

# RESEARCH CONFERENCE PROCEEDINGS

## North Central Region

### American Association for Agricultural Education



**Research Session Coordination**  
*Iowa State University*

**Research Conference Coordination**  
*The Pennsylvania State University*

**Conference Host**  
**The Pennsylvania State University**  
**State College, Pennsylvania**

**Friday, September 30, 2011**

## **Review Process for the North Central Research Conference**

The AAAE North Central members express their sincere gratitude to AAAE colleagues who served as reviewers for research papers submitted for the 2011 North Central Research Conference. A total of 34 research manuscripts were submitted. The AAAE Protocol Guidelines for Conference Paper Selection were used in the paper review and selection process. Twenty-four papers were selected for presentation at the 2011 North Central Conference.

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Wendy Warner  
Brian Warnick  
Jennifer Williams  
Kevin Williams  
Elizabeth Wilson  
Kattlyn Wolf

2011 North Central Research Conference

Friday, September 30, 2011

8:00 A.M. to 9:30 A.M. - Research Session I

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## **Early Career Faculty Perceptions and Preferences Regarding Professional Development in Teaching**

**Lucas D. Maxwell, University of Missouri  
Anna L. Henry, University of Missouri**

### **Abstract**

*The purpose of this study was to describe faculty members' perceptions of and experiences with early career professional development. The target population for this study was early career faculty members in colleges of agriculture and related sciences at Iowa State University, the University of Missouri, and the University of Nebraska – Lincoln. Based on the findings it is concluded that respondents structured education programs prepared them for the content that they teach. Structured education includes degree programs (i.e. B.S., M.S., PhD, etc.) and for credit course work. The results from this study also indicate that perhaps the unstructured portion of graduate education plays the greatest role in terms of the overall development of future faculty related to the content that they teach and how they teach it. In terms of the structure of faculty development in teaching, early career faculty prefer programs that are one day long in length. The implications from these conclusions seem to suggest that ample opportunities exist to work with early career faculty in terms of professional development aimed at improving their teaching. Based on the findings of this study it is recommended that those who are charged with providing professional development focus on providing structured, one day long programs, that help faculty improve their teaching.*

### **Introduction/Frameworks**

Learning to teach is a complex issue. In order to better understand teaching and the act of learning to teach, Bransford, Darling-Hammond, and Lepage (2005) proposed a framework for organizing and understanding teaching and learning. The authors suggested that teachers must possess expertise in three broad areas addressing the teacher's knowledge of the students' development as learners, the teacher's understanding of the subject being taught, and finally their knowledge of teaching (2005). Having earned a doctoral degree, it can be assumed that university faculty have a sound understanding of their discipline, thus addressing the issue of subject matter knowledge. Despite this content knowledge, few faculty members have taken course work or had practical experience in learning psychology or pedagogy, two major components of the framework.

The framework for understanding teaching learning and what is known regarding teaching and learning is supported by four broad research bases in the teacher education literature; research on how people learn, influences of teaching strategies on what and how people learn, research on teacher professional development that influences student learning, and finally research that examines how teachers learn to teach (Bransford, Darling-Hammond, and Lepage, 2005). It is suggested that perhaps the most recent area of inquiry to emerge is research on how teachers learn

Shulman (2004) stated “one never learns to teach once and for all. It is a continuous, ongoing, constantly deepening process” (p. 517). Study of this process has identified three main issues or problems regarding how teachers learn to teach (Hammerness, et al., 2005). The first of these problems deals with the preconceptions that new teachers bring with them as a result of their own experiences as learners. As a result of teachers’ previous experiences, it is first necessary that they acknowledge the need to think about teaching and learning in different ways than they did as learners. Given the years of experience as learners that new teachers possess, this issue is often referred to as the problem of apprenticeship of observation (Lorti, 1975). The second problem has been called the problem of enactment (Kennedy, 1999). This notion of enactment refers to the need of the teacher to have an understanding of the subject but also a firm grasp on the multitude of other issues that a teacher must address (Hammerness, et al., 2005). The third problem area that must be addressed when learning to teach is the problem of complexity (2005). Teachers are generally required to work with several students who have varying backgrounds, ability levels, and outcome expectations. As result, teachers are required to juggle a multitude of issues related to presenting complex material to a diverse group of learners with differing needs and ability level. This is especially true in the college classroom given that the general culture, needs, and level of preparation of students has changed and as such, students are generally less prepared than their predecessors (Choy, 2002).

Golde and Dore (2004) found that generally speaking, students interested in faculty careers were motivated by “a love of teaching, enjoyment of research, and interest in doing service” (p.23). This is particularly interesting and perhaps useful to those interested in faculty professional development given the alignment between these motivations and the tripartite mission of teaching, research, and service that guides land-grant institutions. Not surprisingly, respondents felt that they were best prepared in the area of research. Despite this, fewer than half felt that their programs prepared them to publish and less than one-third indicated that they felt prepared to collaborate on interdisciplinary work (Golde & Dore, 2004). This suggests that a more focused approach to teaching research methods and procedures is needed and perhaps faculty development programs should be developed to address these issues for new faculty members

According to Camblin, Jr. and Steger (2000), the term development can be defined as “targeted enhancement of an individual or a collective set of individuals to serve better the mission of the organization” (p. 1). In an academic setting, the notion of faculty development encompasses any and all efforts “...designed to improve faculty performance in all aspects of their professional lives” (Nelson, 1983, p. 70). With increasing pressure on universities to meet the changing needs of society, the need for faculty members to have the necessary skills to complete their job duties is also increasing. As Camblin, Jr. and Steger stated, “Higher educational institutions must redefine themselves and, in essence, that means the faculty must either face obsolescence or continuously be participating in developmental activities” (p. 2).

For secondary teachers, professional development is often mandated by the state and is an integral part of meeting the requirements for certification or licensure. At the postsecondary level, teacher educators are provided with opportunities for professional development through membership in various professional organizations. Additionally, universities often provide opportunities for faculty professional development (Jones, 2008; Perna, Lerner, & Yura, 1995;

Sands, Parson, & Duane, 1991; Sorcinelli, 1994). While opportunities for professional development exist, little is known about the specific programming that is offered and to what extent faculty members are aware and take advantage of professional development opportunities. Further, little is known in terms of how well early career faculty members feel they were prepared for their faculty roles (Jones, 2008).

There is little doubt that professional development is considered vital to the continued success and growth of higher education (Gillespie, 2002). “One reality is absolute, if higher education environments are to continue to be relevant, faculty development programs must evolve or faculty will become outdated in the rapidly changing work environment” (Camblin, Jr. & Steger, 2000, p. 4). Several studies have been conducted in regard to career and technical educators and more specifically secondary agriculture teachers’ needs in terms of professional development (Birkenholz & Harbstreit, 1987; Brown, 2002; Edwards & Briers, 1999; Garton & Chung, 1996; Mundt & Connors, 1999; Washburn & Dyer, 2006; Washburn, King, Garton, & Harbstreit, 2001). While these studies provide insight into secondary agriculture teachers needs, they tended to focus on aspects relating specifically to the duties of a secondary teacher (i.e., conducting SAE’s) rather than issues relating to needs in terms of teaching development. At the postsecondary level a body of research exists about faculty development regarding model programs, delivery techniques, and mentor protégé relationships (Camblin Jr. & Steger, 2000; Jones, 2008; Perna, Lerner, & Yura, 1995; Sands, Parson, & Duane, 1991; Sorcinelli, 1994). However, regarding the status of faculty development programs in colleges of agriculture and related sciences little is known. Given the rapidly evolving field of agriculture, faculty in colleges of agriculture and related sciences, perhaps more than their colleagues in other disciplines, are required to stay abreast of these changes in order to prepare student to enter the workforce. As a result, further study targeted specifically at professional development needs for faculty in agriculture and related sciences is warranted.

This study was conceptualized through the lens of research on professional development and the different delivery approaches employed to improve teaching and learning. According to Gillespie (2002), there are three main approaches to improving instruction that are employed on college and university campuses. These three approaches, differentiated from each other by their focus, are: faculty development, instructional development, an organizational development. The term professional development loosely refers to some combination of any or all of these three approaches.

Faculty development focuses efforts on the improvement of faculty teaching abilities (Gillespie, 2002). “Common activities include classroom visits by professional staff, personal consultation, workshops and seminars, and the use of video to analyze teaching styles and techniques” (2002, p. 4). The main goal of all of these efforts is to improve individual faculty member’s teaching effectiveness and overall attitude toward the teaching portion of their appointment. Instructional development shifts its focus from the individual faculty member to the student by improving actual courses and curriculums (2002). With the instructional development approach to professional development, the purpose is to increase the overall experience for students by improving the organization and implementation of courses by focusing specifically on “course and curriculum design, implementation, and evaluation” (2002, p. 4). Organizational development takes yet another approach to professional development by

focusing efforts toward issues dealing with the overall structure of a department, college, or institution and its relationship to teaching and learning (2002). The objective of organizational development would be to identify and address institutional issues dealing with relationships between units and overall unit and institutional goals (2002). While each of these different approaches may have different foci and specific outcomes, the over arching goal across all approaches is the improvement of teaching and learning.

### **Purpose and Objectives**

The purpose of this study was to describe faculty members' perceptions of and experiences with early career professional development. The following research objectives were developed to guide the stated purpose.

1. Describe the personal and professional characteristics of faculty in colleges of agriculture and related sciences at Iowa State University, the University of Missouri, and the University of Nebraska – Lincoln (sex, age, teaching appointment percentage, research appointment percentage, extension/service/outreach appointment percentage, rank, discipline, years in a tenure track position).
2. Describe early career faculty members' perceptions of the extent to which structured education, unstructured education, and current place of appointment prepared them for their teaching role as faculty members.
3. Describe early career faculty members' preferences regarding faculty development programming.

### **Methods and Procedures**

The target population for this study was early career faculty members in colleges of agriculture and related sciences. For the purposes of this study early career faculty members were defined as those faculty who had completed seven or fewer years of service in a tenure track position. Several measures were taken to determine the accessible population for this study. First, the researcher obtained a list ( $N = 62$ ) of all universities that were members of the Association of American Universities (Association of American Universities, n.d.). From this list, the researcher identified all member institutions that offered programs in agriculture and related sciences ( $N= 16$ ) based on their status as land-grant institutions (Association of Public and Land-Grant Universities, n.d.). From this list of 16 institutions, the researcher selected three universities based on several factors including their relative regional proximity, similarities in program offerings, and membership in the same athletic conference. These criteria were used in an attempt to ensure that respondents were similar in terms of selected personal and professional characteristics. Additionally, similarities in program offerings and regional proximity allowed for various comparisons among the respective universities and subgroups based on personal and professional characteristics.

The frame for this study was obtained from the college of agriculture and related sciences academic programs office at the selected universities. The researcher contacted the associate dean for academic programs at each institution requesting a list of names and email addresses for all faculty who had completed seven or fewer years of service in a tenure track position and had

at least some appointment in the area of teaching. This request yielded a list of potential participants from each of the respective universities. In an attempt to ensure accuracy and address any potential frame error, each list was checked for error by individuals in the academic programs office who were familiar with faculty members' years of service. Individuals who did not fit the study criteria were purged from the list. Further, all faculty names and email addresses were scrutinized to ensure they were reported correctly and any errors were corrected prior to data collection. Additionally, the data collection instrument was used to confirm the total number of years respondents had spent in a tenure track position allowing for further verification of the frame. As a result, the accessible population ( $N = 63$ ) reflects adjustments made after data collection based on respondent reported data. This accessible population was comprised of 18 faculty from Iowa State University, 25 faculty from the University of Missouri, and 19 faculty from the University of Nebraska-Lincoln.

Data collection was conducted using an instrument developed by the researcher after a review of related literature. The instrument drew from the work of MacKinnon, III (2003). MacKinnon, III sought to determine the attitudes and perceptions of academic administrators and deans toward faculty development in colleges of pharmacy. Recognizing the inherent differences between colleges of pharmacy and colleges of agriculture and related sciences the instrument was modified to meet the objectives of this study. While making these modifications the researcher was guided by literature on survey design, teaching strategies, faculty development and self-efficacy (Bandura, 1977a; Dillman, 2007; Gillespie, 2002; Golde & Dore, 2004; McKeachie & Svinicki, 2006; National Research Council, 2009; Transforming Agricultural Education for a Changing World, 2009).

Prior to administration, the instrument was reviewed by a panel of experts ( $N = 7$ ) in the area of faculty development and questionnaire construction. These experts were charged with evaluating the face and content validity of the instrument. Suggestions from the panel of experts were reviewed and resulted in the final instrument which was used in the study.

Data from a field test were used to determine the reliability of the instrument using a percent agreement measure (Huck, 2008). The instrument was sent to a group of 20 faculty members in the agriculture college at the University of Kentucky who were not a part of the study frame. Based on these data, the researcher calculated the percent agreement between respondents' answers to each item on the first administration of the instrument and the responses received during the second administration. To calculate the percent agreement, the researcher considered responses that were identical or within one point above or below to be in agreement. This approach is a common practice when employing percent agreement measures to calculate reliability (Birkimer & Brown, 1979; Walkup, Satriano, Hansell, & Olfson, 1998; Fletcher & Sabo, 2006).

For all items ( $N = 69$ ) 87% ( $n = 60$ ) were between 86-100% agreement; 99% ( $n = 68$ ) were between 71-100% agreement; and 100% ( $N = 69$ ) were between 64-100% agreement. It is generally suggested that a percent agreement of 70% is necessary for an item to be considered reliable (Hartman, 1977; House, House, & Campbell, 1981). Based on these findings, it was determined that the instrument possessed a level of reliability that was acceptable for use in this study

The researcher chose to administer the questionnaire using the online service Hosted Survey™. In-depth study on the methods and approaches to instrument delivery has indicated that a multiple contact strategy provides the greatest potential for increasing response rates (Scott, 1961; Linsky, 1975; Dillman, 1991, 2007). Schaefer and Dillman (1998) found that this multiple contact strategy is equally as effective when instruments are delivered in an electronic format. Based on these findings, the researcher chose to deliver the instrument electronically using a slightly modified version of Dillman's (2007) four contact email strategy. Due to the option of inserting a direct link to the online questionnaire into the body of the email message delivered to respondents, the researcher chose to include a link to the instrument in each of the four contacts.

After receiving IRB Approval, early career faculty respondents in the study ( $N = 63$ ) were contacted and asked to complete the study on Thursday, March 25, 2010. Respondents were asked to complete the instrument by Wednesday, April 7, 2010. Following this initial request, those individuals who had not responded received a follow-up email with a link to the questionnaire asking them to participate in the survey. These follow-up emails were sent on the following dates: April 1, 2010; April 11, 2010; and April 15, 2010. This study yielded a response rate of 85.48% ( $n = 53$ ) early career faculty members. Specifically, 18 of 18 respondents responded from Iowa State University, 20 of 25 respondents responded from the University of Missouri and 16 of 19 respondents responded from the University of Nebraska-Lincoln. It was found that two of the respondents did not provide usable data resulting in the final accepting sample of  $n = 51$ . Based on the study response rate it must be acknowledged that non-response error is present, however, according to Linder, Murphy, and Briers (2001) additional methods to control for non-response are not needed when a response rate of 85% is achieved.

This study used descriptive statistics such as means, frequencies and standard deviations to describe early career faculty members perceptions of their preparedness for faculty roles, preferences for delivery, and their participation in faculty development programs.

## **Results**

Objective One of the study was to describe the personal and professional characteristics of faculty in colleges of agriculture and related sciences at Iowa State University, the University of Missouri, and the University of Nebraska – Lincoln (sex, age, academic appointment, rank, discipline, years in a tenure track position). Table 1 displays selected personal and professional characteristics of early career faculty members.

Table 1  
*Early Career Faculty Respondents Sex, Age, Rank, Discipline, and Years in a Tenure Track Position (n = 51)*

Characteristic	<i>f</i>	%
Sex		
Male	34	66.70
Female	17	33.30
Age		
31-35 Years	10	19.60
36-40 Years	24	47.10
41-45 Years	11	21.60
46-50 Years	4	7.80
51-55 Years	1	2.00
Not reported	1	2.00
Rank		
Assistant Professor	48	94.10
Associate Professor	3	5.90
Discipline		
Natural Science	39	76.50
Social Science	12	23.50
Years in a Tenure Track Position		
1 Year	1	2.00
2 Years	9	17.60
3 Years	13	25.50
4 Years	10	19.60
5 Years	7	13.70
6 Years	8	15.70
7 Years	3	5.90

Means and standard deviations for selected personal and professional characteristics of early career faculty respondents are presented in Table 2. The average percentage of academic appointment in teaching was 37.80% ( $SD = 15.07$ ). Respondents reported an average research appointment of 52.55% ( $SD = 21.24$ ). Additionally, the average percentage of academic appointment devoted to extension/service/outreach was 7.88% ( $SD = 14.54$ ). Finally, respondents had an average of 3.96 years ( $SD = 1.57$ ) of service in a tenure track position.

Table 2  
*Early Career Faculty Respondents Academic Appointment and Years in a Tenure Track Position (n = 51)*

Characteristic	<i>M</i>	<i>SD</i>	<i>Range</i>
Academic Appointment			
Teaching Percentage	37.80	15.07	68
Research Percentage	52.55	21.24	80
Extension/Service/Outreach Percentage	7.88	14.54	75
Years in a Tenure Track Position	3.96	1.57	6

The second objective of the study was to describe the respondents' perceptions of the extent to which structured education, unstructured education, and current place of appointment prepared them for their teaching role as a faculty member. Table 3 displays the mean responses of respondents regarding their perceptions of how well their structured and unstructured education prepared them for their teaching role. Additionally, respondents' perceptions regarding how well their current place of employment supports their teaching were reported. Data were collected using a five-point Likert-type scale. To aid in data interpretation, it should be noted that strongly disagree = 1.00 - 1.50, disagree = 1.51 - 2.50, neutral = 2.51 - 3.50, agree = 3.51 - 4.50, strongly agree = 4.51 - 5.00. The mean response when asked how well structured education prepared respondents for how they teach was 3.22 ( $SD = 1.35$ ). In terms of how well structured education prepared respondents for the content that they teach, the mean response was 4.33 ( $SD = 0.86$ ). In terms of how well unstructured education prepared respondents for how they teach, the mean response was 3.59 ( $SD = 1.13$ ). Further, the mean response in terms of how well unstructured education helped prepare respondents for the content that they teach was 3.59 ( $SD = 1.25$ ). When asked if respondents' current place of employment provided adequate support in terms of professional development related to how respondents teach, the mean response was 3.86 ( $SD = 1.10$ ) and 3.24 ( $SD = 1.03$ ) regarding professional development focused on the content that they teach.

Table 3  
*Perceptions of How Structured Education, Unstructured Education, and Current Place of Employment Prepared/Supports Respondents for Their Teaching Role (n = 51)*

Statement	<i>M</i>	<i>SD</i>	<i>Range</i>
Structured Education			
Prepared Me for How I Teach	3.22	1.35	4
Prepared Me for the Content I Teach	4.33	0.86	3
Unstructured Education			
Prepared Me for How I Teach	3.59	1.13	4
Prepared Me for the Content I Teach	3.59	1.25	4
Current Place of Employment			
Provides Support Related to How I Teach	3.86	1.10	4
Provides Support Related to Content I Teach	3.24	1.03	4

*Note.* Coded: Strongly Disagree = 1.00 - 1.50, Disagree = 1.51 - 2.50, Neutral = 2.51 - 3.50, Agree = 3.51 - 4.50, Strongly Agree = 4.51 - 5.00.

Objective Three sought to describe early career faculty members' preferences regarding faculty development programming. Table 4 contains mean responses and standard deviations for the respondents regarding their responses to 12 statements related to faculty development. Data were collected using a five-point Likert-type scale. To aid in data interpretation, it should be noted that strongly disagree = 1.00 - 1.50, disagree = 1.51 - 2.50, neutral = 2.51 - 3.50, agree = 3.51 - 4.50, strongly agree = 4.51 - 5.00. When asked if they would or do participate in faculty development in teaching for early career faculty members, the respondents' mean response was 4.14 ( $SD = 1.02$ ). As to whether they do or would participate in faculty development in teaching for all faculty, regardless of rank or years of service, the mean response was 4.20 ( $SD = 1.00$ ). Next, respondents were asked if they would like to see more faculty development in teaching made available and their mean response was 3.53 ( $SD = 1.08$ ). When asked if the level of

faculty development in teaching is adequate at the respondents current place of employment their mean response was 3.67 ( $SD = 0.99$ ). In regard to their interest in working one-on-one with someone to improve their teaching, respondents mean response was 3.39 ( $SD = 1.10$ ). A series of three statements dealt with whether or not early career faculty would participate in faculty development in teaching. The mean response for a one day long program was ( $M = 3.80$ ;  $SD = 1.06$ ), the mean response for meeting one night a week for a semester was ( $M = 2.86$ ;  $SD = 1.28$ ), and the mean response for a week long program was ( $M = 2.69$ ;  $SD = 1.30$ ). The following three statements asked respondents if they preferred that faculty development in teaching be offered at the department level ( $M = 2.78$ ;  $SD = 1.29$ ), college level ( $M = 3.24$ ;  $SD = 0.97$ ), or university level ( $M = 3.37$ ;  $SD = 1.25$ ). Finally, respondents were asked if their disciplines' professional organization meeting was an appropriate place for professional development in teaching. The mean response for this item was 3.39 ( $SD = 1.09$ ).

Table 4  
*Preferences Regarding Faculty Development in Teaching (n = 51)*

Statement	<i>M</i>	<i>SD</i>	<i>Range</i>
I would or do participate in faculty development in teaching for all faculty regardless of rank or years of service	4.20	1.00	4
I would or do participate in faculty development in teaching for early career faculty members	4.14	1.02	4
I would prefer or do participate in one day long faculty development to improve my teaching	3.80	1.06	4
The level of faculty development in teaching is adequate at my current place of employment	3.67	0.99	4
I would like to see more faculty development in teaching made available to me.	3.53	1.08	4
I would prefer or do work one-on-one with someone to improve my teaching	3.39	1.10	4
My disciplines professional organization meeting is an appropriate place for faculty development in teaching	3.39	1.09	4
I would prefer faculty development in teaching be offered at the university level	3.37	1.25	4
I would prefer faculty development in teaching be offered at the college level	3.24	0.97	4
I would or do participate in faculty development in teaching that meets one time a week during the semester	2.86	1.28	4
I would prefer faculty development in teaching be offered at the departmental level	2.78	1.29	4
I would or do participate in a week long faculty development program to improve my teaching	2.69	1.30	4

*Note.* Coded: Strongly Disagree = 1.00 - 1.50, Disagree = 1.51 – 2.50, Neutral = 2.51 – 3.50, Agree = 3.51 – 4.50, Strongly Agree = 4.51 – 5.00.

## **Conclusions, Implications, and Recommendations**

From the findings of the study it is concluded that more men (66.70 %) are in the academy than women (33.30%). This conclusion is consistent with data regarding the sex of fulltime instructional faculty in agriculture and home economics compiled by the National Center for Education Statistics (2009) that indicates more men (64.60%) than women (35.40%) are in fulltime instructional faculty positions. Further, it was concluded that on average faculty have a roughly 50% appointment in research and nearly a 40% appointment in teaching. However, a great deal of variability exists in individual faculty appointments. Finally, with an 85% response rate it can be reasonably concluded that the topic of professional development is important to early career faculty in colleges of agriculture and related sciences given that previous study has indicated much lower response rates from faculty (Shannon & Bradshaw, 2002).

While consistent with national figures regarding the breakdown of men versus women in fulltime faculty position, further research on gender issues in terms of faculty in colleges of agriculture and related sciences should be explored. Specifically, researchers should seek to determine what motivates males and females to pursue graduate education and what differences exist between the two. Further, study should focus on the relationship between individuals who earn graduate degrees and obtain tenure track faculty positions versus those who seek employment in their respective disciplines private sector. Finally, recruitment efforts should be targeted toward women in an effort to encourage more women to pursue tenure track faculty positions.

Objective Two sought to describe respondents' perceptions of the extent to which structured education, unstructured education and current place of employment prepared early career faculty for their teaching role. Based on the findings it is concluded that respondents structured education programs prepared them for the content that they teach. Structured education includes degree programs (i.e. B.S., M.S., PhD, etc.) and for credit course work. This should not be surprising given the emphasis that most graduate programs place on research, thereby providing graduate students ample opportunities to broaden the depth and breadth of their knowledge of their respective degree area (Transforming Agricultural Education for a Changing World, 2009). While faculty feel their structured education prepared them in terms of the content that they teach, it is concluded that they are not provided opportunities to explore the science and art behind how they teach. Given that few, if any, faculty members are excused entirely from teaching this conclusion is particularly alarming (Serow, 2000).

The findings from Objective Two support the conclusion that the unstructured portion of graduate student preparation helps to prepare future faculty for both the content that they teach and how they will teach it. Unstructured education includes professional relationships with faculty and graduate students, and workshops and seminars in one's department, university and greater discipline. It is further concluded that colleges of agriculture and related sciences provide support for early career faculty in terms of how they teach. However, faculty are neutral regarding the support they are provided regarding the content they teach. This finding leads to the conclusion that faculty development programming in colleges of agriculture and related sciences is generally not content specific and is focused on helping faculty grow as teachers rather than broadening their content knowledge.

Further study should be directed at examining the structure of graduate education across disciplines in colleges of agriculture and related sciences. Specifically, researchers should seek to identify opportunities for integration of coursework in teaching and learning. Additionally, research should seek to better define the nature of professional development programming in colleges of agriculture and related sciences both for graduate students and faculty across ranks and years of service.

It is implied from these conclusions that formal course work adequately prepares future faculty in terms of content; however, graduate programs seem to be lacking course work aimed at preparing future faculty to be teachers. Given the increasing pressure in terms of accountability it is implied that the structure of graduate preparation has not responded to the numerous calls for the improvement of teaching on college campuses (Camblin, Jr, & Steger, 2000; Transforming Agricultural Education for a Changing World, 2009; United States Department of Education, 2006). It is further implied that while teaching accounts for nearly 40% of early career faculty members' appointments, faculty are neutral regarding the impact of structured education on their preparation for teaching. This seems to imply that those charged with preparing future faculty members do not value teaching at the same level that they value research.

The results from this study also indicate that perhaps the unstructured portion of graduate education plays the greatest role in terms of the overall development of future faculty related to the content that they teach and how they teach it. As a result, it is implied that the relationships that are forged between graduate students and faculty as well as graduate students and their colleagues are very important to the development of teaching skills in future faculty. Further, because early career faculty agree that their unstructured education prepared them for the content that they teach and how they teach it is implied that graduate programs in agriculture and related sciences do a good job of creating opportunities for graduate students to discuss teaching in informal settings.

Finally, it is implied that colleges of agriculture and related sciences are providing support for early career faculty members regarding how they teach. This seems to suggest that while graduate programs do not appear to be responsive to calls for improved instruction, colleges recognize the need to support faculty and are providing opportunities for professional development on the topic of teaching. It would appear that colleges are beginning to head the calls for change outlined in Transforming Agricultural Education for a Changing World (2009) publication.

Respondents in this study indicated that their unstructured education helped prepare them for both the content that they teach and how they teach it. As a result, graduate educators should seek out ways to facilitate interaction between graduate students and faculty in the department, across disciplines, and at professional meetings and seminars. Additionally, professional development for current faculty aimed at helping them mentor graduate students in the area of teaching should be made available. Finally, seminars and workshops aimed specifically at graduate students where they can discuss topics related to teaching and learning with colleagues across disciplines should be organized.

The goal of Objective Three was to describe early career faculty members' preferences regarding faculty development programming. Based on the findings, it is concluded that early career faculty members' value professional development in teaching and faculty perceive themselves as being actively engaged in faculty development aimed at teaching. Further, faculty do not have strong feelings about whether or not faculty development should be aimed at specific audiences (i.e. early career faculty members) or simply made available to all faculty, regardless of rank or years of service. This conclusion contradicts previous studies that have indicated that faculty at various stages of their careers have differing needs (Weldman & Strathe, 1985; Camblin, Jr & Steger, 2000). Additionally, it is concluded that while faculty believe that the level of faculty development programming is adequate at their current place of employment, they are interested in improving their teaching and therefore would like to see more opportunities made available to them.

In terms of the structure of faculty development in teaching, early career faculty prefer programs that are one day long in length. This conclusion should come as no surprise given that often, one of the biggest barriers to participation in professional development is the perceived lack of time when considering the many and varied responsibilities of faculty members (Sorcinelli, 1994). However, it was concluded that opportunities exist to build support for other delivery structures and program lengths given that faculty did not hold strong opinions regarding programs that meet weekly during a semester or week long meetings focus on teaching. Finally, it was concluded that early career faculty members do not have strong opinions regarding who should be responsible for providing professional development in teaching.

The implications from the conclusions of objective three seem to suggest that ample opportunities exist to work with early career faculty in terms of professional development aimed at improving their teaching. This may stem from the fact that, as graduate students, early career faculty received little to no preparation in teaching (Golde & Dore, 2004). This further seems to suggest that early career faculty members recognize the importance of teaching and are interested in improving their knowledge and skills on the topic. Additionally, these conclusions imply that perhaps those charged with providing professional development in teaching need not target their programming to specific faculty groups, rather making the programming available to all faculty, regardless of rank or years of service. This seems to imply that faculty welcome the opportunity to learn with and from colleagues with varying levels of experience. This is consistent with research that indicates a desire to receive clear and constructive feedback about teaching activities (Sorcinelli, 1994).

In terms of the structure of faculty development programming in teaching and who is responsible for providing it faculty were largely neutral, not holding strong opinions one way or another. Perhaps this is a result of truly having no opinion on the matter or perhaps it is a result of no one entity or group taking responsibility for providing professional development in teaching. If this is the case it would seem to imply that faculty may perceive efforts to improve their teaching as being disjointed and unorganized. Further, because faculty are neutral regarding whether or not their professional organization meetings are appropriate places for faculty development in teaching, it is implied that opportunities exist to build support and

recognition for teaching and learning into existing structures in professional organizations across disciplines.

Based on the findings of this study it is recommended that those who are charged with providing professional development focus on providing structured, one day long programs, that help faculty improve their teaching. Additionally, more in depth study into the nature of teaching professional development programming that early career faculty members indicate they are participating in or are willing to participate in should be explored. Finally, further research should seek to better quantify what opportunities exist at professional organization meetings across disciplines regarding professional development in teaching.

The findings of this study indicate that faculty are generally neutral when asked if they actively seek out professional development in teaching. It is recommended that faculty development programming seek to help highlight opportunities for faculty members to link their teaching and research (Transforming Agricultural Education for a Changing World, 2009). Research on how best to make faculty aware of opportunities for professional development in teaching should be conducted. Further, more informal opportunities for faculty across disciplines to discuss teaching and learning should be made available. Additionally, it is recommended that greater efforts be made to promote teaching as a scholarly endeavor and to improve the status of teaching in terms of promotion and tenure to help provide greater rewards to faculty for their efforts in teaching improvement. This notion of providing greater reward is consistent with research where new faculty have indicated a general feeling of no reward for their effort (Sorcinelli, 1994).

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# Early Career Faculty Perceptions and Preferences Regarding Professional Development in Teaching

## A Critique

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This study recognizes the importance of professional development in tenure-track faculty positions and seeks to identify what newer faculty think and believe about developing their knowledge of the teaching and learning process. This represents a golden opportunity for teacher educators to engage faculty members from other departments in the conversation about what makes for good teaching.

The authors are to be commended for a thorough review of the literature and for articulating the varied responsibilities that newer faculty have that compete for their time as proficient classroom teachers. Studies of this nature help to raise awareness of the need to provide critical teaching assistance to newly minted Ph. D.'s, most who are very proficient in research and scholarship, but lack the confidence in extending their knowledge to the classroom.

The authors provide sound evidence for the methodology employed in this study. Specific attention was given to ensuring that data gathering met accepted standards for collecting data via electronic methods. In addition, the authors were mindful of non-response error and the potential it has to influence the study.

Although the conclusions generally flowed from the findings, the conclusion that *recruitment efforts should be targeted toward women in an effort to encourage more women to pursue tenure-track faculty positions* falls outside the scope of the study conducted on perceptions and preferences of faculty towards professional development. It is interesting to note that the findings of faculty perceptions of professional development for the *content* they teach is neutral. One can only assume this relates to the natural sciences where faculty are hired for their uniqueness in the specific discipline they conduct research in, but it would be interesting to know the breakdown by natural science (76%) versus social science (24%) for this construct.

The authors clearly articulate respondents' neutrality regarding who should conduct professional development training for the improvement of teaching, and that since no single group is responsible, *faculty may perceive efforts to improve their teaching as disjointed and unorganized*. The authors fall short of recommending that those who are experts in the teaching and learning process on campus (teacher educators) fill the void left by others.

The authors are to be commended for addressing a serious issue regarding the preparation of future faculty for careers in teaching at the university level.

## **The Development of a Comprehensive Advising Instrument to Assess Academic Advisors' Performance**

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### **Abstract**

*The quality of academic advising received by students may have tremendous implications on their overall college experience. Not only can quality advising provide students with meaningful connections to university faculty or staff, it can also increase overall student satisfaction, retention, and degree completion. Despite its noted importance, academic advising often goes unevaluated at institutions of higher learning. In some cases, the lack of evaluation may reflect a decreased emphasis or priority placed on advising, although the limited availability of tools to assess advising may also be a factor. Therefore, the primary purpose of this study was to develop a valid, reliable, user-friendly instrument to assess academic advisor performance. The study consisted of four phases, beginning with the creation of a 34-item instrument based upon four constructs of advising. Using exploratory factor analysis, the instrument was reduced to 23 items, and then re-administered to a larger student group. Finally, exploratory & confirmatory factor analyses were used to identify 15 items, representing three constructs of academic advising: advisor knowledge, availability, and supportiveness.*

### **Introduction/Conceptual Framework**

#### *Importance of Advising*

Academic advising has been touted as an opportunity for students to engage in meaningful interaction with faculty members. In some cases, academic advising may be the only structured opportunity a student has to develop a relationship with an institutional representative (Frost, 1991). Richard Light (2001) stated “students who get the most out of college, grow the most academically, and who are the happiest organize their time to include activities with faculty members” (p.10). Ender, Winston, and Miller (1982) compared academic advising to the hub of a wheel, stating that an advisor can be the “hub” of a student’s college experience, from which radiates other developmental experiences, including courses, co-curricular activities, career development, personal counseling, and employment.

Berdahl (1995) stated that “students completing a bachelor’s degree often report that their initial apprehension upon entering the new world of a university was reduced considerably by the person or persons who helped them get started” (p. 10). Mohr, Eiche, and Sedlacek (1998) reported that senior students with meaningful relationships with faculty and advisors were more likely to finish their degree program than those who were merely referred to student services. Cox and Orehovec (2007) reported that when students engage with faculty, they feel valued and important; one student explained, “You become more than just a number...you’re no longer just another one, you’re an individual, you have a name...” (p. 355).

Through meaningful relationships with students, advisors play several valuable roles and responsibilities. Among them, Gordon (1992) identified seven skill areas which advisors must perform, including information dissemination, teaching, counseling, mentoring, referral, monitoring, and decision-making. Indeed, advisors may also be expected to serve in other capacities based on individual student needs, including “expert, advocate, rubber stamp, judge, teacher, and friend” (Kramer & Gardner, 1983, p. 18). Cuseo (2002) synthesized these and other roles and responsibilities identified in advising-related literature into four areas: Available/Accessible, Knowledgeable/Helpful, Personable/Approachable and Counselor/Mentor.

However, not only do students benefit from advisors competent and comfortable in each of the necessary advising roles, institutions benefit as well. Gordon (1992) described academic advising as a “dynamic process that can have a significant impact on both student and institution” (p. 47). Particularly in an era of increased attention to student satisfaction and persistence in college, quality academic advising programs provide for systematic academic planning and enhance retention through student involvement (Frost, 1991). Metzner (1989) found that academic advising can increase students’ satisfaction with college and reduce institutional attrition. Conversely, according to Gardiner (1998), when students receive poor quality advising, it is likely to have a “retardant effect” on their development (p. 81).

Hunter and White’s (2004) article titled, *Could Fixing Academic Advising Fix Higher Education?*, emphasized the importance of academic advising to institutions of higher education in the following quote.

Our belief is that effective advising is now more important and relevant than ever. . . .Resources from federal and state government as well as private granting agencies are drying up. The outlook for students is equally worrisome. Some states are pulling scholarships from students who take longer than four years to graduate. The job market is not as good. . . and tuition costs are climbing for students and their families. As the cost of higher education increases, so do expectations of students and families. . . In terms of maximizing resources, building a sound advising system is an investment in effective goal clarification by students and more efficient process to program or degree completion (p. 21).

#### *The Need for Assessment of Advising*

Gardiner (1998) elaborated on the importance of educational assessment, stating, “when we subject our work as educators to the same close examination we demand in our disciplines, we find a substantial body of evidence that clearly demonstrates a crisis of educational quality. . .” (p. 71). However, Gardiner continued, “. . .rather than a strong sense of urgency for change, we too often find complacency within our ranks” (p. 71).

Jim Collins’ (2001) book, *Good to Great*, expands on this idea of complacency, stating that good is the enemy of great. According to Collins, “We don’t have great schools, principally because we have good schools. We don’t have great government, principally because we have good government. Few people attain great lives, in large part because it is so easy to settle for a good life” (p. 1).

At some institutions, anecdotal evidence suggests that advising is already quite good. In some cases, the utilization of faculty advisors for each student is even viewed as a selling point for programs, colleges and institutions. However, Chickering (1969) described advising as the “the most important kind of teaching” (p. 252). If this is truly the case, why is it that although faculty members receive beneficial feedback in the areas of teaching and research, though the role of faculty advisor may go un-scrutinized? Given the evidence provided through literature about the relationship between academic advising and student retention, what could be done to further enhance the academic advising experiences of students? What steps are necessary to make academic advising truly great?

As Wilbur (2003) noted, “every strong advising program identified by NACADA or other national organization has integrated an effective system to monitor quality” (p. 214). Without a doubt, evaluation and assessment is key. The purpose of advisor evaluation is to improve effectiveness (Creamer & Scott, 2000). With that in mind, one would wonder why more institutions are not conducting evaluations of academic advising?

In some cases, existing institutional norms and practices may work against the concept of assessing academic advising. Another factor working against the development of such skills is the absence of well-designed instruments to evaluate the quality of advising. Such information can provide faculty advisors and college administrators with quantifiable information about the advising which takes place on college campuses across the nation. Such feedback should be desirable; after all, as educators, we strive for continual improvement and growth whether that is through formal evaluation of performance or informal personal reflection.

### *Conceptualizing Quality Advising*

According to Creamer and Scott (2000), there are four primary options an institution can utilize to evaluate its academic advising services: student evaluation, self-evaluation, supervisory performance review, and peer review. Regardless of the evaluation format, feedback is needed to help advisors be more effective (Creamer & Scott). Wilbur (2003) noted that many academic advising instruments exist on a national level, however “each campus has to determine what system of data collection will provide them with the most accurate and timely feedback on the advising process” (p. 214-215). Wilbur further offered,

Sometimes something as simple as a short feedback form that can be completed by students at the end of an advising session proves quite helpful to advisors. Other times, more comprehensive survey instruments and focus groups are needed to capture broader student experiences with advisors and related campus resources over time. In addition to monitoring advising for current students, some of the best programs assess students’ expectations prior to arriving on campus, as well as regularly contacting alumni regarding their reflections on the advising process and how it helped or failed to help them achieve their educational goals (p. 215).

Cuseo suggested that four advising constructs, or advisor roles could serve as the foundation of an advisor evaluation instrument. As a result of his recommendation, the conceptual framework for this study can best be summarized by Cuseo’s (2002) four constructs: Available/Accessible,

Knowledgeable/Helpful, Personable/Approachable, and Counseling/Mentoring. Each of the constructs is further defined in the paragraphs that follow.

Available/Accessible: Cuseo (2002) described an advisor as “someone who effectively communicates and interacts with students outside the classroom, and does so more informally, more frequently, and on a more long-term basis than course instructors” (p.3). Students’ instructors change on a regular basis, however academic advisors have the potential to develop ongoing, meaningful relationships with students throughout their entire college career. The availability and accessibility of the advisor is one of the keys to developing a solid advisor/advisee relationship.

Knowledgeable/Helpful: An advisor must also provide information and resources for students, often playing multiple roles. Cuseo (2002) suggested that an advisor should play four specific roles in this area, including that of a resource agent, interpreter, liaison/referral agent, and teacher/educator. Each of these roles allows an advisor to provide his/her advisees with the knowledge, information and resources necessary to navigate the college experience.

Personable/Approachable: Advisors also need to be able to personalize the college campus for their advisees. Students should feel comfortable seeking advice and counsel from their advisor. If an advisor knows his/her students by name and takes a vested, personal interest in their unique, individual background, experiences, and educational goals, they are generally viewed as personable and approachable (Cuseo, 2002).

Counseling/Mentoring: Cuseo (2002) also suggested that an advisor should be present to offer students advice, direction and guidance in a non-judgmental manner. Rather than treating advisees as “subordinates to be evaluated (or graded),” they should be treated as “clients to be mentored” (p. 3).

### **Purpose**

According to the *National Research Agenda [NRA]: Agricultural Education and Communication 2007-2010*, “High quality academic advising is believed to be a critical element of a strong academic program” (Osborne, n.d., p. 17). Further, the document identifies improving “the success of students enrolled in agricultural and life sciences academic and technical programs” and enhancing “the effectiveness of agricultural and life sciences faculty” as research priority areas related to *Agricultural Education in University and Postsecondary Settings* (p. 7).

To that end, the purpose of this study was to develop a valid, reliable, user-friendly instrument to assess academic advisor performance in university and postsecondary settings, building off of the contributions and recommendations of Cuseo (2002) and others (Frost, 1991; Gordon, 1992; Winston, Ender & Miller, 1982; Winston, Miller, Ender, Grites, & Associates, 1984). In addition to the content of statements utilized, clarity and brevity were key considerations for item development/selection. Specific recommendations regarding the format and structure of the instrument were utilized to enhance the usefulness of the instrument (Cuseo, 2008). Because of the nature of this manuscript, which addresses instrument development process, specific research objectives are not included.

## Methods

This manuscript is designed to describe the four-phase process utilized for development of the instrument. As a result, the methods and results sections will be presented in a blended format to allow each of the phases to be addressed in a clear, logical, and sequential manner. The following is a brief overview of the four phases that will be addressed throughout the manuscript.

Phase 1: Development of the initial advising instrument and administration to students representing one college within the university (Spring 2008)

Phase 2: Exploratory principal components analysis conducted

Phase 3: Revised instrument administered to students in multiple colleges within the university (Spring 2010)

Phase 4: Exploratory & confirmatory factor analyses conducted on the revised instrument

## Results

Phase 1: Upon review of the literature and previously established instruments relevant to academic and faculty advising, the initial advisor instrument was designed. Existing university and college evaluations and the Survey of Academic Advising (SAA) designed by the ACT organization provided a starting point for item generation. From this review, a large number of desirable advising characteristics and descriptors were developed and a list of approximately forty potential statements was created.

The initial list of potential statements was then presented to a panel of faculty advisors, convened to provide guidance to the study. The faculty advisors first worked individually, then collaboratively to clarify ambiguous statements, eliminate duplication, and categorize the statements into one of the four advising constructs suggested by Cuseo (Available/Accessible, Knowledgeable/Helpful, Personable/Approachable, Counseling/Mentoring). This process yielded approximately 40 items, which were then submitted to a larger panel of experts for feedback. This larger panel of experts consisted of faculty members, college administrators and instrumentation experts. Once again, the statements were modified and revised according to the feedback received; ultimately 34 statements were identified that were thought to assess the four advising constructs.

The instrument, distributed using HostedSurvey, an online questionnaire service, was then piloted with December 2007 graduates ( $n = 33$ ) of a college to ensure reliability. Reliability estimates ranging from .82 to .89 were observed for the four constructs. Researchers then administered the instrument to a larger group of current students within the college ( $N=1619$ ). A total of 730 students completed the instrument, resulting in a 44% response rate. Non-response error was addressed by comparing respondents to non-respondents on known characteristics. No significant difference was found, so the sample was deemed to be representative of the larger student population.

Table 1 presents descriptive statistics for the 34 items. These means suggest that overall, students perceived their advisors to be quite proficient at advising, particularly in the areas of

Availability/Accessibility and Personable/Approachable. On each of the two constructs, the mean advisor performance exceeded 4.25. Advisor performance in the areas of Counseling/Mentoring and Knowledge/Helpfulness scored slightly lower (4.06 and 3.92 respectively).

Table 1  
*Advisor Performance on Advising Characteristics within the Four Advising Constructs (n = 730)*

Construct/Item	Advisor Performance	
	<i>M</i>	<i>SD</i>
<b><i>Availability/Accessibility</i></b>		
On time for advising appointments with me	4.58	.78
Provides sufficient time for advising appointments	4.41	.90
Responds to my requests in a timely fashion	4.39	.96
Available when I need assistance	4.25	1.02
Maintains an open line of communication	4.24	1.07
Provides an effective process for scheduling advising appointments	4.24	.99
Summated Score	4.36	.78
<b><i>Knowledge/Helpfulness</i></b>		
Encourages academic success	4.38	.97
Communicates degree requirements	4.21	1.13
Knowledgeable about general education courses	4.12	1.12
Assists in selecting/changing my academic major	4.03	1.14
Encourages involvement in co-curricular student activities	3.97	1.18
Aware of my academic progress	3.93	1.14
Helps clarify life goals	3.77	1.24
Assists in identifying potential areas of employment after college	3.77	1.23
Helps obtain employment on campus	3.72	1.26
Provides information about educational opportunities beyond my Bachelor's degree	3.69	1.26
Suggests academic resources	3.51	1.24
Provides information about obtaining financial assistance	3.50	1.27
Provides information about online registration	3.47	1.25
Provides information regarding study skills	3.37	1.26
Summated Score	3.92	.91
<b><i>Personable/Approachable</i></b>		
Easy to talk with	4.40	.98
Respects my decisions	4.39	.84
Seems to enjoy advising	4.37	.97
Provides a caring, open atmosphere	4.29	.99
Acknowledges me in social settings	4.18	1.14
Familiar with my academic background	3.96	1.13
Summated Score	4.29	.82

Table 1 (continued)

Construct/Item	Advisor Performance	
	<i>M</i>	<i>SD</i>
<b><i>Counseling/Mentoring</i></b>		
Encourages me to assume an active role in planning my academic program	4.25	1.00
Helps select courses that match my interests	4.20	1.09
Expresses concern for my personal development	4.10	1.10
Stimulates my interest in an academic discipline	4.03	1.04
Encourages me to explore career areas of interest	3.92	1.20
Helps me identify obstacles to overcome before I reach my educational goals	3.88	1.13
Suggests strategies to cope with academic challenges	3.73	1.25
Willing to discuss personal problems	3.72	1.20
Summated Score	4.05	.91

*Note.* Scale: 1.00 – 1.50 = Poor, 1.51 – 2.50 = Fair, 2.51 – 3.50 = Satisfactory, 3.51 – 4.50 = Good, 4.51 – 5.00 = Excellent.

In Phase 2, exploratory principal components analysis with varimax rotation was used to seek support for Cuseo’s four-factor structure. However, analysis revealed only two components with eigenvalues greater than one, accounting for 60.37% and 5.76% of the variance (subsequent components, all with eigenvalues less than 1, accounted for 2.79% or less of the variance). Thus, despite the fact that we attempted to assess four distinct constructs, it appeared that within students’ minds, only two distinct constructs existed.

Table 2 presents the rotated 2-component solution, from highest to lowest loading items within each component. As shown, many items loaded cleanly on one component or the other, but some items cross-loaded on both components. Consideration of the loading pattern suggested that the first component be named “Knowledgeable” and the second “Supportive.” The Supportive factor was cleanly represented by items such as “provides a caring, open atmosphere,” “respects my decisions,” and “responds to my requests in a timely fashion (email, phone calls).” The Knowledgeable factor was cleanly represented by items such as “knowledgeable about degree requirements,” “helps obtain employment on campus,” and “provides information about obtaining financial assistance.”

Table 2

*Item Loading Results from Exploratory Principal Components Analysis Based on Rotated 2-component Solution*

Item	Knowledgeable	Supportive
<b><i>Items loading .60 or more on Factor 1</i></b>		
Provides information regarding study skills* (K)	.827	.213
Suggests academic resources (e.g. Student Success Center, Writing Lab)* (K)	.807	.251
Suggests strategies to cope with academic challenges* (C)	.787	.354
Helps clarify life/career goals* (K)	.778	.413

Table 2 (continued)

Item	Knowledgeable	Supportive
Provides information about obtaining financial assistance* (K)	.770	.239
Assists in identifying potential areas of employment after college (K)	.758	.385
Helps me identify obstacles to overcome before I reach my educational goals* (C)	.722	.441
Provides info about educational opportunities beyond my Bachelor's degree* (K)	.721	.377
Encourages me to explore career areas of interest (C)	.702	.448
Willing to discuss personal problems (C)	.681	.389
Provides information about using (online registration)* (K)	.671	.333
Familiar with my academic background (P)	.639	.518
Helps obtain employment on campus (e.g. work study, assistantships)* (K)	.638	.332
Aware of my academic progress (K)	.619	.496
Assists in selecting/changing my academic major (K)	.607	.536
Encourages involvement in co-curricular activities (K)	.600	.415
<b><i>Items loading .60 or more on Factor 2</i></b>		
Maintains an open line of communication* (A)	.388	.791
Available when I need assistance* (A)	.291	.786
Provides a caring, open atmosphere* (P)	.375	.780
Provides sufficient time for advising appointments* (A)	.317	.744
Seems to enjoy advising* (P)	.431	.743
Easy to talk with* (P)	.359	.732
Responds to my requests in a timely fashion (e.g. email, phone calls)* (A)	.258	.729
Encourages academic success* (K)	.457	.721
Respects my decisions* (P)	.371	.715
On time for advising appointments with me* (A)	.165	.701
Encourages me to assume an active role in planning my academic program* (C)	.489	.700
Provides an effective process for scheduling appointments (A)	.382	.678
Expresses concern for my personal development (C)	.553	.633
Acknowledges me in social settings (P)	.408	.615
<b><i>Items loading less than .60 on either Factor</i></b>		
Communicates degree requirements* (K)	.539	.578
Helps select courses that match my interests (C)	.554	.555
Stimulates my interest in an academic discipline (C)	.596	.558
Knowledgeable about general education courses (K)	.565	.549

Note: \* = item retained for Phase 3; K = originally designated a "knowledgeable" item, C = originally designated a "counseling" item, P = originally designated a "personable" item, A = originally designated an "availability" item

In sum, although a "knowledgeable" factor consistent with Cuseo's proposal was identified, the

proposed availability/accessibility, personable/approachable, and counseling/mentoring factors tended to merge into a single “supportive” factor in the data, suggesting that students do not naturally distinguish between the facets of availability, personableness, and counseling. Still, it was believed that availability (connoting mere punctuality and responsibility on the advisor’s part) and mentoring (connoting the provision of psychological resources by the advisor) should, in principle at least, be distinguishable. Establishing such a distinction was the most important aim of Phase 3.

Phase 3: As a result of the exploratory principal components analysis, a subset of the initial 34 items from Phase 2 was selected to re-administer. Specifically, 9 Knowledgeable and 10 Supportive items were identified, based on high loadings on their own factor and substantially lower loadings on the other factor (all differences of .25 or more). These items are indicated by \* in Table 2. The item “communicates degree requirements” was also retained as a knowledgeable item despite the fact that in Phase 2 this item cross-loaded on the two factors, since knowing what a student needs to complete to graduate seems critically important for an advisor. It was hypothesized that the cross-loading may have occurred because the word “communicates” suggests an interpersonal connection. As a result, in retaining the item for Phase 3, item phrasing was changed from “communicates” to “knowledgeable about.” In addition the item “encourages me to assume an active role in planning my degree,” was also retained despite its factor loading difference of only .21, for reasons to be discussed below.

Prior to administering the instrument in Phase 3, two new items were also added, to better discriminate an interpersonal supportiveness factor as separate from mere availability. According to Self-determination theory (SDT; Deci & Ryan, 1985, 2000) and its concept of “autonomy-support,” it is essential that authorities support the autonomy of subordinates if those subordinates are to thrive in their role. This theory suggests that teachers, parents, bosses, and coaches should provide as much choice as possible when working with subordinates, should strive to take the perspective of the person they are influencing, and should provide a meaningful rationale when choice cannot be provided. When this occurs subordinates are better able to internalize the recommendations of authority, and better able to act on those recommendations with a feeling of volition and self-determination. The two added items, “provides me with choices and options” and “seems to understand my perspective,” were derived from the Learning Climate Questionnaire (Black & Deci, 2000). In addition, the retained item “encourages me to assume an active role in planning my degree,” discussed above, was expected to load on a supportiveness factor. Thus, 23 items were included in Phase 3.

The main goal of Phase 3 was to fit a three-factor model to the data, using a confirmatory factor analysis (CFA). Specifically, a “Knowledgeable” factor, an “Available” factor, and a “Supportive” factor were sought. The process for accomplishing this involved two steps: 1) identify items from the refined item pool which best represent each of the three expected constructs, and 2) test those items in a CFA that constrains items to load only on their own factor, to see whether this is a good fitting model. If the CFA supported the proposed model, then a final instrument for use in advising assessment could be proposed with greater confidence.

A second goal in Phase 3 was to test the validity of the three expected factors. Are all three important in predicting students’ global assessment of the quality of the advising they receive? If not, then including items relevant to that factor within a final instrument might be

questionable. To aid in this, two items to assess global advising quality, derived from items used in the university's standardized assessment of teaching performance were included. These two items were: "Overall, my teacher (advisor) has been excellent" and "I would recommend this teacher (advisor) to a friend." From this, the goal was to predict global quality simultaneously from the measures of availability, knowledge, and supportiveness, showing that they each supply independent predictive variance in the regression equation despite their substantial intercorrelations.

Data collected for Phase 3 of the study was gathered using an on-line questionnaire administered to all students (freshmen through senior) from the colleges of education, agriculture, food, and natural resources, and journalism. A total of 527 students completed the 23-item questionnaire: 243 from agriculture, food, and natural resources, 113 from education, and 171 from journalism. This responding sample consisted of 125 men and 400 women (2 participants were missing gender data); 115 freshmen, 113 sophomores, 141 juniors, and 156 seniors (2 participants were missing academic level data); 92.6% Caucasian, with all other ethnicities less than 3%. Of the advisors rated, 242 were faculty members and 282 were professional advisors (1 participant was missing advisor-type).

Upon completion of data collection among the three colleges, the fourth and final phase of the study was conducted. Initial exploratory factor analyses of the 23 items focused on identifying items from three different constructs that loaded upon their expected factor and did not load on another factor. These analyses yielded a set of 15 items, five per factor, for further analysis (8 items were excluded, including "knowledgeable about degree requirements," which continued to load on more than one factor).

These 15 items were subjected to a confirmatory factor analysis (CFA) which specified latent availability, knowledgeable, and supportiveness factors. The model yielded a good fit to the data, with a normed fit index of .99, a goodness of fit index of .93, and a comparative fit index of .99, where good fit is typically indicated for values greater than .90. The model also yielded a root mean residual (RMR) of .026, where good fit is typically indicated for RMR less than .05. Table 3 presents these 15 items and their loadings on the three factors.

Table 3

*Results from Confirmatory Factor Analysis with Factor Loadings on 15 Items Based Upon Designated Latent Factors*

Item	Knowledgeable	Available	Supportive
Provides information about using on-line resources.	.84		
Provides information regarding study skills.	.89		
Suggests academic resources (student success center, writing lab).	.88		
Refers me to the appropriate campus office to obtain financial assistance.	.86		
Helps obtain employment on campus (e.g., work study, assistantships).	.86		
Is on time for advising appointments with me.		.72	
Provides sufficient time for advising appointments.		.86	
Maintains an open line of communication		.91	
Available when I need assistance.		.87	
Responds to my requests in a timely fashion (e.g. email, phone calls).		.85	
Respects my decisions.			.83
Encourages academic success.			.87
Provides me with choices and options.			.93
Encourages me to assume an active role in planning my degree.			.90
Seems to understand my perspective.			.95

Based on these analyses, three subscale scores, called Knowledgeable, Available, and Supportive, were created for each student by averaging the five items from each factor. These subscale scores could then be treated separately or could be averaged to form an overall “advisor quality” score. A correlation of .78 was found between Knowledgeable and Available and .83 between Knowledgeable and Supportive. Available and Supportive also were correlated, at .83. Obviously, these are high intercorrelations between the three constructs, despite their distinguishability in the CFA.

To provide preliminary evidence that all three constructs are important despite their substantial overlap, the overall advisor quality score was regressed simultaneously upon the three subscale scores. All three scores were significant and positive in this analysis, with coefficients of .19, .18, and .59 for Available, Knowledgeable, and Supportive, respectively ( $p < .01$ ). However, notably, the strongest determinant of students’ ratings of overall advisor quality was supportiveness. However, availability and knowledge also play a significant role in these judgments, indicating all three are needed for the best prediction of global quality.

### **Conclusions/Recommendations**

This study began with a literature review to identify key factors to include in a comprehensive assessment of academic advising, for the purpose of designing an instrument to provide feedback for professional development and enhancement of advising services. While the intent was to select a thorough and inclusive initial set based on Cuseo’s four academic advising constructs

and other considerations, the results of Phase 2 of this study suggested that only two of his four factors were recognized by students. However, Phase 4 results suggested that an Available factor can also be distinguished, supporting three of Cuseo's four initial factors.

There are numerous instruments available that provide baseline feedback for advisors, administrators, and university leaders. However, many of these instruments provide only a single undifferentiated advisor quality score. The resulting new instrument may be especially useful because it also provides an assessment of three distinct, important facets of quality advising.

In addition to assessing overall advisor quality (using the summative 15-item score), this instrument may also be used for assessing the three facets of advisor quality (Knowledgeable, Available, and Supportive), using the three facets to characterize different types of advisors, departments, or students; using them as performance measures to identify high performing advisors or advising departments, or as outcome measures to demonstrate the efficacy of programs to improve advising quality.

Similar to the seven skills areas that Gordon (1992) described as essential skills of those in advising roles (information dissemination, teaching, counseling, mentoring, referral, monitoring, and decision-making), the three facets of advising assessed by this instrument can provide insight regarding areas for growth in academic advising. For example, if students indicate that generally, faculty advisors are only "Satisfactory" or below in the Knowledgeable facet, professional development or in-service training could be developed to specifically improve performance in that area.

Given the important role advising plays with regard to student satisfaction, retention, and degree completion (Berdahl, 1995; Frost, 1991; Metzner, 1989; Mohr, Eiche, & Sedlacek, 1998), continual, meaningful assessments of advising must be conducted. Further research should also be conducted to determine additional student needs and/or preferences related to advising, in order that academic advisors can more readily meet the needs of their students.

Additionally, institutions should also consider other evaluative methods to enhance the academic advising received by students. While this instrument is designed to provide feedback to advisors and college administrators from a student perspective, Creamer and Scott (2000) also suggested self-evaluation, supervisory performance review, and peer review could be used to improve advising services.

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## **The Development of a Comprehensive Advising Instrument to Assess Academic Advisors' Performance**

### **A Critique**

**Mark Balschweid, University of Nebraska-Lincoln**

This manuscript addresses a significant issue related to student success in higher education. The authors are to be commended for recognizing the need for quality advising through elements of the research agenda for agricultural education, and for attempting to create an instrument that could assess academic advising in the higher education domain. Academic advising is a task that, if done well, requires a significant degree of knowledge and understanding. This manuscript does not touch on a critical issue for effective advising, namely what are the qualifications of the advisor? However, that question falls outside the scope of this study. How would the knowledge of advisor preparation inform this study?

The conceptual framework provided a sound starting point to establish the need and provide evidence of scholarship in this area. It is curious to note that no reference was used from the work in transformational advising to support the rationale for the authors' approach to this study. In addition, no reference was made by the authors concerning faculty-led advising versus all other forms (central advising, staff advising, flock advising, etc.). It would be helpful to the reader to know what the literature base has to say concerning this and if any of these aspects to academic advising were considered. If so, would that change the elements to the instrument being developed?

Additional information on how the authors handled non-response error would help readers to determine the appropriateness of the methods that were followed. Overall, the methods used for building an academic advising instrument appear consistent with accepted research methodology.

Since, as the authors point out, academic advising plays a significant role in student satisfaction, retention, and time-to-degree, it would be meaningful for the authors to propose an evaluation procedure for utilizing their instrument to systematically assess academic advising in higher education as a whole.

The lack of any deliberate approach to evaluating a college's advising can only lead one to the conclusion that it is not seen as important. Using empirical data for the development of an assessment tool can be the first step in convincing students and parents that institutions are serious about the success of their students. And for that the authors are to be commended for this study and their approach to impacting academic advising.

# Undergraduate Agriculture Students' Perceived Attitudes Regarding Studying Abroad

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Mark G. Zidon, University of Wisconsin-Platteville

## Abstract

*In order to effectively market and promote study abroad, the reasons for undergraduate students' decisions to or not to study abroad need to be known. Definitive research studying these reasons was not found. This researcher examined the reasons students identified in their decision to or not to study abroad at a small. A survey assessing these reasons was conducted with agriculture undergraduates. One hundred twelve students in the School of Agriculture responded to a survey that included statements relating to their concerns about studying abroad. Students perceptions of financial concerns, their willingness to leave family and friends, academic concerns and fears were addressed. The fundamental findings were: (1) Students agreed finance factors were the most compelling barrier in their decision to study abroad. (2) Latent and excluded wants did not appear to have much influence on students' study abroad decision. (3) A student's previous experience with travel abroad and the distance of their home from campus affect responses in the factors of finance, family and friends, academics, and fears. A main conclusion is that finance issues are a primary factor in students' decisions whether or not to study abroad.*

## Introduction

The world is becoming increasingly integrated (Bollag, 2004; Jackson, 2008; Warlick, 2007). Thanks to advances in transportation, technology, and communications, the entire world is accessible almost anywhere, anytime. In order to be successful, people need to have an understanding of life outside their country including differences in things such as rituals, cultures, and languages (Bollag, 2004; Emanoil, 1999; Horn, Jerome, & White, 2008; Kitsantas, 2004; Pietro & Page, 2008; Streitwieser & Leephaibul, 2007; Warlick, 2007). Institutions of higher education need to prepare college graduates to live in a more global environment.

Study abroad students are commonly defined as those who receive academic credit for an international study experience (Open Doors, 2009). For the purposes of this study, study abroad is defined as an international experience of six weeks or more for academic credit, the minimum amount of time required to meet UW-Platteville's international requirement (Undergraduate Catalog, 2009).

In the United States, about 1% of university students study abroad (Bollag, 2004; Goodman, 2007; Marklein, 2008). The Presidential Commission set a goal for 10% of U.S. students to participate in study abroad for the year 2000 (Siaya, 2000). A decade later we are still under that goal. At the University of Wisconsin-Platteville approximately 8.5% of students participate in an international experience for academic credit (Daus, 2009). The participation rate for UW-Platteville School of Agriculture students is approximately 4% (Hansen, 2009). The administration has identified study abroad as an area of growth in the institution's strategic plan (University of Wisconsin-Platteville Strategic Plan, 2009).

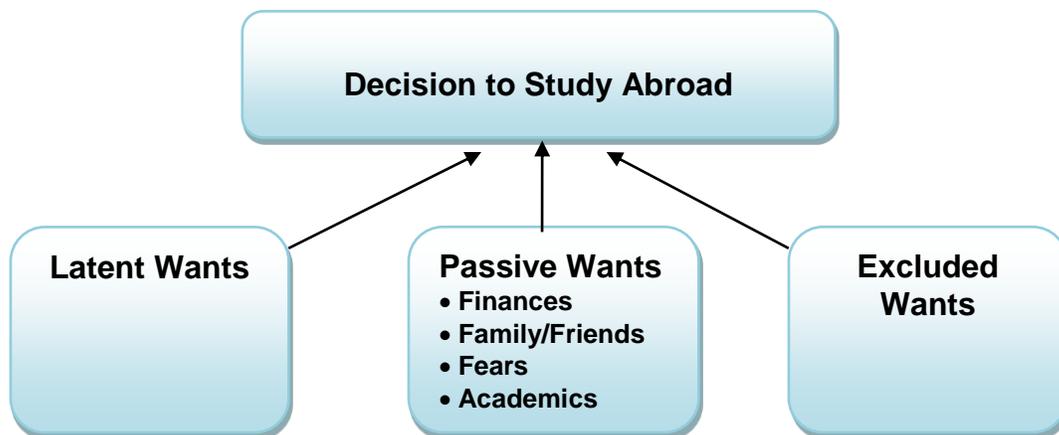
In agriculture, international experience is a tremendous asset. In particular, there is an increase in foreign trade of the food supply of the United States (Warlick, 2007). Many agricultural companies are using global resources for product inputs (Warlick). According to Warlick, the increased global connections in agriculture lead to a need for graduates with “first-hand knowledge of agricultural practices abroad” (p. 15). Many studies illuminate factors that influence students’ choice to study abroad, but few focused specifically on schools of agriculture and life science. Paulsen and St. John (2002) affirm the importance of studying diverse groups, such as agriculture students. They specifically state “Patterns of student choice behavior are likely to differ according to the characteristics of diverse groups of students, such as those with different financial means, diverse ethnic groups, women compared to men, and students of traditional and nontraditional age” (p. 192).

### Theoretical/Conceptual Framework

Globalization as defined by Hankin (2005) is the increasing integration of world economies, especially through trade and financial means. Agriculture is a field that is becoming much more globalized (Branan, 2009; Warlick, 2007). Some areas of special note are food security, environmental issues, and energy security. In fact, according to Branan (2009), the need for international experience in agriculture is even more important than in other fields because most agriculture companies work internationally. An example is the hot dog industry. In the U.S., 80% of the hot dogs are sold in the summer. In order for a company to survive, other markets need to be used during off season times of the year. Countries with opposite seasons such as Argentina, South Africa, and Australia can fill the U.S. wintertime gap in sales (Branan, 2009).

A marketing theory by O’Shaughnessy (1987) was used as the foundational theory guiding this study. O’Shaughnessy (1987) explained that consumers desire products whether they know it or not (see Figure 1). The theoretical model developed by O’Shaughnessy demonstrates the reasons consumers do not buy products even if there is an underlying desire for the product. The basic reasons for a desire to remain dormant include the desire being latent, the desire being passive, or having exclusionary reasons for not buying.

Figure 1. Factors Affecting Study Abroad Decision Model.



Based on O’Shaughnessy (1987)

Latent wants are those where the consumer might be well aware of the product, but does not realize how the product can meet their goals. A latent want can be stimulated by making consumers aware of what the product can do for them (O'Shaughnessy, 1987). With passive wants, a consumer knows of the product and its potential benefits, but the deterrents outweigh the benefits. A passive want can be satisfied by overcoming the objections. Excluded wants differ from latent and passive wants in that the exclusionary reasons for not buying a product have nothing to do with one's buying goals. Exclusionary considerations include legal and ethical reasons as well as lack of enabling conditions. If a consumer has an ethical or legal reason not to buy a product, those would be exclusionary conditions.

Applying O'Shaughnessy's (1987) theory, study abroad can be described as the "want without buying." O'Shaughnessy's theory suggests that students might not choose to study abroad either because of latent wants, passive wants, or excluded wants. This study focused primarily on the passive wants by assuming that students want to study abroad. The study sought to determine which deterrents are most prevalent in their decisions not to study abroad. O'Shaughnessy clearly declared that overcoming the passive barriers to buying is the most effective way to market a product. By discovering these barriers and targeting marketing efforts to overcome them, the institution will make better use of its limited resources.

The barriers, also known as passive wants, were categorized based on the four F's first identified by Margery Ganz in 1991. Although there is no empirical research that directly tests the four-F's model, related work by Woodruff et al. (2005) does support the conclusion that factors which influence students' decisions to study abroad fit with the conceptual frame Ganz provided. In addition, the four-F's model is commonly used among professionals who work with study abroad.

These four F's are (a) finances, (b) family and friends, (c) fears, and (d) faculty. Finances refer to the monetary costs associated with study abroad (Cole, 1991). Family and friends include the influence of the student's family and friends on their decision to study abroad (Institute of International Education, 2009). For this study, the construct of faculty has been modified to include fit factors identified by Woodruff et al. (2005) and Vande Berg (personal communication, April 25, 2010) and this new inclusive category is identified as academics. Fit indicates the fit of the study abroad program with the student's academic coursework. The academics category is a combination of faculty and fit. The category includes the influence of faculty members and coursework concerns on the students' decision to study abroad (University of Minnesota, 2008). Fear refers to the apprehension related to the unknown of study abroad (Institute of International Education, 2009).

The most common reason cited in the literature that deters students from studying abroad is money (Brandenburg, 2000; Bollag, 2004; Bahr, 2008; Doyle et al., 2009; Horn et al., 2008; Lien, 2007; Polsky, 2008; Stuart, 2007). Students and parents fear having to pay extra money to study abroad. The extra money could be for transportation costs, higher housing costs, poor exchange rates, visas, and higher tuition and/or fees. Students also worry about the loss of their current job while studying abroad (Bollag, 2004; Horn et al., 2008; NAFSA, 2003).

## Purpose

The Lincoln Report called for a million U.S. students to study abroad each year by 2017 (Streitwieser & Leephaibul, 2007), and the UW System has set a goal for 25% of its undergraduates studying abroad each year (Achieving Excellence, 2006). The first step to improve participation rates is to determine why the majority of agriculture students do not choose to study abroad.

Research has shown that participating in a study abroad experience can help prepare students for living productively in this global society (Bollag, 2004). Virtually every agricultural enterprise connects in some way with another part of the world (Branan, 2009). Branan relates agriculture graduates should have some worldly experience to better compete in the job market. Despite the benefits of international experience, approximately 96% of UW-Platteville's agriculture students do not participate in a study abroad program (Hansen, 2009). This research sought to examine factors that deter students from studying abroad.

The data presented in this study yields the following benefits: (a) Provide information about factors that influence students' decisions regarding participating in study abroad, (b) inform administrators about potential strategies aimed at addressing barriers to study abroad, and (c) direct future studies to explore more deeply students' perceptions of and behaviors about studying abroad.

## Research Questions

The present study seeks to examine the following research questions:

- What factors influenced undergraduate agriculture students at UW-Platteville in their decision whether or not to study abroad? Specifically, how did they perceive studying abroad in regard to the following areas:
  - Their reluctance to leave family and friends
  - Their perceived ability to financially afford studying abroad
  - Their concerns of fulfilling academic requirements when studying abroad
  - Their fears of studying abroad
- How did demographic factors relate to students concerns of studying abroad?

## Methods

The study took place at the University of Wisconsin-Platteville which is a small Midwestern campus of about 7500 undergraduate students (Undergraduate Catalog, 2009). The School of Agriculture at UW-Platteville has a population of approximately 630 students (School of Agriculture, 2009). A purposeful sample of School of Agriculture seniors were surveyed. Seniors were selected because according to Woodruff et al. (2005), they are close enough to graduation to know if they have or will participate in study abroad. According to the DataMart™ list obtained September 7, 2010, the Fall 2010 senior agriculture class had 157 students with 76 males and 81 females. The class was nearly exclusively Caucasian with only one student self-identified as Hispanic and one student who did not identify race.

An online, 36 item, questionnaire was designed by the researcher to address the factors that deter students in their decision to study abroad. Questions were based on factors which influence the decision to study abroad noted in the existing literature. These questions were mapped for fit into latent wants, excluded wants, or one of the four passive want categories. Each passive want category had at least four associated questions. A five-point Likert scale was used to allow participants to rate their level of agreement with a statement.

Demographic data were also collected from participants. Historically, females have outnumbered males in participation in study abroad (Open Doors, 2009), so students were asked to identify their gender. Carlson et al. (1990) found that students with greater academic success were more likely to study abroad, therefore students were asked to identify their grade point average to determine if there is a relationship between academic performance and study abroad decisions. Participants also indicated their major, size of their high school, whether they were a first generation student, previous family travel habits and distance from home to campus. Desoff (2006) stated first generation students often have a difficult time just leaving home for college, overseas travel is not part of the family culture. Spiering and Erickson (2006) found that the size of the student's high school class, and whether or not the student and/or their parents had traveled outside the United States influenced a student's decision to study abroad.

The survey instrument was pilot tested with female and male sophomore agriculture students. Sophomores were selected for the pilot test because they were not part of the sample to be surveyed. Face validity was established by having experts review the survey instrument before and after the pilot test. Chronbach's alpha was used to test reliability of the subscales developed for the four Passive Want constructs. Reliability coefficients of Cronbach's Alpha were 0.648 for the finance construct, 0.686 for family and friends, 0.587 in the academic construct, and 0.690 for the questions related to fear. According to Nunnally (1967), the Cronbach alpha results for each construct indicated modest to acceptable correlation of questions within each construct. A coefficient alpha of 0.7 is typically considered acceptable (Iacobucci & Duhachek, 2003; Nunnally & Bernstein, 1994). The four constructs combined made up the Passive Wants portion of the theoretical model. The reliability for the Passive Wants section of the survey was 0.840 which is considered a high reliability (Iacobucci & Duhachek, 2003 ; Nunnally & Bernstein, 1994 ).

## Findings

The population surveyed included all 157 UW-Platteville agriculture seniors identified through a query from DataMart™ obtained September 7, 2010. Of the 157 participants contacted, 112 useable surveys were completed for a 73% response rate. Seven percent indicated they had participated in an international experience for academic credit of six weeks or longer. An additional 5% of the students plan to participate in such an experience before graduation. Eight students indicated they had already studied abroad. Those eight were included in the analysis of the data regarding the decision to study abroad.

Forty percent of respondents indicated they were first generation students (Table 1) as defined by having no parents or grandparents attending school beyond high school.

Table 1

*Demographic Factors of Respondents*

Demographic Factor		Percent Survey Respondents	Percent School of Agriculture
Gender	Male	45	48
	Female	55	52

Ninety-seven percent of respondents had at least a 2.5 out of 4.0 grade point average (Table 2) which is the minimum grade point required for study abroad at UW-Platteville (Undergraduate Catalog, 2009). Size of high school and distance of the university from home data are summarized on Table 2. Forty-nine percent of the students said they had traveled outside the US and Canada, and 48% indicated at least one of their parents had traveled outside the US and Canada (Table 2). Forty percent of the students felt study abroad was desirable and realistic, yet 41% felt it was not an option for them. Another 29% did not think study abroad was essential. Very few students, 3%, believed that study abroad was not possible with their major.

Table 2

*Demographic Factors of Respondents Including High School Size, Campus Distance from Home, and Self and Parent Travel Outside of the US and Canada*

Demographic Factor	Percent Responding	
High school size		
	<50	14
	50-199	60
	200-499	19
	500+	6
Distance from home		
	within 30 miles	23
	31 miles to 75 miles	30
	76 miles to 150 miles	32
	151 miles to 300 miles	14
	More than 300 miles	0
I have traveled outside the US and Canada		
	Yes	49
	No	50

Students were asked to indicate their agreement with statements related to their view of study abroad. This question was taken from a survey conducted in 2008 at UW-Platteville based on the University of Minnesota’s study abroad survey (University of Minnesota Model, 2008; University of Wisconsin-Platteville education abroad institutional data, 2008). Students could select all answers that applied to them. Table 3 illustrates the responses for this query.

Table 3

*Respondents’ View of Study Abroad*

Statement	Percent Responding
Study abroad is not an option	41
Study abroad is not essential	27
Study abroad is not possible within my major	3
Study abroad is a desirable and realistic part of my educational experience	40

The theoretical model contained passive want constructs of finance, family and friends, academics, and fears. A composite score for each construct was calculated by averaging the student responses on a 1 (strongly agree) to 5 (strongly disagree) Likert score for that construct. This was done to determine if the constructs were mutually independent and to determine if some constructs were significantly greater than others. Paired t-tests were used to determine if significant differences existed between these constructs. As illustrated in Table 4, all constructs were found to be uniquely different from all other constructs.

Financial concerns surfaced as the greatest perceived concern of students with a mean of 3.04. Leaving family and friends was second (2.67), academic concerns were third (2.29) and fears of studying abroad was the least concern (2.15).

Table 5 depicts the frequency of student responses to statements related to studying abroad. The area of most concern was the financial issue with the largest mean score (see Table 4). Of the four finance questions, the statement most selected was “it is too expensive to study abroad.” Sixty-nine percent of students strongly agreed or somewhat agreed with the statement. Fifty-eight students agreed that studying abroad would “delay my time to graduation, thus costing me more tuition and/or lost income from a permanent career.” Employment and housing were perceived to be less of an issue.

Not wanting to be away from family and friends rose to the top in the family and friends category. Sixty-two students agreed with not wanting to be away from family and 54 students agreed that they did not want to leave friends. On the other hand, family and friends were perceived as encouraging students to study abroad.

Few students agreed that studying abroad would adversely affect their academic progress. Only 27 students agreed that courses needed for graduation are not offered abroad. Five students felt that academics are too difficult at universities abroad. The data indicate that academic advisors inform students of study abroad opportunities and encourage students to participate in study abroad.

While the area of fears was the least concern, not speaking a foreign language was the top concern in this area. Forty-seven students agreed that “I don’t speak or am not comfortable speaking another language” was an issue. Housing, food, safety and disability issues were not perceived to be great fears related to students studying abroad.

Table 4

*Respondents’ View of Study Abroad*

Constructs compared	Mean <sup>a</sup>	Variance	n	P(T<=t)
Finance verses Family and Friends	3.04 2.67	0.98 0.72	103 103	0.000*
Finance verses Academics	3.04 2.29	0.98 0.32	103 103	0.000*
Finance verses Fears	3.04 2.15	0.98 0.4	103 103	0.000*
Family and Friends verses Academics	2.67 2.29	0.72 0.32	103 103	0.000*
Family and Friends verses Fears	2.67 2.15	0.72 0.4	103 103	0.000*
Academics verses Fears	2.29 2.15	0.32 0.4	103 103	0.023*

<sup>a</sup>Means were computed based on a five-point Likert scale where 1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree or disagree, 4 = somewhat agree and 5= strongly agree  
\*p < 0.05

Table 5

*Respondents' Agreement with Construct Statements*

Construct and statement	SD*	D	N	A	SA
<b>Finance</b>					
It is too expensive to study abroad	10	11	11	43	26
It would delay my time to graduating, thus costing me more tuition &/or lost income from a permanent career	14	14	15	40	18
I couldn't afford to leave my housing in the U.S.	22	14	17	30	12
I couldn't leave my job here in the United States	34	13	16	17	13
<b>Family and Friends</b>					
I didn't want to be away from family	14	17	8	38	24
I didn't want to be away from friends	18	16	13	45	9
I didn't want to miss athletics or other activities	30	17	23	18	5
My family didn't want me to study abroad	34	21	21	18	4
My friends didn't want me to study abroad	38	20	34	7	1
<b>Academics</b>					
The courses I needed to take to graduate are not offered abroad	15	12	47	21	6
Academics are too difficult at universities abroad	12	24	59	5	0
Academics are not as challenging at universities abroad	21	18	52	7	1
My advisor didn't inform me about study abroad	41	25	12	20	2
I didn't think I was academically eligible for study abroad	44	23	22	10	1
My advisor discouraged me from studying abroad	60	23	16	1	0
<b>Fears</b>					
I don't speak or am not comfortable speaking another language	17	18	15	27	21
I didn't want to leave my housing here in the states	27	15	21	22	8
The application process to study abroad is too complex	22	20	38	17	3
I had concerns with housing abroad (lack of, inadequate, not up to my standards, etc)	28	30	34	7	1
Inadequate medical care is available abroad	26	33	35	5	1
I wouldn't like the food	34	28	25	10	3
I was concerned that my academic disability needs wouldn't be met while abroad	29	14	24	3	0
I felt it is too dangerous to travel abroad	50	24	17	8	2
I was concerned that my physical disability needs wouldn't be met while abroad	35	7	23	0	0

\*SD = Strongly disagree, D = Somewhat disagree, N = Neither agree nor disagree, A = Somewhat agree, SA = Strongly agree

Analysis of Variance and t-Tests were performed to determine if differences existed between demographic groups and constructs or statements. Due to space restrictions, only those results that were significantly different are displayed in Table 6 and Table 7.

Table 6.

*ANOVA Analysis of Responses to Selected Demographic Factors and Selected Constructs*

Demographic Factor	Construct/Statement	Groups	Count	Sum	Mean	Variance	P(F<f)
Distance from home	Financial Construct	within 30 miles	23	59.75	2.60	1.40	0.011*
		within 75 miles	30	86.75	2.89	0.96	
		within 150 miles	32	107.50	3.36	0.64	
		within 300 miles	14	48.50	3.46	0.73	
Distance from home	I could not afford to leave my housing in the U.S.	within 30 miles	23	43.00	1.87	2.21	0.003*
		within 75 miles	30	80.00	2.67	2.09	
		within 150 miles	32	107.00	3.34	1.39	
		within 300 miles	14	42.00	3.00	3.08	
Distance from home	My friends didn't want me to study abroad	within 30 miles	23	39.00	1.70	1.13	0.010*
		within 75 miles	30	61.00	2.03	0.79	
		within 150 miles	32	74.00	2.31	0.80	
		within 300 miles	14	39.00	2.79	1.57	
Distance from home	I didn't want to miss athletics or other extracurricular activities	within 30 miles	23	39.00	1.70	1.86	0.029*
		within 75 miles	30	68.00	2.27	1.51	
		within 150 miles	32	81.00	2.53	2.00	
		within 300 miles	14	42.00	3.00	1.85	
Distance from home	Academic Construct	within 30 miles	23	47.83	2.08	0.30	0.041*
		within 75 miles	30	65.83	2.19	0.36	
		within 150 miles	32	79.67	2.49	0.37	
		within 300 miles	14	33.33	2.38	0.09	
High School Size	The application process to study abroad is too complex	<50	14	39.00	2.79	0.95	0.020*
		50-199	60	165.00	2.75	1.24	
		200-499	19	42.00	2.21	1.29	
		500+	6	9.00	1.50	0.30	

\*P < 0.05

As illustrated in Table 6, there were significant differences between the distance students live from UW-Platteville and several constructs and statements. For example, there were significant differences in groups whose homes were nearer or further from campus when comparing students' perceptions related to finances. Table 7 illustrates significant differences between groups of students who have previously travelled abroad and those who have not when comparing several constructs or statements.

Table 7.

*T-test Analysis of Responses to Selected Demographic Factors and Selected Constructs*

Construct/Statement	Demographic Factor	Mean	Variance	n	P(T<=t)
Financial Construct	Has Travelled Abroad	2.77	0.92	49	0.004*
	Has Not Travelled Abroad	3.34	0.95	50	
I couldn't leave my job in the United States	Male	2.88	2.91	43	0.013*
	Female	2.09	2.05	56	
I couldn't leave my job in the United States	Has Travelled Abroad	1.9	2.14	49	0.001*
	Has Not Travelled Abroad	2.96	2.45	50	
Family and Friends Construct	Has Travelled Abroad	2.39	0.74	49	0.001*
	Has Not Travelled Abroad	2.95	0.57	50	
I didn't want to be away from friends	Has Travelled Abroad	2.71	1.71	49	0.006*
	Has Not Travelled Abroad	3.48	1.44	40	
I didn't want to be away from family	Has Travelled Abroad	2.94	1.81	49	0.001*
	Has Not Travelled Abroad	3.93	1.51	40	
Fear Construct	Has Travelled Abroad	1.98	0.36	49	0.010*
	Has Not Travelled Abroad	2.31	0.39	50	

\*P < 0.05

### Conclusions and Recommendations

This study sought to ascertain reasons students are reluctant to study abroad. Specifically, student perceptions of four passive wants were studied. These are students' reluctance to leave family and friends, perceived financial issues, concerns of meeting academic requirements and fears of studying abroad.

Students were most concerned about financial matters. They were least concerned about their fears of studying abroad. Concerns of leaving family and friends were greater than concerns

about meeting academic requirements. Students perceive family and friends as well as university academic advisors as being supportive of studying abroad.

Demographic factors most closely related to students' reluctance to studying abroad are the distance their home is from the university campus and whether or not they have previously travelled abroad.

This study suggests that marketing efforts should focus on the perception of expense. Students appear to have the impression that a semester study abroad program costs more than their typical semester budget. Publishing explicit budgets could help dispel these perceptions. Exchange programs that add very little extra cost to student expenses need to be promoted. Students need to become aware of scholarship opportunities to study abroad.

Faculty also need to be made more aware of study abroad and the actual costs associated with it. Workshops and study abroad fairs have been offered for faculty, but participation seems to be limited to those already heavily promoting study abroad. Presentations at departmental or college meetings might capture faculty who do not attend workshops. Creating a brochure or flyer focused on educating faculty about study abroad may be beneficial. Sharing the sample budgets with faculty would not only enlighten them, but they could share with the students they advise.

Well-focused marketing efforts should target the issue of family and friends. Family and friends could be educated about study abroad and its benefits through print pieces, individual contacts, and seminars. Promotion of study abroad should begin with the student recruitment process. Recruitment activities would be a place to capture parents' attention as they are often involved in their child's college selection process. Planting the seed early on and then continuing to inform and persuade parents throughout their student's college years could be fruitful.

Distance from the campus to home was related to several items. However, the reason for this phenomenon was not determined. It prompts a question of the relationship between student willingness to travel further to college and their willingness to travel to another country. Further research should be conducted to pursue this question.

Many independent variables such as gender, grade point average, being a first-generation student and academic major in agriculture did not surface and having an impact on students choice to not study abroad. Research on study abroad should be repeated to determine if these demographics really do not play a part in a student's choice to study abroad.

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## Undergraduate Agriculture Students' Perceived Attitudes Regarding Studying Abroad

### A Critique

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The authors undertake an issue of increasing importance to our global society, and that is 'why aren't more students from American universities studying abroad?' The emphasis on studying abroad is decades old. And yet, as the authors point out, in the United States about 1% of college students study abroad in an experience defined by the authors as *an international experience of six weeks or more for academic credit*.

The review of literature establishes several factors that influence the decision making process for studying abroad. The authors tie their study into previous research and utilize a sound theoretical framework to guide the study. In addition, the study appears to align well with the authors' institution that has a goal for increasing student participation in study abroad.

The methodology used appears sound, however the use of undergraduate seniors as the sample leaves one to wonder if the results would be different if all students who *started* at their university could be queried rather than just those who are about to successfully complete their studies. The authors indicate that the vast majority of students (97%) had a grade point average above 2.5 out of 4.00 scale. What do students who dropped out of college due to poor grades think about study abroad? Would those who left college early, prior to their senior year because of financial difficulty, yield different results?

A confusing part of the methodology, as the manuscript is written, is that *all* senior students in the School of Agriculture were queried, regardless if they stayed home or chose to study abroad. Yet the results were aggregated as one data set. How did students who successfully studied abroad answer the questionnaire in a way that was helpful to the researchers? Would the phenomenon of studying abroad confound their views of latent wants, passive wants and excluded wants *ex post facto*? Realizing this study is not an experimental design, the reader is curious to what effects did maturation play upon the memory of those studying abroad thereby effecting the internal validity?

The evidence provided by the authors is helpful for furthering the debate for how we influence more students to consider study abroad. Of particular interest is the information regarding the students' distance from home and the influence of other factors related to family attachment.

## **Relationship Between Leadership Constructs and Student Activity Participation During High School Among First-time College of Agriculture Students**

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*First-time college students take a range of experience with them to college. Many of the experiences occurred during high school and may contribute leadership skills in students. This descriptive-correlational study sought to describe the activities that first-time college students participated during high school and to determine if there was a relationship between student activity participation and their leadership traits. Student responses revealed that most students were involved with community service projects and athletics during their high school years. Furthermore, over one-third of the students had served in leadership roles during their participation. Student self-perceptions of their leadership traits were measured using eight leadership trait constructs. The Integrity construct produced the highest self-perceived mean. Student respondents also perceived that they possessed all eight of the leadership constructs. Twelve statistically significant relationships were identified between high school activity participation and leadership trait constructs. However, the strength of the relationship was low and therefore of little practical importance. Further research is warranted to provide more information about first-year students on college campuses in order to better understand the potential relationship between student activity participation and the development of leadership traits.*

### ***Introduction***

Leadership (or more precisely, the lack thereof) has been a focal point in the media over the past several years, framed in the context of politics, education, and the economy. Noted authors have suggested that the world faces daunting problems which will require strong leadership to guide society toward a better future (Gardner, 1995; Kouzes & Posner, 1995). Rapid changes occurring throughout the world have contributed to the need for new leadership approaches (Komives, Lucas, & McMahon, 2007) and sound leadership at every level of society (Frigon, Jackson, & Jackson, 1996). The need for leadership, now and in the future, is viewed as a clarion call to action in order to prepare future generations of leaders.

Departments of Agricultural Education in colleges and universities have been active participants in providing leadership instruction at the post-secondary level for several years (Fritz et al., 2003; Simonsen & Birkenholz, 2010). Untold numbers of students have enrolled in leadership courses taught by agricultural education faculty throughout the nation. Students have enrolled in leadership courses from various majors, both within and beyond, colleges of agriculture. Therefore, agricultural education plays a key role in educating students about leadership in higher education.

The leadership literature encompasses a myriad of research pertaining to leadership development among college students. Much of that literature has been focused on leadership development programs in support of the claim that leadership development is a desired outcome of a college education (Roberts, 2007). One factor that has been overlooked in the research about college students is pre-college leadership experiences (Komives & Johnson, 2009). Student activity participation and the level of engagement in those activities during high school may be related to leadership knowledge and skills that first-year students possess as they begin their college career.

Astin (1984) developed a Theory of Involvement related to student academic and social interaction. In his theory, he believed that the quality and quantity of the students' involvement in academic and social interaction would influence student learning and development. Astin (1984) believed that for student growth to take place, students must be actively engaged in their environment. The Theory of Involvement supports the benefits of pre-college student activity and engagement in leadership type activities.

The more that academics, educators, and mentors know about the leadership development experiences of beginning students, the better they can serve students' needs in order to meet the demand for leadership in society. Further justification for the importance of this research project is based on AAAE Research Priority Area Six: Vibrant, Resilient Communities with a specific focus on "Examine the aspects of vibrant, resilient communities that encourage youth and adults to become future members and leaders of the community." (AAAE National Research Priorities, 2011-2115, unpublished).

### ***Theoretical Foundation***

Early leadership philosophies were based upon a belief that leaders possessed personal characteristics or genetic traits that were the source of their leadership ability (Komives et al., 2007). Over time, ancestry and genetic predisposition leadership theories were abandoned in favor of behavioral and situational contingency theories (Chemers, 1995). More recently, philosophical paradigms based on transformational, servant, authentic, and relational leadership theories have emerged (Komives et al., 2007). A major paradigm shift occurred during the transition in which leadership knowledge and skills were not viewed simply as inherited traits, but as knowledge and skills that could be learned as well as taught (Eich, 2008; Dubrin, 2001; Komives et al., 2007; Wren, 1995; Yukl, 2006). Therefore, a foundational principle for this study was the belief that the potential for leadership exists within every student (Cress, Astin, Zimmerman-Oster, & Burkhardt, 2001).

Leadership is a complex and multidimensional social construct that is one of the most widely studied phenomena in the social sciences (Antonakis, Cianciolo, & Sternberg, 2004; Northouse, 2012). Numerous research studies have been conducted in an attempt to identify traits and characteristics that differentiated leaders from non-leaders (Kirkpatrick, 1991; Northouse, 2012; Stogdill, 1974). In 1974, Stogdill identified an extensive list of traits and skills essential to effective leadership. He identified traits such as dependability, adaptability, assertiveness and persistence and skills such as clever, creative and organized (Stogdill, 1974).

Northouse (2012) acknowledged that research has provided an extensive list of leadership traits and characteristics, which he synthesized into six categories as keys to effective leadership (in no particular order of importance): intelligence, confidence, charisma, determination, sociability, and integrity.

Intelligence is one of the characteristics determined to be key in leadership ability. Northouse (2012) stated that, “Intelligence includes having good language skills, perceptual skills, and reasoning ability . . .” (p. 28). Although an individual’s intelligence quotient is hard to alter, it is possible for the individual to stay well informed and aware of the happenings around them. A second characteristic displayed by effective leaders is confidence. “Confident leaders feel a sense of certainty and believe that they are doing the right thing” (Northouse, 2012, p. 28). This positive feeling leads to the ability to succeed. The third characteristic described by research is charisma. Charisma is often described as a special personality characteristic, magnetic charm, or appeal that allows the leader to influence others (Northouse, 2012). Another characteristic described by research is determination which leads to focus and attention to tasks at hand. Northouse (2012) shares that, “Determination is the decision to get the job done; it includes characteristics such as initiative, persistence, and drive” (p.30). The final two characteristics displayed by effective leaders are sociability and integrity. Words used to describe a leader who exhibits sociability include: friendly, outgoing, courteous, tactful, and diplomatic (Northouse, 2012). The characteristic of sociability contributes to positive social relationships between everyone involved. Integrity is simply the qualities of honesty and trustworthiness (Northouse, 2012). When those qualities are demonstrated, the capacity for an individual to lead increases, and loyalty is built between individuals.

In addition to possessing the previously mentioned characteristics, a leader must also be able to produce a result, influence an action, facilitate change, and build others. Therefore, the characteristics of leadership efficacy and decision-making efficacy become necessary in effective leadership. Leadership efficacy refers to the beliefs espoused in relation to the skills and abilities needed to lead (Hannah, S.T., Avolio, B.J., Luthans, F., & Harms, P.D., 2008). These perspectives clearly align with Bandura’s (1986) definition of self-efficacy, “. . . people’s judgements of their capabilities to organize and execute courses of action required to attain designated types of performances . . .” (p.391) and that efficacious individuals tend to work harder, persist longer, and participate more readily. Decision-making efficacy refers to the leader’s ability to determine and communicate decisions. The decision making process is much larger than just the decision being made but rather it includes the design, regulation, and selection of social systems to aid in making decisions (Vroom & Yetton, 1973). As a potential change agent, the ability to facilitate the decision making process and implement action is an important component of effective leadership.

Student leadership development is often associated with activity participation and the level of engagement. Eccles and Barber (1999) examined extracurricular involvement among high school students in order to identify a possible link between involvement and positive or negative development. Their research revealed several positive benefits including reduced dropout rate, decreased substance abuse, and increased development of self-concept, school engagement, and educational aspirations. In 1997, Mahoney and Cairns examined high school student participation in extracurricular activities and also noted that they were related to a lower

chance of becoming a high school dropout. Furthermore, Lamborn, Brown, Mounts, and Steinberg (1992) examined the relationship between school-related clubs and nonathletic activities and found that both were positively related to the likelihood of attending college full-time at age 21 and were predictors of increased grade point average. When looking at broader measures of student engagement, Lamborn et al. (1992) noted there seemed to be a pronounced advantage for students in, “. . . leadership activities and clubs or interest groups . . .” (p. 169) as compared to those simply involved in sports. Involvement in youth programs and a sense of heightened responsibility has also been investigated and there appears to be a link (Wood, Larson, & Brown, 2009). Collectively, these findings support the belief that activity involvement during high school may be related to student leadership development.

### ***Purpose and Objectives***

The purpose of this study was to describe student activity participation during high school among first-time college students in colleges of agriculture. This study also sought to determine if a relationship existed between the scope of student activity participation during high school and their self-perceived leadership characteristics. Findings from this study will provide additional insight into the potential linkage between student activity participation and their leadership characteristics.

The following research objectives were developed to guide this study:

1. Describe the level of participation in activities during high school by first-time college students.
2. Describe first-time college students' self-perceptions of leadership characteristics.
3. Determine the relationships between activity participation levels in high school by first-time college students and summated leadership characteristic scores.

### ***Methods and Procedures***

This research was a descriptive-correlational study that utilized survey methodology. Survey methodology can be used to summarize characteristics or measure attitudes and opinions of subjects about the phenomena of interest (Ary, Jacobs, Razavieh, & Sorensen, 2006). Data collected through the survey methodology were analyzed to describe the high school activity participation of first-time college students, their self-perceived leadership characteristics, and to investigate relationships between student activity participation and their leadership characteristics.

First-time college students in colleges of agriculture at The Ohio State University, The Pennsylvania State University, and the University of Missouri comprised the population frame. First-time college student is a common category of status within higher education to designate beginning students. The subjects were students attending college at the respective campus for the first-time and were not considered transfer students based on credit hours. This designation was used to secure common population frames between institutions. Each frame was obtained through the academic programs office in the college of agriculture at each respective institution. A census was conducted, based on the compiled population frame (N = 1,348).

Data were collected using the Individual Leadership Traits Inventory (ILTI) questionnaire. This researcher-designed questionnaire was based on eight leadership constructs. The six constructs suggested by Northouse (2012) included: intelligence, confidence, charisma, determination, sociability, integrity. Two additional efficacy constructs were developed by the researchers and labeled as: leadership efficacy and decision making efficacy. An initial draft of the questionnaire was reviewed by a panel of experts to assess face and content validity. The experts consisted of faculty from seven agricultural education departments, located at land grant universities throughout the U.S. As a result of the panel of experts review, changes were made to item wording and placement of items. The questionnaire was then pilot tested at three land grant universities using subjects enrolled in undergraduate leadership courses. The ILTI questionnaire contained 48 Likert-type statements (six items pertaining to each construct) assessing the aforementioned constructs. Cronbach alpha reliability coefficients were computed as follows: intelligence = .705, confidence = .730, charisma = .825, determination = .678, sociability = .798, integrity = .866, leadership efficacy = .837 and decision making efficacy = .741. The reliability coefficients were near or above the alpha level of 0.7 which was the standard established *a priori* to determine reliability. Therefore, the reliability of the data collection instrument used in this study was deemed acceptable (Nunnally & Bernstein, 1994). The questionnaire also asked respondents to report their level of participation in activities during high school and demographic items.

Upon approval from the offices of responsible research, the questionnaire was administered online via SurveyMonkey<sup>TM</sup>. Administration protocol followed the Dillman Tailored Design Method (Dillman, Smyth, & Christian, 2009) and included a pre-notification email, initial invitation, reminder invitation, follow-up reminder, and a final notification. Of the 1,348 first-time college students in colleges of agriculture at the three institutions, the researchers received 239 usable responses for an 18% response rate. Although agricultural education researchers often tout higher response rates, the response rate is within the expectations of research reported in other disciplines (Fox, Robinson, & Boardley, 1998; Hikmet & Chen, 2003) and exhibits a continued decline in general response rate (Cook, Heath, & Thompson, 2000; Sheehan, 2006). Based on the nature of the study and other limitations, the researchers caution against generalizing results beyond the respondents.

### ***Results and Findings***

The respondents for this research were first-time college students at The Ohio State University, The Pennsylvania State University, and the University of Missouri in their respective colleges of agriculture. There were 174 (72.8%) female and 65 (27.2%) male respondents with 89.1% of the group reporting their ethnicity as White or Caucasian. Student responses indicated 51.9% ( $n=124$ ) were 18 years old, 42.3% ( $n=101$ ) were 19 years old, 3.3% ( $n=8$ ) were between 20 and 25 years old, and 2.5% ( $n=6$ ) were over 25 years of age. Respondents were asked to report the size of their high school graduation class which ranged from 1 to 800 ( $x = 233$ ,  $sd = 187$ ). The population of the communities that the respondents reported as their permanent addresses included 54.0% ( $n=129$ ) from a rural community with less than 10,000 people, 34.7% ( $n=83$ ) from a suburban community of 10,000 to 100,000 people, and 11.3% ( $n=27$ ) from an urban community of over 100,000. Common majors that student respondents had declared included: Ag Business/Ag Economics, Ag Communications, Ag Education, Ag Systems

Management, Animal Science/Pre-Veterinarian, Biochemistry, Environmental Sciences, Forestry/Fishery/Wildlife, Food Science, Hotel/Restaurant Management, Plant Science, and Sports Management. Upon college graduation 73.6% ( $n=176$ ) of the respondents planned to enter the Agriculture, Food, and Natural Resources career field followed by 10.0% ( $n=24$ ) in the Health Sciences career field, and 5.4% ( $n=13$ ) in the Science, Technology, Engineering, & Mathematics career field.

Research objective one was to describe the level of participation in activities during high school by first-time college students. Students were asked to report the activities and organizations they had participated in during their high school career, the number of years involved, and if they served as an officer or group leader. Table 1 reports the data collected from the respondents. Specific activities listed in the left hand column of the table include activities that generated participation rates higher than 10 percent of all respondents.

Data collected from first-time college student respondents revealed that Community Service (independent from school-based service) and Athletics had the highest participation rates during high school. Likewise, these two activities generated the highest proportion of students who reported serving in a leadership role (officer or group leader). The two student organizations with traditional connections to agricultural education: specifically, 4-H (34.3%) and FFA (29.7%) generated lower rates of participation among respondents during their high school careers. The Other category included a compilation of all activities and organizations that did not generate at least a 10 percent participation rate from the respondents.

Objective two involved summarizing data regarding the self-perceptions of leadership constructs among first-time college students. Means and standard deviations are reported in Table 2 for each of the eight leadership constructs. Each construct was comprised of six items within the ILTI questionnaire. Item responses were coded using a six point Likert-type response scale (1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Slightly Agree, 5 = Agree, and 6 = Strongly Agree). The six items comprising each construct were summed and the result divided by the number of items to produce the construct means presented in Table 2.

The Integrity leadership construct produced the highest overall mean ( $M = 5.39$ ) for first-time college student respondents. The Charisma construct ( $M = 4.82$ ) and the Leadership Efficacy construct ( $M = 4.82$ ) produced the lowest overall means among the eight leadership constructs measured. Each of the eight leadership constructs produced means that appeared to cluster around the Agree (5.0) point on the response scale (ranging from -0.18 to + 0.39).

Table 1  
*Participation in Activities and Organizations While in High School by First-time College Students (n=239)*

Activities (Percent Participation <sup>c</sup> )	Years of Participation <sup>a</sup>					Served as Officer/ Group Leader <sup>b</sup>
	0	1	2	3	4	
	<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)	<i>f</i> (%)	
Community Service (74.9%)	60 (25.1)	24 (10.0)	22 (9.2)	12 (5.0)	121 (50.6)	34.7%
Athletics (73.6%)	63 (26.4)	13 (5.4)	18 (7.5)	24 (10.0)	121 (50.6)	43.9%
National Honor Society (64.9%)	84 (35.1)	18 (7.5)	85 (35.6)	35 (14.6)	17 (7.1)	23.4%
Religious Youth Group (46.4%)	128 (53.6)	10 (4.2)	19 (7.9)	16 (6.7)	66 (27.6)	15.5%
Other <sup>d</sup> (42.7%)	137 (57.3)	12 (5.0)	11 (4.6)	15 (6.3)	64 (26.8)	31.0%
Drama/Theater (38.1%)	148 (61.9)	31 (13.0)	23 (9.6)	9 (3.8)	28 (11.7)	11.7%
4-H (34.3%)	157 (65.7)	5 (2.1)	7 (2.9)	2 (0.8)	68 (28.5)	29.7%
FFA (29.7%)	168 (70.3)	3 (1.3)	8 (3.3)	5 (2.1)	55 (23.0)	24.3%
Student Council (28.9%)	170 (71.1)	7 (2.9)	18 (7.5)	14 (5.9)	30 (12.6)	18.4%
Boy/Girl Scouts (19.7%)	192 (80.3)	10 (4.2)	10 (4.2)	3 (1.3)	24 (10.0)	8.4%
Speech (16.7%)	199 (83.3)	15 (6.3)	10 (4.2)	1 (0.4)	14 (5.9)	4.2%

<sup>a</sup> Number of students reporting years of participation.

<sup>b</sup> Percent of participants who had been an officer or group leader in the organization/activity.

<sup>c</sup> Listed in rank order by participation rate (calculated as the percent of all respondents reporting at least one year of participation in organization/activity).

<sup>d</sup> Other organizations/activities included (but had less than 10% student participation): Art Club, Astronomy Club, Band, Choir/Chorus, Class Officer, Dance Team, Environmental Club, FBLA, FCCLA, Foreign Language Club, Future Teachers of America, History Club, Math Club, Newspaper, S.A.D.D., and Yearbook.

Table 2

*Self-Perceived Leadership Traits of First-time College Students (n=239)*

Leadership Construct <sup>a</sup>	Mean	Standard Deviation
Integrity	5.39	0.44
Intelligence	5.27	0.47
Sociability	5.13	0.59
Determination	5.10	0.54
Decision Making Efficacy	5.08	0.51
Confidence	4.99	0.61
Charisma	4.82	0.65
Leadership Efficacy	4.82	0.66

<sup>a</sup> Based on a response scale from 1 to 6, with 1 being “Strongly Disagree” and 6 being “Strongly Agree”

Research objective three was included to determine if a relationship existed between student activity participation and the leadership construct means. Statistical significance was established a priori at the .05 level. Table 3 presents the correlation coefficients and designates relationships found to be statistically significant with an asterisk superscript (\*).

Twelve of the correlation coefficients computed for student activity participation and leadership construct means were found to be statistically significant. However, using the Davis conventions for describing the magnitude of a relationship, all 12 statistically significant relationships were of low association (Davis, 1971). Overall, the student participation in Speech produced six statistically significant correlation coefficients with leadership constructs: Intelligence, Confidence, Charisma, Sociability, Integrity, and Leadership Efficacy. The only other student activity variable that revealed more than one statistically significant relationship with a leadership construct was Community Service. Three leadership constructs (Charisma, Sociability, and Leadership Efficacy) were significantly correlated with Community Service. Drama/Theater, 4-H, and Student Council each produced one statistically significant correlation coefficient.

Table 3 provides correlation coefficients for student activities in relation to the eight leadership constructs. To further address objective three, the researchers summed the number of years of student activity participation in all activities for each respondent while in high school. This calculation was then used to provide insight into the relationship of composite student activity participation and their self-perceived leadership constructs. Figure 1 reveals the distribution of respondent participation based on the composite number of years of participation reported for all activities and organizations during high school. Activity participation scores were calculated by summing each student’s number of years of participation during high school in all organizations/activities. So a student who was actively involved could have a rather high composite score. An example would be if a student participated in athletics four years, FFA four years, Student Council 3 years, and National Honor Society two years; the student would possess a summed multi-activity score of 13. Table 4 displays the correlation coefficients that were found to be statistically significant with an asterisk superscript (\*).

Table 3  
*Correlation Coefficients for Student Activity Participation During High School and Leadership Constructs of First-time College Students (n=239)*

Activity Participation	Leadership Constructs							
	Intelligence	Confidence	Charisma	Determination	Sociability	Integrity	Leadership Efficacy	Decision-Making Efficacy
	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>	<i>r</i>
Community Service	.111	.060	.139*	.094	.176*	.005	.166*	.085
Athletics	-.033	-.004	.053	.009	.064	-.079	.057	.025
National Honor Society	.007	-.003	.037	.011	.071	.115	.033	-.009
Religious Youth Group	-.061	-.032	.007	.032	.120	-.013	.077	-.038
Other	.097	.014	.035	.097	.069	.031	-.014	.009
Drama/Theater	.032	-.016	-.004	.024	.172*	.024	.056	.076
4-H	.064	.055	.087	.069	.044	.064	.128*	.025
FFA	-.030	-.009	.067	.008	.017	.047	.073	-.074
Student Council	.084	.032	.110	.065	.104	.107	.139*	.052
Boy/Girl Scouts	.037	.049	-.028	.000	-.016	.036	.008	.025
Speech	.132*	.187*	.181*	.107	.147*	.147*	.198*	.122

\* Statistically Significant Correlation Coefficient

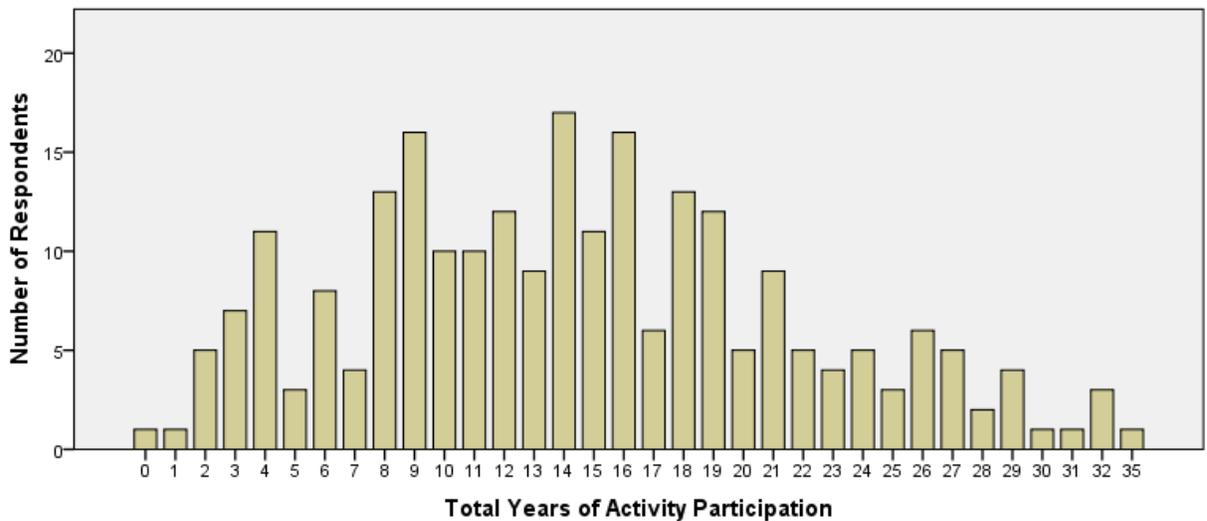


Figure 1. Composite Years of Participation in Activities and Organizations During High School

Table 4

Correlation Coefficients for Composite Years of Activity Participation in High School and Leadership Traits in First-time College Students (n=239)

	Leadership Constructs							
	Intelligence	Confidence	Charisma	Determination	Sociability	Integrity	Leadership Efficacy	Decision-Making Efficacy
	<i>r</i> ( <i>p</i> )							
Composite Years of Activity Participation	.085 (.192)	.058 (.374)	.140* (.030)	.108 (.094)	.200* (.002)	.086 (.183)	.189* (.003)	.052 (.421)

\* Statistically significant correlation coefficient

Three correlation coefficients were found to be statistically significant between the computed variable of composite years of student activity participation during high school and the leadership construct mean scores. However, the magnitude of each relationship was low in terms of association (Davis, 1971).

### Conclusions and Recommendations

Defining leadership can sometimes be an elusive task, but many scholars agree that one can recognize leadership when one sees it happening or once the action has occurred. College campuses continue to strive to provide opportunities for students to develop as leaders. One factor that should not be overlooked by universities is the high school experiences that students have engaged which may hold some potential to enhance leadership development. Knowing

more about first-time college students will enable university faculty to build upon a foundation of high school experiences to better serve students in the future.

This research sought to describe first-time college student participation in activities during high school and the self-perceived leadership characteristics of those students. The reported data were also used to determine if a relationship existed between student activity participation and leadership constructs. Respondents were from three land grant university campuses and a broad range of majors within their respective colleges of agriculture. Furthermore, the majority of respondents were female, White or Caucasian, 18-19 years of age, lived in a rural community with less than 10,000 people, and planned to pursue a career in agriculture, food, and/or natural resources after graduation from college.

Community Service was the activity that generated the highest participation rate among first-time college student respondents. The ILTI questionnaire stated that involvement in Community Service was to be independent from school. This leads the researchers to conclude that a majority of the respondents were active within their communities and deemed service to be important. A sense of community development is viewed as a positive in society and the data reveals that the respondents were actively involved in some form toward the cause of community development.

Athletics was another activity that generated a relatively high rate of participation among the respondents. The level of student participation in both Community Service and Athletics, based on the percentage of respondents who served in a leadership role, suggests that students were actively engaged in the two activities.

Two other activities traditionally linked to agricultural education revealed lower levels of student participation 4-H (34.3%,  $n=82$ ) and FFA (29.7%,  $n=71$ ). Approximately one-in-four (~25%) of the respondents who participated in 4-H or FFA, had served in a leadership role as an officer or group leader. The 4-H and FFA organizations pride themselves on building future leaders and useful citizens. Many of the students involved with these two organizations may have encountered focused leadership skill building programming during high school. However, when viewed from an alternative perspective there was a large percentage of the students who would have not participated in 4-H and FFA. Granted, these are not the only organizations providing leadership opportunities, but these organizations expend considerable effort in the area of leadership development. Finding that a large percentage of new students in colleges of agriculture may not have participated in focused leadership development activities during high school provides the opportunity for tremendous growth in leadership development at the post-secondary level.

Along with a better understanding of student activity participation, this research sought to describe the self-perceived leadership constructs of first-time college students. The leadership constructs, measured using a Likert-type summated rating scale (1 = Strongly Disagree to 6 = Strongly Agree), were used to self-assess agreement with each construct. The leadership construct of Integrity produced the highest overall mean score. Charisma and Leadership Efficacy produced the lowest overall mean scores. However, all eight construct means were

within one standard deviation of the Agree response point on the scale. This finding provides the basis for concluding that the student respondents perceive they possess the leadership constructs.

Examining each construct independently may allow educators to examine areas to consciously address in an undergraduate program. As Departments of Agricultural Education continue to evaluate, develop, and update leadership course content, there may be the potential to provide additional opportunities to further develop Leadership Efficacy and Charisma. The leadership constructs that produced somewhat higher mean scores should not be overlooked however, as all the constructs woven together provide a more holistic view of leadership. The leadership construct findings also provide benchmark information which may be used as a basis for examining student leadership development throughout a college career.

Research has provided insight into links between student activity participation and positive student development. Theoretically, participation in positive activities will contribute to fostering positive development in individuals. Data collected through this research was used to investigate if there is a relationship between student activity participation during high school and the self-perceptions of leadership constructs of beginning college students. Although, twelve statistically significant relationships were reported in the study, participation in Speech resulted in the greatest number of statistically significant correlations in comparison to participation in other activities. Never-the-less, each relationship was a low magnitude association. Based on previously-cited research, the researchers expected to discover larger magnitude associations, but the data collected from the respondents in this study did not reveal a practical relationship between activity participation and student self-assessment of their leadership constructs.

An overall, composite activity participation score was computed by summing the years of participation in all of the activities and organizations during high school. Three statistically significant relationships were produced when the composite years of activity participation was correlated with the eight leadership constructs. However, once again, the relationships, were judged to be of low magnitude association. This study was not able to produce empirical evidence to support the proposition that student activity and organization participation during high school was related to their leadership constructs; even though there were several statistically significant correlation coefficients computed in this study. Based on the findings from this study and the limited ability to generalize results, the researchers recommend further research to investigate a potential relationship between activity participation and leadership constructs.

This research provides insight regarding first-time college student activity and organization participation during high school and the relationship between participation and the student leadership constructs. The researchers recommend further research to more thoroughly and precisely assess first-time college student activity participation prior to attending college. Additional research is also needed to examine factors associated with student activity and organization participation that may be positively and negatively related to leadership development. Finally, research should be conducted to determine if certain activities are more influential than others, explore if collegiate student activities have similar effects, and continue investigating relationships between student activity participation and leadership constructs among other populations.

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# **Relationship Between Leadership Constructs and Student Activity Participation During High School Among First Time College of Agriculture Students**

## **A Critique**

**Mark Balschweid, University of Nebraska-Lincoln**

The authors examined the effects of participating in high school activities on leadership in first time college students. The study builds upon Astin's *Theory of Involvement* while building a strong foundation from the literature base in leadership development theory. The authors utilized a tailored leadership instrument to collect data from students enrolled in three land grant universities. Appropriate methods for electronic data collection involving survey research were used. And, although a low response rate (18%) was reported, the authors recognize the limitation and caution against generalizing the results beyond the respondents.

The authors are to be commended for clearly articulating the eight leadership constructs, with the eleven secondary activities, with the number of years of involvement, with the students' self-perceived leadership traits. The use of tables and graphs for depicting the data was effective.

The conclusions arrived at by the authors were soundly built upon the findings contained within the manuscript. Although the empirical evidence did not reveal what the authors had hoped to find, the data provided can inform future efforts in the field of leadership development and how young people come to understand the importance of actively engaging in opportunities.

It would be interesting to know how the data compared across all three institutions and states included in the study (Pennsylvania, Ohio and Missouri). Are students more likely to be involved and engaged in activities in one state versus another? Do individual state education governing bodies incentivize activities for students in their schools and communities more so than other states?

It could be beneficial to separate out the data from the "other" category (since it was listed by over 40% of respondents) and look for trends across the organizations listed. Although none of the "other" organizations were listed by more than 10% of the respondents, data might be revealed that could inform future studies. It is often thought that organizations such as Future Teachers of America, FBLA and FCCLA have strong leadership development components and it would be interesting to determine if that was the case as reported by the respondents in this study.

It is unfortunate that the authors were not able to achieve a higher response rate. It would be very interesting to know how the non-respondents view the impact of their involvement in activities upon their self-perceived leadership development and abilities.

## **Safety Conditions and Practices in Secondary Agricultural Mechanics Programs**

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### **Abstract**

*The purpose of this study was to determine if secondary agricultural mechanics laboratories are perceived to be safe by the teachers who utilize them. This study also sought to determine the most common safety violations found in a high school agricultural mechanics laboratory. The health belief model was utilized as the framework for this study. A web-based questionnaire using the National Institute for Occupational Safety and Health (NIOSH) checklist for secondary agricultural science laboratories was developed to assess teachers' perceptions regarding safety in their secondary agricultural mechanics laboratory. It was determined that there were four specific areas of concern related to safety practices and conditions in agricultural mechanics laboratories. They included signage, storage of oxygen and fuel gas cylinders, noise levels, and disconnecting switches on arc welding machines.*

### **Introduction**

Agricultural mechanics courses are popular among secondary students throughout the United States (Anderson, Velez, Anderson, 2011). Rudolphi and Retallick (2011) indicated that 90% of agricultural education respondents in Iowa reported having taught agricultural mechanics courses. Saucier, Terry, & Schumacher, (2009); and Saucier, Vincent, & Anderson (2011) found that agricultural education teachers were spending roughly nine to ten hours per week in the agricultural mechanics laboratory in Missouri and Kentucky respectively. McKim, Saucier, and Reynolds (2010) indicated that in some states nearly 60% of the curriculum taught in agricultural education courses included agricultural mechanics competencies.

Teachers' attitudes and beliefs towards safety also play a role in students' development. Hubert, Ullrich, Lindner and Murphy (2003) examined the relationship between Texas agricultural education teachers' personal beliefs as they pertained to common agricultural safety practices. The participants felt most strongly about having a properly working fire extinguisher. The second area they felt strongly about was having emergency phone numbers listed by the phone and students wearing personal protection equipment. Additionally, Swan (1993) conducted a study that examined agricultural mechanics safety practices in agricultural science laboratories. He concluded that the instructional techniques most commonly used in safety instruction were demonstrations conducted by students and instructors in the use of power tools. On the other hand, safety manuals, booklets, and worksheets were determined to be the most often used instructional materials by agricultural mechanics instructors. In regards to personal protective equipment (PPE), it was determined that industrial-quality eye protection and welding gloves were the most frequently available safety equipment for use by the students.

In order for agricultural educators to provide a safe laboratory learning environment for their students, they must possess certain skills and knowledge associated with agricultural

mechanics laboratory management (Saucier, Schumacher, Funkenbusch, Terry, & Johnson, 2008). Johnson and Schumacher (1989) conducted a study that examined agricultural mechanics specialists' identification and evaluation of agricultural mechanics laboratory management competencies. These experts determined that the top five management competencies of a secondary agriculture teacher included the provision and documentation of safety instruction, the safe storage of hazardous materials, updating course offerings, safely arranging shop equipment, and conducting safety inspections. It was determined that safety was the most important factor in laboratory management. Eleven of the top 18 competencies identified by the respondents were safety related (Johnson & Schumacher, 1989).

Even though student safety has been determined to be the most important consideration, accidents still occur. Dyer and Andreasen (1999) reported that a mean of 1.3 major (requiring medical attention) student accidents and 13.3 minor accidents (requiring bandage but not medical attention) occurred per year when high school agricultural programs were examined (as cited in Swan, 1993). Lawver (1992) conducted an analysis of agricultural mechanics safety practices in Texas agricultural education programs. The objective of the study was to identify specific areas of deficient safety practices in order to make recommendations concerning the improvement of safety programs. The mean response when asked to report the number of major accidents (requiring attention by a doctor or a nurse) which had occurred in their agricultural mechanics program during the last five years was 0.8 accidents. The mean number of minor accidents (requiring minor first-aid but no attention by a doctor or a nurse) was 5.7 accidents. Lawver concluded that Texas agricultural education teachers were using recommended safety practices and were providing student safety and emergency equipment but not to the extent warranted by the hazards present. The results indicated that it was apparent that unsafe conditions exist in agricultural mechanics laboratories and that safety program improvement must become a top priority.

Lawver and Frazee (1995) conducted a follow-up study in which they evaluated why accident rates were so high by examining the relationship between accidents and safety attitudes and perceptions of students. Out of the 377 respondents, 13.2% indicated they had been injured in the agricultural mechanics laboratory. When students appeared to have favorable safety attitudes, fewer injuries in the agricultural mechanics laboratory and fewer serious school accidents were reported. It was also determined that teacher carelessness was associated with more incidence of injury in the agricultural mechanics laboratory and more involvement in serious accidents (Lawver & Frazee, 1995). From this study, the researchers concluded that Texas agricultural education teachers needed more preservice and inservice education in the areas of promoting positive safety attitudes and reducing teacher carelessness (Lawver & Frazee, 1995).

Another possible explanation as to why accidents are still occurring in the agricultural mechanics laboratory could be because the safety needs of teachers are not always met. Johnson, Schumacher, and Stewart (1990) found that the greatest inservice needs of agriculture education teachers in Missouri were in the area of safety. Saucier et al. (2009) also concluded that Missouri secondary agriculture education teachers were in need of in-service training in maintaining a safe agricultural mechanics laboratory and storing, handling, and disposing of hazardous materials. Similarly, McKim et al. (2010) determined that secondary agricultural education teachers in Wyoming were in need of inservice education in first aid, correcting hazardous laboratory

conditions, and general laboratory safety. Texas school-based agricultural education student teachers were also found to be in need of professional development education in the areas of first aid and safe disposal of hazardous materials (Saucier, McKim, Murphy, & Terry, 2010).

Many states mandate that career-technical schools and institutions have safety and health programs in place, conduct hazard analyses for each career-technical program, do safety inspections and maintenance, and comply with safety and health and environmental regulations. The Safety Checklist Program by the National Institute for Occupational Safety and Health (NIOSH) provides information needed by schools to maintain safe classrooms, shops, and labs for teachers and students in career-technical education. This information can also be used by colleges and universities with occupational safety and health programs. This checklist covers such programs as agricultural mechanics, animal sciences, landscaping, and natural resources (Centers for Disease Control and Prevention & National Institute for Occupational Safety and Health, 2003).

Due to the nature of the agricultural mechanics laboratory, the inexperience of students who participate, and the proximity to dangerous equipment and chemicals, the potential for injury exists (Dyer & Andreasen, 1999). Woodford, Lawrence, and Bartrug (1993) found that potentially damaging levels of noise occurred during the use of all machines in agricultural mechanics laboratories except the vertical belt sander and bandsaw. Additionally, McKim, et al. (2010) concluded that a safe learning environment provided by agricultural teachers is a necessity for students' development of agricultural mechanics related skills. Bruening, Hoover, and Radhakrishna (1991) insisted that of all the duties for which the instructor is responsible, the physical safety of students must come first. While teachers possess general positive attitudes towards safety, the current study sought to determine if the safe attitudes are being put into action.

### **Theoretical Framework**

The health belief model was utilized as the framework for this study. The health belief model originally suggested that people's use of health services was a function of their predisposition to use services. Health beliefs are attitudes, values, and knowledge that people have about health and health services that might influence their perceived need or use of health services (Andersen, 1995). Health beliefs and attitudes towards health practices can easily be adapted to agricultural education teachers' safety practices and attitudes. The model has five dimensions that the researchers linked to agricultural mechanization laboratory safety.

The first dimension, perceived susceptibility, refers to a person's subjective perception of the risk of contracting a health condition (Strecher and Rosenstock, 1997). In regards to safety in the agricultural mechanics laboratory, this refers to an instructor's perception of a student getting involved in an accident. This perception could have little to no effect on the instructor's willingness to allow the student to participate, or it could be so intense that the instructor refuses to allow the student to participate.

The second dimension, perceived severity, refers to the feelings concerning the seriousness of contracting an illness of both clinical consequences and possible social

consequences (Strecher and Rosenstock, 1997). This dimension, paired with the first, can further hinder an instructor's willingness to allow a student to participate in agricultural situations that pose threats to their physical well-being.

The third dimension, perceived benefits, refers to a potential course of action that could be taken depending upon whether or not an individual believes the actions will be an effective way of reducing the possibility of threat (Strecher and Rosenstock, 1997). This means that if the instructor does not believe that allowing a student to participate in said action will result in a reduction of threat level; he/she will not be allowed to participate.

Perceived barriers, the fourth dimension, refers to how the potential negative aspects of an action may result in impeding a recommended behavior (Strecher and Rosenstock, 1997). In agricultural mechanics laboratory safety, this is essentially taking shortcuts to save time or money at the cost of safety.

Cues to action, cues that trigger specific reactions, also come into play. Cues to action could be as simple as safe behavior signs. Other variables such as demographics may affect an individual's perception (Strecher and Rosenstock, 1997).

The final dimension, self-efficacy, refers to one's ability to feel in themselves the competency required to implement a change once they realize a specific change is required in order to not feel threatened any more (Strecher and Rosenstock, 1997). This often requires long-term changes.

### **Purpose and Research Objectives**

The purpose of this study was to determine if secondary agricultural mechanics laboratories are perceived to be safe by the teachers who utilize them, as well as determine if teachers who specialize in agricultural mechanics perceive their laboratories to be safer than those who do not specialize in agricultural mechanics. This study also sought to determine what teachers perceived to be the most common safety violations were that could be found in a high school agricultural mechanics laboratory. This study was guided by the following research objectives:

1. Determine if the agricultural mechanics laboratories are safe as perceived by teachers who use them.
2. Identify the safe practices being observed by students and teachers in agricultural mechanics laboratories.

### **Procedures**

#### **Population**

For this study, teachers who trained teams for the state Agricultural Mechanics CDE were considered "specialized" as agricultural mechanics instructors, while teachers who trained teams

for the state Nursery/Landscape CDE were considered as “non-specialized” in agricultural mechanics. The population for this study consisted of a group of 32 secondary agricultural education teachers whose teams participated in the [State] Agricultural Mechanics CDE and 32 secondary agricultural education teachers whose teams did not participate in the [State] Agricultural Mechanics CDEs. The second group was selected from the list of the participants in the [State] Nursery/Landscape CDE. The Nursery/Landscape CDE was the only CDE that was comprised of agricultural education instructors who did not prepare an agricultural mechanics CDE team that participated at the state competition. An assumption was made that agricultural education teachers who trained Nursery/Landscape CDE teams had access to and utilized agricultural mechanics laboratories but specialized in another area of agricultural education instruction. It was also assumed that agricultural education teachers who trained state level Agricultural Mechanics CDE teams did specialize in agricultural mechanics instruction and were considered experts.

## **Instrumentation**

A web based questionnaire developed using the National Institute for Occupational Safety and Health (NIOSH) checklist for secondary agricultural science laboratories was developed on SurveyMonkey.com to assess teachers’ perceptions regarding safety in their secondary agricultural mechanics laboratory. The NIOSH checklist is primarily based on Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) regulations (CDC, 2003). Additionally, the checklist takes into account specific regulations that are in place for workers or students under the age of 18. The researchers narrowed down the extensive checklist to seven agricultural mechanics specific categories: personal protection equipment (PPE), compressed gasses, flammable and combustible liquids, portable hand and power tools, noise, welding and cutting with oxygen-fuel gas, and welding with arc-welding equipment. The questionnaire also included a background section to collect demographic information for the respondents.

In accordance with Dillman, Smyth, and Christian (2009), the questionnaire was checked for content validity through a review conducted by a panel of experts. The panel consisted of pre-service and current agricultural education teachers who were not eligible to participate in the study as well as two teacher educators with agricultural mechanization backgrounds. Following this review process, suggestions for improvement were taken into consideration and slight modifications were made to the questionnaire. Due to small sample size and yes/no options for most items on the questionnaire, a reliability analysis was not conducted.

## **Methods**

Dillman, Smyth, and Christian (2009) data collection methods were utilized for this study. Eligible teachers were sent an introductory e-mail including details about the design and importance of the study, as well as contact information of the researchers. A second e-mail sent contained two hyperlinks, one of which took recipients to the questionnaire and the other which allowed recipients to decline participation, was sent the next day. One week later, recipients who had not yet completed the survey were sent the first follow-up e-mail that stressed the importance of their contribution and provided the same two hyperlinks to encourage

participation. Two weeks after the initial email with links to the questionnaire was sent, a personalized letter was sent to those recipients who had still not provided responses. A final invitation containing the two original hyperlinks was sent via email to non-respondents three weeks after the initial email was sent. Data collection was open for a total of five weeks.

The introductory email was sent to 64 teachers who were determined eligible to participate in the study. However, four of these teachers, two from each group, had blocked attempts to contact them. Of the remaining 60 recipients, 26 teachers responded, providing a 43.3% response rate. Of those respondents, three partially incomplete questionnaires were received. Therefore, some of the data will be reported with only 23 respondents. Thirteen of the respondents trained teams that participated in the state Agricultural Mechanics CDEs and ten trained teams that participated in the state Nursery/Landscape CDEs. Data was analyzed using SPSS 17.0. Due to anonymity, telephone calls were not conducted to accommodate for nonresponse error. Instead, it was assessed by comparing responses from the first 12 respondents to the last 11 with regard to the yes/no questionnaire items. No significant difference was found between the two groups. According to Lindner, Murphy, and Briers (2001), this method is acceptable for testing for nonresponse error.

## **Findings**

### **Research Objective #1**

The first research objective addressed was whether or not agricultural mechanics laboratories are perceived by teachers who use them as safe working environments. A frequency analysis (Table 1) indicated four areas of concern. Areas of concern occurred when 50% or more of the responses indicated a specific safety practice or condition was not reported for the teachers' agricultural mechanics laboratories. Over 80% of all respondents indicated that their facilities do not have all of the proper signage indicating the required personal protective equipment required for each work area alerting students of potential hazards. Only 15.4% of the respondents specializing in agricultural mechanics indicated having proper shop signage, while 20% of respondents not specializing in agricultural mechanics indicated having proper signage. Even though the respondents not specializing in agricultural mechanics indicated safer practices than the respondents specializing in agricultural mechanics concerning the storage of fuel gas cylinders, both fared low with negative responses of 50% and 66.7% respectively.

Almost 90% of all respondents indicated not having a continuing effective hearing conservation program. Furthermore, none of the respondents who did not specialize in agricultural mechanics indicated having any hearing conservation programs for the criteria listed. Just under than 70% of the respondents specializing in agricultural mechanics indicated not having a disconnecting switch with overcurrent protection located at or near each arc welding machine. The respondents not specializing in agricultural mechanics indicated a safer environment at 55.6% not having a disconnect switch, but this percentage is still not in the acceptable range.

Table 1

*Specific Areas of Concern Related to Safety Practices and Conditions in Agricultural Mechanics Laboratories*

Question	Specialized			Non-Specialized		
		<i>f</i>	%		<i>f</i>	%
Are all lab shop entrances, areas, and equipment requiring the use of PPE devices, posted with a sign indicating this requirement?	Yes	2	15.4	Yes	2	20.0
	No	11	84.6	No	8	80.0
Are oxygen and fuel gas cylinders separated by a minimum of 20 feet when in storage?	Yes	4	33.3	Yes	5	50.0
	No	8	66.7	No	5	50.0
Does the school administer a continuing effective hearing conservation program when noise exposure equals or exceeds 85 dBA as an 8-Hour time weighted average?	Yes	2	16.7	Yes	0	0.0
	No	10	83.3	No	7	100.0
Is a disconnecting switch with overcurrent protection located at or near each arc welding machine that does not have a switch?	Yes	4	30.8	Yes	4	44.4
	No	9	69.2	No	5	55.6

**Research Objective #2**

The second research objective addressed was whether or not safe practices were conducted by students and teachers in agricultural mechanics laboratories. There were ten questions in the questionnaire directly related to safety training and associated practices of students in the agricultural mechanics laboratory. As shown in Table 2, the majority of respondents indicated that their students received specific safety training and demonstrated safe practices. However, there were areas that were noticeably low. Both groups indicated that only 62% of their students wore protective footwear whenever the potential of foot injuries were present. Additionally, two respondents, one from each group, indicated that not all students who will be using the agricultural mechanization laboratory have received training on the required PPE. All of the respondents specializing in agricultural mechanics indicated requiring their students to wear appropriate eye protective devices while participating or observing activities which present a potential eye safety hazard. However, only 80% of the respondents not specializing in agricultural mechanics reported students wearing eye protection. Notably, only 86.4% of the total respondents indicated their students actually using the PPE selected. Approximately 66.7% of the respondents specializing in agricultural mechanics indicated that students engaged in gas-shield arc-welding were acquainted with “Recommended Safe Practices for Gas-Shield Arc-Welding.”

Table 2.

*Specific Areas of Concern Related to Student Safety Training and Practices in Agricultural Mechanics Laboratories*

Question	Specialized		Non-Specialized			
		<i>f</i>	%	<i>f</i>	%	
Do students use the PPE selected?	Yes	11	84.6	Yes	8	88.9
	No	2	15.4	No	1	11.1
Has each student, who is required to use PPE, been provided with training?	Yes	12	92.3	Yes	9	90
	No	1	7.7	No	1	10
Have the trained students demonstrated an understanding of the training and the ability to use PPE properly before performing work requiring it?	Yes	12	92.3	Yes	8	88.9
	No	1	7.7	No	1	11.1
Is protective footwear used wherever there is danger of foot injuries?	Yes	8	61.5	Yes	5	62.5
	No	5	38.5	No	3	37.5
Are appropriate protective gloves used wherever there is the danger to hands of exposure to hazards?	Yes	12	92.3	Yes	8	88.9
	No	1	7.7	No	1	11.1
Are students issued and required to wear appropriate eye protective devices while participating or observing activities which present a potential eye safety hazard?	Yes	13	100.0	Yes	8	80
	No	0	0.0	No	2	20
Are all students trained and evaluated competent in the use of welding apparatus?	Yes	13	100.0	Yes	10	100
	No	0	0.0	No	0	0
Are students properly instructed and qualified to operate arc-welding equipment?	Yes	13	100.0	Yes	10	100
	No	0	0.0	No	0	0
Are students engaged in gas-shield arc-welding acquainted with Recommended Safe Practices for Gas-Shield Arc-Welding?	Yes	8	66.7	Yes	8	80
	No	4	33.3	No	2	20
Is the student required to report any equipment defects or safety hazards and to discontinue use until safety has been assured?	Yes	13	100.0	Yes	10	100
	No	0	0.0	No	0	0

## Conclusions

### Research Objective #1

The intent of the first objective was to determine if agricultural mechanics laboratories were perceived by teachers who use them as safe working environments. It was determined that four areas of safety in the secondary agricultural mechanics laboratories needed improvement. These areas included signage, storage of oxygen and fuel gas cylinders, noise levels, and power-disconnect switches on arc-welding machines. Even though they were all negative responses, respondents not specializing in agricultural mechanics reported having a safer environment than those specializing in agricultural mechanics respondents in three of the four areas. The only one where they scored lower was in the hearing conservation program section.

These results confirmed previous studies. Gliem and Miller (1993) found that some schools were not taking the necessary steps to bring the safety awareness of students to an acceptable level, even when the issues could be resolved by using relatively inexpensive safety materials and procedures such as color coded tools and safety zones. Having all laboratory and shop entrances, areas, and equipment requiring personal protection equipment posted with a sign indicating this requirement was also suggested as an inexpensive way to bring safety awareness to students. These results show that this is an area that is lacking in many secondary agricultural mechanics laboratories.

Another issue that this study revealed was the lack of effective hearing conservation programs. This coincided with Woodford et al. (1993). Furthermore, Woodford et al. (1993) also determined that 70% of the students examined reported that they never wore hearing protection when around machinery. Secondary schools appear to have a need for hearing conservation programs to prevent hearing damage that could occur in the agricultural mechanics laboratories.

### Research Objective #2

The second research objective was used to determine if safe practices were reported by students and teachers in agricultural mechanics laboratories. There were ten questions in the questionnaire that specifically addressed student safety instruction and practices. The majority of the respondents indicated that the students under their supervision were taking the necessary steps to practice safe behavior. Only two respondents indicated that their students were not issued and required to wear appropriate eye protective devices. These findings were in agreement with previous work done on the subject. Swan (1993) found that eye protection and welding gloves were the most frequently available safety equipment for student use. The results indicated that over 90% of respondents claimed that their students used protective gloves and eye protection when potential hazards were present. It appears that secondary agricultural mechanics instructors are taking some of the necessary steps to keeping their students safe. There is still room for improvement in this area. The percentage of students using the selected PPE should be 100 percent. Wearing protective footwear falls into this category. Only 61.9% of respondents reported requiring their students to wear the proper protective footwear. Further research should investigate what types of footwear students and teachers are wearing while teaching in the

agricultural mechanics laboratory. It is possible that the teachers are requiring students to wear boots or leather shoes, but not requiring steel-toed boots as required by NIOSH.

### **Recommendations & Implications**

It was determined that there were four specific areas of concern related to safety practices and conditions in agricultural mechanics laboratories. They included signage, storage of oxygen and fuel gas cylinders, noise levels, and disconnecting switches on arc-welding machines. It is the recommendation of the researchers that NIOSH create and distribute laboratory safety signage that should be required in all agricultural mechanization laboratories. The researchers also highly recommend that local gas distribution centers work with their agricultural education instructors to ensure all cylinders are stored properly. The researchers recommend a study be conducted to measure the noise levels in agricultural mechanization laboratories to determine the amount of noise that both students and teachers are being exposed to. The researchers suggest that further investigation be targeted at determining why these four areas are not being addressed.

The participants of the study should be commended for their efforts to provide safety training to their students. However, the researchers are highly concerned that there are teachers who admittedly reported that they do not require their students to wear safety glasses in potentially hazardous conditions. It is also alarming that they reported students do not wear proper PPE while working in the laboratory. These items are indicators that the instructors are acknowledging that they are allowing unsafe environments to exist. The health beliefs model suggests that attitudes dictate actions. It is the researchers' interpretation that the agricultural education teachers agree that safety is important, but some fail to truly believe that is important based on their actions.

Another area for further investigation should be to determine if there is a difference between self-reported agricultural mechanics laboratory safety practices and conditions compared to observations of agricultural mechanics laboratory safety practices and conditions conducted by an independent observer trained in laboratory safety. The researchers also recommend teacher education programs work with state teachers associations to deliver safety workshops at state teacher workshops.

Implications for teachers of agricultural mechanics include the need for increased and ongoing emphasis on the use of all PPE devices, especially hearing protection devices. More attention needs to be placed on this particular portion of agricultural mechanics teacher development.

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## **Safety Conditions and Practices in Secondary Agricultural Mechanics Programs**

### **A Critique**

**Greg Miller, Iowa State University**

This study addresses a very important topic – safety in agricultural mechanics. The introduction presents an extensive review of related literature. While appropriate references are utilized, I recommend developing a stronger lead up to the problem statement. The “health belief” model was used as the theoretical framework for this study. I am skeptical about whether this model actually provides a framework for the study that was done. Using the “health belief” model as a theoretical framework would suggest a study involving prediction.

The methods section raises a few questions. What was the rationale for comparing perceptions of teachers who specialize in agricultural mechanics versus those who do not? Why make assumptions about whether teachers had and used agricultural mechanics laboratories? Why not ask some demographic questions to get at this and their level of expertise. It is probably important to the validity of the study to confirm that the teachers did in fact have and use an agricultural mechanics laboratory. In which state did this study take place?

Basing the questionnaire on a NIOSH checklist and using a panel to validate it were good decisions. However, I was disappointed that reliability was not addressed. Data collection procedures were appropriate and described in detail. Steps were taken to control for non-response error. Even so, I am not sure if this data provides an accurate (representative) picture of the safety status of agricultural mechanics laboratories in the state.

Were there additional findings related to objective 1? Do the items in Table 1 “determine if agricultural mechanics laboratories are safe as perceived by teachers who use them”? Could the wording of items lead to measurement error? I’m guessing that teachers would know whether their students use hearing protection devices, but some might not know what is meant by a “continuing effective hearing conservation program when noise exposure equals or exceeds 85 dBA as an 8-Hour time weighted average.”

In general the conclusions, recommendations, and implications appear to be based on the findings that were presented. I have a feeling that additional data is available and should be reported in this paper. There was a recommendation that NIOSH create and distribute laboratory safety signage. I believe that the signs needed in agricultural mechanics laboratories already exist and are available for purchase. I found an online retailer with a huge selection of safety signage. There was also a statement indicating that “teachers agree that safety is important, but some fail to truly believe that is important based on their actions.” I saw no findings concerning teachers’ beliefs about the importance of safety.

## **Educational Technology Use and Acquisition in Secondary Agricultural Education Classrooms**

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*Educational technology such as computers, the internet, and other peripherals such as interactive whiteboards and MP3 players can improve how students perform in the classroom. However, the amount of time and knowledge required to integrate these technologies into a classroom is sometimes difficult for the teacher. The purpose of this study was to determine what educational technologies are being integrated and used in Indiana's agriculture classrooms and how these technologies are acquired. If these factors can be determined then agriculture teachers and their schools will have more information to better integrate technology into their classroom to positively affect student learning.*

*The participants (N=128) were proficient with technologies such as desktop computers and LCD projectors but do not use technologies such as MP3 players, webcams, or video cameras. This study uncovered several factors related to technology acquisition. Funding was the primary issue along with lack of knowledge and training as well as the availability of technology. Once the factors impacting technology acquisition and integration are identified, they can be used to successfully integrate technology in agriculture programs across Indiana.*

### **Introduction**

Our world has been forever changed by technology (Fraze, Fraze, Kieth, & Baker, 2002). Technology has permeated nearly every aspect of American society – from cell phones to refrigerators - but its incorporation into our nation's schools has been slow (Bauer & Kenton, 2005). A great change has been created by technology and as Murphy and Terry (1998) pointed out “education, and more specifically, agricultural education, is not immune to the effects of change” (p. 28). Agriculture teachers and their classrooms are no different academically than other courses in schools in that “moderate barriers exist that prevent teachers from integrating technology into the teaching/learning process” (Douglas, Kotrlik, & Redmann, 2003, p. 78). It is important that agriculture teachers know how to use educational technology such as the computer, as it has shown to be effective in providing more educational opportunities (Bauer & Kenton, 2005).

New technologies are being produced, and older technologies improved, at increasingly faster rates, according to the law of accelerating returns, a term coined by Ray Kurzweil, a futurist and inventor. Technologies that were available for use in classrooms in 2000 are vastly different from those available for use in 2010, and the trend does not appear to be slowing. According to Kurzweil, “the computer in your cell phone today is a million times cheaper and a thousand times more powerful and about a hundred times smaller (than the one computer at MIT in 1965)...” (Lomas, 2008, para. 4). Studies which described the use of educational technology in agriculture classrooms referred to computers as “micro-computers” and treated e-mail as a

new innovation. These technologies are no longer new and, according to Kurzweil, will continue to change at an exponential pace (Lomas, 2008). The rate at which technology is changing adds necessity to updated studies of educational technology use in Indiana's agriculture classrooms. If Kurzweil is correct, studies describing technology use could be obsolete shortly after they are conducted.

### **Theoretical Framework**

The theoretical framework for this study comes from Everett Rogers' Theory of Diffusion of Innovations which was originally proposed in 1962. The Theory of Diffusion of Innovations has two parts – the diffusion and the innovation. Diffusion “is the process in which an innovation is communicated through certain channels over time among the members of a social system” (Rogers, 2003, p. 5). Rogers defined an innovation as “an idea, practice, or object that is perceived as new by an individual or other unit of adoption” (p. 12). The complexity of an innovation will impact the rate of adoption, so determining how complex an agriculture teacher views a technology to be will impact its adoption. Using the Theory of Diffusion of Innovations to guide this study helped identify how technology is diffused through Indiana's agriculture classrooms and explain why agriculture teachers use or do not use educational technology.

Many studies regarding educational technology integration used the Theory of Diffusion of Innovations to guide the research. Frazee, Frazee, Kieth, and Baker (2002) used this theory to guide their research regarding Texas agriculture teachers' attitudes towards the internet. The findings of their study indicated Texas Agri-Science teachers have a high level of adoption of the internet. Frazee et al. also found that the Texas Agri- Science teachers' level of adoption could be predicted by their computer anxiety and attitude toward the internet. Straub (2009) used Rogers' Theory of Diffusion of Innovations along with other theories and suggested that “technology adopting is a complex, inherently social, developmental process” (p. 625).

The Theory of Diffusion of Innovations was used in this study to determine which stage of adoption agriculture teachers generally fit into and determine what is influencing them to adopt educational technology in their classroom. The five groups into which the adopters were categorized are innovators, early adopters, early majority, late majority, and laggards (Rogers, 2003). Each category has traits unique to those individuals classified into that category as shown in Table 1. Understanding the adopter categories can help the agriculture teachers of Indiana to either better integrate newer technologies or to begin integrating technology if they have not yet done so in their classroom.

Table 1. *Description of Adopter Categories.*

<b>Rogers' Adoption Level</b>	<b>Characteristics</b>
Innovators	Sense of adventure, have resources available to acquire new innovation, like to try new things and first to try it.
Early Adopters	Respect for Innovators, earn respect by adopting an innovation, trigger "critical mass" of adoption.
Early Majority	Adopt technology just before general population, deliberate for period of time before adoption.
Late Majority	Skeptical, wait for other units to adopt innovation, moved by peer pressure.
Laggards	Last in social system to adopt, traditional, look to the past, suspicious, non-adoption not an issue for them.

### **Purpose and Objectives**

The purpose of this study was to determine what educational technologies are being integrated and used in Indiana's agriculture classrooms, how these technologies are acquired and what issues the teachers are facing when they are using or want to use technologies in their classroom. The objectives of this study were to:

1. Identify types and frequencies of use of educational technologies used in agriculture classrooms.
2. Determine how educational technology is acquired in the classrooms and where the funding for the technology comes from.
3. Identify the general issues and concerns existing in acquiring educational technology.
4. Determine an adopter category for Indiana agriculture teachers as described by the Theory of Diffusion of Innovations.

### **Methods/Procedures**

This descriptive research study used a mixed-method survey design. A mixed method survey "is conducted by more than one method, allowing the strengths of one survey design to compensate for the weaknesses of another and maximizing the likelihood of securing data from different types of respondents" (Schutt, 2009, p. 300). The research was conducted using a researcher developed survey and the Qualtrics online survey system available through the researcher's university. The survey attempted to gather both quantitative and qualitative data about educational technologies being used in the agriculture classrooms of Indiana.

The population for this study consisted of all licensed Indiana secondary agriculture teachers who were teaching agriculture during the 2010-2011 school year ( $N=243$ ). A list of the

current agriculture teachers was obtained from the Department of Youth Development and Agricultural Education at Purdue University. The list also included teachers located at Career Centers, the state blind school, correctional centers, and also administrative personnel at the Indiana Department of Education. These locations and people were removed from the population because this study was only concerned with traditional secondary agriculture programs. A Family and Consumer Sciences teacher was included in the list so they were removed since they were not a licensed Agricultural Science and Business teacher. Once these persons were removed, the total population came to 229 licensed Agricultural Education teachers currently teaching in Indiana.

After e-mailing a pre-notice letter to notify the teachers of the survey, seven were undeliverable or were considered SPAM by the schools' e-mail filters. Some e-mails that were returned had to be sent out separate from the mail-merge in order for the recipient to receive the e-mail. Three participants had to be sent a fax of the notification letter and survey link. A total of 148 participants began the survey but only 128 completed all sections for a final response rate of 56%.

Schaefer and Dillman (1998) suggested making multiple contacts to survey participants in order to increase the response rate. They also found that addressing the e-mail to the individual participant and not a group list increases the response rate. The letters for this study were personalized, since this was shown to increase the response rate. Notification of the participants began with a pre-notice to the population to inform them that they would be asked to participate in a study. The first e-mail notification and invitation were then sent out four days later. One week after the initial contact a reminder e-mail was sent to encourage non-participants to participate. Due to the anonymity of the Qualtrics system, the entire population was notified because the researcher did not know who had or had not completed the survey. One week after this reminder, and two weeks after the initial mailing, a final reminder e-mail was sent to thank the population who had participated and to encourage the nonparticipants to participate one last time. The survey was then closed one week after the final reminder.

The researcher developed survey instrument included questions from studies found through a review of related literature. The instrument collected both quantitative and qualitative data. Quantitative data focused on the amount of technology present in the classrooms as well as the frequency of their use. Participants were asked which technologies were used in the courses they were teaching at the time the survey was taken. Teachers were then asked to rank the frequency with which they used the technologies in each of the classes they were teaching in the first semester of the 2010-2011 school year. A total of 21 educational technologies were listed. Table 2 shows the technologies chosen for this study. These technologies were picked by the researcher to reflect the most commonly used technologies at the time of this study, and also those that are considered innovative and not commonly used but could very well be used in a classroom. Participants were asked what technologies were used in each of the classes they were teaching. A five-point scale was used with zero meaning the technology was not used in that particular class in that semester and four meaning the technology was extensively used in that particular class that semester.

For the purpose of this study, hardware was defined as any piece of equipment or tangible item that is used for instruction or classroom operation. It also includes access to the internet or school network as this involves cables and servers even though the agriculture teacher is not directly responsible for these. Software was defined as any program that is dependent upon hardware to operate. For example, student evaluation programs require a computer and podcasts require an MP3 player. It was assumed that all teachers knew of these technologies and they only had to indicate those technologies they were currently using so a lack of knowledge about a technology would not impact the outcomes of this study.

Table 2. *Technologies Investigated for this Study*

Technologies	
<b>Hardware:</b>	<b>Software:</b>
Desktop computer	CAERT.net
Laptop computer	Classroom website
LCD projector	CSA Tracker
Overhead projector	EZ Records
TV	MyCAERT.com
SMARTboard	Online video
DVD Player	Podcasts
VCR	
MP3 Player/iPod	
Camcorder (any type)	
Digital camera	
Webcam	
Computer with wired access (connected to a network/internet via a cable)	
Computer with wireless access (“Wi-Fi”)	

Qualitative data were provided in the form of open-ended questions. Determining how technology is acquired and where funding for the technology comes from in the schools is different in each school corporation so these provided an opportunity for individual responses. The open-ended questions asked were:

1. Where does the funding for educational technology in your room come from?
2. What obstacles have you overcome in order to use educational technology in your classroom?
3. What factors influence your decision to use technology in your classroom?

### Findings/Results

*Objective 1: Identify types and frequencies of use of educational technologies used in agriculture classrooms.*

Teachers were asked to rank their use of educational hardware and software. Table 3 presents the most commonly used educational technologies as indicated by the participants in this survey. The data show that teachers are using desktop computers and LCD projectors most

often in their classroom instruction. Even though the various software presented were rarely used they were the technologies with the highest means of use.

Table 3. *Most Commonly Used Educational Technologies (Hardware & Software)*

Technology	<i>M</i>	<i>SD</i>	Use Level
<i>Hardware</i>			
Desktop Computer	3.03	1.21	Frequently
Laptop Computer	1.59	1.60	Rarely
LCD projector	2.45	1.41	Occasionally
<i>Software</i>			
Online videos	1.29	1.21	Rarely
CAERT.net	1.13	1.31	Rarely
MyCAERT.com	1.02	1.29	Rarely

*Note.* 0 = Never; 1 = Rarely; 2 = Occasionally; 3 = Frequently; 4 = Extensively.

Table 4 presents the least commonly used educational technologies as indicated by the participants in this survey. The majority of these technologies require internet access. For example, if MyCAERT.com is going to be used to give assessments to students in a class, each student would need access to a computer. This presents a problem as most schools do not have a 1:1 student to computer ratio and reserving a computer lab is necessary but not always possible.

Table 4. *Least Commonly Used Educational Technologies (Hardware & Software)*

Technology	<i>M</i>	<i>SD</i>	Use Level
<i>Hardware</i>			
Webcams	.17	.51	Rarely
MP3 players	.30	.72	Rarely
Camcorders	.32	.68	Rarely
<i>Software</i>			
EZ Records	.10	.40	Rarely
Podcasts	.18	.50	Rarely
CSA Tracker	.45	.94	Never

*Note.* 0 = Never; 1 = Rarely; 2 = Occasionally; 3 = Frequently; 4 = Extensively.

Table 5 presents the agriculture classes taught by the teachers which most often used educational technology. Even the classes with the highest mean for use of technology were only ranked “rarely” to “occasionally.” However, it should be noted that two of the three Advanced Life Science (ALS) classes were present in technology hardware while all three of the ALS classes were present in software. This is promising because these classes are to be taught as dual credit college courses. The use of technology in these advanced classes can greatly improve the students’ experiences and prepare them for the technology rich world of college.

A low mean in technology use is not an indication of poor teaching. Some courses such as Agricultural Mechanization may only be in a formal classroom environment for only a few weeks out of the semester and then will spend the rest of the semester in the agriculture shop, and likewise with Horticultural Science. The Horticultural Science course may only spend a few weeks in the classroom before they are in the school’s greenhouse nearly every day. Any

indication of technology use is a positive sign that Indiana’s agricultural educators are open to, and willing to use, educational technology.

Table 5. *Educational Technology Use by Agriculture Class*

Class	<i>M</i>	<i>SD</i>	Use Level
<i>Hardware</i>			
Exploring Agricultural Science & Business	2.14	1.06	Occasionally
ALS: Animals	2.34	1.32	Occasionally
ALS: Foods	2.23	1.29	Occasionally
<i>Software</i>			
ALS: Animals	1.91	1.09	Rarely
ALS: Foods, Plants & Soils	1.85	1.21	Rarely
Farm Management	1.63	1.11	Rarely

*Note.* 0 = Never; 1 = Rarely; 2 = Occasionally; 3 = Frequently; 4 = Extensively.

*Objective 2: Determine how educational technology is acquired in the classrooms and where the funding for the technology comes from.*

One hundred and twenty-eight participants answered the question “Where does the funding for educational technology in your room come from”? Thirty eight participants indicated they receive their funding from the school corporation or a general fund. The second most popular source was grants, endowments or other local funds. One teacher said, “Funding for educational technology in my classroom comes from grants or from corporation money. I typically do not get new educational technology equipment unless I find a way to get it.” Another teacher indicated their technology department or media specialist applies for grants, while one teacher stated they apply for grants on their own.

The third most popular response, with 18 participants, indicated their schools have a technology fund which allows the teacher to purchase technology for their department. The fourth most common answer, with 15 responses, was Perkins and Vocational dollars. Some teachers stated that they no longer receive Perkins money and that “we get very little help from the area vocational director...”

Nine participants noted that they use money from their FFA chapter to purchase technology for their classroom. A teacher said, “The FFA actually purchased the student computers in my room.” Other responses included money from the greenhouse plant sales. A small number said their school collects a technology fee from the students. Some teachers indicated they purchase technology for their room with their personal money or even use their own personal technology in the classroom. Four responses indicated that their department receives the technology that is discarded or leftover after an upgrade.

Some unique sources of funding included money from the local riverboat casinos and Project Lead The Way funds. Project Lead The Way requires that the school have a one to one student to computer ratio, and some agriculture teachers also teach Project Lead The Way courses which allow them to use these computers for agricultural education.

*Objective 3: Identify the general obstacles and concerns that prevent the acquisition of educational technology.*

One hundred and twenty-eight participants responded to the question, “What obstacles have you overcome in order to use educational technology in your classroom?” The most common response to this question, with 35 responses (27%) was the cost of technology and the funding to get it. A teacher stated, “It is a constant battle for [money] to get and keep upgrading as things advance.” Along with funding, a teacher indicated that completing grant applications is an obstacle they need to overcome. One teacher stated that an obstacle was “purchas[ing] equipment with [the] greenhouse account.” A positive remark was made by one teacher who said, “We have used technology in the agriculture area that was many times the first ones in the high school to use it, such as [the] internet and digital cameras.”

Another common theme, and the second highest response, was a lack of training or knowledge about technology which 27 teachers (21%) indicated was an obstacle. Among those that stated training and knowledge was an issue, a teacher said, “One obstacle that I have had to overcome in order [to] use educational technology in my classroom is understanding the full capabilities that the technology can have. I often feel that I learn the basics and sometimes miss out on other great things that the items can do.” Along with this, another teacher indicated he/she are not even aware of what is available for use in their classroom.

One teacher even stated, “Over the past 30 years I have gone from mimeograph copiers and overhead projectors to laptop/LCD in my classroom. All learning was done in workshops or through hands-on applications. Keeping up with all that is out there in technology is my biggest hurdle.” Some of the teachers mentioned they have a fear of trying new technologies and must rely on the students in their classroom in order to complete tasks with these technologies. They indicated that depending upon their students to run the technology was somewhat embarrassing.

In addition to a lack of training and knowledge, many teachers indicated that problems with technology were a problem when in the classroom. For example, when wireless technologies were being used in the classroom the router did not have enough bandwidth to support the computers being used. Another teacher said, “The biggest obstacle I face is when technology does not work properly. It is hard to teach a class when your lesson plan is based whether the digital camera will record or YouTube will load.”

A lack of access and availability of technology was the third most common theme with 24 responses (18%). The teachers mentioned that gaining access to a computer lab in the school was often complicated or impossible. One teacher said it is an inconvenience when the only computer in the room belongs to the teacher.

Teachers were asked “What factors influence your decision to use technology in your classroom?” The results of this question were promising because 28 (21.8%) participants said

that students influence their decision to use educational technology in their classroom. “The biggest factor I use is whether it will engage my students to learn the material” said one teacher. Two participants stated that using educational technology helps them to feel like they are on the leading edge of education and the students benefit from that. Many of the teachers liked that technology is good for the students but did note that using educational technology does not replace good teaching methods.

Eighteen participants (14%) indicated that the ease of use of the technology influences their decision to use educational technology. Age plays a factor in the ease of use of technology as one teacher pointed out, “Being a younger teacher, we grew up in the age of computers. I am much more comfortable working with computers, as are the students I am teaching.” However, one respondent who has been teaching for 33 years, which was indicated in their remarks, said, “To remain current and an [effective] teacher [I] understood that this technology would not only be beneficial but a necessary part of my job.”

Necessity was a common theme throughout some of the comments. “It is where they live and we must meet them where the[y] are,” “It is where society is going so it needs to be incorporated,” “I believe that technology is important because students will be using technology in the future.” One teacher found it necessary in order to attract students and also to work on FFA projects.

Teachers also mentioned that they use technology because they do not have textbooks for their classes so they must use technology but in doing this it saves them valuable time. “I especially like to use CSA Tracker for quizzes and [tests] because it instantly grades and gives feedback to the students. I also don’t have to spend hours grading tests and quizzes by hand, which allows me to spend more time preparing for classes and FFA activities.”

*Objective 4: Determine an adopter category for Indiana agriculture teachers as described by the Theory of Diffusion of Innovations.*

Once all of the data were gathered and analyzed, an overall adoption level was considered according to Rogers’ Theory of Diffusion of Innovations. The levels of Rogers’ Theory of Diffusion of Innovations have five distinct levels of adopters: innovators, early adopters, early majority, late majority, and laggards. Determining one overall level for Indiana’s agriculture teachers is difficult because of the many different technologies present across the state. Not every teacher has an interactive whiteboard or laptops for every student. However, since the adopter levels are based on innovativeness, the adopter categories can largely depend on how an agriculture teacher uses technology or indicated how much they would like to use technology.

Through observations of the qualitative data, it appears as though at least some agriculture teachers are innovators or early adopters. For example, a teacher indicated they use portable interactive slates. They would be considered an early adopter among the population of secondary Indiana agriculture teachers because they are the first among this population to try the technology and are willing to take a risk. Other teachers indicated that their students would be better off without technology. This would classify them as a laggard in the sense of technology

adoption among the population of teachers because they are hesitant to try new technologies or simply cannot afford it.

It is hard to determine a level of adoption in a school setting because many times, as teachers indicated, they were required by the school to use a technology. Many school corporations provide and require their teachers to use technologies like a desktop computer to take attendance, for example. In this case, the agriculture teachers have no choice but to be a forced early adopter or innovator of both the desktop computer and the attendance or classroom management software.

### **Conclusions and Recommendations**

This study was conducted only in Indiana during one semester of the school year and the response rate was 56%. Conclusions and recommendations are only for the population represented by the sample and generalizing beyond that is cautioned.

Indiana's Agriculture Teachers are primarily using a computer with an LCD projector. These technologies can be effective but are becoming main-stream and students no longer view them as innovative. Lessons should be developed that specifically integrate newer, more interactive technologies. It is clear that desktop and laptop computers as well as LCD projectors are the most common educational technologies present in Indiana's agriculture classrooms which supports the literature (Bauer & Kenton, 2005) that technology integration into schools is slow. So, the teacher education program should provide lessons that integrate newer technologies to Indiana's agriculture teachers.

Teachers mentioned that they are unfamiliar with how to use current technologies and also are unaware of what technologies are available to use in the classroom. According to Rogers' (2003) theory, this would inhibit adoption of these technologies. Therefore, it is recommended that in-service training on using current and emerging technologies in the classroom be provided to Indiana's agriculture teachers. Different trainings will be needed for different groups of teachers. The first group of teachers - those with limited knowledge and skills with technology - will benefit from a more in-depth and comprehensive workshop that, ideally, will be hands-on, just as the teachers mentioned in the qualitative data. The second group - agriculture teachers with a strong understanding of technology - will benefit from sessions on how to successfully integrate technology into their classroom, or to show them new technologies available for use in the classroom. Rogers (2003) stated that increasing the degree of observability enhances the rate of adoption.

One possible method for these professional development opportunities would be short online presentations or demonstrations that the teachers can view when it is convenient for them. A short 15 minute presentation or recorded demonstration could provide a quick glimpse at ways to integrate and use old or new technologies available in the classroom. Teachers might be more willing to view 15 minute presentations as opposed to spending a whole day in training. Research should be conducted to investigate how training should be delivered based on the agriculture teachers' needs. Determining the best methods for presenting educational technology training will provide a more meaningful experience for the teachers.

It was clear from the open-ended responses that funding is a main concern. This supports the findings of Douglas, Kotrlik, and Redmann (2003) regarding barriers and technology integration into the classroom. Providing resources to agriculture teachers and making them aware of grants available for technology would eliminate financial barriers which were a main cause of a lack of technology and integration of it into the classroom. Many teachers also mentioned receiving little support from the Career and Technical Education Director in their district. Providing the results of this study to the Career and Technical Education Directors will make them aware of the issues affecting Indiana's Agricultural Science and Business Teachers. The Directors can work in conjunction with Agricultural Education at Purdue University to find and disseminate information about funding for classroom technology.

Further study should be completed to investigate the use of specific technologies in Indiana. The study should investigate only one or a few related technologies in order to gain a deeper understanding of those technologies. For example, studying the attitudes of agriculture teachers toward the use of computers in the classroom would be a gateway to exploring how other technologies would be viable in the classroom. If an agriculture teacher is comfortable with a computer then maybe they could be trained to use a webcam that would allow them to connect their classes with experts in subjects they are currently teaching.

Teaching future agriculture teachers about technology begins at the postsecondary level. Today's college students are tech-savvy and understand the power of technology but they need to know how to integrate it meaningfully into their lessons. The students should be provided with the opportunity to view exemplary technology-using teachers in their classroom, but should also be able to practice lessons using technology while in college. With the speed at which technology is advancing it is important to keep future teachers up to date about new technologies and how they can be used. This means that teacher educators must stay up-to-date about current educational technologies as well so that they can effectively teach future agriculture teachers how to use the technology in their classrooms. A study about the teacher educators and technology use would also complement this study and provide more information for the better integration of technology into Indiana's agriculture classrooms.

Creating opportunities for agriculture teachers to view those teachers who are using innovative technologies would provide yet another means for teachers to see how technology can work in the agriculture classroom. The Theory of Diffusion of Innovations says that people will be more likely to adopt an innovation if they see it working. Because the findings indicated some of Indiana's secondary agricultural educators are innovators or early adopters, it might be beneficial to have them put together a short online video or present a workshop on how they use and integrate new technologies into their rooms.

A study that specifically focuses on the Theory of Diffusion of Innovations and the adopter categories (Rogers, 2003) of Indiana's agriculture teachers could provide more baseline information regarding feelings and attitudes toward technology in the state. As technology continues to advance and the makeup of Indiana's agriculture teachers change due to retirement and other factors, the topic of technology use and integration will always change and always have a place for research.

## **Implications**

The findings from this study can be used in many ways to improve agricultural education in Indiana. This study uncovered what technologies are being used in Indiana's agriculture classrooms and what factors are preventing technology from being used. Now that these factors are known, professional development opportunities can be more focused with regards to technology. Indiana's agriculture teachers can use the data from this study to apply for technology grants to acquire some of the technologies they want to use or currently do not have.

Information from this study can impact how Indiana's agriculture curriculum will be developed in the future. Knowing what technologies are available in Indiana's agriculture classrooms can help curriculum specialists develop lesson plans that integrate a wide variety of technology, and at a minimum includes the most common technologies seen in Indiana's agriculture classrooms.

This study also has many implications for Indiana's agriculture teacher education program. They should use this data to see what current technology is being used by agriculture teachers and also consider what technology could be used in the future. Teacher education programs currently face funding issues similar to secondary education and yet are expected to be on the cutting edge of technology use and demonstrate through their classroom instruction current technology available to teachers. If funding continues to be an issue, teacher education programs will have to be innovative in their lessons to demonstrate the use of these new technologies available.

The findings from this study indicated that educational technology is being used in Indiana's secondary agricultural education classrooms. Teachers stated that they use technology because it benefits their students and is a positive finding which shows that the Indiana's agricultural educators do understand the power of educational technology. While not all teachers have adopted newer innovations, it is clear that technology is, and will continue to be, present in the classrooms and will continue to evolve as will the learners who enter the classrooms.

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# **Educational Technology Use and Acquisition in Secondary Agricultural Education Classrooms**

## **A Critique**

**Greg Miller, Iowa State University**

The introduction to the study is well written and does a fair job of setting the stage for the study that was conducted. However, the review of related literature is limited in scope and tends to draw extensively on studies from Agricultural Education. It is unusual these days to see a paper with only nine references. Two of the references had to do with research methods. Rogers' Theory of Diffusion of Innovations was used as the theoretical framework. Based on the findings related to objective four, it seems that little thought went into formulating a method to determine an adopter category for Indiana agriculture teachers.

The purpose and objectives of the study are well stated. Subject selection and data collection methods were clearly and adequately described. I do wish that steps had been taken to address non response error. To the authors' credit we are cautioned against generalization. I believe that this caution should be more restricted. Because of the nonresponse issue we cannot generalize to the "population represented by the sample". The questionnaire was based on previous studies and the researcher's opinion regarding commonly used technologies. I believe that the list of technologies included in the questionnaire was rather limited in scope and in degree of innovativeness. This could have been remedied by a broader review of literature and a panel of experts in the field of educational technology.

Findings were neatly organized by objective. Means, standard deviations and use level were reported for the most commonly and least commonly used educational technologies. I would recommend reporting this information for all of the educational technologies that were identified in Table 2. I found some commentary or discussion of findings in this section. I would save this for the conclusions and recommendations section. The most interesting findings are from the qualitative analysis of questions related to funding, obstacles, and concerns. The findings were not unexpected, but using the words of agriculture teachers provides context and greater depth of meaning.

The conclusions and recommendations are generally consistent with the findings of the study. In the section on implications, a statement suggests that this study provided information on technologies that were available. I do not think this is true. What we have is information on the extent to which teachers use a researcher developed list of technologies. Teachers may have technologies and not use them. Teachers may also have technologies not on the list. I was intrigued by the recommendation for 15 minute online professional development presentations. I do not know if this professional development format would be effective with agriculture teachers, but it is worth testing.

## **Voices from the Field: A Delphi Study of Perceived Professional Development Needs of Novice and Experienced Agricultural Science Teachers**

James C. Anderson II, University of Illinois  
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### **Abstract**

*The purpose of this study was to identify the professional development topics of most interest and perceived importance to novice and experienced agricultural science teachers in order to respond to these needs with future academic offerings. Panel members consisted of 24 current agricultural science teachers in Illinois, one state agricultural teacher support liaison, and one university instructional services support liaison. The panel identified 27 topics that were of the highest priority for professional development experiences for novice and experienced teachers. In addition, the panel identified online courses and half and full day in-person experiences as preferred modes of instruction.*

### **Introduction and Conceptual Framework**

Enrollment in agricultural teacher education programs has declined since the 1980's leading to a decrease in qualified secondary agricultural educators (Kantrovich, 2007). With a lower number of teacher candidates from which to choose, the increase in retirements, teacher attrition, and those pre-service teachers choosing not to teach, the number of unfilled positions increased from 23 in 1990 to 78 in 2006 (Kantrovich, 2007). Previous studies have found that factors such as extrinsic rewards, personal goals, advancement opportunities, and salaries influence individuals' decisions to teach (Guarino, Santibanez, & Daley, 2006; Vincent, Ball, & Anderson, 2009).

Over the last decade, a body of literature has emerged on professional development, teacher learning, and teacher change for in-service teachers (Desimone, Porter, Garet, Yoon, & Birman, 2002). The professional consensus emerging about characteristics of "high quality" professional development is that it should include a focus on content and how students learn content; substantive active learning opportunities; links to high standards, opportunities for teachers to engage in leadership roles; and collective participation of groups of teachers from the same school, grade, department, or discipline (Desimone et al., 2002). Previous studies suggest that professional development experiences that share all or most of these characteristics can have a positive influence on teachers' classroom practice and student achievement (Birman, Desimone, Garet, & Porter, 2000; Garet, Porter, Desimone, Birman, & Yoon, 2001).

To meet the demands of the ever-changing educational and technological environment within the field of agricultural education, professional development programs are necessary to provide teachers with technical knowledge and skills (Washburn, King, Garton, & Harbstreit, 2001). To ensure these professional development programs are of greatest use to teachers, Sofranko and Khan (1988) found that the individuals that are likely to be involved in or affected by the educational program should be an integral part of the program's development. In light of the ever evolving field of agriculture, researchers have established a compelling argument that needs assessments should be conducted at regular intervals (Dormody & Torres, 2002; Duncan, Ricketts, Peake, & Uessler, 2005; Joerger, 2002; Layfield & Dobbins, 2002; Peiter, Terry &

Cartmell, 2003). However, while findings from needs assessments conducted by other states can definitely assist teacher educators in developing their own potential lists of professional development programs, some argue that sufficient differences exist between states to necessitate needs assessments in each individual state (Washburn et al., 2001).

In addition, the professional development needs of novice teachers are different from experienced teachers. Agricultural science teachers' needs vary depending on years of experience, stage of teacher development, level of education, leadership experience, and levels of pedagogical and technical knowledge (Dobbins & Camp, 2000; Joerger, 2002; Layfield & Dobbins, 2002; Steffy, Wolfe, Pasch, & Enz, 2000). However, much of the research about the educational needs of agricultural science teachers focused on the needs of novice teachers. There are five major themes or phases teachers experience throughout their career development which include discovery and survival (one to three years), stabilization (four to six years), experimentation /diversification or stocktaking/interrogations (seven to 18 years), serenity (19-30 years), and disengagement (31 plus years) (Huberman, 1989).

Recognizing these differences and the lack of data being collected on experienced teachers' professional development needs, Layfield and Dobbins (2002) identified the need for in-service needs assessment research that includes or focuses on experienced teachers. A number of professional development topics have been identified including working with special populations, evaluating students, controlling student behavior, motivating students to learn, implementing new curricula, using new technologies and applications, preparing award applications, supporting record keeping, public relations, adult education, creating and supporting Supervised Agricultural Experience opportunities, teaching leadership, teaching in laboratory settings, designing and modifying curriculum and course offerings to attract high-quality students, and planning fieldtrips (Elbert & Baggett, 2003; Roberts & Dyer, 2004).

The conceptual framework that is the underpinning of this study is an andragogical model. Andragogy as a system of ideas, concepts, and approaches to adult learning is founded, according to Knowles (1968, 1980) on five basic assumptions about a learner's ability, need, and desire to take responsibility for learning:

1. Their **self-concept** moves from dependency to independency or self-directedness;
2. They accumulate a reservoir of **experiences** that can be used as a basis on which to build learning;
3. Their **readiness to learn** becomes increasingly associated with the developmental tasks of social roles;
4. Their **orientation to learning** changes from postponed to immediacy of application and from subject-centeredness to performance-centeredness; and
5. Their **motivation to learn** becomes internal with maturity.

Although Knowles acknowledges that the concepts of self-directed learning can be applied to youth education, andragogy as an approach will attempt to move the learner to independent learning as quickly as possible (Hiemstra & Sisco, 1990).

With this in mind, K. Patricia Cross (1981) presented the Characteristics of Adults as Learners (CAL) model to integrate other theoretical frameworks for adult learning such as

experiential learning and lifespan psychology with andragogy in the hopes of synthesizing the information and stimulating research on the topic. CAL introduced two classes of variables: *personal characteristics* and *situational characteristics*. Personal characteristics, includes three dimensions: *aging*, *life phases*, and *developmental stages*. Aging results in the deterioration of certain sensory-motor abilities such as eyesight, hearing, and mobility, and an improvement in intelligence abilities such as decision-making skills, reasoning, and vocabulary. Life phases and developmental stages involve a series of plateaus and transitions that may or may not be directly related to age. Such occurrences can include an addition to the family (e.g. marriage, birth, adoption) or employment changes (e.g. new job, layoff, retirement). Situational characteristics, consists of two dichotomous contexts in which the individual learns includes *part-time* versus *full-time* learning, and *voluntary* versus *compulsory* learning. Simply stated, learning is strongly affected by the priority of time and the source of motivation for each individual learner. Therefore, professional development that seeks to improve adult learning should capitalize on the participants' experiences, provide information that is task-oriented and relevant to current work and life responsibilities, and provide choices in terms of availability and organization of the experience, while taking into account the characteristics of adults as learners.

### **Purpose and Objective**

In an effort to develop "high quality" professional development experiences that have a positive influence on teachers' classroom practice and student achievement, it is imperative to take into account the needs and preferences of teachers in the field to ensure teachers will participate. The purpose of this study was to identify the professional development topics and instructional delivery format of most interest and perceived importance to novice and experienced agricultural science teachers in order to be able to respond to these needs with future academic offerings. The following objectives guiding this study:

1. Determine the professional development workshops that should be offered to novice teachers;
2. Determine the professional development workshop topics that should be offered to experienced teachers;
3. Determine the topics that should be offered in graduate-level courses; and
4. Determine the most desirable formats of professional development delivery.

### **Procedures**

This statewide study used the Delphi technique to identify professional development topics of most interest and perceived importance to novice and experienced agricultural science teachers. The Delphi technique is well suited as a means and method for consensus-building by using a series of questionnaires to collect data from a panel of purposively selected subjects (Dalkey & Helmer, 1963; Hsu & Sandford, 2007; Young & Jamieson, 2001). The population for this study consisted of high school agricultural science teachers and two support services liaisons in Illinois. In selecting the sample of experts, the researchers solicited the recommendations of the University of Illinois agricultural education faculty. They were asked to nominate individuals that were active in the Illinois Association of Vocational Agriculture Teachers (IAVAT), currently teaching in Illinois or directly working with agriculture teachers as instructional support, and have a previous affiliation with the University of Illinois. Affiliation was defined as alumni, served as a cooperating teacher, served on an advisory committee, and/or

participated in more than three activities sponsored by the university. The purpose of the affiliation requirement was to insure that the panel had some working knowledge of the institution. Fifty expert agricultural educators were identified as meeting the selection criteria.

Regarding any set standards for selecting Delphi subjects, the literature is ambiguous (Hsu & Sandford, 2007). However the literature does state that individuals are considered eligible to participate if they have somewhat related backgrounds and experiences concerning the target issue, are capable of contributing helpful inputs, and are willing to revise their initial or previous judgments for the purpose of reaching consensus (Pill, 1971). The aforementioned selection criteria was established to insure the panel had previous knowledge and experience with professional development activities in the state as well as a working knowledge of services offered by the university.

In order to ensure the highest level of attendance, the informational meeting about the study was held at the IAVAT annual meeting where the 50 nominees were invited to attend. After the explanation of the study, the 43 attendees were provided a paper questionnaire and asked to fill out the questions and indicate if they wanted to participate in the multiple round online study. There were 36 questionnaires returned with 24 indicating they wished to continue participation in the study. The seven who were not in attendance were provided the questionnaire at another time during the annual meeting. From the effort to collect from individuals not attending, only two additional questionnaires were returned. When analyzing the 14 individuals' answers against the 24 who agreed to participate, there were no unique responses from those that opted out compared to those that agreed to participate. Dalkey (1969) found that the reliability was greater than .80 when the group size was larger than 13; therefore, beyond three email reminders to complete the questionnaire before the deadline of each round, no further efforts were made to collect data for comparison from non-respondents.

The study used one paper questionnaire and two web-administered questionnaires. The first round of the study used a questionnaire with the open-ended statements. The statements were formulated based on the conceptual framework, specifically identifying topics that were relevant based on teacher's professional experience and motivation and readiness to learn. The statements were: "List 3-5 professional development workshop topics that should be offered to novice teachers (less than 5 years)," "List 3-5 professional development workshop topics that should be offered to experienced teachers (more than 5 years)," and "List 3-5 credit granting graduate-level courses that should be offered to teachers." Responses from the participants were categorized to produce items for a second round questionnaire.

In the second questionnaire, respondents were asked to rate the importance of the topics identified in round one for each of the three statements using a five point Likert-type scale (1 = Not Important, 3 = Important, 5 = Highly Important). In addition, respondents were asked to rank the top five most critical topics out of the fifteen most frequently mentioned in the first round.

In the third and final questionnaire, respondents were asked to state their agreement or disagreement with the group's rating for each of the highest priority (Agree or Disagree) and lowest priority (Agree or Move to High Priority) topics for each of the three areas as modified

from round two. In addition, respondents were provided with the ranking of the 15 top topics from round two, plus the 12 topics added during that round and asked to state their agreement with the group's ranking or provide a new top 15 ranking choosing from all 27 topics. Finally, respondents were asked to rate their preference for in-person or online instructional delivery and the time duration for each format. The choices were hours (half day and full day), days (weekend, week long, and 2-5 sessions over a period of time), and weeks (8 weeks and semester). These last two items were added to provide an opportunity for the panel to provide insight on views of self-concept (independence) and orientation to learning (immediacy and application) as it related to relevant topics.

All questionnaires were reviewed and validated using an expert panel of content and instrumentation specialists. Agreement was reached when 70 percent of the Delphi subjects' votes were three or higher and the median was 3.5 or higher (Hsu & Sanford, 2007; Ulschak, 1983). Data were analyzed using descriptive statistics. Data collected using Likert-type scales were reported using median and inter-quartile range (Hasson, Keeney, & McKenna, 2000). Nominal data were reported using frequencies and percentages.

## **Results**

This study was to identify the professional development topics of most interest and perceived importance to novice and experienced agricultural science teachers in order to be able to respond to these needs with future academic offerings. There were 38 agricultural science teachers that participated in round one of the study. Only 24 agreed to participate in future rounds and therefore only their responses were included in this study in order to keep the panel consistent. There was exactly a 50% split between male and female, with representation from all five geographical districts within the state as identified by IAVAT. Teaching experience ranged from the novice first year teacher to the experienced teacher with 35 years. The average for years of experience was 12, with 18 of the respondents having 10+ years. For round two, 18 teachers participated with 61% being males. The average for years of experience was 11.5 years. For round three, 23 teachers participated with 61% being males. The average years of experience were 15 years. It should be noted that the final round was conducted at the beginning of a new academic year increasing the average by 1 year. It should also be noted that every individual participated in a minimum of two of the three rounds.

### **Round One**

Round One yielded 275 independent responses to the three questions posed. Those responses yielded three themes within each question. The themes were agriculture content, agricultural teaching methodology, and professional development. Table one summarizes the top 10 topics based on frequency mentioned.

Some recurring topics that did not make the top list for teachers under five years (novice) was classroom management, business and industry tours to experience agriculture first-hand, developing a comprehensive agriculture program, youth leadership management, fiscal responsibility, and student advocacy. Similarly, topics that were recurring for teachers greater than five years (experienced) were secondary endorsements, curriculum updating, strategies for student engagement, fiscal responsibility, and program advocacy.

Table 1

*Round One: Summary of Top Mentioned Topics (n = 24)*

Rank	Topic	Frequency	Theme
10	Agricultural Innovations (energy, biotechnology, farming)	10	AC
4	Ag Mechanics	17	AC
6	Award Applications (Degree, POA, State Programs)	14	PD
9	BSAA & PSAA Methods	12	TM
1	Career Development Events Preparation	21	TM
8	Educational Technologies	13	TM
5	Laboratory Management (Greenhouse, Shop, Land)	15	TM
2	Organization (time, paperwork, work environment)	20	PD
3	Record Books/SAE Development	18	TM
6	Professional Support/Resources	14	PD

*Note.* AC = Agriculture Content, TM = Teaching Methodology, PD = Professional Development

### **Round Two**

In round two, of 26 topics identified for professional development workshops for novice teachers, the group began to converge on 17 topics. Of those 17 topics, eight were identified as one of the top 10 frequently mentioned topics in Round 1 as denoted by the number in the rank column (see Table 2). From this list, notable topics were record books/SAE development, classroom management, developing a comprehensive agriculture program, laboratory management, fiscal responsibility, and youth leadership management.

Table 2

*Round Two: Topic Agreement for Professional Development Workshops for Novice Teachers (n = 18)*

Rank	Topic	Median	IQR	Theme
4	Agricultural Mechanics	3.5	2.3	AC
-	Ag Business Management	4.0	1.3	AC
6	Award Applications (Degree, POA, State Programs)	4.0	2.0	PD
9	BSAA & PSAA Teaching Methods	4.0	1.3	TM
1	Career Development Events Preparation	3.5	1.0	TM
-	Classroom Management	4.5	1.0	PD
-	Comprehensive Ag Program Development	4.5	2.0	PD
8	Educational Technologies	3.5	1.0	TM
-	Fiscal Responsibilities (Accounting, Fundraising, Grants)	4.0	1.0	PD
5	Laboratory Management (Greenhouse, Shop, Land)	4.0	1.0	TM
-	Professional Responsibilities	3.5	1.0	PD
2	Organization (time, paperwork, work environment)	4.0	2.0	PD
3	Record Books/SAE Development	5.0	1.0	TM
-	School Law (classroom and school safety)	3.5	1.0	PD
-	Special Education (DI, RtI, Coteaching)	4.0	1.3	TM
-	Strategies for Student Engagement	4.0	2.3	TM
-	Youth Leadership Management (Officers, Aides)	4.0	1.0	PD

*Note.* IQR= Interquartile Range, AC = Agriculture Content, TM = Teaching Methodology, PD = Professional Development

There were 28 topics identified for professional development workshops for experienced teachers. Similarly to the results for the novice teacher, the group began to converge on 18 topics. Of those 18 topics, the same eight were identified as one of the top 10 frequently mentioned topics in Round 1 (see Table 3). Unlike the results for the novice teacher, none of the topics had a strong degree of consensus. The topics with the strongest consensus were Biological Science in Agricultural Applications (BSAA) and Physical Science in Agricultural Application (PSAA) teaching methods, laboratory management, and organization.

There were 35 topics identified for graduate-level courses. The group began to converge on 14 topics. Topics with the highest degree of consensus were Agricultural Business, Animal Sciences, Horticulture and Landscape Design, Laboratory management, and Teaching Endorsements.

Finally, participants were asked to rank their top five choices of topics to be taught of the 15 most frequently mentioned in round one. The top five topics in order based on frequency selected and individual rankings were Laboratory Management ( $n = 11$ ), Record Books and SAE Development ( $n = 10$ ), Comprehensive Program Development ( $n = 8$ ), Educational Technology

( $n = 8$ ), and Fiscal Responsibility ( $n = 8$ ). The middle five topics were Organization ( $n = 6$ ), Agricultural Innovations ( $n = 6$ ), Career Development Events Preparation ( $n = 6$ ), Award Applications ( $n = 5$ ), and Youth Leadership Management ( $n = 5$ ). The bottom five topics were Agricultural Mechanics ( $n = 5$ ), Special Education ( $n = 5$ ), Veterinary Technology ( $n = 4$ ), Classroom Management ( $n = 2$ ), and BSAA & PSAA Methods ( $n = 1$ ).

Table 3

*Round Two: Topic Agreement for Professional Development Workshops for Experienced Teachers ( $n = 18$ )*

Rank	Topic	Median	IQR	Theme
-	Ag Leadership Development & Communications Content	4.0	1.3	AC
4	Agricultural Mechanics	3.5	1.3	AC
6	Award Applications (Degree, POA, State Programs)	3.5	2.3	PD
9	BSAA & PSAA Teaching Methods	4.0	1.0	TM
1	Career Development Events Preparation	3.5	1.0	TM
-	Comprehensive Ag Program Development	3.5	2.3	PD
-	Course Curriculum Updating	4.0	2.0	PD
8	Educational Technologies	4.0	2.0	TM
-	Fiscal Responsibilities (Accounting, Fundraising, Grants)	3.5	1.5	PD
-	Horticulture and Landscape Design (IPM, Plant ID)	3.5	1.0	AC
-	Innovative Lesson Plan Development	4.0	2.0	TM
5	Laboratory Management (Greenhouse, Shop, Land)	4.0	1.0	TM
2	Organization (time, paperwork, work environment)	4.0	1.0	PD
3	Record Books/SAE Development	4.0	2.3	TM
-	Special Education (DI, RtI, Coteaching)	3.5	1.3	TM
-	Strategies for Student Engagement	4.0	2.0	TM
-	Student Recruitment	3.5	1.0	PD
-	Veterinary Technology	3.5	1.0	AC

*Note.* IQR= Interquartile Range, AC = Agriculture Content, TM = Teaching Methodology, PD = Professional Development

Table 4

*Round Two: Topic Agreement for Graduate-level Courses (n = 18)*

Rank	Topic	Median	IQR	Theme
4	Agricultural Business	4.0	1.3	AC
10	Agricultural Innovations (energy, biotechnology, farming)	3.5	2.0	AC
-	Animal Sciences	4.0	1.0	AC
9	BSAA & PSAA Teaching Methods	3.5	1.3	TM
-	Horticulture and Landscape Design (IPM, Plant ID)	4.0	1.0	AC
-	Innovative Lesson Plan Development	4.0	2.0	TM
-	Innovative Teaching Methods	4.0	2.0	TM
5	Laboratory Management (Greenhouse, Shop, Land)	4.0	1.3	TM
-	Literacy in Ag Content (Reading and Writing)	3.5	2.0	TM
2	Organization (time, paperwork, work environment)	3.5	1.3	PD
3	Record Books/SAE Development	4.0	2.0	TM
-	Teaching Endorsements (Science, Math, Social Studies)	4.0	1.3	PD
-	Strategies for Student Engagement	4.0	2.0	TM
-	Youth Leadership Management (Officers, Aides)	4.0	1.3	PD

*Note.* IQR= Interquartile Range, AC = Agriculture Content, TM = Teaching Methodology, PD = Professional Development

### **Round Three**

In round three, of 27 topics identified for professional development workshops or graduate level courses for novice and experienced teachers, the group agreed that all the topics were of the highest priority (see Tables 5 & 6). A notable finding was that the topic of educational technologies was just at the cutoff for agreement for novice teachers with 69.9% agreement. Similarly, Professional Support for novice teachers; Agricultural Innovations, Agronomy Content and Cognitive Instruction for Experienced teachers; and Current Issues in Education and School Safety Law for graduate-level courses all had 69.9% agreement as topics that were of the lowest priority. In addition, Literacy in Ag Content had 68% agreement as a topic that was of the lowest priority for experienced teachers. Finally, Veterinary Technology Content had 65% agreement and Cognitive Instruction had 60.9% agreement as topics that were of the lowest priority for graduate-level courses.

Table 5

*Round Three: Level of Agreement for Professional Development Workshops (n = 23)*

Topics	% Agreement	% Agreement
	Novice	Experienced
Ag Leadership Development & Communications Content	-	91.3
Agricultural Mechanics	87.0	81.8
Ag Business Management	82.6	-
Award Applications (Degree, POA, State Programs)	91.3	87.0
BSAA & PSAA Teaching Methods	91.3	91.3
Career Development Events Preparation	87.0	87.0
Classroom Management	87.0	-
Comprehensive Ag Program Development	100.0	82.6
Course Curriculum Updating	-	87.0
Educational Technologies	69.6	90.9
Fiscal Responsibilities (Accounting, Fundraising, Grants)	87.0	73.9
Horticulture and Landscape Design (IPM, Plant ID)	-	82.6
Innovative Lesson Plan Development	-	87.0
Laboratory Management (Greenhouse, Shop, Land)	95.7	95.5
Professional Responsibilities	95.7	-
Organization (time, paperwork, work environment)	87.0	73.9
Record Books/SAE Development	95.7	95.7
School Law (classroom and school safety)	77.3	-
Special Education (DI, RtI, Coteaching)	87.0	78.3
Strategies for Student Engagement	91.3	91.3
Student Recruitment	-	86.4
Veterinary Technology	-	77.3
Youth Leadership Management (Officers, Aides)	81.8	-

*Note.* Level of agreement set *a priori* at 70% to retain the topic.

Participants did agree on the top 15 topics to address with limited resources. Ten participants agreed 100% with the rankings; ten participants had slight changes to the rankings to include the other 12 topics that were agreed upon in round two or reorder the 15 original topics; and three participants did not complete the question correctly and their rankings were removed. Notable changes were that record books and SAE development moved to first while laboratory management moved to second in the top tier. In addition, Agricultural Innovations moved into the top tier while Fiscal Responsibility moved into the middle tier behind organization. Finally, participants reported that they preferred online courses with a median of 4.0 and an IQR of 2.0 versus in-person with a median of 3.0 and an IQR of 3.0. In addition, they reported a preference for half day (median = 4.0, IQR = 2.0) and full day (median = 4.0, IQR = 2.0) in-person professional development experiences over longer ones. There was no consensus on the length of time for online courses.

Table 6

*Round Three: Level of Agreement for Graduate-level Courses (n = 23)*

Topics	% Agreement
Agricultural Business	87.0
Agricultural Innovations (energy, biotechnology, farming)	95.7
Animal Sciences	82.6
BSAA & PSAA Teaching Methods	100.0
Horticulture and Landscape Design (IPM, Plant ID)	78.3
Innovative Lesson Plan Development	95.7
Innovative Teaching Methods	100.0
Laboratory Management (Greenhouse, Shop, Land)	95.5
Literacy in Ag Content (Reading and Writing)	73.9
Organization (time, paperwork, work environment)	82.6
Record Books/SAE Development	78.3
Teaching Endorsements (Science, Math, Social Studies)	91.3
Strategies for Student Engagement	91.3
Youth Leadership Management (Officers, Aides)	73.9

*Note.* Level of agreement set *a priori* at 70% to retain the topic.

### Conclusions

The panel provided 275 responses in round one of this study, which culminated into 27 topics of interest in round two, and agreement in round three. However, there were a few topics that were in question as to whether they should have been included with the agreed upon topics. The topics that were on the low priority list that did not reach agreement were Literacy in Ag Content, Veterinary Technology Content, and Cognitive Instruction. These questionable topics were in response to the questions concerning professional development for experienced teachers as well as graduate-level courses. When the panelists were asked to comment on why they deviated from the group on these topics, responses were: “Ag is always changing and those with 20 or more years may not have had the classes needed to cover these areas. Professional development workshops are the best way to reach these teachers,” and “Brain-based learning and issues related to instructing a variety of different learners are valid opportunities for graduate credit because they are quickly becoming more and more the main stream norm.” These statements support Knowles’ (1980) fifth assumption that an individual’s motivation to learn changes over time and therefore should involve the individual in the decision-making process. Because personal and situational characteristics inform their developmental needs, topics that may be relevant for one group may not be as relevant for another.

Nine of the top ten topics identified in Round One, excluding Professional Support/Resources, were found in the final 15 most essential topics to address. Four of the top

five topics identified were coded in the theme of teaching methodology. Similarly, the panel identified the top topics for novice teachers as those coded in the themes of professional development and teaching methodology. This finding supports Knowles' (1980) second and third assumptions that an individual's readiness to learn is based on their experiences and current social roles. In addition, the finding supports previous studies that technical agricultural knowledge and skill competencies rank lower in priority when compared to competencies in the areas of instruction, program planning, development and evaluations, and program administration (Layfield & Dobbins, 2002).

In terms of the perceived needs of experienced teachers, the frequency of agriculture content themes did increase, although professional development and teaching methodology topics were more frequent. Conversely, the panel agreed that topics for graduate-level courses should focus less on professional development themes and more on teaching methodology and agriculture content. These findings highlight the most notable difference between the perceived needs of novice versus experienced teachers in that the novice teacher needs instruction on how to navigate the profession and develop a comprehensive ag program (Elbert & Baggett, 2003; Roberts & Dyer, 2004), whereas the experienced teacher is looking for development in specific content areas due to changes in the industry and advance teaching methodology (Cohen & Hill, 2001; Stigler & Hiebert, 1999). This supports both Knowles' (1980) fourth assumption and Huberman's Teacher Career Cycle Model (1989) which suggests that as teachers mature in their career, they move from content-centered to performance-centered instruction and look for ways to experiment with teaching and evaluation strategies. Finally, the panel reported preferring online courses versus in-person. This supports Knowles' (1980) first assumption about self-directness. However, because there wasn't agreement on the length of time for online courses, more research is needed to confirm appropriate lengths for online delivery.

Based on the findings of this study, the University of Illinois should begin offering a few of the top topics as professional development experiences and evaluate agricultural science teachers' rate of attendance and satisfaction with these offerings. Furthermore, while this study did ask respondents to rank top needs given limited resources, it did not ask for their sense of urgency or availability of financial resources to seek this additional training, which are key factors in motivation to participate. Therefore, further research may be warranted on Knowles' (1980) last two assumptions to clearly identify the level of immediacy and factors that motivate agricultural science teachers to participate in professional development opportunities. In addition, this study should be replicated in other states to determine the similarities and differences in topics based on location, top agricultural commodities in the state, and the state's educational climate/curriculum.

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# **Voices from the Field: A Delphi Study of Perceived Professional Development Needs of Novice and Experienced Agricultural Science Teachers**

## **A Critique**

**Greg Miller, Iowa State University**

The authors do a nice job of introducing the study and establishing a conceptual framework based on andragogy. I appreciate the extensive review of related literature including relevant references from the discipline of Agricultural Education. The stage was set for a study that could have practical implications as well as implications to theory.

I really like the use of a Delphi study to identify the professional development needs of teachers. This technique allows the topics to come directly from and be shaped by people who might later directly benefit from the results. The procedures were clearly outlined and appropriate. I do have one concern in this area. Were there any novice teachers on the Delphi panel? The definition of a novice was a teacher with less than 5 years of experience. Data indicated that 18 out of 24 panelists had 10 or more years of experience. I suppose that experienced teachers can reasonably comment on the needs of novice teachers. After all they were once novices. However, the rationale for this study was that the needs and interests of teachers must be taken into account if they are expected to participate. Therefore novice teachers would be the best persons to comment on their own needs and interests.

The research findings were nicely organized by round. However, I would recommend some adjustments in the way the findings were presented:

1. Organize all of the data around workshop topics for novice teachers, workshop topics for experienced teachers, and graduate courses that should be offered.
2. What was the organizational strategy for Table 1? Is a column needed for rank and frequency? Isn't rank based on frequency? The order of topics is not alphabetical, not based on frequency, and not based on theme. I would recommend ordering the content of all tables based on frequency.
3. Convergence and consensus are mentioned in the round two findings. The procedures only mention criteria for agreement in round three. Do the round three criteria apply to round two? If so, should percent of votes that were three or higher also be reported?
4. Did all topics in Tables 5 and 6 have median scores of 3.5 or higher?

The conclusions section was well done and the findings were linked back to the related literature. This study can serve as a model for other states interested in determining the professional development needs of teachers.

## **Perceptions of Administrators in Kentucky Secondary Schools Regarding the Integration of Mathematics into Agricultural Education**

Matthew Silvey, Austin Peay University  
Ryan Anderson, Iowa State University

### **Abstract**

*The purpose of the study was to gain a greater understanding of the perceptions of secondary school administrators on the integration of core academic subjects, specifically mathematics, into the agricultural education curriculum. The researchers investigated the perceived relationships between agriculture and mathematics, administrators' perceptions on teaching integrated mathematics, and meeting state standards. The researchers utilized a modified version of Thompson's Integrating Science Instruments. The population for this study included all administrators (N = 875) of Kentucky secondary schools with agricultural education programs. An important finding of the study indicated that most administrators felt agriculture uses applied mathematics.*

### **Introduction**

The need for improving mathematics scores has been a well documented national concern. Agricultural education has also been identified as a contextual area rich in mathematics content. A study conducted by Miller and Vogelzang (1983) discussed the importance of including mathematical concepts as part of the agricultural education curriculum. "Agriculture is an industry that requires its employees to use and apply knowledge and skills from many disciplines..." the researchers noted. "Therefore, agricultural education may need to be concerned not only with the body of knowledge that is unique to agricultural education, but also other non-agricultural knowledge and skills which are applicable to agricultural education." Miller and Vogelzang's study concluded that mathematical concepts had a "greater-than-average" importance, in regards to the Iowa agricultural education curriculum during the early 1980's. Participants from Miller and Vogelzang's study believed mathematics integration into agricultural education curricula was a logical progression to improve student aptitude, while the students felt these mathematics concepts were best suited for a general education mathematics course

A study conducted through the Kentucky Department of Education (2010) examined 11<sup>th</sup> grade students' scores on the ACT. The research indicated "the ACT is a curriculum-based measure of college readiness." This examination tested students' academic achievement in English, Mathematics, Science, Reading and as an option, Writing. The ACT was the only college readiness examination that could be directly tied to academic standards. Administrators could use this data to accurately assess secondary schools for effectiveness of curriculum in each subject administered on the ACT.

The study averaged the scores from Kentucky 11<sup>th</sup> grade students during the years 2008 and 2009 to understand the statistics regarding the students meeting Kentucky benchmark scores. The benchmark scores for Kentucky were described as "the minimum score needed on an ACT subject-area test to indicate a 50% chance of obtaining a B or higher or about a 75% chance of obtaining a C or higher in the corresponding credit-bearing college courses" (Kentucky

Department of Education, 2009). This study indicated that 42,929 students' scores from ACT test revealed only 20% of the students met the benchmark score for Mathematics in 2008. In 2009, 43,511 students' scores were reported from the ACT, denoting 21% of 11<sup>th</sup> grade students met the benchmark scores for Mathematics. These findings indicate a deficiency in Mathematics education in Kentucky secondary schools.

Parr, Edwards, and Leising (2006) determined that mathematics-enhanced curriculum stated, "Recent secondary mathematics education literature suggests that a trend toward reform in mathematics education has materialized in the form of contextualized learning."

"The majority of students in our schools are unable to make connections between what they are learning and how that knowledge will be used. This is because the way they process information and their motivation for learning are not touched by the traditional methods of classroom teaching. The students have a difficult time understanding academic concepts (such as math concepts) as they are commonly taught (that is, using an abstract, lecture method), but they desperately need to understand the concepts as they relate to the workplace and to the larger society in which they will live and work." (The Center for Occupational Research and Development, 2010)

Contextualized learning has emerged as a concept that has incorporated a majority of cognitive educational subjects. Contextualized learning became a reaction to the behaviorist theories that had dominated American education for many decades. The contextual approach recognized that learning had become a complex and multifaceted process that went far beyond previous methodologies. Researchers from the Center for Occupational Research and Development (CORD) stated, "according to contextual learning theory, learning occurs only when students (learners) process new information or knowledge in such a way that it makes sense to them in their own frames of reference (their own inner worlds of memory, experience, and response)" (CORD 2010). Furthermore, by using this approach to learning and teaching, one could assume the students' mind naturally sought for meaning in context through relationships. By teaching mathematics in this manner, some teachers could expect to see improvement in certain students' academic achievement.

Agricultural educators have begun to take on a greater role with the integration of core academic subjects into agricultural education curriculum. Agricultural education curriculum is heavily infused with science, english and mathematics. Plant science includes the use of science and Latin to properly prepare students on plant pathology and identification. Increasing evidence suggests that American students are lacking the mathematical skills needed to apply mathematical knowledge in application based contexts (Mathematical Sciences Educational Board, 1995). Mathematics is a skill used in all aspects of society; therefore, agricultural educators should place a very high priority on their ability to effectively teach mathematical concepts to secondary education students who enroll in their classes. "Research supports the notion that students gain deeper understandings of the curriculum when they actively construct knowledge in contexts what they find meaningful and motivating" (Brown, Collins, & Dauguid, 1989; Greeno & The Middle School Mathematics Through Applications Project Group, 1998; Brendefur, J., 1996).

Studies have been conducted regarding the primary educators' perceptions and attitudes concerning the integration of core curriculum in agricultural education courses (Brister, M., & Swortzel, K., 2009; Anderson, R., Williams, R., Hillson, J, 2009). A principle concern for

educators is that in order for students to successfully complete high school, they must have a positive educational experience. One theory is to achieve success through an integrated curriculum. The use of integration allows the students the opportunity to understand key concepts through the use of application in a variety of settings (Conroy & Walker, 2000). These educators have an increasingly daunting task, which includes balancing lecture and contextual learning, Career Development Events, Supervised Agricultural Experiences, and FFA activities. Young, Edwards, and Leising (2007) concluded a math-enhanced Agricultural power and technology curriculum showed a positive effect on math achievement. "Traditional Mathematics instruction has experienced a great deal of scrutiny. One of the reoccurring themes suggests that in academic programs, students are lectured to about theories and principles, but are never shown how these theories and principles can be applied to real situations" (Bottoms & Sharpe, 1996). Attitudes concerning the application of content, allows for students to create an understanding of how concepts are beneficial (Burris, Bednarz, & Frazee, 2008). Mathematics teachers have articulated a need to greatly reform Mathematics education, listing contextual learning as possible solution (Briner, 1999).

Agricultural educators have become aware that they will be called upon to convey a broader knowledge of educational tools to increase student understanding of basic agricultural concepts. Berman & McLaughlin (1978) indicated that "Fitting new practices and techniques to unique, on-the-job conditions is an uneven process that requires time and extra effort, especially when beginning" (p. 60). Secondary Career and Technical Education students might only have a cursory understanding of core principles in regards to general secondary education. In order for these students to properly grasp the concepts of agricultural education, some remedial teaching has to be completed to bring these students up to speed. Career and technical educators and critics both viewed integration of academics as a curricular reform that has improved the academic content of Career and Technical Education and has helped prepare students for employment in our current workforce (Thompson, 2000). Agricultural educators must be willing and able to adopt these principles to allow their students the opportunity to gain these fundamental concepts in an applied method.

Graduation rates have become a gauge for curriculum effectiveness due to the No Child Left Behind Act of 2001 (NCLB) and public concerns. NCLB requires states to develop and implement a state wide yearly assessment measuring students' progress and understanding of the state curriculum (United States Department of Education, 2009). Schools have shifted the main focus from improving overall academic achievement to increasing testing scores. NCLB legislation has placed a greater importance on preventing students from failing than on challenging students to become higher order thinkers. Kentucky secondary school funding has been directly related to the scores from these tests as compared to other schools in Kentucky, as well as throughout the Nation.

Secondary school systems have recently been focusing on integrating core curriculum into Agriculture and other career clusters in an attempt to increase testing scores on standardized tests, such as Kentucky Testing System. In the past decade, federal legislation authorizing funding for Career and Technical Education began to mandate improved academic achievement. The 1998 Carl D. Perkins Vocational Education and Applied Technology Act continued to commit federal funding to integrating academics into CTE (Myers & Thompson, 2009).

Kentucky testing system has been used to not only compare general education students, but also CTE students across the state. Standardized testing can be used to compare scores from

agricultural education students to general education students at both the school and state levels. These figures are also useful in assessing the effectiveness of programs, viability of the curriculum, and the need for reform. Woglom, Parr, and Morgan (2005) describe this Kentucky testing system as a “very useful form of assessment, in that it is designed for both state and national comparison.” The researchers discussed the creation of the Kentucky standardized test through a broad collaborative process that included teachers, administrators and members of the community. This test is given over a multi-day period, and includes single answer questions used to test students’ specific knowledge in certain core subjects. These subjects include Mathematics, Science, Reading and Writing, Social Studies, Arts, and Humanities. “In addition to a conglomeration of student academic scores, schools also receive scores regarding non-academic issues including student retention rate, dropout rate, and the percentage of graduates that continue their education in college” (Woglom, Parr, and Morgan, 2005). One of the criticisms of administering standardized testing is that lengthy tests discourage students prior to taking the test. It is also the belief that these standardized tests encourage memorization due to the fact that standardized tests narrow curriculum by focusing on recall (Sloan & Kelly 2003). Another criticism is that teachers will teach for the test, missing out on important curricula normally taught in non-testing semesters.

Roegge and Russell (1990) also determined that students who completed courses that integrated biological with agricultural principles demonstrated a higher overall achievement, as well as a higher biology achievement than students who were taught science traditionally. Young, Edwards, and Leising (2007) concluded that a positive effect on mathematics achievement could be realized through a mathematics-enhanced agricultural power and technology curriculum. Agricultural education programs have begun aligning curriculum to state standards to improve both science and mathematics scores. “Region 8 of the Texas Education Agency has implemented a new course called Agricultural Algebraic Extensive Exploration ( $A^2E^2$ ). The  $A^2E^2$  course was designed for ninth grade students who were unsuccessful in mastering the eighth grade Texas Assessment of Knowledge and Skill (TAKS) test and are enrolled in Algebra I” (Burriss, Bernard, and Frazee 2008). This course was designed to assist students who were struggling in understanding mathematics concepts by applying them to the context of real world settings. The research concluded that the  $A^2E^2$  course provided the students with similar improvement in testing scores when compared to current forms of remediation.

Mandates created in the 1980s threaten administrators by holding them responsible for results based on the work of others. This caused the administrators to be cautious and display a low-risk attitude toward reform (Klein, 1991). Great care has to be taken to improve curriculum regarding each specific subject matter and increase passing rates among agriculture students without decreasing the amount and quality of the curriculum. A study conducted by Foster, Bell, and Erskine (1995) stated the development of curriculum must take a middle ground with teachers, principals, and superintendents working in partnership. Administrators and teachers can adjust curriculum mandates to local conditions, and package them so that they are more credible to other teachers and the community.

Agricultural educators’ perceptions and theories concerning curriculum integration of core principles had been identified as important, and had been deemed relevant to understanding how one group views agricultural education (Thompson, 2001 & Anderson et al. 2008). However, administrators represented another vital segment of the educational equation. The

researchers intended to focus on administrators' attitudes regarding mathematics integration into the agricultural education curriculum in order to fully understand how improvements to curriculum and teacher relations can further benefit agriculture education programs and ultimately benefit the students

The purpose of the study was to gain a greater understanding of the perceptions of secondary school administrators on the integration of core academic subjects, specifically mathematics, into the agricultural education curriculum. Kentucky secondary school administrators have played an important role in facilitating change in the agricultural education classrooms by mandating curriculum improvement and/or replacement. According to Dietel, Herman, and Knuth (1991), Kentucky secondary school administrators use assessments to plan and improve programs, while teachers utilize it to observe student progress. Policy makers use assessment as a way to set standards and monitor education quality. It was therefore important to understand the administrators' relationships with these educators and the level of involvement in the classroom they might have experienced.

### **Theoretical Framework**

Fishbein and Ajzen's theory was utilized to guide this study, "A description of attitude is explained as a learned predisposition to respond in a consistently favorable or unfavorable manner with respect to a given object". Fishbein and Ajzen (1975) describe four classifications which categorize predispositions:

- Affect (feelings, evaluations): A favorable or unfavorable evaluation of an object. (attitude)
- Cognition (opinions, beliefs): Information a subject has of an object, thus linking a belief of the object to an attribute.
- Conation (behavioral intentions): A subjects intention to perform various behaviors, based on strength of intention.
- Behavior (observed overt acts): Observable act, reaction, or response.

Any response to a questionnaire or verbal survey is considered a behavioral instance. The responses can be used to aid in creating inferences regarding beliefs, intentions or attitudes. The fourth category, however, is used to measure a particular overt behavior in order to understand the details relating to it (Fishbein & Ajzen, 1975). This theory suggests prior exposure to a subject would have an effect on the perceptions of respondents. Positive experiences would tend to lead researchers to infer positive attitudes, and negative experiences would lead to negative attitudes. Knowledge of a subject, the respondent's own belief system, and personal opinions all serve to guide the respondent behaviors in regards to completing the survey instrument.

Greenwald (1989) supported this theory by concluding that individuals, who showed a positive favor towards a situation or an issue, also tend to evaluate the situation in a positive manner. This concept suggested that if an administrator had a positive attitude in relation to the integration of mathematics in the agricultural education curriculum, administrators would tend to be more supportive of agricultural educators efforts to integrate mathematics into the curriculum.

In theory, changing a person's attitude regarding a subject could change the level of support that would be offered for that subject.

### **The Purpose of the Study**

The purpose of this study was to provide an assessment of the attitudes and perceptions of administrators of Kentucky secondary schools regarding mathematics integration in the agricultural education curriculum. The research objectives of the study were:

1. Identify the demographics of schools offering agricultural education in Kentucky.
2. Determine the administrators' attitudes toward agricultural education as a context to teach mathematics
3. Determine the administrators' attitudes toward agricultural education instructors teaching integrated mathematics
4. Determine attitudes of administrators regarding the agricultural education curriculum as a viable source to assist students to increase the standardized mathematics scores in Kentucky secondary schools.

### **Procedures**

#### **Population**

The population for this non-experimental, quantitative study consisted of Kentucky secondary administrators in the fall of 2010 (N= 875). The researchers collected electronic contact information for all administrators in school districts in Kentucky that offered agricultural education. A total of 130 superintendents, 78 assistant superintendents, 170 principals, 369 guidance counselors and 128 professional development coordinators were identified for a total of 875 participants. A census study was utilized to reduce sampling errors and to describe the entire population.

#### **Instrumentation**

The data collection instrument was developed by Thompson (2000) and was modified by the researchers to collect mathematics integration data electronically. The instrument was divided into two sections. The first section asked respondents to answer 71 statements regarding different aspects of mathematics integration and the agricultural education curriculum. Their responses were measured using a five point Likert-type scale where 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, and 5 = strongly agree. The second section asked the participants to answer a series of 17 demographic questions designed for a greater understanding of background information and school population characteristics.

The reliability and face validity were examined through the field study. The reliability of the instrument was found to be "very good" according to DeVellis (1991) with the Cronbach's alpha coefficient score falling between .80 and .90 from the results of the study yielding an ( $\alpha = .895$ ). Murray State University pre-service teacher candidates and selected faculty members

served as the panel for review of the instrument due to their background in agricultural education. The student and faculty panel was asked to review the instrument for face and content validity.

## Methods

Dillman's (2007) data collection methods were utilized for this study. After five contact attempts, a response rate for individual administrative positions included superintendents having 31.53%, assistant superintendents with 28.21%, principals with 28.82%, professional development coordinators having 28.13%, and guidance counselors indicating a 9.21% response rate. The guidance counselors' response rate was responsible in lowering the overall response rate to 20.80% ( $n = 182$ ). The response rate prior to inclusion of this administrative group indicated a rate of 29.24%. Non-response error was a concern; therefore the researchers utilized Lindner, Murphy & Briers recommendations by comparing early to late respondents to find no significant differences. Data was analyzed using PSAW 18.0.

## Findings

### Research Question #1

Respondent demographic data was analyzed through a series of 17 questions. The age range of the respondents was between 41 and 60 years old (77.46%). A majority of the respondents had less than ten years of experience as an administrator (73.57%). The results revealed a high majority of administrators were relatively new to administration, while only 26.43% of administrators of Kentucky secondary schools had more than 10 years employed as an administrator. They had also indicated 47.13% had been employed in their current school district for more than 16 years. Over 93% of the respondents had at least a Masters plus thirty credit hours as their indicated level of education.

Gender of secondary school administrators was nearly evenly distributed, with male administrators a slight majority (52.02%). Nearly half (45.67%) of Kentucky secondary administrators indicated having grown up on a farm. Less than 30 % (28.90%) grew up in a town/city, while the rest (25.43%) grew up in a rural/non-farm location. Administrators' enrollment in agricultural education during high school was questioned, indicating 86.21 % of Kentucky secondary administrators indicated not taking agricultural education as a high school student. When asked of involvement in 4-H as a youth, 51.46 % indicated having been involved. The largest frequency of administrators currently lived in a rural/non-farm area (41.71%), while a majority of respondents currently lived in a town smaller than 10,000 residents (53.26%).

Kentucky secondary school demographics showed the highest percentage of students enrolled in the schools were between 501 and 1,000 students (38.86%), while most agriculture programs were between 101 and 150 students (32.56%). Two agricultural education teacher departments were the most frequently reported (45%). Over 64% of the administrators reported attending three or more in-service workshops related to academic integration.

### Research Question #2

A series of statements regarding agricultural education and mathematics can be found in Table 1. Administrators almost universally agreed with the statement: *Agricultural Education uses applied Mathematics*, yielding a mean score of 4.68 and a standard deviation of 0.50. Administrators also rated three statements regarding the need for understanding mathematical

concepts highly among the statements in this section of the survey ( $m = 4.48, 4.44, \text{ and } 4.44$ ). Administrators agreed with the statements regarding student learning and motivation with an agricultural education curriculum integrated with mathematical concepts. The statement ranked lowest in this section was concerning the perception that students would be better prepared for mathematics after taking a mathematics integrated course in agriculture (3.99).

Table 1  
*The Role of Mathematics in Agricultural Education (n = 182)*

Statements	M	SD
Agriculture uses applied mathematics.	4.68	0.50
People pursuing a career in agriculture must have a greater understanding of mathematical concepts than they did ten years ago.	4.48	0.66
Agricultural education curriculum requires a greater understanding of mathematical concepts than it did ten years ago.	4.44	0.67
Students are more aware of the connection between mathematical principles and agriculture when mathematical concepts are an integral part of their agricultural education instruction.	4.44	0.54
Mathematical concepts are easier for agriculture students to understand when mathematics has been integrated into the agricultural education curriculum.	4.31	0.62
Students learn more about agriculture when mathematical concepts are an integral part of their instruction.	4.26	0.66
Students are more motivated to learn mathematical concepts when the concepts are integrated into the agricultural education curriculum.	4.24	0.74
Students are better prepared in mathematics after they have completed a course in agricultural education that integrates mathematics.	3.99	0.73

Note. Scale 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree.

### Research Question #3

Table 2 contained statements on the topic of teaching integrated mathematics. Respondents agreed that integrating mathematics into agricultural education curriculum would take more preparation time than currently required of non-integrated curriculum (3.78). Administrators agreed integrating mathematics into the agricultural education curriculum had increased the schools ability to solve problems (3.53). Statements regarding agricultural

education teachers teaching integrated concepts (3.51), and agricultural education teachers being prepared to teach integrated concepts (3.36) were also placed high among the statements ranked in this section. The two statements ranking lowest in this section were regarding their agricultural education teacher integrating more mathematics into advanced agricultural education courses versus introductory courses (3.32), and their agricultural education teacher's ability to teach a general mathematics course (3.21).

Table 2  
*Integrated Mathematics in Agricultural Education (n = 182)*

Statements	M	SD
Integrating mathematical concepts into the agricultural education curriculum requires more preparation time for my agriculture teacher than before integrated concepts were emphasized.	3.78	0.76
Integrating mathematics into agricultural education courses has increased our schools ability to teach students to solve problems.	3.53	0.73
My agriculture teacher teaches integrated mathematical concepts in agricultural education.	3.51	0.83
My agriculture teacher is adequately prepared to teach integrated mathematical concepts.	3.36	0.91
My agriculture teacher has integrated more mathematics into advanced agricultural education courses than he/she has into introductory agricultural education courses.	3.32	0.75
My agriculture teacher is prepared to teach a general mathematics course.	3.21	1.03

Note. Scale 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree.

#### Research Question #4

Table 3 includes of statements about meeting state standards for Kentucky secondary school administrators through an integrated curriculum. Administrators agreed strongly that integrated mathematics would align agricultural education programs with Kentucky Department of Education standards (4.06). Respondents agreed an integrated program would help students meet Kentucky Testing System standards (4.03). Respondents indicated, almost identically, that students would be better prepared for standardized testing through contextualized agriculture courses (3.99), and mathematics teachers with an agricultural background should examine agricultural education curriculum for integration opportunities (3.99).

The first section of the instrument delved into the administrators' perceptions on the subject of agricultural education and mathematics. Administrators indicated this section contained the most agreeable statements of the study. The statement "Agriculture uses applied Mathematics" was the highest rated statement of the entire study with a mean score of 4.67 (SD 0.50). Administrators strongly agreed with this statement. The lowest ranked statement in this section was the statement "Students are better prepared in mathematics after they have completed a course in agricultural education that integrates mathematics", with a mean score of 3.98 (SD 0.72). This score indicated that even though this was the lowest score, administrators still agreed with the statement. This was the only statement in this section that administrators did not indicate a strong agreement. The author concluded this section was highly rated due to the value placed upon the integration of core curriculum into career and technical education by administrators.

Section two focused on the administrators' perceptions regarding "Teaching Integrated Mathematics." The statement regarding integrating mathematical concepts into the agricultural education curriculum would require more preparation time for the administrators' agriculture teacher than before integrated concepts were emphasized ranked the highest with a mean score of 3.77 (SD 0.76). Administrators agreed with this statement, but did not feel as strongly about statements from the previous section. Administrators indicated, with a mean score of 3.21 (SD = 1.03), the statement "My agriculture teacher is prepared to teach a general mathematics course" was the lowest rated in this section. The rating of statements in this section suggests most administrators have more faith in their agricultural education teacher's ability to teach an integrated course than in the ability to teach a general mathematics course.

The sixth section of the instrument included statements on the subject of meeting state standards. Administrators' perception of the statement regarding integration would help align agricultural programs with Kentucky Department of Education standards showed a strong agreement with the statement, with a mean score of 4.06 (SD 0.60). The statement "Agricultural Education courses that integrate mathematics should be credited toward satisfying college admission mathematics requirements" rated lowest among secondary administrators, indicating a mean score of 3.22 (SD 0.92). Examination of this section of research revealed secondary administrators advocate the use of mathematics integration to improve the current curriculum in order to meet Kentucky Department of Education testing standards, but did not feel integrated agricultural education courses should replace general mathematics for college admission credit.

Table 3

*Utilizing Agriculture to Meet State Math Standards (n = 182)*

<i>Statements</i>	M	SD
Integrating mathematics will help align agricultural education programs with emerging state educational standards.	4.06	0.60
Integrating mathematics will support agricultural education programs by helping our students meet state standard requirements.	4.03	0.68
Students will be better prepared for standardized testing if they learn the application of mathematical concepts in agriculture.	3.99	0.65
Mathematics teachers with knowledge of agriculture should examine curricula and instructional materials to identify opportunities to incorporate agricultural education subject matter into mathematics instruction.	3.99	0.63
State standards are seen as an asset to what we are trying to achieve in our agricultural education program.	3.53	0.79
Agricultural education courses that integrate mathematics should be credited toward satisfying college admission mathematics requirements.	3.22	0.92

*Note.* Scale 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree.

### **Conclusions, Implications, & Recommendations**

Administrators perceived the idea of mathematics integration in the agricultural education curriculum to be very high. Administrators felt strongly that mathematics integration would benefit the student's testing scores, grades, and college entrance scores. Administrators believed mathematics and agriculture teachers should work together in a collaborative manner, even as far as to co-teach on occasion. Administrators indicated that they encouraged their agricultural education teachers to integrate more academic content, and considered them to be qualified and equipped to teach an integrated curriculum.

The administrators perceived the actual level of mathematics integration in the agricultural education curriculum to be much lower than the idea of mathematics integration. While administrators encouraged the teachers and discussed the benefits, administrators admitted there was much work to be done to have their agricultural education curriculum considered integrated. While there was support for the implementation of an integrated curriculum, there was a need for further education on mathematics integration. Administrators supported the idea of providing workshops, collaboration seminars, and continuing education classes to provide educators with the tools to integrate mathematics into the agricultural education curriculum. Administrators believed post-secondary institutes could require pre-service teachers to enroll in courses that teach mathematics integration.

Administrators' attitudes regarding meeting state standards through an integrated curriculum indicated support of the statements concerning the possible use of agricultural education as a secondary source for mathematics. Administrators agreed that the integration of mathematics would improve testing scores among agricultural education students, would benefit the agricultural education students when enrolled in general mathematics courses, and reinforce the core mathematics concepts needed for college entrance. They believed average and lower performing students would possibly benefit more from an integrated agricultural education course than a general mathematics course. The following recommendations have been based upon the findings and conclusions of this study:

1. Kentucky secondary administrators should continue to emphasize the importance of providing the students with an agricultural education curriculum, featuring mathematics integration.
2. Kentucky secondary administrators should continue to strive to provide the agricultural educators with the best professional development and continuing education material to ensure an easy transition into an integrated curriculum.
3. Agricultural educators should seek the assistance from mathematics teachers to aid in the integration of mathematics in the agricultural education curriculum.
4. Kentucky institutes of higher learning should require pre-service teacher candidates to enroll in courses that integrate academics such as mathematics in the agricultural education curriculum.
5. Teacher educators need to continue to reinforce the importance of academic integration with both in-service and pre-service agricultural educators.

The following recommendations have been based upon the findings and conclusions of this study:

1. Investigate the data collected from this study to determine the differences in perceptions between the different administrators for any trends.
2. Compare the attitudes of the administrators regarding academic integration to the attitudes of the agricultural education teachers in their respective districts.
3. Experts in both Agricultural Education and Mathematics Education should conduct collaboratively measure the percentages and levels of mathematics integration in the agricultural education curriculum currently available for agricultural education teachers.
4. Investigate the amount and level of mathematics being outlined in lesson plans being utilized by in-service teachers.
5. Determine the administrator's perception of what mathematics content should be integrated by the Agricultural Education instructor and at what frequencies.

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# **Perceptions of Administrators in Kentucky Secondary Schools Regarding the Integration of Mathematics into Agricultural Education**

## **A Critique**

**Greg Miller, Iowa State University**

This paper presents an extensive review of literature related to integration of academic and agricultural education. Much of the review is presented as a series of abstracts rather than a synthesis. In addition, the introduction does not lead us to the problem that is the focus of the study. I would recommend mapping out the major points and creating a structure leading to the problem and to the purpose of the study.

The purpose and objectives are clearly stated and the research procedures were generally appropriate and adequately described. The research focused on a census of administrators in Kentucky secondary schools that offered agriculture. The questionnaire was built around an established instrument focused on science integration. More information is needed concerning the “field study” used to establish reliability and validity. How many people participated in the field study? Who were they? Since data were presented for individual items instead of summated scale scores, was Cronbach’s Alpha appropriate? We also need more information about the nature and timing of the five contacts used to collect data. Which of Lindner, Murphy and Briers methods for comparing early and late respondents was used?

The findings are nicely organized by objective. I would offer a couple of recommendations. Consider reporting frequencies and percentages instead of means and standard deviations? Individual Likert-type items produce ordinal data. Frequencies and percentages could give a more accurate representation of the data. Why not report the findings by administrator group? For example, do counselors and superintendents have the same views?

This study basically supports the conclusion that the administrators who participated had favorable attitudes toward integrating math into agriculture. This is an important finding as successful curriculum integration using contemporary models would require administrator support.

The conclusions and recommendations were not clearly based on the findings of this study. I could find no support for several conclusions and recommendations such as these: “Administrators believed mathematics and agriculture teachers should work together in a collaborative manner, even as far as to co-teach on occasion.” “While administrators encouraged the teachers and discussed the benefits, administrators admitted there was much work to be done to have their agricultural education curriculum considered integrated.” “Administrators supported the idea of providing workshops, collaborative seminars, and continuing education classes to provide educators with the tools to integrate mathematics into the agricultural education curriculum.”

# **Incorporating Learning Objects in a Curriculum Re-design to Meet Needs of SLD students in Illinois Agricultural Education Programs**

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## **Abstract**

*A quasi-experimental pilot study of curriculum re-design using Learning Objects (LO) to instruct agricultural education students with Specific Learning Disabilities (SLD) was conducted in five high schools in the federally designated economically distressed area, the Illinois Delta Region. Six LOs were developed based on a unit of instruction in The Illinois Core Curriculum for Agriculture and designed in a manner appropriate to SLD students. Students were randomly assigned to treatment and control groups. Results from pre-posttests in this study found Learning Objects increased learning for both SLD and traditional students.*

## **Introduction**

Recently educators and researchers have noted the pressing lack of methods for meeting learning disabled agricultural education students' unique needs (Dormody, Seevers, Andreasen & VanLeeuwen, 2006; Pense, 2009; Easterly & Myers, 2011). In an attempt to address this necessity, a national mandate calling for appropriate vocational education for students with learning disabilities has repeatedly been issued (Perkins, 2006). Furthermore, studies have clearly set out that a need exists for placing a high priority on teacher in-service for instructing the special needs student, and a need exists for re-designing the agricultural education curriculum to meet the needs for SLD students (Sorenson, Tarpley and Warnick, 2005).

In response, only two studies have thus far sought to identify methods that can best meet the needs of the learning disabled student in the Ag. Ed. Classroom; namely, inquiry based instruction (Easterly & Myers, 2011) and technology-assisted curricular redesign (Pense, Wakefield & Watson, 2010). With nearly one fourth of students enrolled in secondary Ag. Ed. possessing a learning disability (Dormody, Seevers, Andreasen & Vanleeuwen, 2006; Pense, 2009), further curriculum development and inquiry into appropriate teaching methodology for SLD students is clearly needed.

In this study, the term "specific learning disability" (SLD) was used to identify the learning disabled student. The Learning Disabilities Association (LDA) of Illinois (2011), citing the U.S. Office of Education (1977) defines SLD to mean:

... a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, speak, read, write, spell, or to do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning disabilities which are primarily the result of visual, hearing, or motor

handicaps, or mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage (p. 1)

Citing the Association for Children with Learning Disabilities (ACLD, 1986), the LDA of Illinois further defines SLD as “a chronic condition of presumed neurological origin” (2011, p. 1) which can affect education, vocation and socialization.

### *Learning Objects as an Instructional Aid*

Learning Objects constitute a valuable and underutilized instructional/learning tool which can be readily implemented to develop and expand the impact of current curriculums to meet the needs of the learning disabled student in the agricultural education classroom. Learning Objects (LO) are defined as “interactive web-based tools designed to enhance, amplify and guide learning” (Baki & Cakiroglu, 2010. p. 1459). Learning qualities have been further emphasized; including a focus on “interaction and the degree to which the learner actively constructs knowledge” (Kay & Knaack, 2009, p. 148).

To help an SLD student better construct new knowledge, the LO development model of Schlais and Ploetz (2005), suggests the Textual, Conceptual and Practical (TCP) approach. Such an approach has lent itself to better use of the downloadable material, so that the LOs could be “disassembled, edited, and the resulting components reassembled for use in contexts more appropriate to pedagogical needs” (p. 2).

### *Learning Object Repositories*

To allow LOs to be used with any learning management system, they should be compliant with the Sharable Content Object Reference Model (SCORM). This model comprises a set of technical standards for e-learning software products. One of the standards requires LOs to contain metadata, or descriptive information in tags, that support context sensitive retrieval by web search engines (Schlais & Ploetz, 2005). Thus, LOs can then be placed in a repository and made available to all educators.

In some instances, schools use a form of SCORM called Shareable Content Learning Objects (SCLO). However, SCLO is not quite SCORM compliant; the LOs would still be sharable, but could not be disassembled, could not be edited, and resulting components could not be reassembled to address current pedagogical needs (Schlais & Ploetz, 2005).

## **Theoretical Framework**

The framework for this study was based on five theoretical concepts: inclusion, student engagement, assistive technology, principles of curriculum re-design for the SLD student, and evaluation of learning objects (Figure 1). These five components may be viewed as two phases in the evaluation of Learning Object usage in the re-designed curriculum for SLD students: phase one includes curriculum re-design, in this case development of learning objects appropriate to the SLD student, and phase two involving the evaluation of the learning objects.

## Phase 1: Re-Designed Curriculum, Learning Object Development

As the first concept in Phase 1 of the theoretical framework, an inclusive environment must first be established. Only then may SLD students be provided curricular services in conjunction with their non-disabled classmates; thus, encouraging a diverse classroom while meeting the individual needs of all students.

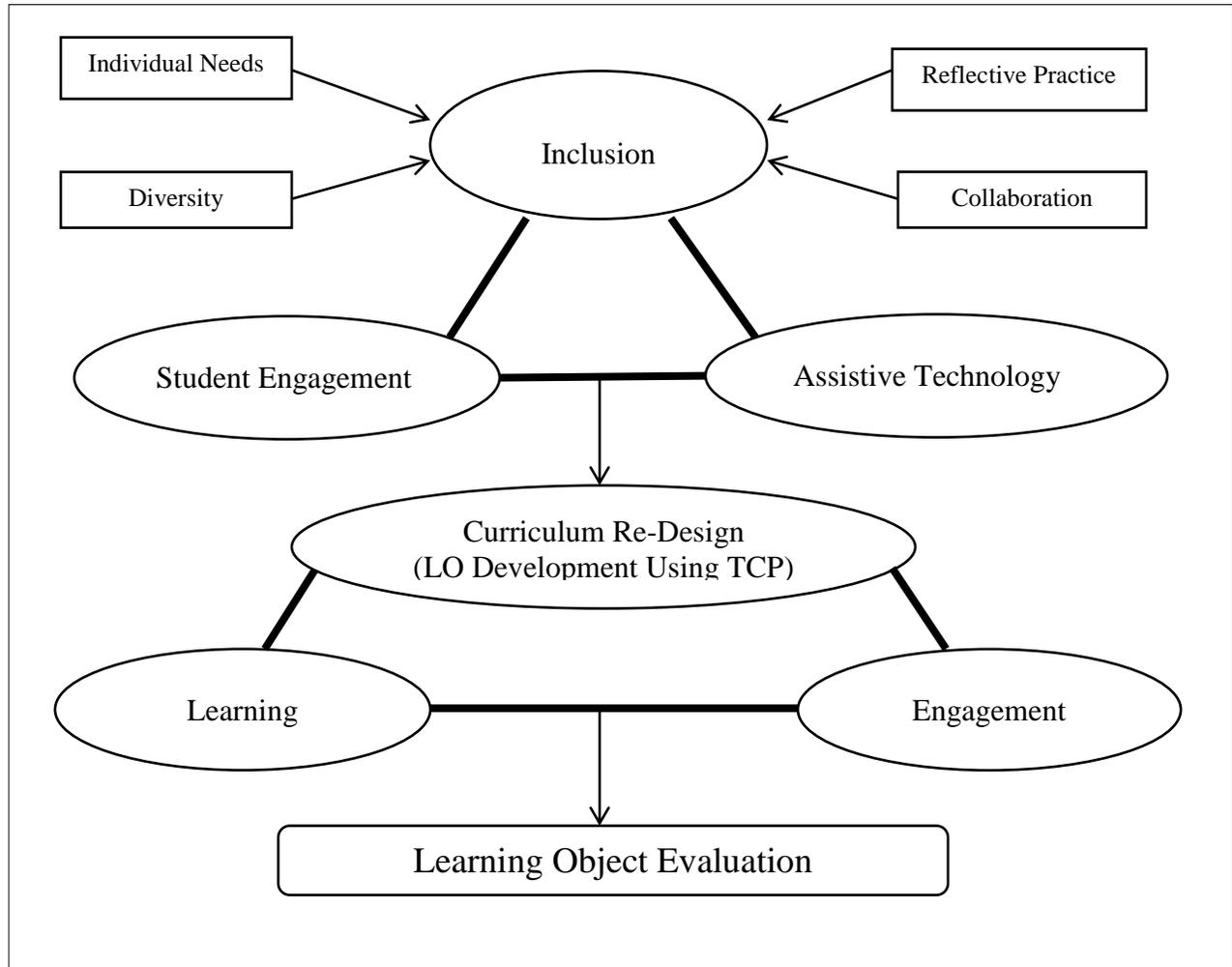


Figure 1. Conceptual Model of Curriculum Re-Design and Evaluation of Learning Objects for SLD Students

The inclusion aspect of the model comprises four major principles, including diversity, individual needs, reflective practice and collaboration (Elbert & Baggett, 2003). Diversity is brought about when SLD students interact with traditional students in the agricultural education classroom. Individual needs are observed when students select a career pathway and when the curriculum is adapted to the special needs of the SLD student. The instructor may also engage in reflective practice and make appropriate adaptations to the curriculum (Bloom, Perlmutter and Burrell, 1999). According to researchers in agricultural education (Dormody, Seevers, Andreasen

& VanLeeuwen, 2006; Kessell, Wingenbach & Lawver, 2009), reflective practice and confidence were critical for the teacher who must develop “competency in working with disabled students” (Dormody et al., 2006, p. 94). Reflection is particularly necessary when dealing with the challenges faced when instructing SLD students. Collaboration occurs not only when the teacher cooperates with parents, specialists, and community; but also when interaction takes place between the SLD student and his/her non-disabled peers.

The second concept of the framework, theory of student engagement, addresses student motivation and strategies to increase engaging tasks and activities in the curriculum. Shernoff, et al. (2003) posited that student engagement addressed motivation through the culmination of concentration, interest, and enjoyment. Using the concept of flow theory, “a symbiotic relationship between challenges and skills is needed to meet those challenges” (p. 160). Concentration, interest and enjoyment during a learning activity are to be simultaneously experienced, which creates “flow” (p. 161).

Assistive technology, the third concept of the theoretical framework, provides the accommodations needed by SLD students (Forgrave, 2002), and may aid in creating flow by balancing skill with challenge for each SLD student. Assistive technology helps deliver the information while enabling students to complete tasks more efficiently and independently; thus, leading to improved performance (Hasselbring & Bausch, 2006).

### *Phase 2: Learning Object Development and Evaluation*

The first three theoretical concepts of the framework lay the groundwork for the process of curriculum design, the fourth element of the framework. Six major principles of effective instructional design (Heward, 2009) help to not only guide curriculum re-design for SLD students, but also provide a framework for evaluating the newly re-designed curriculum. These include:

- Big Ideas – selected concepts that facilitate knowledge acquisition.
- Conspicuous Strategies – sequence of teaching to make learning steps explicit.
- Mediated Scaffolding – temporary learning support for students; faded over time.
- Strategic Integration – instructional sequencing, relating SLD and new knowledge.
- Judicious Review – adequate sequencing and scheduling of learning opportunities.
- Explicit Instruction – present and monitor repeated learning opportunities incrementally.

Learning and Engagement, as the fifth and sixth concepts of the framework, complete the evaluation phase in the theoretical framework. Learning Objects have traditionally been evaluated through technical and instructional design issues, rather than employing issues based on pedagogy (Kay & Knaack, 2009). The emphasis on design has resulted in a model that is dated, while recent research cited by Kay & Knaack in 2009 (Friesen & Anderson, 2004; Krauss & Ally, 2005; Nurmi & Jaakkola, 2006) suggests students need to construct knowledge and participate in the learning process. One way this can be accomplished is by measuring the amount and quality of interactivity in a learning object. While pointing and clicking may be passive, manipulation of tools in the LO require the user to test and evaluate “what-if” scenarios;

which may result in stimulation/motivation (Kay & Knaack, 2009). This study chose the technical design issues which focused on usability as a measure of engagement and learning, in addition to measuring knowledge acquisition through traditional means.

A high level of engagement is thought to be necessary if an LO is to be successful. Kay and Knaack (2009) cited Lin and Gregor (2006) when they identified engagement, positive affect and personal fulfillment as key factors in LO evaluation. And self-efficacy is identified as critical in the process of engagement (Oliver & McLoughlin, 1999).

### **Purpose/Objectives**

The purpose of this study was to create and assess Learning Objects based on a unit of instruction from *The Illinois Core Curriculum* (Illinois State Board of Education, 2004) in a manner appropriate to the SLD student, administer the lessons to students in secondary agricultural courses, and compare gain scores through pre- and posttests for both treatment and control groups. The specific objectives were:

1. Develop a demographic profile of the participating schools in the curricular re-design study.
2. Develop reusable learning objects from a unit of study in the Horticulture Cluster of The Illinois Core Curriculum (Illinois State Board of Education, 2004) which will be designed to assist students with Specific Learning Disabilities (SLDs).
3. Compare/contrast the gain scores of SLD students in agricultural education classes who were taught using the curriculum enhanced with Learning Objects to those of SLD students taught using the curriculum without Learning Objects.
4. Compare/contrast the gain scores of non-SLD students in agricultural education classes who were taught using the curriculum enhanced with Learning Objects to those of non-SLD students taught using the curriculum without Learning Objects.

### **Methods/Procedures**

This quasi-experimental study employed a pre- posttest design to measure the effectiveness of Learning Objects incorporated into an agricultural education curriculum. Prior to initiating the study, consent forms were signed by school administrators at the research sites approving the study and assuring parental consent would be obtained. The study was then approved by the university Institutional Review Board for research with human subjects (Assurance # 00005334).

The target population for the study included agricultural education students enrolled in Introduction to Agriculture courses (N = 98) in five high schools in the federally designated economically distressed area, the Illinois Delta Region (Anna-Jonesboro H.S., Goreville H.S., Marion H.S., DuQuoin H.S. and Vienna H.S.). Based on student IEPs and the definition of SLD by the Learning Disabilities Association of Illinois, the agricultural education teacher at each site identified the SLD students and non-SLD students in each class. Students from each of the two groups were then randomly assigned to treatment and control groups. All students received instruction using lecture and power point presentation from lessons in *The Illinois Core*

*Curriculum.* Following instruction, the treatment groups worked through the newly developed learning objects designed to enhance the daily lessons, while the control groups were given lab work unrelated to the lessons.

Ten intervening variables were identified by Joy and Garcia (2000) from a meta-analysis study by Rachal (1993) for studies of computer aided instruction. Seven of these were addressed in this study of learning objects; including, random assignment of groups, pretesting to account for prior knowledge, grouping by student ability, accounting for differing learning styles through the six major principles for instructional design, teacher effects by utilizing five different sites and their instructors, instructional method by utilizing the state core curriculum as a basis of instruction, and media familiarity by providing learning objects through a simple but effective computer application.

### *Instrumentation*

The Illinois Core Curriculum for Agricultural Education (Illinois State Board of Education, 2004) meets state learning standards for five cluster areas in agriculture; including 746 lessons in 165 units. However, the core curriculum has not been re-designed in a manner appropriate to the SLD student and does not include learning objects to aid the instruction of SLD students. A framework for a technology-assisted curricular design was necessary. According to King-Sears and Evmenova (2007), instructional technology permits students to receive information, practice it, and express what they know.

A horticulture unit of instruction from the Illinois Core was employed in this study to create six learning objects that would address the needs of SLD students (see Repository under Teacher Resources at <http://teachag.siuc.edu/>). Technology choices were examined based on the recommendations of King-Sears and Evmenova (2007) that it be “efficient, cost effective and gets the job done” (p. 9). Power point software was therefore chosen as the medium. To help integrate the technology into the learning objects, and to accommodate the broad array of disabilities evident in the agricultural education classroom, measures suggested by Kathleen Plesko, Director of Disability Services, Southern Illinois University (personal communication, September 26, 2007), were employed in the re-designed curriculum of learning object inclusion. The LOs therefore employed a self-paced format, used illustrations with text, employed basic English phrases, and used a voice-over application with the Special English technique advocated for second language learners (Celce-Murcia & McIntosh, 1979).

The six principles of instructional design advocated by Heward (2009) guided the design of the learning objects; including big ideas, conspicuous strategies, mediated scaffolding, strategic integration, judicious review, and explicit instruction. Teacher educators in agriculture education and special education validated the newly developed learning objects using these principles. Such a validation process helps to ensure appropriate language and content in the newly developed curriculum (Wiersma & Jurs, 1990).

To assess learning, pre- posttests (parallel forms) were developed in an earlier project utilizing the same unit of study from the Illinois Core Curriculum (Pense, 2009). Content validity was addressed by adhering to the original lesson plans in the core curriculum. The pre- posttests were pilot-tested with 17 students enrolled in the Introduction to Agriculture courses at Eldorado

High School in Eldorado, Illinois. Initially, the pretest yielded a *KR-20* reliability coefficient of .68 (Table 1).

Table 1  
*Kuder-Richardson Formula 20 (KR-20) Reliability Coefficients for Pre- and Posttests Prior To and After Test Revision*

	<i>KR-20 Reliability Coefficients</i>	
	1 <sup>st</sup> Pilot Test	2 <sup>nd</sup> Pilot Test
Pretest	0.68	0.90
Posttest	----	0.78

Note: Posttest was a parallel form constructed from 1<sup>st</sup> pilot test; resulting in a single reliability coefficient.

An item analysis yielded a difficulty index score and a mean discrimination index for each multiple choice question. Researchers then determined whether to retain, reword or remove each test item. The pre- posttests also underwent revision to ensure that each item was written based on Gronlund and Waugh’s (2009) rules for multiple choice items. In a second pilot test, the pretest yielded a *KR-20* reliability coefficient of .90. Developed from the revised pretest, the posttest yielded a *KR-20* reliability coefficient of .78 (Table 1).

Pre-service agricultural education teachers (university students) were trained to administer the pre- posttests, conduct instruction using the Illinois Core Curriculum, and supervise use of the newly developed learning objects. The project workers then traveled to each of the five school sites during April and May, 2011 to administer the pretests to 97 students enrolled in Introduction to Agriculture courses. All students received instruction from the project workers using the lesson plans and power point presentations taken from *The Illinois Core Curriculum for Agriculture*. However, students were randomly divided into two groups: one group to be given the self-paced learning objects after each lesson in Horticulture, and the other group to receive unrelated instruction in a laboratory setting from their usual teacher after each lesson. Students were told only one purpose of the study: to compare student performance through curriculum enhanced by the use of learning objects with student performance through curriculum not enhanced with learning objects. They were not told the study was targeting SLD students, in an effort to protect the SLD student from being singled out. Posttests were administered once all three lessons had been administered.

Items in the pre- and posttests numbered 24 and were multiple-choice. Students recorded their answers on a Mark Reflex<sup>®</sup> answer sheet by NCS. Due to student absences on either the pre- or posttest, only 83 useable pre- posttest scores were obtained from the population (N=98).

### **Results/Outcomes**

Table 2 summarizes demographic data for the study sites retrieved from the Illinois Agricultural Education website: <http://www.agriculturaleducation.org/>. Each research site was a high school incorporating grades 9 through 12, and were located in rural settings; specifically, in the Illinois Delta Region, a federally designated economically distressed area. The student

population of each school ranged from 184 to 1115. Three of the schools used the traditional 50-minute Carnegie unit based on seven- to eight-period schedules on an 18-week semester. Two of the schools employed a four-block schedule. The number of minority students in the agricultural education program at each site was negligible, with a maximum of two in any one program. Representation of SLD students at each site ranged from 6 to 25 per program.

Table 2  
*Demographic Information on Five Schools in the Study and One School in the Pilot Test*

	Research Sites					
	Pilot	Sch. 1	Sch. 2	Sch. 3	Sch. 4	Sch. 5
School Type	Rural	Rural	Rural	Rural	Rural	Rural
Grade Levels	9-12	9-12	9-12	9-12	9-12	9-12
Student Population	345	530	184	1115	423	353
Class Schedule	7 Per.	7 Per.	7 Per.	7 Per.	4 Blk.	4 Blk.
Minority Students	2	1	1	2	1	2
IEPs in Ag Program	25	20	6	14	6	20

Abbreviations: Sch.= School, Per.= Period, Blk.=Block

In three of the five schools tested in the study, male students outnumbered the female students (Table 3); 22 males and 5 females in school 1, 13 males and 5 females in school 3, and 16 males and 5 females in school 4, as opposed to 11 females and 6 males in School 2 and 10 females and 7 males school 5.

Intervening factors resulted in a small number of SLD students (Table 3) who completed both the pre- and posttests, ranging in number from no SLD students in school 4 to four SLD students in schools 1, 3, and 5.

Table 3  
*Number of Students in Study by Gender and Type of Student*

	Research Sites									
	Sch. 1		Sch. 2		Sch. 3		Sch. 4		Sch. 5	
	Trad	SLD	Trad	SLD	Trad	SLD	Trad	SLD	Trad	SLD
Male	18	4	5	1	10	3	16	0	5	2
Female	<u>5</u>	<u>0</u>	<u>10</u>	<u>1</u>	<u>4</u>	<u>1</u>	<u>5</u>	<u>0</u>	<u>8</u>	<u>2</u>
Total	23	4	15	2	14	4	21	0	13	4

A series of learning objects were constructed for a unit of instruction in horticulture; being redesigned by a subject matter specialist, and including objectives, learning activities, and evaluation instruments and activities. These learning objects were produced using Microsoft Power Point. They contained voice-over recordings, employed interactive components to increase student learning and retention for the SLD student, and are housed in a repository under Teacher Resources at <http://teachag.siuc.edu/>. The lessons addressed the following subjects:

Lesson 1 – Understanding horticulture; Lesson 2 – Determining the importance of the horticulture industry; Lesson 3 – Exploring career opportunities in horticulture.

The treatment and control groups of both SLD students (Table 4) and traditional students (Table 5) consistently scored higher in the posttest over the pretest. The greater gain scores were obtained for the treatment groups of both types of students, with the SLD students achieving the largest gain scores. It should be noted, however, that the highest mean score achieved by the SLD students in the posttest was 33% (16.33/50) and the highest mean score achieved by the traditional students in the posttest was only 35% (17.73/50).

Table 4  
*SLD Student Pre- Posttest Mean Scores and Gain Scores for Treatment & Control*

Groups	SLD Student Mean Scores						Gain Score
	Pretest			Posttest			
	n	M	SD	n	M	SD	
Treatment	6	11.00	3.16	6	16.33	5.61	5.33
Control	6	9.43	2.76	6	10.14	4.67	0.71
Gain Score Difference							4.62

Note: Gain Score was calculated as posttest minus pretest.

Table 5  
*Traditional Student Pre- Posttest Mean Scores and Gain Scores for Treatment & Control*

Groups	Traditional Students						Gain Score
	Pretest			Posttest			
	n	M	SD	n	M	SD	
Treatment	36	13.05	3.06	36	17.73	3.52	4.68
Control	35	13.03	3.41	35	16.92	3.83	3.89
Gain Score Difference							0.79

Note: Gain Score was calculated as posttest minus pretest.

### Conclusions

These findings should not be generalized beyond the population of this pre- posttest quasi-experimental study. The amount of data generated, however, carries implications for all agricultural education programs. Examination and analysis of the major findings for objectives three and four led to the following conclusions:

1. Learning Objects, as a form of a re-designed curriculum in agricultural education, made a positive difference in student knowledge acquisition for SLD students (treatment group mean gain score was 5.33; gain score difference between treatment and control group means was 4.62).
2. Learning Objects, as a form of a re-designed curriculum for agricultural education, made a positive difference in student knowledge acquisition for non- SLD students (treatment

group mean gain score was 4.68; gain score difference between treatment and control group means was 0.79).

3. Learning Objects as a form of a re-designed curriculum for SLD students resulted in a greater gain scores for SLD students than for non- SLD students in agricultural education.
4. Overall mean scores in the posttest were low for both groups of students; SLD student mean score in the posttest was 33% (16.33/50) while the traditional student mean score in the posttest was 35% (17.73/50).

### **Implications**

A primary goal of learning objects is to provide a repository of teaching materials that can be combined into multiple lessons. For example an introduction to horticulture lesson might have a component on definition of key terms. The definition of each term could be an LO. The instructor would link together the LOs of the number of definitions appropriate for one or a group of SLD students to have in a single lesson. Depending on the type and level of a student's SLD, a teacher could string together different sets of LOs to best meet the ability level of the student. For example a lesson for one SLD student may include only the essential definitions and examples related to Horticulture, but for another SLD student additional background and application material may be incorporated into a lesson.

In this case, a key requirement of an LO repository is that it contain an appropriate amount of content on a subject and the content be "broken" into relatively small chunks with the idea that each chunk would only be a small part of a lesson. The LO material must also be provided in such a manner that teachers can readily string together LOs for lesson development. Each LO may contain link(s) to background or example material and the instructor may need control to turn the background/example links on or off for different students.

Given that nearly 23% of students in the agricultural education classroom possess specific learning disabilities, the agriculture industry risks losing nearly a quarter of its workforce. Learning Objects are yet another tool available to the agricultural education instructor for effectively meeting the needs of not only SLD students, but also the traditional students in the classroom. By utilizing such methods, the needs of all students are met and the future workforce is protected.

### **Recommendations**

Since curriculums can effectively be redesigned with LOs to improve learning for SLD and traditional students, additional work is needed to:

1. Determine the appropriate subject matter size of LO content for inclusion in lessons for SLD students.
2. Develop and implement methods for teachers to integrate LOs into lesson plans for SLD students, while minimizing preparation time.
3. Ag teachers may need to be queried in a study to provide recommendations on the amount of subject matter to include in one LO.

4. Appropriate cataloging and metadata requirements for SLD suitable LOs need to be established.
5. Software tools need to be evaluated and recommendations provided on best practices for linking LOs for lesson preparation for SLD students.

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**A Critique**  
**Susie Whittington, The Ohio State University**

Incorporating learning objects in a curriculum re-design to meet needs of SLD students in Illinois agricultural education programs

You have chosen an important topic. Our profession currently is publishing very little that addresses learners with special needs.

A minor thought regarding the title: I suggest spelling out SLD since a new reader does not know the letters until the third paragraph of the manuscript. The topic is too important to get lost in letters. Spelling-out the letters adds to its searchability for this line of inquiry.

Since this is technical writing, spell-out agricultural education throughout the manuscript. Also avoid beginning a sentence with And in formal, technical writing. Check the APA style manual for some corrections throughout the manuscript.

I applaud taking-on a quasi-experimental study, and explaining it so well.

Unfortunately, the model on page three was lost in the transfer from program-to-program during the review process, so the words were missing from my conceptual model. I look forward to the oral presentation, so I can see the model. I suggest a pdf of the manuscript when the model is as important as this one to the understanding of the study.

The explanation of the conceptual framework reflects the authors' variables to be studied in the research design.

The purpose and objectives were clear and are important. The methodology was appropriate, and sound. The findings were well-written.

The conclusions, implications, and recommendations were written succinctly and within the scope of the study.

Finally, there are minor APA items that need examined in the reference list. Although the items are minor, such details affect the academic image of our profession.

Congratulations on the contribution you have made to knowledge regarding special needs programming.

## **Defining Success Through Adversity: A Case Study of Managing a School-based Agriculture Program in a High Poverty Rural Community**

Kristin Kovar, University of Missouri  
Anna Henry, University of Missouri

### *Abstract*

*The purpose of this case study was to gain a deeper understanding of the ways that Agriculture teachers in a diverse, low socio-economic rural school manage a school-based program. A case study approach was utilized to provide a rich description of the unique environment of the case as well as the strategies employed by the teachers in the case. Individual interviews and field notes from an on-site observation provided the data for the case. The five themes that emerged from the data in this study were: (a) support, (b) cooperation, (c) diversity, (d) challenges, and (e) drive. The findings indicate that there are tacit strategies to operating a successful agricultural education program in a diverse, low socioeconomic rural school. The findings of the study provide useful information for teacher preparation programs such as offering strategies to future teachers in the areas of (a) increasing program support and building cooperation among all stakeholders, (b) balancing demands, creating a welcoming environment for diverse students, and offsetting program expense for their students, as well as (c) techniques in self and student motivation.*

### **Introduction**

Teaching Agriculture in rural, low socioeconomic, diverse schools can be particularly challenging due to the high level of involvement Agriculture teachers devote to their students and their careers. Agriculture teachers rely heavily on local funding to be able to attend career development events, field trips, and leadership conferences and conventions. According to the United States Department of Education in a comprehensive study of rural schools by the National Center for Educational Statistics, high poverty rural schools spend less per pupil on average than high poverty urban schools with remote rural schools having much higher poverty rates than other rural schools (U.S. Department of Education, 2007). As funding decreases, many times the educator must forgo events during the year. Federal and state budget cuts trickle down to the teacher on top of the furlough days, decreasing salary thousands of dollars. In 2009, Georgia for example, was one of the first states to implement statewide furlough days for educators causing as much as a \$1000 decrease in their pay for the year (“Schools force”, 2009). The Agriculture teacher is still expected to meet standards for quality programs with fewer resources. In examining the FY2012 budget, several states are still in economic crisis with Illinois and Nevada at a 45% budget shortfall and a total of ten states at 20% and higher budget shortfalls (Yourish & Stanton, 2011).

According to the National FFA Organization, 66% of FFA members come from rural agricultural education programs (farm and non-farm areas) while the remaining 34% come from urban and suburban areas (National FFA Organization, 2011). Poverty in education has been the topic of research for decades, many times in conjunction within the context of critically

disadvantaged populations. Research has been conducted in the area of ‘success in high poverty schools’ (Boyd, Lankford, Loeb, Rockoff, & Wyckoff, 2008; Kannapel, Clements, Taylor, & Hibpshman, 2005; Mertens & Flowers, 2003; Reeves, 2003) which found building collaborative relationships, changing belief systems, and a devotion of individuals who care deeply about a community can impact student achievement. On such study based on “90/90/90” indicating 90% or more of the students are eligible for free and reduced lunch, 90% or more were members of ethnic minority groups, and 90% or more met the district or state academic standards in reading or another area indicated two interesting characteristics of high performing schools including an emphasis on nonfiction writing and collaborative scoring of student work (Reeves, 2003). Significant research has also been conducted in the area of ‘teaching in urban high poverty areas’ (Freedman & Appleman, 2009; McKinney, Haberman, Stafford Johnson, & Robinson, 2008), many of which focus on teacher retention in high poverty urban schools (Freedman & Appleman, 2009). These studies found ‘altruistic motivations and opportunities’ as well as ‘teacher commitment to their students’ to be the most important reasons for teacher retention in high poverty schools. Recent research has been conducted in the area of maintaining teacher morale in high poverty schools (Byrd-Blake et al., 2010). This specific study found an adverse effect of the No Child Left Behind Act on teacher morale specifically on secondary school teachers.

More research is needed to examine the distinctiveness of what it is like to teach in rural schools with not only students of low socio-economic status (SES), but with ethnically diverse students as well, particularly in the discipline of agricultural education. With the current status of the American economy, more and more teachers will soon be faced with the uniqueness of maintaining quality school-based Agriculture programs in economically depressed communities.

### **Conceptual Framework**

This study was conceptualized using wisdom of teacher practice and focused on coping strategies utilized in managing these challenging environments. This, in conjunction with the motivations and challenges teachers of rural, low socioeconomic, diverse environments face in their Agriculture programs contributed to this framework.

While difficult for teachers to describe, and often more difficult for researchers to codify, the knowledge of the wisdom of teacher practice is an important construct that serves to inform the understanding of *why* teachers teach the way that they teach (Shulman, 1987). This study was conceptualized from the lens of codifying the wisdom of teacher practice in order to make the tacit strategies of successful teachers more explicit. The investigation of teachers’ knowledge of wisdom of practice has been noted to serve as an essential link in understanding the knowledge base for teaching. Fenstermacher (1994) argued that a critical challenge for research in teacher knowledge is to understand that teachers, “...know. And even more important, that they know that they know” (p. 51).

A deep understanding of what teachers do in their practice is remiss without further understanding the “why” or the motivation behind their decisions, Thus, the researcher chose to frame this study with the Expectancy-Value Theory of Achievement Motivation. The researcher’s goal for this study was to determine the drives and motivations of teachers in a single successful agricultural education program with unique conditions. Expectancy-Value

Theory originated with Atkinson (1957) and continued through with significant work from Wigfield and Eccles (2000). Wigfield (1994) described the theory as "individual's expectancies of success and the value they have for succeeding as important determinants of their motivation to perform different achievement tasks" (p. 50). Specifically in the educational setting, Eccles (1983) is touted as the one who expanded the Expectancy-Value model to further discuss how individuals' expectancies, values, and beliefs facilitate their motivation and achievement in the classroom. The researcher chose to look at this study from the perception of the Agriculture teacher. With this theory in mind, the goal was to evaluate the Agriculture teacher's expectations, values, and beliefs and determine their motivations and achievements in the setting of their Agriculture program.

Within the discipline of agricultural education, little is known about teacher wisdom of practice or teacher motivation. Recent studies relating to teacher wisdom of practice have focused on teacher perceptions of their confidence to perform certain teaching and agricultural education program management behaviors (Wolf, 2011), beginning teacher perceptions regarding their confidence in their ability to teach (Burriss, McLaghlin, McCulloch, Brashears, & Frazee, 2010), perceptions of the indicators of quality teaching, SAE, and FFA in school-based agriculture programs (Jenkins III, Kitchel, & Hains, 2010; Jenkins III, & Kitchel, 2009), indicators of the skills and abilities for being a successful teacher (Harlin, Roberts, Dooley & Murphrey, 2007), and teacher perceptions of the barriers and support toward teaching Agriculture (Boone & Boone, 2007). Research in motivation has been conducted mainly on the motivations of the students rather than the motivations of the teachers (Rohs & Anderson, 2001). While these studies are useful at reaching toward a knowledge base of wisdom of practice and motivation, more research is needed to explicitly define teacher expectancies and values as well as teacher practice, particularly of teachers who manage programs in distressed areas and challenging situations.

### **Purpose/Research Questions**

The purpose of this study was to gain a deeper understanding of the explicit strategies for teaching and managing a school-based agriculture program in a rural, low socio-economic, diverse school system. The following research questions guided the stated purpose:

1. What were the explicit strategies utilized in managing a school-based agriculture program in a rural, low socio-economic diverse school system?
2. What were the unique challenges to managing a program in a rural, low socio-economic diverse school system?
3. What kept the teachers motivated in balancing the success and challenges associated with managing a school-based agriculture program in a rural, low socio-economic diverse school system?

### **Methods/Procedures**

The study utilized a case study approach to more carefully examine the unique case of a particularly successful school-based Agriculture program purposefully selected in a rural, low socio-economic diverse program in Missouri. Stake (1995) described a case study as "the study of the particularity and complexity of a single case, coming to understand its activity within

important circumstances” (p. xi). He stressed the priority in case study research is to understand this one case. Qualitative design allows the researcher to focus on small samples, even a single case, when selected with a purpose (Patton, 2002). This case was chosen purposefully for its uniqueness. The important circumstances of this specific case were the successes of the program in challenging times. Thus, the case was considered to be an instrumental case study, because the knowledge gained by the case could serve to inform future professionals in similar situations (Stake, 1995). The study was conducted via a pragmatic approach. Pragmatism “focus[es] on the outcomes of the research-the actions, situations, and consequences of inquiry” (Creswell, 2007, p. 22). The goal of this study was to illustrate vicariously to the reader through the participants view what it was like to be an Agriculture teacher in a rural low SES diverse school and the actions, situations, and consequences of that scenario. The case was analyzed through an Interpretive lens to illustrate how the particular teachers in the case constructed their experiences of success, challenges, and motivations in managing the school-based Agriculture program (Denzin & Lincoln, 2005).

The uniqueness of this program that made this a case worth investigating was evident in several aspects. First, the percentage of students eligible for Free and Reduced Lunch in 2010 for Ruraltown High School was 67.1 % with an overall poverty rate in the district of 23.754%. The economic status of the community was also disadvantaged, reporting 18.3 % of families lived below poverty compared to the state average of 9.9% and 25.0% of individuals lived below poverty compared to the state average of 13.5%. Geographically, the area was considered rural with 676 students in the K-12 school in 2010. Finally, racial diversity in the district included 1% African America, 36.7% Hispanic, and 61.7% white. This, along with the 2010 Adequate Yearly Progress (AYP) status of district improvement, level 3, corrective action, created a truly unique case study to be observed (Missouri Department of Elementary and Secondary Education, 2011).

Beyond census and related community data, Ruraltown is a small, town in the northern part of Missouri that was originally created due to a railroad economy. The town is hours from the nearest major shopping center, and even students who live within city limits by virtue of growing up in that area tend to live a rural lifestyle. One recent addition to the community within the last 5 years was the influx of a large swine processing plant that brought some income to the town as well as the Hispanic population to the community.

The school has an older school center appearing to be nearly 100 years old, with an outcropping of other buildings around it that have grown up as the school has evolved. The Agriculture program itself is located in the center of the old school. The agricultural mechanics laboratory is in the basement of the building, and one must climb two sets of older wooden stairs to enter the Agriculture classroom. The classroom is a large room with 15’ ceilings, old windows, and hardwood floors. Since two teachers share the classroom there are stacks of books and teaching materials and papers in every imaginable open space in the classroom.

Two male Agriculture teachers were interviewed to gain a better insight into this case. One was considered a novice teacher at year four, while the other educator, in year 15, was more experienced in the profession. Both individuals had a background in agricultural education and FFA, and indicated that they were both personally involved in their subsequent chapters in high school as former students.

Primary data sources for the study included two thirty-minute interviews conducted with the Agriculture teachers as well as a three-hour on site observation used to obtain field notes. Secondary data sources included statistics for the school and the community from the Missouri Department of Elementary and Secondary Education website to gain a better insight into the overall context of the case. Each interview was hand coded using different color highlighters. Constant-comparative analysis was used to reduce and make sense of the data in attempt to identify patterns and meanings (Patton, 2002). Inductive analysis allowed data to be coded based on five emergent themes. Several passes of the data were used to obtain those themes. Using those emergent themes, the field notes were then coded based on those found themes.

To establish credibility of the findings, the researcher utilized triangulation between two interview transcriptions and in depth field notes based on observations. Further, the researcher conducted frequent peer debriefs during the data collection and analysis process with a qualitative mentor, and kept a reflexive journal. To ensure the trustworthiness of findings, it is important for a qualitative researcher to bracket their own personal feelings, and situate themselves as the instrument within a study (Patton, 2002). The researcher for this study was an Agriculture teacher for five years in a once rural area outside a metropolitan city. The diverse school the researcher taught in had a high poverty rate, fueled by a high unemployment rate. As a result, this researcher’s perspectives were shaped by their experiences in this context. Rich, thick descriptions of observations were also used to enhance transferability of the study to other contexts. To ensure dependability of the findings the researcher maintained detailed field notes and used a quality audio recorder to record the interviews which were later transcribed including all pauses and overlaps. Both interviews were audio taped and then transcribed. The observational field notes were organized and expanded to offer a rich context of the researcher’s experience at the case study location.

### Findings

This study resulted in five major themes. These themes were the product of the essence of strategies for managing a school-based Agriculture program in a rural, low socio-economic, diverse school. The emergent themes of this study included (a) support, (b) cooperation, (c) diversity, (d) challenges, and (e) drive (Figure 1).

Table 1.

*Strategies for managing a school-based Agriculture program in a rural, low socio-economic, diverse school*

Themes	Examples	Representative Quotes
<b>Support</b>	Communities Families School	“We do have a lot of support from our administration...”
<b>Cooperation</b>	Among students Between teachers With the principal With the community	“...making sure that we build really strong community relations.”

(continued)

Themes	Examples	Representative Quotes
<b>Challenges</b>	Meeting the needs of all Motivating students Program expenses	“...because you have to take into consideration where that child is coming from...”
<b>Diversity</b>	Ethnic Economic Background Skill level	“We get kids from all different backgrounds...”
<b>Motivations</b>	Competitive Nature Lifelong FFA connection Need for success	“They realize the things our kids achieve and appreciate what we are doing for them.”

**Research Question One: What were the explicit strategies utilized in managing a school-based agriculture program in a rural, low socio-economic, diverse school system?**

The emergent themes for research question one, or the explicit strategies utilized in the low socio-economic agricultural education program, included support and cooperation.

**Support.**

Support emerged as the strongest theme from the interview data. One of the important strategies that the teachers in this study employed to maintain success in this economically disadvantaged program was creating and fostering well-developed support networks. The different types of support noted from the interviews included support of the community, families, other faculty in the school, administration and parents. Due to the observation site being in an economically disadvantaged area, much of the support needed for this program was monetary in value. One teacher stated “...we are very fortunate in our program [and] in our community to have several people that step forward as supporters and give anonymous donations to help out...”. Another one mentioned the importance of alumni support, “We have an alumni chapter also...they help us with hotel rooms and going to WLC and things like that.”

The researcher directly observed the nature of administrative support during the field observation. The administrators held the program in very high regard in the school, provided the resources within the means of the budget to assist with program needs, and allowed the teachers to manage their program by supporting their needs when possible. An interviewee substantiated this observation by stating, “We do have a lot of support from our administration and from our school board. Our high school principal was actually a former Ag teacher so he understands Ag education really well...” and “We are very fortunate our administration gives us a heads up of

when enrollment day is coming around.” This support was noted as extremely beneficial by the teachers not only in the school, but in any agricultural education program. Community members that supported this program had more to offer than money, they offered opportunities to the students in the program. “This community...is really good about hiring high school kids. We have had their son go through here so they know how the SAE program works and are good about working with us.” Also, “...we have a very supportive family who owns the lumber yard here in town and I’ve called upon almost everyone in that family at some point in time for different things.”

Besides what was heard, field observations corroborated with the statements of the interviewees. Support for this program was evident through the resources available to the agricultural education teachers. Resources observed in the classroom included a SmartBoard, projector, speakers mounted on the wall, and three student computers in what looked to be an FFA office.

### **Cooperation.**

The theme of cooperation included cooperation among students, other teachers, the principal, and the community. Cooperation between the two Agriculture teachers was illustrated when one stated, “He has his specialty areas and then I have my specialty areas. We try to combine our strengths and make up for each other’s weaknesses.” The interviewees also stressed the cooperation with other teachers within the school, “We rely on the other teachers a lot because we do miss some school especially during contest season.” Many examples of cooperation between the program and the community emerged. For example, “...primarily our big thing is being really involved in the community making sure that we build really strong community relations.” Also, “...we are asked to do a lot of different things around the building and the community...” One interviewee included the importance of parent cooperation “...we also hold a parent/member barbeque where we bring in their parents and for those people who are still having questions, we can answer them. I think it eases some parents concerns about joining a program they weren’t in or don’t know a whole lot about.” Ag teachers know the importance of staying visible in the community in order to maintain community cooperation. “Going to a couple Board meetings a year and presenting, keeping them informed really helps them want to be supportive of what we are doing because they see that we are making a difference for our kids.”

Several examples of cooperation were witnessed during the observation of this case study. There were two separate occasions during the couple of hours of the observation that one of the interviewees met with the principal in his office. During lunch, the principal came and sat down at the lunch table right next to the very same teacher. This illustrates the familiarity between these two individuals and indicates a strong level of cooperation between them. Both teachers described a devotion to their students’ success. Finally, both educators mentioned their cooperation with each other as an important aspect to the program’s success. They described how they utilized the strengths of each individual to maximize the operation of the agricultural education program.

## **Research Question Two: What were the unique challenges to managing a program in a rural, low socio-economic, diverse school system?**

The emergent themes for research question two included the challenges of meeting the needs of a diverse population as well as the concern of program expense.

### **Challenges.**

Teachers face challenges on a daily basis. The challenges that emerged from this study included challenges of meeting the needs of the students and community members as well as motivating students and managing the extensive program expenses. Having a strong Hispanic population in the school has challenged these teachers because they want their program to be culturally diverse and representative of the school, and yet it is not. One interviewee stated, "...that's something we are trying to improve...our numbers...recruiting more diverse members into the program." Meeting student needs also presented a challenge to the teachers in this study. "...we try to base our course offerings off of what we feel are the needs of our students and what they want."

The teachers in this study both sincerely indicated that they want to positively connect with all of their students and have struggled with this. "I think the dynamic of the kids have changed since I've started [teaching]...it's finding different ways to motivate them. Just trying to always continue to learn what motivates each student." One teacher spoke of earning the respect of the students as an important aspect in developing relationships with their students.

Being in an economically disadvantaged area also presented unique challenges for the teachers in managing the program. Charging students to attend FFA activities or purchase the FFA accouterments was sometimes not possible. Some examples of monetary challenges were seen in the following statements. "If we have a kid that comes from a low income home, it costs a lot to travel with us, it really does, and it puts a strain on the child and on their parents..." and "...two weeks ago we hit six contests in five days and a lot of those kids went three or four times or could have went three or four times and they simply would come up to us and say... my mom or dad say they're not going to hand over 15 or 20 bucks each day..."

Another challenge that emerged was that of teaching the disadvantaged student. The interviewee stated, "We get some kids that have several disadvantages before they maybe get to school...maybe their needs aren't met at home, as far as meeting their basic food, shelter needs." Many of these disadvantaged students come from non-traditional households as seen in the comment, "...maybe come from either single parent homes or parents are no longer together. We have one senior right now who doesn't live with either parent. He is raising himself." The struggle of the teacher is evident when he stated, "...because you have to take into consideration where that child is coming from and I don't ever want a kid to feel like they are left out due to the fact that they don't have the funds they may need...". It was clearly evident that the two teachers interviewed care deeply for their students and will face any challenge to help them succeed.

## **Diversity.**

Diversity also emerged as a prominent theme in regard to teacher challenges in the study because it was an area the Agriculture teachers of this program were working to accommodate. Fighting a lack of diversity of their program, while in a diverse school, as well as diverse economic backgrounds of their students were important challenges the Agriculture teachers faced. Areas of diversity that emerged in this study included: ethnicity, economic, background, and skill level. As mentioned previously, this case was unique because of its high Hispanic percentage and diverse student population. The interviewees supported the data by stating, "...our program differs from a lot...due to the fact we don't have a high number of Hispanic students in the program, but in our school we have roughly 40 – 45 percent Hispanic population, and that's something we are trying to improve." Beyond ethnicity, background and economic diversity are seen in the statement, "We have about 10 percent SAEs of traditional production Ag, and the rest are placement." Also, "We get kids from all different backgrounds, especially economically...I think we also deal with a lot of low income students here and that maybe come from either single parent homes, or parents are no longer together." The diversity in skill level was evident when one interviewee stated "We are going to have a girl who's going into Ag Business/Ag Econ...she's valedictorian. Diversity was summed up with the comment, "We have some very unique situations of families we that get in here."

Diversity was also observed by the researcher during this case study. There was diversity in gender, but an overwhelming lack of ethnic diversity in the classroom. In one class, there were 10 male and 9 female, all of which were Caucasian. The lunchroom was a different story. There were children from all ages from small young elementary aged students all the way through high school aged students. There was also a definite segregation among the students. There was a very long table along the south wall of the cafeteria. A Hispanic student filled every chair at that table. No Caucasian students sat at that table. To the middle and in the back of the cafeteria were Caucasian students. No African American students were seen in the lunch room. The researcher observed that this segregation seemed to be by choice among the students.

### **Research Question Three: What kept the teachers motivated in balancing the success and challenges associated with managing a school-based agriculture program in a rural, low socio-economic, diverse school system?**

The emergent themes for research question three included the motivations of competition, passion for the FFA and success.

## **Motivations.**

The most abstract of the themes that emerged from the findings of the study were the particular drives of the Agriculture teachers. Going into the study, the research wasn't specifically looking to find or asking specifically what "drove" the teachers or motivated them. Rather, the intention of the research was to gain a deeper understanding of the strategies for success in managing a program in a very challenging situation. Yet, it became evident during the analysis of the data, that there were very important notions about what drove or motivated these teachers. Patton (2002) describes emergent design as a naturalistic approach to qualitative

research, allowing the researcher to be flexible and willing to examine the data that unfolds. Those motivations seemed to guide their actions and strategies and became a key to their success in the program. The important sub-themes that emerged included the competitive nature of the teachers, a lifelong FFA connection, as well as the need for success.

The competitive nature of the two teachers was abundantly noted throughout the interview. One stated, “Right now [I’m] still really passionate about career development events because that’s a motivating factor...because it’s kind of a bragging right thing.” Another mentioned, “...we are getting to send 25 different kids that have qualified for different things to state convention, which is the biggest number we’ve had in about 10 years.” The idea of respect emerged with, “Whether it be on the state level or even the area level I think we have a lot of respect from other people even faculty members in our district because they realize the things our kids achieve and appreciate what we are doing for them.” The idea of being more successful than other programs became evident in the statement, “...the Ag program is in one of the top tiers in the district.” The idea of success comes from the competitiveness of the teachers as well as the need to be better than other programs. The following statement is the most profound of this theme. When asked “How do you think the CDE’s benefit your students?” the teacher replied, “Success. Success breeds success.” It was noted during the observation that every inch of wall was covered with plaques. This indicates a strong passion for competition and winning plaques to put on the wall, and displaying the products of the program success.

Competitions are included in the design of the FFA organization, but it is not known if it is the competitions or another aspect of the FFA that draws the teachers to have a strong passion for the FFA. Yet, a central feature for this program and its success was this strong connection to and affinity for the FFA by both teachers. Thus a second theme that emerged was the sense of connection to and passion that both of the teachers had for the FFA organization itself. One interviewee indicated the connection extended beyond himself and into his family. He stated, “I’ve always had a strong connection with the FFA. I had a brother who was a state officer and I started going to National Conventions when I was in the third grade. I’m the youngest of four boys and all of us went through this program and my parents helped start the Alumni here...it’s just who we are.” Another mentioned, “...the FFA part is my passion. I love teaching the kids the leadership side...motivating them. God calls people to do different things...This was my calling and I have never questioned it... it’s what I do and it’s who I am.”

### **Conclusions/Implications/Recommendations**

Based on the findings of this study, it was concluded that there are specific strategies for operating a school-based Agriculture program in a low socio-economic area. Through support and cooperation this case study offered a picture of successful strategies that have been adopted for the benefit of the program. The notion of support is inconsistent with Boone & Boone (2007) who found that garnering administrative support was a problem for West Virginia Agriculture teachers. While the study only investigated one program, a clear key to the program success as indicated by these teachers was the cooperation and support by many, including school administration. The findings imply that by gaining the needed support and through mindful cooperation, school-based Agriculture programs in low socio-economic status areas can operate

successfully. It is recommended that offering strategies to increasing program support and building cooperation among all stakeholders be a focus in teacher preparation programs.

It was also concluded through the findings of this case study that the teachers of this program faced challenges of meeting the needs of all program stakeholders as well as the needs of a diverse population. The Agriculture teachers described the importance of balancing the needs of their students, the rural community and the school as well as the importance of creating a diverse program representative of the school population. Program expense was mentioned by both teachers as a challenge often faced. According to a study by Connors (1998), the category of funding local agricultural education programs was identified by teachers as an extremely important issue. These conclusions imply that Agriculture teachers in rural low socio-economic programs face different challenges than perhaps those programs in urban or higher socio-economic areas. The lens of teacher's wisdom of practice describes *why* teachers teach the way they do. This concept allowed the researcher to view how the teachers in this case study utilized the strategies in their own context (Shulman, 1987). Based on these findings, it is recommended that future teachers are prepared to identify explicit strategies for balancing these demands, creating a welcoming environment for diverse students, as well as implement strategies for offsetting program expense for their students in economically disadvantaged areas.

Finally, it was concluded through the findings that competition, FFA, and success were powerful motivators to the Agriculture teachers of this case study. The FFA creates opportunities for students to be recognized for their achievements and the Agriculture teacher can use this competition to recognize and in turn motivate their students (Wedel & Jennings, 2006). The competition among chapters throughout the state can potentially create unique opportunities for educators to be recognized as the leader of a "successful" program. In order to balance the tension between successes and challenges, there were clear motivators driving the educators in this study. Using the Expectancy-Value Theory of Achievement Motivation indicated how the teacher's expectancies, values, and beliefs facilitated their motivation and achievement in their program (Eccles, 1983). Both teachers were competitive in nature and explicitly indicated the motivation behind success, for themselves as well as their students. These conclusions imply that by having a solid understanding of what motivates individual teachers and students, success can be achieved in the low socio-economic agricultural education program. Based on these implications, it is recommended that specific techniques in motivating students through the FFA be offered in teacher preparation programs as well as through professional development for current teachers.

Having a better understanding of what it is like to be an Agriculture teacher in a diverse impoverished area can offer future improvements of practice in education. Acquiring knowledge of how these educators are able to run successful Agriculture programs and FFA chapters is important for other educators in similar situations. With the economy still being in distress, the number of educators that may encounter low SES students in their communities and classrooms is steadily increasing. The findings of this study indicate several practices that are beneficial in the context of this study. Developing strong relationships with community members and school administrators, having the drive to improve, as well as the cooperation among co-workers all aid in program success, according to this case study.

The limitations of this study include the focus on a single case study. It would be interesting to see the similarities and/or differences between this case study and other high poverty areas with different demographics than the one originally studied. It is recommended that a collective case study be conducted to examine the particulars of teaching and managing a program in other economically disadvantaged areas across the United States. Another limitation of the study was the singular focus on a rural context. Urban poverty may likely look very different than rural poverty. It is recommended that research examine if teachers of diverse, low SES students in urban areas have different challenges than those their rural counterparts.

In this particular case the element of diversity posed an interesting and unique challenge, however diversity itself was limited in this study. The racial demographics of students within the school-based Agriculture program were not reflective of the racial demographics within the school itself. While the teachers in the study indicated that diversity was a concern and that they generally tried to take student needs into consideration when designing courses, they also noted the interesting challenge of trying to be relevant to a traditional audience while trying to recruit diverse students into the program. This finding could imply that teachers face an interesting dilemma of balancing tradition versus diversity. Thompson-Tetreault (as cited in Banks, 2010, p. 159) recognizes the need for today's teachers to incorporate diverse perspectives in their classrooms, while also engaging in pedagogical practices that will increase student learning by increases student voices rather than diminishing them. It is suggested that further research investigate the traditions of school-based agriculture programs and barriers toward diversity.

It was also suggested by the findings in this study that further research be conducted to investigate (a) other forms of adversity in the rural school-based agriculture classroom; (b) the uniqueness of managing the urban school-based agriculture program; and (c) and investigating the programmatic impact of resources available to agricultural education teachers in diverse, low SES areas. According to Croom, "We have a difficult job to do, and it goes beyond training teams for career development events. We have a responsibility to citizens in our school communities to help them in this economic crisis. We have to step up to provide positive, real and enduring solutions to real community problems" (2009, p. 4).

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**Defining success through adversity: A case study of managing a school-based agriculture program in a high poverty rural community**

**A Critique**

**Susie Whittington, The Ohio State University**

After I read the title of the paper, I was looking forward to reading it; agricultural education in high poverty communities is a topic in which I am very interested. However, I had a rough time with this manuscript, so I will look forward to the clarity that the presentation will bring. I will address specifics of the manuscript in my oral comments at the conference, so, in this feedback document, I will offer a few general thoughts.

The readability and flow of the introductory paragraph, to me, were difficult. I thought there were editorial-type statements that were unusual for an introduction in an academic, scholarly, technical manuscript. Restructuring of the opening paragraph of this manuscript would allow a reader to more readily grasp the importance of the nature of the study.

In addition, I was uncertain of the theme sentences throughout the manuscript. Therefore, the impact normally created through the use of strong theme sentences is less prevalent in this manuscript than in others I have read. Again, since I believe that the important content is embedded within the manuscript, a restructuring of theme sentences and supporting documentation would add clarity to the manuscript.

For me, the necessary connection between the opening paragraphs, the conceptual framework, the purpose, and the research design were not as tight as what I needed them to be. There are also some APA items that need addressed throughout.

The methodology is appropriate. The findings table is clear. There are selected quotes that add support to the themes.

The conclusions, implications and recommendations seem to me to be inherent in many programs, not just high poverty programs. Are there other variables that differentiate high poverty programs from others?

## **A Case Study of the Youth-Adult Relationships of an Urban Veterinarian Program**

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John Tummons, University of Missouri  
Michael J. Martin, University of Missouri  
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*The purpose of the bounded single case study was to explore youth-adult relationships in the context of an urban high school agricultural veterinary program. The data collection included interviews of students, teachers, school administration, and internship supervisors. The researchers also collected field notes of students at their internships and classroom observations. Findings indicated that student success was a product of multiple youth-adult relationships created through communal environments within the context of an urban agricultural veterinary program. Adults served as mentors with whom the students felt constant caring support. The attachment formed between the students and adults was a result of the program and/or internship atmosphere. This case demonstrated how a school-based agricultural veterinary program can effectively serve the needs of students in urban areas. The researchers recommend agriculture teachers work to construct meaningful relationships for their students with adult role models beyond the four walls of the typical classroom. It is also recommended that agriculture teachers adopt teaching and communication strategies to encourage open, trusting, and safe learning environments to enhance student engagement.*

### **Introduction / Framework**

An abundance of literature has indicated that school-based agricultural education is not serving the needs of urban, suburban, and diverse student populations, mostly because Agriculture programs, are not represented in in urban and suburban areas (Jones & Bowen, 1998; Talbert & Edwin, 2008; **Talbert & Larke, 1995**; Warren & Alston, 2007). Furthermore, traditional models of school-based agriculture programs do not quite fit the unique needs in urban and suburban areas. Thus, there is a need to investigate models of innovation that overcome challenges and represent quality urban and suburban programs (National Council of Agriculture, 2000; National Research Council, 2009). A great deal of literature exists that attempts to address such challenges. For instance, much is known about the level of agricultural content knowledge of urban students (Pense & Leising, 2004; Trexler, 2000), issues facing urban agriculture teachers (Warner & Washburn, 2009), factors of urban students' career choice (Esters & Bowen, 2004), and factors influencing enrollment in agriculture programs (Esters & Bowen, 2005; Hoover & Scanlon, 1991). Yet, paucity still exists in the research regarding how unique models for school-based agriculture within urban programs can inform urban and suburban programming. One investigation (Soloninka, 2003) examined an urban agriculture program as a model of innovation in small animal care. Interesting findings resulted around the roles of adults in the program and a recommendation was made to further examine adult roles in urban agriculture programs (Soloninka, 2003). Thus, the driving question for the current study was how are urban programs linking agriculture students with adults, and what meaning do students and adults assign to their experiences?

Adults, including parental and non-familial adults, play a large role in shaping and directing the development of youth into healthy, productive future citizens (Csikszentmihalyi & Larson, 1984; Halpern, 2005). Parental relationships are crucial for healthy human development from early childhood through the end of adolescence (Hartup, 1989). During early and middle adolescence, youth increasingly distance themselves from parental adults to explore relationships beyond the home setting and find their individual identity (Fuligni & Eccles, 1993). Youth exploration of the adult world benefits them in multiple ways, especially when given the opportunity to interact and learn from positive, non-familial adult figures. Adolescent-aged youth who form meaningful positive relationships with non-familial adults have been found to show improvement in their perceived value of academic success and information learned in school (Grossman & Rhodes, 2002); increased knowledge, skills, and connections to assist with attaining future educational and career opportunities (Jarrett, Sullivan, & Watkins, 2005), and increased confidence between youth and adults in each others' intentions and abilities (Camino & Zeldin, 2002). Research has shown that connecting youth to positive non-familial adult figures can have positive developmental outcomes.

Teachers have the potential to serve as non-familial adults and form similar positive relationships with students (Bergin & Bergin, 2011). Teacher-student relationships can positively affect student cognitive outcomes, including increased levels of critical thinking, use of higher order thinking skills, and utilizing basic learning skills to master meta-cognitive learning skills (Cornelius-White, 2007). Similarly, positive teacher-student relationships can affect student behavioral outcomes such as increasing student participation during class time, increased student satisfaction with content, and enhanced motivation to learn (Cornelius-White, 2007). Positive teacher-student relationships can also reduce problem behaviors of school dropout, aggression, disruptive behaviors in class, and school absence (Bergin & Bergin, 2011; Cornelius-White, 2007). Student outcomes can be greatly enhanced if teachers are willing to provide a learning environment fostering meaningful teacher-student relationships (Bergin & Bergin, 2011; Fredericks, Blumenfeld, & Paris, 2004; Frymier & Houser, 2000).

School-based agriculture programs provide unique opportunities to facilitate youth-adult relationship development within the classroom and surrounding community. In the current structure of most school-based agriculture programs, many students receive instruction from the same teacher across multiple classes for up to four years. This extended contact time facilitates development of an enhanced student-teacher connection. The National FFA Organization also has programs designed to involve youth and adults in partnerships for community development such as the National Chapter Award Program (Israel & Hoover, 1996; National FFA Organization, 2011). Supervised Agricultural Experience Programs (SAEs) provide additional outlets for the facilitation of positive youth-adult relationships, which may not have existed otherwise, particularly in diverse, urban communities (Jones & Schneider, 2009). While SAEs facilitate individual student experiences in agricultural careers, students are often exposed to real-world work environments that include youth-adult interaction. Furthermore, SAEs can facilitate youth-adult interaction over an extended period of time, as SAEs are designed to grow with the student throughout high school (Phipps, Osborn, Dyer, & Ball, 2008). This would lead one to conclude that school-based agricultural education can provide students with youth-adult relationships in multiple settings and backgrounds.

When compared to more traditional rural programs, urban schools have structural differences concerning the administration of agricultural education (Esters & Bowen, 2004, 2005). Understanding these differences benefits stakeholders, teachers, and teacher educators as school-based agriculture expands into new areas. The current case study presents a multi-faceted view of a successful urban veterinary agriculture program's youth-adult relationships.

### **Purpose of the Study**

The purpose of the bounded single case study was to explore youth-adult relationships in the context of an urban high school agricultural veterinary program. The study was guided by the following central question, which emerged as an issue after initial data collection: What is the meaning of these youth-adult relationships? The research aligns with guidelines set forth by the National Research Agenda (Osborne, 2007), specifically addressing the Research Priority Area 1 of the agricultural education in schools section, "What types of program delivery models best respond to the changing population?" (p.8).

### **Description of the Program**

The bounded single case study examined an urban high school agricultural veterinary program located in a large city with a population of over two million residents. Researchers purposefully selected this urban high school veterinary program because of its unique location, program design, student demographic population being served, and large numbers of urban students entering into careers or higher education related to the animal science or the veterinary industry. The program was located in an inner city technical school of 1200 students. The four-story brick school building, built in the early 1960's, was located in an industrial area near the downtown of a major metropolitan area. Unlike traditional rural programs in comprehensive high schools, each student applied for admission in the program and met specific academic requirements to maintain enrollment.

The veterinary classroom was located in the basement of the school and included a classroom, an animal lab, kennels, a wash space, and a storage area. One young, white female teacher originally from a rural area in a neighboring state managed the program. This Junior/Senior program had a total enrollment of 33 students; the program had 25 females and 8 males, with 21 African Americans, 11 Caucasian, and 1 Asian student. Twenty-eight students qualified for free/reduced lunch (85%). Students were required to complete an application to enter the 2-year veterinary program for their junior and senior years. While agriculture curricula tracks in traditional rural programs can last up to 4 years, this program was designed and implemented as an intense two-year program, with full-day internships during the senior year. Students were required to complete an Introductory Small Animal Care course during their first year and senior students were required to take an Advanced Animal Care course. All seniors completed a one-semester internship experience in local neighborhood animal shelters, veterinarian clinics, or animal care facilities. During the internship, students were assigned to work at a designated site two days per week as the capstone experience of the veterinary program. Seniors were required to interview for internships prior to placement with their internship supervisor. The agriculture teacher recruited and monitored all internship sites and supervisors. Student internship experiences were designed to familiarize students to real world

work environments, to incorporate skills learned in the veterinary program, and learn from adult internship supervisors.

### **Case Study Methodology**

The rationale for the single case methodology was the urban agricultural veterinary program was an intrinsic case (Stake, 1995). An intrinsic case merits investigation because the program was a case unique in geography, curriculum, and student population. Researchers operated under a constructivist epistemology that emphasized openness in data coding and a commitment to preserving multiple realities, including contradictory viewpoints. The participants' responses, rather than a predetermined theoretical framework, shaped the data collection, process (Crotty, 1998; Guba & Lincoln, 2005). All researchers were former agriculture teachers with rather traditional agricultural backgrounds; none experienced teaching in a metropolitan community or veterinary program.

Researchers interviewed twelve students, conducted four teacher, three school administrators, and two internship supervisors interviews. The adult interviews lasted in duration from 10 to 45 minutes each, while student interviews ranged from 10 to 40 minutes in length. All interviews were audio recorded and transcribed verbatim. Researchers attended an advisory council meeting, which was audio recorded and transcribed. The advisory council meeting was two hours long with seven in attendance. Researchers conducted over 20 hours of fieldwork, including three instances of classroom instruction and eleven internship site visits with the teacher, supervisors, and students. All observations were recorded as field notes and transcribed as logs. Nine program documents were also analyzed. Documents were analyzed much like the field notes, with special emphasis on the intention and attended audience of each documents. All transcripts, logs, and documents were assimilated into a single document, almost 6,000 lines of data for analysis. The multitude of data provided a multi-faceted view of the program and facilitated triangulation of data (Stake, 1995).

Investigators began with a general research question of “what factors made this urban agricultural veterinary program unique compared to traditional, rural agriculture programs?” The openness of the initial research question allowed for participants to reveal the issues of the case, or emic issues. After initial open data coding, the researchers refined the research question to reflect these emic issues (Stake, 1995). The refinement of the central research question was based on the emic issues that emerged and followed Stake's (1995) methodology of progressive focusing. This issue, or refined research question, which guided further data collection was, “what is the meaning of the youth-adult relationships?” Topical questions that emerged included exploring the perspectives and experiences of teacher, students, internship supervisors, and school administration regarding youth-adult relationships. The findings of the study were written as thick, rich descriptions, presented as vignettes, to provide vicarious experiences for the reader. The researchers included a concluding paragraph with each vignette that explored the themes represented in the vignette.

Credibility of the findings was established through triangulation at multiple levels. Initially, researchers developed data source triangulation by validating participants' interview statements with their behaviors during field observations. Methodological triangulation occurred

by building confirmation of the themes through the interviews, observations, and documents of the case. Investigator triangulation was established by having multiple researchers reach a consensus on the emergent themes (Stake, 1995). Researchers individually read and coded all transcripts, then collectively created a matrix of emergent themes and sub-themes. The researchers conducted regular peer debriefs and member checks with participants as the themes emerged to establish credibility (Ary, Jacobs, & Razavieh, 2002). Transferability (Ary, Jacobs, & Razavieh, 2002), was built by the researchers utilizing thick, rich descriptions of the case vignettes. Dependability and confirmability (Ary, Jacobs, & Razavieh, 2002) were facilitated through triangulation, comparing the emerging codes of each researcher, conducting peer reviewing, and maintaining an audit trail of coding.

## **Findings**

The researchers utilized vignettes to help explain the emerging themes. The vignettes demonstrated the following themes:

- 1) Students were engaged in multiple youth-adult relationships, both within and outside the school, at a deep and personal level.
- 2) A learning community was developed which created an atmosphere of trust and safety among students and adults.
- 3) The program generated new opportunities for students while developing their self-worth.

The vignettes are based on field observations and interviews woven into a narrative. The vignettes represent the participants' actual quotes and observed actions.

### **The Lunchtime Refuge**

As the lunch bell rings, Ms. Anderson sits down at her cluttered desk to check her emails and text messages. Ms. Anderson picks at her re-heated lunch as she stares back and forth between the computer screen and her cell phone. Sunny and Comet, two visiting dogs, sit underneath the desk pawing and whimpering for attention. She admits to sending texts to some students 6-7 times each day. "Annie, don't forget your biology test tomorrow." "Ryan, I missed you yesterday when I visited your internship site. Why didn't you show up?" "Javon, we are going to Eisenhower High tomorrow for a recruiting trip, make sure you get your permission slip signed." Ms. Anderson texts two more students before she moves on to the unopened emails in her inbox. Sunny leaves her desk and heads for the classroom door, sitting and barking. Moments later, a knock is heard at the door. Ms. Anderson follows Sunny and opens the door. Two students, both dressed identically in their school uniforms, enter with their lunch. "Can we eat with you today?" Ms. Anderson moves the animal gate from in front of the door and welcomes the students in. One student makes his way to a computer in the back of the laboratory and eats his lunch quietly. The other student goes into the kennel room to play with a box of kittens.

Ms. Anderson returns to her food and messaging at her desk. Four more students appear at her door and ask to spend their lunch in Ms. Anderson's room. The students congregate in the

classroom, and the space becomes noticeably louder. As Ms. Anderson finishes her lunch, she turns to me and says:

For their lunch shift, they'll grab something to eat and come down here and just spend 20 minutes hanging out and away from the drama of the school. And sometimes they want to talk, and sometimes they just need a few minutes of chill time away from everything else. And even faculty, sometimes they'll come down when they're stressed out and kids are driving them crazy.

Ms. Anderson uses her teaching position to intentionally create a consistent, positive presence for students. I walk across the room to the student sitting at the computer, carefully avoiding the gerbil in the plastic ball rolling around at my feet. I strike up a conversation with the girl who tells me about her experience with Ms. Anderson.

I had a really bad skipping school problem last year. Really, really, bad. And she would make an effort to text me and say, "Dana, you better be at school today. Dana, your grade is slipping. Dana, you really need to come."

I am a distraction to Dana's task at hand, so I return to Ms. Anderson's desk. I can't help but ask the teacher if the room is always like this at lunch. Ms. Anderson says, "They tend to think of the room as their closet in the morning...they bring their backpack to class and leave it there saying that they will be back to eat lunch. It is fine because... it is me filling that role."

**Exploring 'the lunchtime refuge' vignette.** Theme one was manifested in the vignette through Ms. Anderson's constant interaction with students. Ms. Anderson regularly sent text messages to students attempting to provide a stable source of guidance. Dana personally testified to the powerful influence of Ms. Anderson's vigilance. Other students expressed thoughts similar to Dana's. The classroom was a safe space, as expressed by the students, the teacher, and even other faculty in the school. Students used the agriculture classroom as a place to escape the "drama" that often occurred throughout the school. They viewed the agriculture classroom as "their space," which they accessed for reasons beyond the typical class period.

### **The Most Unlikely Agriculture Mentor**

I step out of Ms. Anderson's car, carefully avoiding the passing downtown city traffic. We walk between towering skyscrapers on either side of the street among numerous small retail stores tucked among the giant structures. We hear engines of cars, drivers honking at other cars; more than anything else, I hear the buzz that is a living, breathing metropolis. Our destination was Downtown Pet Store, a student internship site. As we enter the store, a neatly dressed African American male is talking on the telephone behind the counter. He waves us in, and I decide to take a self-guided tour of the store as Ms. Anderson waits to speak to him. I am impressed with the gleaming hardwood floors, neatly organized shelves, and obvious efficiency in which the gentleman uses such a small space. The phone conversation ends, so I walk to the front counter to listen to his discussion with Ms. Anderson.

The man behind the counter, Mr. Durant, is the owner of the store. Mr. Durant's intern is also an African-American male; this intern has faced multiple challenges at home and in his personal life. Mr. Durant is worried about the intern falling into the wrong crowd. He tells a story to Ms. Anderson describing his philosophy on preparing interns for success after school:

I'm not going to go out there and do it for you. What I do is I'm going to try to give you the tools to build a house. I'll build the foundation, but I'm not going to build the house. I'll build the foundation, and I'll give you the tools. But you have to build the house because then, when it's finished, you'll appreciate it and you'll never forget it.

Mr. Durant stresses the importance of encouraging the students to think through situations in work or life. For instance, the intern did not know the fastest bus route to Downtown Pet Store and was routinely late to work. Mr. Durant explained to him that you should always ask for help and urged him to contact the bus station for their expertise on routes. Mr. Durant refers to what he told the student earlier in the semester, "If you don't know, then you call the 800 number and ask. They [the bus drivers] aren't going to call you and say 'Where do you want to go today?' It's up to you to find out and put the pieces together." Mr. Durant also helped set up a checking account for the student to teach him money management skills. For Mr. Durant, the internship is much more than learning about animals, this internship is about helping students in need of a positive adult mentor:

You're supervising and helping someone, a young person that needs it. You don't have time for half the stuff you do, but you have to make time for that. You're helping them, and that helps everybody when you help the young people. Especially the ones having problems with their family, or their grades, or their self-esteem. Most of the time it's their self-esteem that's been broken down by whatever. You have to build it back up so that they know they're a good person.

As we leave Downtown Pet Store I ask Ms. Anderson if Mr. Durant was unusual in the level of concern he had for the well being of the intern. Ms. Anderson replied, "I think it is mostly the norm."

**Exploring the 'most unlikely of agriculture mentor' vignette.** Theme one emerged as Mr. Durant was engaged with his intern at a deep and personal level; he served as a role model for his intern in multiple contexts, both personally and professionally. Mr. Durant intentionally carried himself and his business with a high level of professionalism, because he recognized that many of his interns lived in chaotic environments. Mr. Durant also modeled skills related to planning and navigating personal situations his intern might later face in the real world. As a role model, Mr. Durant fostered independence and accountability in his interns, leading to feelings of competence and self-efficacy for students, was part of theme three. Mr. Durant fostered feelings of competence in his students through teaching life skills, including personal financial management and navigating public transportation. The mentor carefully crafted the experience in a manner where the intern gained the personal tools needed for future life success.

## Feeling Like Family

Our next stop was to visit Trevor at the Riverside Veterinary Clinic. We are in an older business neighborhood, but the brick clinic building shines with its white sign and bright teal awnings. Ms. Anderson tells me this clinic is where she brings classroom animals when they need to see a vet. As we walk in the door, we meet two women with large dogs waiting to see the vet and two other customers are paying a receptionist. Stan, a young African-American male with thick-framed black glasses, yells across the clinic, “Hi Ms. Anderson!” Stan leads us through the door into the back of the vet clinic. We walk into a large, open room where four veterinarians work feverishly on a variety of animals. Behind me, a small white dog is under anesthesia and is getting its teeth cleaned by a middle-aged Caucasian woman. I am almost run over by a veterinary technician as she carries an unconscious dog back to its kennel from surgery. Ms. Anderson asks Stan how the internship is going. Stan says:

I was actually invited to Molly’s [Riverside Clinic employee] retirement party at Dr. Clark’s house. He gave me directions and everything. I actually had to go on Facebook after I left [the party] to make a status update just to say how loved I felt because I haven’t even known these people for a year. I think I’ve known them for 4 or 5 months, and already they’ve taken me in, and shown me so many different things, and it was just a total honor for me... He [Dr. Clark] told me to give him my contact information, my cell phone, email address, and anytime I needed a reference for anything, to call him or email him.

Stan continues his updates as the hustle and bustle in the room escalates further. Ms. Anderson’s cell phone rings; she steps out of the room and into the reception area to escape the many noises echoing around the room. I ask Stan about Ms. Anderson. He replies:

Last year, she was like, my teacher. Last year she was actually my favorite teacher, and that was pretty much it. She was Ms. A, just the cool Ag Ed/Pre-Vet teacher. This year... I don’t know if it’s me or her, but she’s kind of taken on a new role, but she’s actually been like my family. She’s helped me a lot. My mom moved to [city] for different opportunities and she’s doing very well down there, but she’s not here, so whenever I need someone like face-to-face or whenever I just want to sit or come down she’s [Ms. Anderson] always here. She just does so much...

I then ask Stan his opinion of his internship experience. He replies:

This program just opens up a whole new world that a lot of other students don’t have... We can say, ‘Hey, I have this training so I’m going to go fill out this application for an animal assistant.’ There’s just so many things that this program enables us to do.

As we are leaving Riverside, I ask Ms. Anderson what Stan will do after high school. She tells me he plans on going to [State University] to become a wildlife veterinarian.

**Exploring the ‘feeling like family’ vignette.** Theme three was evident in this vignette because Stan gained multiple resources for his future. The veterinarian was willing to be a reference for Stan, but went one step farther by intentionally including Stan into the clinic’s social network. Stan’s comments also supported theme two, the atmosphere of the whole agriculture program, as he described Ms. Anderson and the internship supervisor. Ms. Anderson fulfilled Stan’s need for a temporary motherly figure in addition to her role as a teacher. The office retirement party provided Stan a sense of belonging and openness with his coworkers he didn’t expect.

### **Career Mentoring in Action**

We enter into the small, well lit grooming room of Church Street Veterinary Clinic. This morning, Ms. Scott is grooming a small Pomeranian on the grooming table in the front half of the room. Behind her is an African American female student grooming a Poodle on the table in the back half of the room. The room is small; we are squeezed between the storage cabinets on the left side of the room and kennels on the right with dogs of various sizes and colors waiting for their turn with the groomers. Ms. Anderson and Ms. Scott speak with soft voices as to not disturb the busy students or to startle the animals. I can’t help but notice that as Ms. Scott talks, she does not stop the motions of her hands; she is constantly brushing the dog’s coat with her left hand. With her right, she is insistently readjusting the dog’s position on the table. Throughout the conversation, she never stops these motions; her motions seem natural and effortless. Ms. Anderson engages in small talk about the student interns and then asks, “Are you gonna be sad to see them go?” Ms. Scott’s voice drops to a whisper, “We are making them both a scrapbook and giving it to them on their last day.” The two begin to reminisce about the internships.

I walk to the back half of the room where Rachel is working. Rachel struggles keeping the Poodle relaxed while brushing out the knots on her back left leg. She is attempting to mimic the natural hand motions of Ms. Scott. Ms. Scott occasionally whispers a quick hint to Rachel about how to better hold the Poodle. Casually, I initiate a conversation with Rachel and ask her what has the internship been like. She looks up from the Poodle and says:

... A really good experience, like a big family. They don’t hide anything. Ms. Scott is really open about how they get the work done, the way that they’re paid and what you should expect working in a job like this. It just gave us a lot of basic experience. Just getting to meet different types of people I may not have met otherwise.

Just then, another African American female student walked into the room through a side door carrying a small dog in her arms. I am somewhat startled when Clarice enters, because I was not aware of the separate grooming room. Apparently, Clarice is trusted to work on her own in the adjoining room. Clarice puts the dog back in a crate and then retrieves a Cocker Spaniel from the row of kennels on the right side of the room. Clarice says hello to Ms. Anderson and walks back into the other grooming room after she has received instructions from Ms. Scott.

I think I am in the way of Rachel's work, so I move back to my original position in the room next to Ms. Anderson and Ms. Scott. The two women have not stopped talking and Ms. Scott has continued working with the Pomeranian. I listen in to what Ms. Scott is saying:

One of the interns actually has a part-time job for the summer helping us out in grooming as a bather. The reason she got that job was that she had the confidence to bring it up with Dr. Benson. We've never hired a summer bather before, in all the years I've been here. It's a fantastic help to us, and because this young woman [Clarice] had the confidence to even approach Dr. Benson and tell him that she would love it if she could have a part-time job here and if there was a possibility, he thought about it. He talked to me, and I said "Heck yes." It wouldn't have occurred to me to ask, so she took it upon herself. That says a lot that she knows she has a skill to offer, and maybe she'll get hired. And the other girl [Rachel] we had had the confidence to apply to another grooming facility in downtown [city]. So I don't think they would've had that kind of confidence before this internship program.

Ms. Anderson looks at her cell phone and says we need to head to the next internship site. We say our goodbyes and depart Church Street Veterinary Clinic.

**Exploring the 'career mentoring in action' vignette.** Ms. Scott typified theme one as a caring role model who provided students with a meaningful relationship through her constructive feedback and caring attitude. For instance, she took her own personal time in making a scrapbook for each student. The students also worked in an environment they viewed as a "family," which further illustrated theme two. Ms. Scott entrusted the girls to groom the dogs as she would with her full time employees. Students felt so comfortable that one of them actually worked up the courage to ask for summer employment at Riverside. Theme three was apparent because the students were attempting to mimic the skill sets of Ms. Scott. This included dog grooming skills, as well as interpersonal skills, which facilitated one of the interns asking for a job at a different pet grooming business.

## **Discussion**

This bounded single case study explored youth-adult relationships in the context of an urban high school agricultural veterinary program. Findings indicated that student success was a product of multiple youth-adult relationships created through communal environments within the program. The three themes that emerged in findings are consistent with previous youth-adult relationship literature. However, these findings were unique in school-based agricultural education research. The following paragraphs outlined the themes across all vignettes, related themes back to research, and contain recommendations for practice.

Theme 1: Students identified the close relationships formed with adults (the agricultural education teacher and/or adult internship supervisors) as a catalyst for change. The value of the constant presence and close mentoring relationships was evident through statements from multiple participants and field observations. Specific examples included Dana improving her attendance because of Ms. Anderson's reminder text messages, Mr. Durant's positive role

modeling for his intern, and Ms. Scott's efforts to teach grooming skills while concurrently fostering a close relationship with students. Prolonged exposure to multiple positive adult figures was vital to student development within this program. This theme supports previous findings (Eccles et al., 1993; Grossman & Rhodes, 2002) indicating prolonged exposure to positive adult figures led youth to acquire the positive habits of adult mentors.

Theme 2: Participants talked about the close-knit environment created within the agriculture classroom and internship site. Students treated the agriculture classroom as "their space" or a "refuge" in which they "escaped" the other parts of their day. Similarly, at the internship locations, participants regarded the internship atmosphere as one of trust, familial bonds, and openness with adults; an example was when the internship supervisor had enough trust in the students to let them work independently to groom a customer's pet. The atmosphere of the veterinarian technician program facilitated an emotional engagement, which enhanced the student's experience. Stan's description of Ms. Anderson acting as his surrogate mother demonstrated this effect. Previous research has indicated that teachers and adults who are open, warm, and demonstrate a genuine caring for the well being of their students greatly enhance the cognitive and behavioral engagement of students (Bergin & Bergin, 2011; Fredericks, Blumenfeld, & Paris, 2004; Skinner & Belmont, 1993). Adults who strive to conquer barriers which exist between youth and adults will ultimately aid in creating an environment of mutual trust between youth and adults that can lead to positive development (Camino & Zeldin, 2002).

Theme 3: The experiences within the veterinarian technician program empowered students. Examples of student empowerment included Mr. Durant providing his student with advice on how to effectively use the bus system or Stan gaining a future career reference. Rachel and Clarice gained self-confidence from their internship experience and secured summer employment in the animal care industry. Research has demonstrated that youth who are able to establish relationships with high resourced adults outside their home and school gain numerous career and educational advantages (Fulgini & Eccles, 1993; Jarrett, Sullivan, & Watkins, 2005).

### **Conclusions, Implications, and Recommendations**

In this case, adults served as mentors with whom the students felt constant caring support. It was concluded that the crux of the youth-adult relationship was a well-developed sense of trust in the adults by the youth. This finding aligns with previous research in youth development (Larson, Walker, & Pearce, 2005; Grossman & Rhodes, 2002). However, the use of texting by the teacher was a form of constant presence not evident in previous research. Texting could be a reflection of the current technologies available, and that the teacher was maximizing her resources to connect with her students ways that relate best to them. Regardless, this finding implies that trust, caring, and support are of particular importance in urban programs. Teachers, particularly in smaller, more traditional programs might take the nature of trust, caring, and support for granted, due to the fact that people may be more familiar with each other in smaller schools and communities. It would also stand to reason that there are more barriers to establishing trust in more urban areas. It is recommended that future research continue to investigate how trust between students and teachers is established as well as what factors may restrict the trust within youth-adult relationships in a variety of settings. The researchers recommend agriculture teachers work to construct meaningful relationships with positive adult

role models beyond the four walls of the typical classroom for their students. Some teachers may not feel comfortable with communication methods such as texting. However, it is recommended that teachers find acceptable methods to facilitate a constant, positive presence in the lives of students to benefit their development and learning.

It was further concluded that the attachment formed between the students and adults was potentially a result of the close program and/or internship atmosphere. Research suggests that socially and emotionally supportive learning environments benefit student-teacher attachment (Weissberg & O'Brien, 2004). Student-teacher attachments are important components to student engagement and learning (Zeldin, 2000). This finding implies that environment is a necessary component for the relationships to be built. It was interesting to note that this supportive environment was not created around competition for plaques or awards, but rather around personal development. Students demonstrated high levels of engagement in their experiences, as well as competence in their abilities. The educational value of well structured internship experiences and placement SAE's in agriculture programs should not be overlooked. Future research should investigate student experiences during internships and placement SAE's in traditional agriculture programs to see if the experience is as impactful as it was for students in the urban veterinary program. All school-based agriculture teachers should continue to facilitate educational experiences that join students and adults to provide similar positive experiences.

Finally, it was concluded that relationships between youth and adults created feelings of enablement and self-efficacy that the students, in turn, used for personal betterment. This finding also concurred with previous research (Bergin & Bergin, 2011; Camino & Zeldin, 2002; Grossman & Rhodes, 2002; Jarrett, Sullivan, & Watkins, 2005). Students gained numerous personal and career related resources from working with positive adult figures during the internship experience, which helped give them a head start to future success. This finding leads to some interesting implications about the nature of student career and self-efficacy and how learning seemingly basic career related skills could help facilitate student development. It would stand to reason that empowering environments would be particularly useful for students in environments where they are more at risk for failure. Future research should continue to illuminate what other empowering environments and practices "look like" as well as how those environments are established. Agriculture teachers should continue to create such environments and teach skills that lead to personal empowerment of students in traditional and nontraditional programs.

Youth-adult relationships have been conceptualized as essential for learning and applying knowledge by bridging the gap between the student world in school and the adult world beyond the school (Dewey, 1916; Hartup, 1989; Zeldin, Camino, & Mook, 2005). A growing number of scholars have contributed to the investigation and understanding of youth-adult relationships as they occur in formal and non-formal educational settings. This article supports the recent research that has attempted to identify strategies for establishing positive youth-adult relationships (Anderson & Samndman, 2009; Larson, Walker, & Pearce, 2005; Libby, Rosen, & Sedonaen, 2005). This case study demonstrated how a school-based agricultural veterinary program can serve the needs of students in urban areas and provide information regarding how agricultural education can continue serving the needs of an ever-changing society (National Research Council, 1988; National Research Council, 2009).

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## **A case study of the youth-adult relationship of an urban veterinarian program**

### **A Critique**

**Susie Whittington, The Ohio State University**

Thank you for taking-on a topic that is heavy on the minds of many of us in the profession – urban agricultural education.

A minor thought regarding the title: When I first read the title, I thought, “Do we have programs in high school that prepare veterinarians”; I am not sure if it is a *veterinarian* program or a *veterinary* program? Also, after reading the manuscript, I suggest a more exciting title like, “A case study of the youth-adult relationships prevalent in a successful secondary urban veterinary program”.

The introduction paragraph, to me, was confusing. Twice in the same paragraph the authors write, “An abundance of literature...” and “...a great deal of literature...”. What is the theme sentence? Often in technical writing the theme sentence is the first sentence of the paragraph followed by three or so supporting sentences, then a new paragraph. The opening paragraph of this manuscript needs restructured, so that it captures a reader immediately.

In addition, the opening paragraph needs to establish importance and also needs to appeal to an audience beyond agricultural education. An opening paragraph should address a broad, critical, national, or global issue, and then should lead the reader to the specific, pinpointed focus of this particular study.

After finding my way through the first page, I got to the second page. I suggest that the second page of the manuscript be moved to the first page of the manuscript. The second page begins with a critical, compelling issue, and keeps the reader attracted and focused to the end.

Although one of the headers indicates a “framework”, I was uncertain of the theoretical or conceptual framework. Many believe that we conduct research to either test or to develop theory. Therefore, a clearly stated framework, tied to the research design, is necessary and helpful.

The purpose and central question were clear and are important. The methodology was appropriate, and sound.

The vignettes were well-written and enjoyable to read. The “explanation” at the end of each vignette added clarity for the reader.

The conclusions and implications were written succinctly into the same paragraphs for clarity.

Finally, there are minor APA items that need examined in the reference list. Although the items are minor, such details affect the academic image of our profession.

Congratulations on an interesting manuscript and the contribution you have made to knowledge regarding urban programs.

## **Agricultural Issues on the Ballot: The 2009 Ohio Issue 2 Campaign**

Dr. Emily B. Rhoades, The Ohio State University

Hannah M. Thompson, The Ohio State University

### **Abstract**

*This in-depth case study explored the marketing of the November 2009 ballot initiative that created the Ohio Livestock Care Standards board. Key individuals who were involved in communications campaigns dealing with the ballot initiative were interviewed and media coverage was closely analyzed. The interviews examined questions dealing with the origin of the initiative, the types of media used to promote it, the budget for the media campaign and which types of media were viewed as the most valuable and successful. The information obtained reveals which types of media are most effective in reaching consumers about agricultural issues according to campaign organizers. By examining a successful agricultural communications campaign, insight can be gained about how other groups can best reach the public and persuade them to support legislation benefiting the agricultural industry.*

### **Introduction**

In the early months of 2009, the Humane Society of the United States (HSUS) called for a meeting with Ohio livestock organizations, including the Ohio Farm Bureau Federation, Ohio Pork Producers Council and the Ohio Cattleman's Association. During this 'meeting of the minds', HSUS president and chief executive officer Wayne Pacelle announced HSUS' intention to come to Ohio with a ballot initiative similar to "The Prevention of Farm Animal Cruelty Act", also known as Proposition 2, which had recently been passed in California. That legislation "requires that calves raised for veal, egg-laying hens and pregnant pigs be confined only in ways that allow these animals to lie down, stand up, fully extend their limbs and turn around freely" (Anti-Cruelty: Related Statutes, 2010, pg. 6).

To be proactive in the face of this future legislation, these agricultural groups formed the Ohio for Livestock Care political action committee and formed the idea for the Ohio Livestock Care Standards Board ((S)LCSB), which would be an unbiased group of industry experts responsible for overseeing livestock care in Ohio. The measure resoundingly passed with 64% of the vote (Elections & Ballot Issues, 2009). Undoubtedly, the pro-Issue 2 media campaign can be categorized as a success. This study thus aimed to explore the initiative from inception to passage, with the major focus on the media campaign conducted by the Ohio Farm Bureau Federation in its effort to promote the issue and other groups' campaigns to defeat the measure. This information should serve very useful to other state agricultural organizations as they look to pass similar legislation in their states, or to any group attempting to create a media campaign around an agricultural ballot initiative.

### **Significance and Purpose of the Study**

Agricultural issues are appearing on state ballots with increasing frequency, and this poses a challenge to agricultural organizations as they try to reach out to the voting public. These organizations must design and implement media campaigns to encourage a favorable outcome from the election. As agricultural organizations and commodity groups are not typically well funded, it is key for them to understand the most cost-effective media strategies to utilize.

The purpose of this study was thus to analyze the pro-Issue 2 media campaign during the 2009 Ohio general election. The study focused mainly on the activities of the Ohio for Livestock Care political action committee (PAC), the only PAC registered with the Ohio Department of State as spending funds for an Issue 2 campaign (Ohio Department of State, 2011). Through this study, important strategies for ballot initiative campaigns are revealed.

This study will align with Research Priority 2 of the National Research Agenda for Agricultural Education and Communication, “within and among societies, aid the public in effectively participating in public decision making related to agriculture” (Osborne, 2007). When the public is called upon to impact the future of agriculture by casting its vote on the ballot, it is crucial that it is fully armed with all of the tools to make an informed decision. Through this study, the best methods of reaching the public with information about agricultural ballot initiatives will be determined, helping the industry to make wise choices regarding spending and investing in communication methods.

### **Objectives of the Study**

After reviewing relevant literature, additional, specific goals were outlined. These objectives, listed below, helped guide the aim of the study and the collection and analysis of data.

1. To examine the financial report of the Ohio for Livestock Care PAC, including contributions and expenditures;
2. To determine the key messages of the media campaign and how key personnel rate their effectiveness;
3. To review media coverage of the campaign and examine shifts in tone.

## **Review of the Literature**

### **History of the Animal Rights Movement in the United States**

The origins of the animal rights movement are apparent even earlier than the United States itself. The 1641 “Body of Liberties” of the Massachusetts Bay Colony included two tenants relating to the care of animals: “92. No man shall exercise any Tirranny or Crueltie towards any brute Creature which are usuallie kept for man’s use. 93. If any man shall have occasion to leade or drive Cattel from place to place that is far off, so that they be weary, or hungry, or fall sick, or lambe, it shall be lawful to rest or refresh them, for a competent time, in any open place that is not Corne, meadow, or inclosed for some peculiar use” (Beers, 2006). This was the earliest known law in this section of the world that dealt with the treatment of livestock (Beers, 2006). In England, articles appeared in newspapers denouncing cockfights and other bloodsports as early as 1749 (Beers, 2006).

Europe has been at the forefront of animal protection legislation, with the first law passing in 1822 (Radford, 1996). This legislation, titled ‘An Act to Prevent the Cruel and Improper Treatment of Cattle,’ later becoming known as Martin’s Act, protected cattle, horses, sheep, and mules from excessive cruelty (Beers, 2006). The roots of the animal protection movement in Europe can be seen in the writings of Jeremy Bentham, whose 1789 *An Introduction to the*

*Principles of Morals and Legislation* directly applied the concept of rights to animals, in conflict with the traditional view of animals as lacking feeling or thought (Beers, 2006).

The legal protection of animals in Europe continued to increase over time, with the 1957 Treaty of Rome, which dealt with concerns for animal protections and the 1997 Treaty of Amsterdam, which provided revisions to the Treaty of Rome, including expanded animal protection measures (Sullivan, Vietzke, & Coyne, 2008). Other animal protection legislation included the Wild Mammals (Protection) Act, Animal Health Act, and Welfare of Animals (Slaughter or Killing) Regulations (Radford, 1996). More recently, politicians have banned veal crates (Sullivan et al., 2008). The success of animal care legislation in Europe has inspired similar movements around the world.

In 1828, New York passed legislation defining wanton cruelty toward a domesticated animal as a misdemeanor, and in 1835 Massachusetts followed suit (Beers, 2006). Throughout the 1830s-1850s, newspapers published an increasing number of articles reporting acts of cruelty and editorials denouncing them (Beers, 2006). The growing issues of animal welfare in the United States became organized in 1866 with the formation of the American Society for the Prevention of Cruelty to Animals, modeled after the British Royal Society for the Prevention of Cruelty to Animals (Jasper, 1996).

The two early primary federal regulations in place in the United States regarding animals were the Humane Methods of Slaughter Act of 1901 and the Federal Meat Inspection Act of 1906 (Becker, 2009). The Humane Methods of Slaughter Act regulated that "...livestock must be slaughtered in a humane manner to prevent needless suffering" and called for "research of humane methods of slaughter, the non-applicability of these statutes to religious or ritual slaughter, and the investigation into the care of non-ambulatory livestock" ("Humane Methods," 2009, pg. 1-3). The Federal Meat Inspection Act provided regulations dealing with ante mortem and post mortem inspections, humane methods of slaughter, meat inspections, labeling and other topics (Food Safety Inspection Service, 2009). Most of the early organizations and legislation focused on animal welfare, not animal rights (Francione, 1996).

The animal welfare view assumes that animals can be treated as a means to a human end, provided that standards of care are upheld, while the rights view demands the end of the use of animals for human benefit (Francione, 1996). In the past 30 years, the animal rights movement has come to the forefront and gained strength in American Society (Garner, 1996). People for the Ethical Treatment of Animals (PETA), an animal rights organization, formed in the early 1980s (Jasper, 1996). PETA and fellow animal activist group the Animal Liberation Front (ALF) released videos and photographs from animal research laboratories to the news media throughout the 1980s (Jasper, 1996).

The current organization at the center of the animal rights movement is HSUS, formed in 1954 (The Humane Society of the United States, 2009). HSUS, which claims to be backed by 11 million Americans, spent a combined total of almost \$40 million on "strategic communications" and "advocacy and public policy" in 2009 (The Humane Society of the United States, 2009).

### **Trends in Animal Care Legislative Policy**

In a parallel to the escalating nature of the animal rights movement, legislation regarding animal care has increased in number and scope. The Animal Welfare Act, passed originally in 1966, was intended to "...regulate the transportation, sale and handling of dogs, cats and certain other animals intended to be used for purposes of research or experimentation, and for other purposes" (United States Department of Agriculture, 2009a). The Act has been amended six times, most recently in 2007, and has been expanded to: include all warm-blooded animals being used for experimentation or exhibition, set restrictions on animal righting, established that an Institutional Care and Use Committee must be in place at institutions of animal experimentation to ensure humane care, set requirements of health certifications by a veterinarian, and created holding periods for shelter animals (United States Department of Agriculture, 2009a; United States Department of Agriculture, 2009b; United States Department of Agriculture, 2009d; United States Department of Agriculture, 2009f).

In recent years, federal legislation regarding the treatment of animals has given way to a trend of state legislation for animal protection. Many of these state laws have been proposed and supported by HSUS and other animal rights organizations. HSUS supported 121 successful pieces of state legislation in the year 2009 (The Humane Society of the United States, 2010). Recent pieces of legislation dealing with the treatment of animals included the Prevention of Equine Cruelty Act ("Horse Slaughter Ban"), passed in Texas and Illinois in 2007 (Becker, 2009).

A current trend in policy is legislation controlling livestock housing. Florida legislation banning gestation crates for sows passed in 2006, followed by similar laws in Arizona in 2006, Oregon in 2007, Colorado in 2008, California in 2008, and Maine and Michigan in 2009 (The Humane Society of the United States, 2009). California's "Proposition 2" was especially impactful, due to the size and scope of California's agricultural industry (Goodwin, 2010).

In response to this trend of policy, Ohio took a step to be proactive in creating the (S)LCSB (The Ohio Ballot Board, 2009). The Board sets standards for the care of livestock, maintenance of farm safety, supports local food and protects Ohio farmers and families from out-of-state interest groups (The Ohio Ballot Board, 2009). The 13 members of the board, which are appointed by the Governor, the President of the Senate and the Speaker of the House of Representatives, must include the director of the Ohio Department of Agriculture, three family farmers, a food safety expert, two members from a statewide farming organization, two veterinarians, a dean of an Ohio college of agriculture, two consumers and one local humane society representative (The Ohio Ballot Board, 2009). "Issue 2", the legislation to establish the (S)LCSB, appeared on the November 2009 Ohio ballot. Issue 2 passed with 63.66% (n=1,959,669) of voters in favor and 36.4% (n=1,118,805) opposed (Ohio Secretary of State, 2009).

### **The Ballot Initiative Process and Campaign Spending**

Ballot initiatives are a permanent part of the legislative process in 24 states, including Ohio (Ballot Initiative Strategy Center, 2011). In Ohio, initiatives exist in two forms: initiated statutes and initiated constitutional amendments, such as the establishment of the (S)LCSB (Ohio Secretary of State). To place a constitutional amendment on the ballot, a strict process must be followed. First, petitioners must create a committee of 3 to 5 individuals to represent them in all

matters (Ohio Revised Code Section 3519.02). Second, an initial petition, signed by 1,000 qualified Ohio voters, must be filed with the Ohio Attorney General and Secretary of State (Ohio Revised Code Sections 3501.05; 3519.01; 3519.05; 3505.062). Once the Ballot Board has certified the petition, the petitioners may begin to collect signatures for the initiated constitutional amendment (Ohio Constitution: Article II, Section 1g). The number of valid signatures on the petition must equal at least 10% of the total number of votes cast for the office of governor at the last gubernatorial election, the signatures must have been obtained from at least 44 of the 88 counties in Ohio and each signer must be a qualified Ohio voter (Ohio. Once signatures have been filed and verified, the initiated constitutional amendment will proceed to the ballot Constitution, Article II Section 1a; Ohio Constitution, Article II, Section 1g).

Although HSUS and other outside groups would likely use the signature-gathering process to place an initiative on the ballot, Issue 2 was instead initiated by the Ohio General Assembly. To begin this process, the people behind Issue 2 had to gain the support of members of the General Assembly to sponsor resolutions that would place the constitutional amendment to create the (S)LCSB on the ballot. The resolutions were introduced on June 18, 2009 in both the house and senate. A three-fifths vote in the General Assembly is required for passage of a joint resolution. HJR 2 passed with 84 yeas and 13 nays on June 24, 2009, and SJR 6 passed with 31 yeas and 1 nay on July 6, 2009 (129<sup>th</sup> General Assembly of the State of Ohio, 2009).

Ballot initiatives are frequently costly affairs, with both supporting and opposing sides spending large amounts on their campaigns. In 2006, over \$325 million was spent by both sides of the 12 most expensive ballot initiatives in the United States, dealing with issues from renewable energy to cigarette taxes (Ballot Initiative Strategy Center, 2011). The amount of money spent during campaigns is also on the rise, as in 1992, \$117 million was spent in 21 states on campaigns supporting or opposing ballot measures, and in 1998 that figure jumped to \$400 million in 44 states (Stratmann, 2005). An increase in spending is predicted to result in a favorable election outcome, as an additional \$1,000,000 spent in favor of a ballot initiative is predicted to increase its chances of passing by 1.4%; and an increase of \$1,000,000 spent in opposition to a ballot initiative decreases its likelihood of passage by 1.90%(Figueiredo, 2010).

A recent study in California revealed a large disparity in spending on legislative propositions from 1982-2006, which must pass through both houses of the state Congress to make it onto the ballot, and initiatives, which are placed on the ballot through a signature gathering process (Figueiredo, 2010). An average of \$478,406 was spent in support of propositions and \$220,273 in opposition; in contrast to an average of \$3.6 million in support of initiatives and \$2.4 million in opposition (adjusted for inflation, in 1982-1984 dollars) (Figueiredo, 2010).

Much of this spending is on mass media advertising, which has been proven to impact the passage of an issue. Research has demonstrated that 100 extra advocacy advertisements increase the probability of the passage of an initiative by 1.2%, and 100 extra opposition advertisements decrease the probability of the passage by 1.8% (Stratmann, 2005). Trends are also apparent in the types of advertising which are effective in political campaigns. Almost half of all adults used the internet, email or phone text messaging for political purposes during the 2008 campaign cycle (Smith & Lee, 2008). The two fastest-growing sources for political information are social media sites and online videos (Smith & Lee, 2008).

## **Cognitive Dissonance**

The cognitive dissonance theory states that when one is faced with conflicting ideas, one will be driven to complete cognitive work that will reduce the inconsistency (Dillard, 2002). Four research paradigms have repeatedly appeared in the research of dissonance processes: Free Choice Paradigm, Induced Compliance Paradigm, Belief Disconfirmation Paradigm and the Hypocrisy Paradigm (Dillard, 2002). These four paradigms drive the logic behind persuasion attempts. The Free Choice Paradigm assumes that once a decision is made, dissonance may arise (Dillard, 2002). Dissonance can be lessened by viewing the selected alternative as more desirable and the rejected alternative as less desirable, an effect called spreading of the alternatives (Dillard, 2002). The Induced Compliance Paradigm assumes that dissonance arises when a person does or says something in contrast to a previously held belief or attitude (Dillard, 2002). The Belief Disconfirmation Paradigm assumes that dissonance arises when people are exposed to information which conflicts with their beliefs (Dillard, 2002). Finally, the Hypocrisy Paradigm states that when faced with dissonance, people will attempt to reduce it by acting in accord with their pro-attitudinal statement or changing their attitudes to be more consistent with their past behavior (Dillard, 2002). Research has supported the notion that dissonance is a motivational theory and that it produces lasting attitude, belief, and behavior changes (Dillard, 2002). Cognitive inconsistency arouses motivation to change behavior and thought processes, therefore the cognitive dissonance theory is key in persuasion and motivation efforts, such as the media campaign being examined in this study.

New research in the field supports the idea of vicarious dissonance, in which people experience dissonance and attitude change through the experiences of others (Cooper, 2010). This concept combines cognitive dissonance with the theory of social identity (Cooper & Hogg, 2007), suggesting that people experience dissonance vicariously when they view a member of their social group behave in a manner that is at odds with that group member's attitude. This ability to be motivated to alter one's attitude by viewing attitude changes in another makes the theory of vicarious dissonance very useful in instigating attitude and behavior changes on a broad scale (Cooper, 2010). This theory is directly related to the planning of media campaigns surrounding ballot initiatives, as they are aimed to reach and persuade the broadest audience possible.

Recently, cognitive dissonance has been conceptualized in an action-based model (Harmon-Jones, Amodio, & Harmon-Jones, 2010). This model assumes that perceptions and cognitions activate action tendencies automatically, suggesting that when cognitions with action implications come into conflict, dissonance is aroused (Harmon-Jones, Amodio, & Harmon-Jones, 2010). Once an individual makes a decision to resolve that dissonance, they are motivated toward enacting the decision and behaviors which support it (Harmon-Jones, Amodio, & Harmon-Jones, 2010). This modern perception of cognitive dissonance suggests that once individuals are presented with information, such as the media materials in this study, and make a decision, they will take action to enact that decision, such as researching more about the ballot initiative and casting a certain vote. This action will also produce lasting changes in their attitude toward agriculture and public policy.

Because this study focuses on a media campaign aimed at persuasion, the cognitive dissonance theory is an important framework to consider. Voters were presented with information that may

cause dissonance in their thought process, and were hopefully then motivated to resolve that dissonance by forming a new, positive opinion on the farming industry and casting a “yes” vote on the issue at hand. Based on prior research, the cognitive dissonance persuasion theory will cause lasting changes in behavior and thought processes, therefore the new perspective gained by voters will alter their mindset toward farmers and animal-rights interest groups.

### **Methodology**

The purpose of this study was to examine a successful marketing campaign focused on a ballot initiative, the “Yes on Issue 2” campaign in Ohio.

### **Research Design**

Researchers used case study methodology to evaluate the communications campaigns surrounding Issue 2. Case studies, commonly used in the social sciences, involve studying all of the intricacies of a single case (Stake, 1995), such as the media campaign. Stake defines a case study as “the study of the peculiarity and complexity of a single case, coming to understand its activity within important circumstances” (1995, pg. xi). In this research, the case is the media campaigns, and the important circumstances are the current state of public affairs in agriculture.

Interviews were a key part of the research conducted. The researchers interviewed three individuals involved with the media campaign, including a consultant at a consulting firm and two individuals in communications at Ohio Farm Bureau Federation who played large roles in selecting and overseeing the materials and tactics used. Through these interviews and secondary source research, researchers were able to study the timeline, budget, and reasoning behind the campaign. Additionally, researchers were able to gauge how Ohio Farm Bureau Federation rates the success of their campaign, and changes they may make in future campaigns.

Key areas examined were the impact of social media, as it is a “free” media to use, and grassroots/word of mouth communication. According to the Pew Institute, the two fastest growing sources for election information are social media sites and online videos (Smith & Lee, 2008). As these sources are free to create, it is interesting to determine how the advertisers would rate their effectiveness in terms of effort and money spent.

### **Data Collection**

Using a case study, the data collection process for this study was threefold: primary research through interviews, secondary research through news media analysis, and secondary research through campaign finance reports. The subjects for the interviews were chosen based on their first-hand involvement in the campaign and intimate knowledge of the methodology of the decision-making process for media purchases.

The newspapers used, *The Cleveland Plain Dealer* (267,888 readers) (The Cleveland Plain Dealer, 2007); *The Columbus Dispatch* (210,000 readers) (The Columbus Dispatch, 2008); *The Toledo Blade* (139,346 readers) (The Toledo Blade, 2010); *The Cincinnati Enquirer* (161,858 readers) (The Cincinnati Enquirer, 2011); and *The Dayton Daily News* (116,200 readers) (Dayton Daily News, 2008) represent the largest media markets in the state. A search of LexisNexis Academic database was conducted for each newspaper for the time frame of January 1-

November 4, 2009. Search terms included “Issue 2 Ohio,” “Ohio Livestock Care Standards Board,” and “Livestock care”. Only news articles that focused primarily on Issue 2 were considered in this study. Endorsements of the initiative were considered separately. A total of 27 news articles were collected, along with nine opinion editorial/endorsement pieces.

The Ohio for Livestock Care PAC expenses for the year 2009 were analyzed. Only the income and expenses for 2009 were considered, as this was the year of the election. The expense report was accessed through the Ohio Secretary of State. The Top 10 Contributors were compared, along with their total contributions. The expense breakdown of the PAC was also considered.

## Findings

### Objective 1. Campaign Spending

The campaign spending report filed by Ohio for Livestock Care provided valuable information to the study. A total of \$5,448,226 was donated to the pro-Issue 2 campaign. The main source of funding was the Ohio Farm Bureau Federation, who donated \$606,930, or 11.15% of the total contributions. A considerable portion of the campaign funding came from outside of the state of Ohio, with the largest out of state contributors being the National Pork Producers Council (\$249,500) and United Egg Producers (\$200,000). In total, \$1,793,359, or 33.0% of total contributions, came from outside of Ohio. The vast majority of campaign funding came from the agricultural industry. Within agriculture, the top donors came from the following industry segments: Farm Bureau (\$1,314,853), poultry and eggs (\$1,048,262), livestock (\$910,559), agricultural services and products (\$698,860), and crop production and basic processing (\$431,910) (See Table 1).

*Table 1. Top 10 Contributions to Ohio for Livestock Care Political Action Committee*

Contributor	Amount	Percent of Total
Ohio Farm Bureau Federation	\$606,930	11.15%
National Pork Producers Council	\$249,500	4.59%
United Egg Producers	\$200,000	3.68%
Cooper Farms Feed & Animal Prod.	\$144,495	2.66%
Ohio Fresh Eggs LLC	\$144,000	2.65%
Ohio Poultry Association	\$125,273	2.30%
Ohio Soybean Association	\$110,500	2.03%
Ohio Pork Producers Council	\$107,922	1.98%
Weaver Bros, Inc.	\$105,073	1.93%
Fort Recovery Equity Inc.	\$100,576	1.85%
<b>Total Contributed to OLC</b>	<b>\$5,448,226.08</b>	

The top expenses for the campaign were in advertising. The most costly form of advertising utilized was television, costing \$1,633,158, or 36.90% of total spending. Other forms of advertising used were mailed advertisements, radio spots, billboards, automated calls, and yard

signs. Besides advertising, considerable expenses were consulting, website, legal, and market research. In all, the PAC spent \$4,426,779 on the pro-Issue 2 campaign. (See Table 2).

Table 2. 2009 Expenses for OLC PAC

<b>Expense</b>	<b>Amount</b>	<b>Percent of Total</b>
Television Advertising	\$1,633,158.57	36.90%
Mailers (Printing/postage/design)	\$784,204.87	17.72%
Advertising (General)	\$682,953.59	15.43%
Consulting	\$449,763.97	10.16%
Automated Calls	\$250,875.25	5.67%
Radio Advertising	\$161,930.23	3.66%
Website	\$113,220.60	2.56%
Legal	\$108,741.48	2.46%
Billboard Advertising	\$76,245.07	1.72%
Market Research	\$62,594.24	1.41%
Yard Signs	\$55,925.87	1.26%
Misc.	\$47,166.07	1.07%
<b>Total Spending</b>	<b>\$4,426,779.81</b>	

### **Objective 2. Central Messages and Key Personnel**

The key personnel interviewed were asked to provide insight on the central elements of the campaign and their effectiveness. Their responses can be summarized into three categories: social media, unity, and proactivity.

*Social media* was a key tool used in the pro-Issue 2 campaign, especially by the Ohio Farm Bureau Federation. Subject 1 stated: “People aren’t going to (s)FBF.org, they aren’t going to OhioansForLivestockCare.com, they’re going to Facebook and Twitter to spend their time. That’s where they’re discovering news and information, that’s where like-minded people are sharing news and information, that’s where they trust people more than they trust messages.” Facebook, Twitter, and YouTube were all used in the campaign. Facebook was used as a rallying point for campaign supporters, where they could post photographs, links, and other content. Twitter was used to reach a broader audience and to broadcast events as they occurred, such as the hearings in the Senate and the House about the ballot initiative, which were live-tweeted using a hash tag. “Our logic for using social media was to show who we are, to build trust in Ohio farmers and our members, to build those connections and those relationships so that when we do need them, they’re already established,” said Subject 1.

Additionally, *unity* was a recurring topic during the interviews. Unifying to establish the Ohioans for Livestock Care organization allowed Ohio agriculture to present a united front and to pool their resources for the campaign. Subject 2 referenced unity as an important element to the campaign’s success, stating, “One of the crucial decisions both on the political action side and the communications’ side was that this was going to be a collaborative effort. The Pork Producers weren’t going to go out and fight this battle on their own, and the poultry people on

their own, and the dairy people on their own, and Farm Bureau separately. It was decided that agricultural unity was a must.”

*Unity* was also crucial in the different elements of the campaign, as harmony had to exist between the paid forms of media and grassroots efforts. Subject 3 noted room for improvement in this area, stating, “We did a lot of farmer engagement, I think we could have started that sooner and made more tools available to them. Potentially, we could have focused on more local events, really trying to bring people out in local communities.”

Lastly, the interviewees emphasized the importance of being *proactive*. Proactivity allowed the (S)LCSB to be invented and implemented. After the February meeting with HSUS, Ohio’s agricultural leaders chose to be proactive by pursuing the establishment of the (S)LCSB instead of mounting a defensive campaign against an HSUS-supported ballot initiative. Being on the offensive allowed the Issue 2 campaign to focus on the positive aspects of both the (S)LCSB and Ohio agriculture, as opposed to being in a reactionary mode to statements made by HSUS. Subject 3 stated, “As a general principle, animal care issues win, whether it’s our side bringing it or the activist side bringing it... which is part of why we won, which is part of why HSUS wins.”

Being proactive with establishing a social media presence was also a contributing factor to its success, as Subject 1 stated: “With Issue 2, we had already built up a really nice group of followers [on Twitter], we had a lot of fans on Facebook, there were a lot of people that we interacted with on a daily basis that enjoyed getting messages from Ohio Farm Bureau and talking with Ohio Farm Bureau...it was a natural thing for us to do.”

### **Objective 3. Media Coverage**

Media coverage of Issue 2 appeared in each of the five newspapers included in the study. *The Columbus Dispatch* printed the most articles on the subject, with a total of 10. The *Cincinnati Enquirer* and *Cleveland Plain Dealer* published the least, with each printing only two articles dealing with Issue 2 appearing during the study period. These articles were all straight news pieces dealing with the issue and arguments surrounding it; opinion-editorial pieces and letters to the editor were considered separately. Each newspaper that printed an editorial or endorsement on the issue, *The Cleveland Plain Dealer*, *The Columbus Dispatch*, *The Dayton Daily News* and *The Toledo Blade*, endorsed a “No” vote, usually citing opposition to board being included in the Ohio Constitution. A total of 27 news articles were collected, along with nine opinion editorial/endorsement pieces.

*The Cleveland Plain Dealer*, who referred to the initiative as “Farm fresh foolery” in a July 6 editorial, shifted in tone by the end of the campaign to state: “Ohio who vote “no” on Issue 2 on Nov. 3 should be prepared to vote “no” again, should the Humane Society seek its own ballot measure in a future election,” in their October 18<sup>th</sup> endorsement of a “no” vote. *The Columbus Dispatch* also cited constitutional issues in their opposition, stating “Creating a well-balanced board to set standards for the care of livestock in Ohio is a good idea, but using the Ohio Constitution to do so is not. State Issue 2 would amend the constitution to create a 13-member Livestock Care Standards Board. Such a board could easily be created by legislation,” in their November 2 editorial.

## **Summary, Key Findings and Implications**

The case study's data was collected using three techniques: primary research through one-on-one interviews with key personnel in the campaign, secondary research through an analysis of the Ohio for Livestock Care Political Action Committee income and expenses from January-November 2009 and secondary research through examining articles published from May-November 2009.

### **Limitations of the Study**

The case study conducted focused on the campaign promoting a "Yes" vote on the issue, as there were no registered PACs in opposition. Although an opposition campaign did exist, the lack of organization and filed spending reports made it difficult to analyze. Additionally, the social media aspect of the study poses issues. As statistics regarding the Facebook and Twitter posts of the Issue 2 campaign were not logged, it is impossible to track how many times they were viewed or shared, and therefore gauge their effectiveness. It is also difficult to quantify the value of social media in the campaign, as it is a "free medium" to use and therefore does not have a fixed cost.

### **Objective 1: Campaign Spending**

A total of \$5,448,226.08 was donated to the pro-Issue 2 campaign. In total, 33.0% of total contributions, came from outside of Ohio. This is interesting to note, as it emphasizes the importance of unity within the agricultural industry. The Issue 2 campaign in Ohio was very much a 'trial run' for other states with agricultural industries that may face a similar campaign in the future.

Within agriculture, the top donors came from the following industry segments: Farm Bureau, poultry and eggs, livestock, agricultural services and products, and crop production and basic processing. This is important to note, as industries outside of livestock production supported the issue, although it did not impact them directly. Industries outside of livestock, such as crops, insurance, and other services, must recognize that their futures go hand-in-hand with that of the livestock industry.

The top expenses for the campaign were in advertising. The most costly form of advertising utilized was television. Other forms of advertising used were mailed advertisements, radio spots, billboards, automated calls, and yard signs. Besides advertising, considerable expenses were consulting, website, legal and market research. In all, the PAC spent \$4,426,779.81 on the pro-Issue 2 campaign. This seems to be a high amount for a campaign with little organized opposition, but it was crucial to spread a positive, unified face of Ohio agriculture, as supported by the cognitive dissonance theory of persuasion. If people are motivated to change their thought processes, the impact will be lasting and carry over to other decisions.

### **Objective 2: Central Messages and Key Personnel**

According to campaign personnel, social media was a key tool used in the pro-Issue 2 campaign, especially by the Ohio Farm Bureau Federation. Facebook was used as a rallying point for campaign supporters, as one must "Like" the page to view the information, while Twitter was used to reach a broader, more general audience, as posts are open to public view. Social media was an important component due to its free nature and wide audience. Personnel indicated that in

a future campaign, they would dedicate even more time and resources to their social media sites. This information implies that agricultural organizations should establish a presence online and familiarize themselves with social media websites and tools before facing such situations.

Unity was also a recurring topic during the interviews. Unifying to establish the PAC allowed Ohio agriculture to present a united front and to pool their resources for the campaign. Additionally, those interviewed emphasized the notion that the portion of the industry with the most to lose should not be at the forefront of the campaign. This implies that agricultural groups must join together to display a united front in the face of outside threats, instead of dividing and avoiding issues that do not directly impact them. Unity was also crucial in the different elements of the campaign, as harmony had to exist between the paid forms of media and grassroots efforts. It was suggested that in future campaigns, the personnel would work to strengthen this relationship by surveying grassroots campaign members about what materials they would find most effective, and then hiring paid media firms to create these materials.

Lastly, the interviewees emphasized the importance of being proactive. Proactivity allowed the (S)LCSB to be invented and implemented. Organizations should be proactive before faced with a crisis by becoming a trusted source of information and creating an open forum of discussion with the public. Having a well-established social media following made Ohio Farm Bureau's campaign much easier and successful. Agricultural organizations should establish a presence online and in public as soon as possible in order to become a familiar source for information for the public.

### **Objective 3: Media Coverage**

The debate over Issue 2 was covered by the five major Ohio newspapers, *The Cincinnati Enquirer*, *The Cleveland Plain Dealer*, *The Columbus Dispatch*, *The Dayton Daily News* and the *Toledo Blade* with 27 total news stories between May 26, 2009 and November 4, 2009. Additionally, nine opinion editorial/endorsement pieces were published during this same time frame, with the four papers that offered an opinion supporting a "No" vote on the issue.

While the number of negative endorsements and editorials implies an uphill battle with the media, many of these pieces focused on the constitutional aspect of the issue rather than the (S)LCSB itself. This coverage implies that the agricultural community must maintain an open and honest dialogue with the media and constantly be available to provide information. The fact that the media's criticism of the issue focused largely on constitutional issues as opposed to showing support for HSUS' demands is promising for agriculture.

### **Implications**

This campaign is an example of a piece of legislation that benefits agriculture successfully passing on the ballot, in contrast to the large numbers of initiatives that do not. It is apparent that agricultural organizations need to be proactive and communicate with the public at all times in order to be successful in the future with other ballot initiatives.

By being proactive after the original meeting with HSUS, Ohio agricultural organizations were able to move swiftly to set the initiated constitutional amendment in motion that would create the (S)LCSB. Instead of mounting a defensive campaign against an HSUS-supported ballot initiative, Ohio agriculture was able to be on the offensive. Additionally, Ohio Farm Bureau was

proactive in their social media efforts. Because they were already an established presence on Facebook and Twitter, less effort was needed to reach a broader audience. Other state and national agricultural organizations should begin to establish a credible presence online, so they can be viewed as a trusted source of information in the future when they attempt to communicate about key issues.

The unified agricultural industry allowed the pro-Issue 2 campaign to receive considerable amounts of funding from both in and out of Ohio. Without this funding, the campaign would have been impossible to accomplish. Unity also allowed organizations to come together to establish the Ohio for Livestock Care PAC to present a united front. Grassroots advocacy was an important part of the campaign, as it is low-cost and allows a personal connection between the farmer and the public. Other campaigns should heed the advice regarding ensuring a strong and cohesive connection between the paid media materials and the grassroots campaign efforts.

Based on the outcomes of this study, agricultural communication educators need to ensure that they are educating their students on the wide range of communication methods available during media campaigns. Students must be aware of every communication outlet, from paid television advertising to grassroots volunteers, and how they can function cohesively in a media campaign. Additionally, it is important for educators to pass on information about the legislative process. The next generation of agriculturalists must know how the government functions in relation to agriculture and how to use the legislative process to their greatest advantage.

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## **Agricultural issues on the ballot: The 2009 Ohio Issue 2 Campaign**

### **A Critique**

**Susie Whittington, The Ohio State University**

I applaud the efforts of the authors for examining a topic that is interesting, timely, and has application across the country. After reading the manuscript, I suggest that the authors change the title to reflect the objectives that were studied. Since the objectives guided the authors to some very interesting findings, a more descriptive title would attract a broadened potential readership.

The introduction of the paper is interesting, but the first sentence of the significance section, and the first sentence of the ballot initiative section are compelling, and have the potential to quickly establish for the reader, the importance of this work across the country. I suggest that a tiny bit of restructuring could add significantly to this already very good paper.

The authors' choice for a theoretical frame is excellent. The Cognitive Dissonance Theory further explains the foundations and rationale for examining the relationship between the public opinion and the persuasive approach of the media.

The objectives are clear show alignment to the theory. The methodology is appropriate, straight forward, streamlined, and accurate. The explanation of the choice of research design is very good.

The findings are organized and clear. Make sure that the word data is always written as plural, so "data were" is the appropriate terminology. Also, when stating \$s, unless it is \$1.00, the word combination will always be "\$xxxs were".

The conclusions and implications, I believe, are not yet as thoroughly complete as possible. One audience, and one objective are basically addressed, but because the findings were very interesting, there are more audiences that can benefit from the objectives/findings of the study. I suggest flushing this out with more thought and detail.

Finally, there are minor APA items that need examined in the reference list. Although the items are minor, such details affect the academic image of our profession.

Congratulations on an excellent manuscript and the contribution you have made to knowledge.

## **Student Motivation for Involvement in Supervised Agricultural Experiences**

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*The purpose of this study was to examine student motivation for SAEs through the lens of the Self-Determination Theory. Self-Determination Theory proposes that human beings are more genuinely motivated when driven by internal factors as opposed to external factors. The researchers used historical research and general qualitative interpretative methods to develop an interpretation of the motivation of SAEs. The authors examined historical magazines, documents, and books for detailed cases of SAE participation from 1917-1988, eventually examining three specific time periods; 1928-1934, 1947-1953, and 1966-1973. The findings highlight that student motivation for SAEs has been a prevailing topic since the 1920s. Whether through mandating, awards, class requirements, or collaborative school projects, SAEs have typically been initiated by utilizing extrinsic motivating forces. Although extrinsic motivation is not ideal, half of cases studied ended with a developed internal locus of causality. This demonstrated that student motivation to participate in SAEs could be established by external motivators and later sustained by internal stimulus. It is recommended that agricultural education practitioners use caution when assigning external rewards. Overuse of external rewards such as money, trophies, or recognition can potentially distort a student's acquisition of the "true" SAE values of enhanced learning and career exploration.*

### **Introduction**

There has been growing interest in how school-based agriculture students are motivated to participate in supervised agricultural experiences (SAE). For instance, two studies (Retallick, 2010; Wilson & Moore, 2007) reported that teachers utilized FFA awards to motivate students to participate in SAEs. Psychological research has indicated that students motivated by such extrinsic awards would be reluctant to continue their SAE (Deci & Ryan, 1985a). The use of such extrinsic awards for motivating students may seem like a new issue in secondary agricultural education, but Bible (1941) described how the FFA awards became an aid for supervised agricultural experiences by the 1940s.

The opportunity for degree advancement provides the single strongest drive for the boy to develop a strong supervised farm practice program. During the first day or two of his high school life, every freshman boy learns what vocational agriculture and the F.F.A. organization are. We give him a glimpse ahead, if he works hard enough to build a record of scholarship and leadership and a long-time farming program. (p. 117)

Existing research on SAEs primarily focused on teacher's motivation for implementing SAEs in their program (Jenkins & Kitchel, 2009; Retallick, 2010; Robinson & Haynes, 2011; Wilson & Moore, 2007) and the economic impact of SAEs (Hanagriff, Murphy, Roberts, Briers, & Linder, 2010; Retallick & Martin, 2005). But, limited research exists to analyze student motivation for

participating in SAEs. Furthermore, researchers have not sufficiently studied the evolution of SAEs since their federal mandate under the Smith-Hughes Act of 1917. Agricultural education practitioners may long for the high quality SAEs of the past when every student had a SAE for four years (Boone, Doerfert, & Elliot, 1987), but we have little understanding of the student motivation and educational outcomes of those early SAEs.

### **Purpose of the Study**

The researchers chose to conduct a review of historical SAE literature to better understand how student motivation to participate in SAEs has evolved during the first 60 years of vocational agriculture. The purpose of this study was to examine student motivation for SAEs through the lens of the Self-Determination Theory (Deci & Ryan, 1985a).

### **Theoretical Framework**

Modern motivational theories generally suggest a continuum on which human behaviors fluctuate. On one end of the continuum is intrinsic motivation (internally important) and on the other end is extrinsic motivation (external influences) (Schunk, Pintrich, & Meece, 2008). Self-Determination Theory proposes that human beings are more genuinely motivated when driven by internal factors as opposed to external factors (Deci & Ryan, 1985a). Some human behaviors can be created by external motivators while at the same time being inherently important to an individual (Deci & Ryan, 2000). Behaviors can be classified by two categories: (a) regulatory styles and (b) perceived locus of causality (Ryan & Deci, 2000). Simply put, regulatory styles are the reasons for beginning an action (amotivated, externally motivated, internally motivated), while locus of causality are the reason for continuing the action (internal or external).

#### *Amotivational Regulatory Styles-Impersonal Locus of Causality*

Motivation is the “means to be moved to do something” (Ryan & Deci, 2000, p. 54). The antithesis of being motivated is amotivation and may be experienced in a variety of ways: internal amotivation regulations, external amotivation regulations, or a combination of the two. Amotivation may be experienced in a variety of settings including personal, educational or career oriented contexts. Internal motivation regulations may be described as an internal feeling of being overwhelmed by responsibilities or tasks, feelings of inadequacy or incompetence to begin a task, or a feeling that one does not possess the skills to structure and ultimately complete a task. External amotivation regulations can result when “environmental factors are neither predictable nor controllable” (Deci & Ryan, 1985a, p. 150). Uncontrollable environmental factors can include experiences such as being told what to do as opposed to what an individual wants to do or sudden changes to “normal” task completion procedures that are unknown and daunting to an individual (Deci & Ryan, 1985a). Internal and external amotivation regulations can be harmful to an individual’s emotions through negative feelings towards the task at hand, feelings of helplessness towards the task, feelings of incompetence to complete the task, or refusal to participate in the task in the future (Abramson, Seligman, & Teasdale, 1978; Deci & Ryan, 1985a; Ryan, 1995). Impersonal locus of causality represents the least motivated and least self-determined level of causation for continuance of an action or activity. Individuals who experience an impersonal locus of causality are likely to react to an activity in a submissive or

passive manner because they view the activity as beyond their ability to control the guidance and outcome of the activity. The result is an individual reluctant to continue the activity and/or engage in the activity in the future (Deci & Ryan, 1985b).

#### *Extrinsic Motivation Regulatory Styles-External Locus of Causality*

Human behaviors are classified as externally motivated when an individual is persuaded, driven, or enticed by forces beyond the inherent values possessed by an individual (Vallerand & Bissonnette, 1992). Extrinsic motivation regulations can be utilized to initiate an individual's participation in a task and can have a varying degree of internal importance to an individual once the task has begun (Ryan & Connell, 1989). Ryan and Deci (2000) classified extrinsically motivated actions into four domains of perceived internal importance once the task has been initiated: external regulation, introjection, identification, and integration. The external regulation domain can be described as little or no internal importance to the individual once the task has begun. Furthermore, the individual has feelings of being controlled primarily by the rewards or benefits that they will receive upon completion of the task (Vallerand & Bissonnette, 1992). The introjection regulation domain is when an individual participates in a task due to feelings that they "must" participate (Schunk, Pintrich, & Meece, 2008, p. 253). An example would be remaining in a task as to not "disappoint" the person in charge of the task at hand. The individual is not forced to participate in the activity, however, the individual engages in the activity due to external forces acting on the individual's emotional decisions. Ultimately, the activity has little or no intrinsic value to the individual and is mostly completed to gain approval from others (Schunk, Pintrich, & Meece, 2008). External regulation and introjection regulation domains are similar concerning the locus of causality. Individuals can experience positive outcomes from participating in an activity. However, the individual may have little or no self-determination during the activity and is thus less likely to continue the activity in the future (Ryan & Connell, 1989).

#### *Extrinsic Motivation Regulatory Styles-Internal Locus of Causality*

The identification regulation domain is a classification of extrinsic motivation regulations that describes an externally initiated activity that becomes more self-determined once the activity has been started (Schunk, Pintrich, & Meece, 2008). Individuals may choose to continue a task, or even take on more similar tasks, because they perceive the task to be inherently valuable (Vallerand & Bissonnette, 1992). An example of this behavior would be choosing to practice a task beyond the minimum activity requirements in order to become more skilled at the task. The integration regulation domain refers to an individual conceptualizing and identifying the importance of an activity while at the same time initiating the activity due to some form of external driver. However, the intrinsic value of the task greatly outweighs the extrinsic driver initiating the action (Ryan & Connell, 1989). The individuals not only identify the inherent value to them but also incorporate the task fully into their skill set to use for future needs (Deci, Eghart, Patrick, Leone, 1994). In summary, an individual may require an extrinsic motivation regulation to initially begin an activity. The realized intrinsic value of the activity may vary widely depending on the external rewards and/or consequences according to self-determination theory (Deci & Ryan, 1985a). Identification and integration regulation domains represent a locus of causality in which individuals have a higher degree of control and self-determination

over their engagement within an activity. This increased perception of control often provides an enhanced level of engagement during the activity and increased likelihood of participating in the activity in the future (Ryan & Connell, 1989).

*Intrinsic Motivation Regulatory Styles-Internal Locus of Causality*

Intrinsically motivated human behaviors are actions taken to fulfill purely inherently valued actions or tasks of an individual (Deci, 1971) that have little or no external reward or consequence (Deci & Ryan, 1987; White, 1959). Actions driven by intrinsic regulations are often used to satisfy three needs that all humans inherently possess: competence (a person's need to feel a level of confidence in themselves and their abilities), relatedness (feeling that one belongs to a group or community), and autonomy (one's ability to feel control, choice, or direction) (Deci & Ryan, 1985a; Ryan & Deci, 2002). Intrinsic motivation is looked upon as the most powerful and ultimately fulfilling regulation style due to the fact that individuals complete a task for its own sake (Schunk, 2009). The locus of causality is derived purely from the individual's internal interest held for the activity (Ryan & Connell, 1989). An overview of the taxonomy of human motivation proposed by Ryan and Deci (2000) can be found in Figure 1.

Regulatory Style	Amotivational	Extrinsic Motivation				Intrinsic Motivation
Emotions Felt by Individual	Low perceived competence "I must do this to satisfy the leader." "I can only do it because you tell me how to." "I don't see how this applies to me."	<b>External Regulation</b> Significance of extrinsic rewards or punishment "What do I get for doing this?" Compliance "I have to do this to get X"	<b>Introjection</b> Ego Involvement Focus on approval from self or others "I don't want to do this, but I will do it to make you happy."	<b>Identification</b> Conscious valuing of the activity "I don't want to do this, but I can see how it will help me" Self-endorsement of goals	<b>Integration</b> Hierarchical synthesis of goals "I didn't like it, but I'm glad I did it. It really helped me." Conforming with the group	Interest Enjoyment "This is something I wanted to do." "It was work, but it didn't feel like it."
Perceived Locus of Causality	Impersonal	External	Somewhat External	Somewhat Internal	Internal	

Figure 1. Taxonomy of human motivation in self-determination theory (Ryan & Deci, 2000)

**Methods**

The researchers used historical research and general qualitative interpretative methods to develop an interpretation of the motivation of SAEs. They relied on historiography methodology

to develop a varied list of the different types of SAEs from the three eras researched. The researchers were interested in understanding the context and the evolution of SAE motivation through time. The variation of cases ensured an accurate depiction of the historical development of SAEs (Rampolla, 2007; Spalding & Parker, 2007). The researchers understood the contextual changes that occurred in agriculture, which affected school-based agricultural education and SAEs: including the changing nature of production agriculture, communities where agricultural education occurred, and the development of the SAE awards system (Boone et al., 1987; Moore & Borne, 1986; Retallick, 2010; Wilson & Moore, 2007). Thus, the researchers chose cases that represented a wide-range of SAE practices and eras in agricultural education. The primary sources included articles about SAEs written by agriculture teachers and interviews with former agriculture students. Secondary sources included articles written by agricultural education professionals about the SAE practices of agriculture teachers and students (Gall, Gall, & Borg, 2007).

The authors examined historical magazines, documents, and books covering school-based agriculture for detailed cases of SAE participation from 1917-1988. Three time periods were chosen by the researchers to represent three different decades in agricultural education. Specifically, the researchers analyzed the *The Agricultural Education Magazine* and 12 texts from 1928-1934; the time frame of 1947-1953 included the *The Agricultural Education Magazine*, *Better Farming Magazine*, and 21 texts; and the researchers analyzed the *The Agricultural Education Magazine* and 9 texts from 1966-1973. The researchers also interviewed former FFA members that had in SAEs during time frame of 1966-1973. The decision to include interviews was based on the limited number of cases that emerged from the literature during the time frame of 1966-1973. The pool of possible interviewees was collected from a list of names generated by state department of education staff in agricultural education. The interviewees were selected based on their level of engagement in FFA and their SAE. A conscious was made effort to find representative cases from the era. The researchers utilized two of the interviewees. First, a female was chosen to represent that unique, but growing population of agriculture students during the early 1970s. Second, a male was chosen who lived on a family farm, worked on the farm for his SAE, but who then left the farm after graduating high school. The researchers felt that this student was not recognized in the primary sources and represented a growing number of agriculture students during the 1970s.

The qualitative interpretations occurred in a collaborative setting and the cases were analyzed for their defining characteristic, regulatory style, and locus of control. The researchers categorized the cases by a defining characteristic that best represented the student's motivation for conducting the SAE. The researchers identified the characteristics to ensure that a wider-variety of cases was represented. The defining characteristics were not grounded in agricultural education literature. The characteristics were subjectively chosen by the researchers and peer-reviewed with other agricultural education faculty for accuracy. The characteristics included (class) mandate, student interest/owned, collaboration, experiential learning opportunity, and awards. The researchers then analyzed the cases for their regulatory style and locus of control. The interpretations were grounded in peer-reviewed researched definitions (Ryan & Deci, 2000) and examples provided by a professor of student motivation on campus. Each time period had a synopsis of the analysis of the cases from that time period.

Trustworthiness was maintained by a variety of methods. First, the researchers developed a consensus of theory interpretation with a professor of motivational theory. Second, primary and secondary historical sources were evaluated to determine if the SAE cases represented truth and historical accuracy. Third, bias was controlled by framing the interpretations in the cases to the case itself and through collaborative debriefing. Fourth, the researchers conducted peer debriefing to assure the accuracy of the motivational interpretations. Last, the researchers developed trustworthiness by finding a wide variety of SAE cases to ensure a multitude of interpretations (Ary, Jacobs, Razavieh, & Sorensen, 2006).

## Findings

The findings were divided into three different subsections representing the three time periods included in the analysis. SAE projects were first described with a synopsis within each time period. Next, each time period case analysis was put into a table format to organize the findings. Finally a description of each individual case was developed by the researchers.

### SAEs from 1928 to 1934

The researchers examined four SAE cases representing the time period from 1928 to 1934. The four defining characteristics of the SAE projects were found to be mandated production project, student interest/student owned project, collaborative project, and awards driven project. Two projects were found to have extrinsic regulatory styles; one project had an amotivational regulatory style, and one project had an intrinsic regulatory style. Three projects were found to have somewhat internal or an internal locus of causality while one project had an impersonal locus of causality. The internal locus of causality to continue participation developed through either student-to-student competition or the desire to achieve high levels of accomplishment via FFA awards. The mandated SAE projects were interpreted to have an impersonal effect of student's locus of causality because students viewed them as a negative component of vocational agriculture. The data and case descriptions are displayed in Table 1.

Table 1  
*Interpretive Analysis of SAE Motivators from 1928 to 1934*

SAE Data and Cases	Defining Characteristic	Categories of Motivation	
		Regulatory Style	Locus of Causality
Mandated SAEs	Mandated Production Project	Amotivational	Impersonal
Martin's poultry SAE	Student Interest/ Student Owned Project	Intrinsic Motivation	Internal
Lebanon's class SAE	Collaborative Projects	Extrinsic Motivation	Somewhat Internal
SAE Awards	Award Driven Project	Extrinsic Motivation	Internal

**The SAE mandate.** The requirement of the Smith-Hughes Act of 1917 for all students to have a SAE was quickly adapted. 79% of all agriculture students across the nation had a SAE in 1921-22 (True, 1929) and this arose to about 90% by 1930 (Maltby, 1931). But, just because

most students had a SAE didn't mean that all students valued their SAE. Schmidt (1928) illustrated this situation quite well.

In too many instances the project has been regarded as something that must be done because it has been made a requirement. In a school where such an attitude prevails, many of the boys who are studying vocational agriculture regard the projects as a six-month sentence at hard work to be served as a result of selecting the training course in vocational agriculture. (p. 260)

**Martin's poultry SAE.** As the special editor of the supervised practice section of *The Agricultural Education Magazine*, G. A. Schmidt reported about actual SAEs. One such report was a short article about the poultry flock of Martin Rand (1930). As a sophomore Martin wanted to raise a poultry flock of a 500 hens on his farm, despite his father's reluctance. His father initially suggested 50-100 hens, but Martin persisted and eventually his father gave in. Martin built the brooder houses, started a flock, and by the first year made almost \$1,000. Martin's father was so impressed that he encouraged his son to increase the poultry business, invited his other son into a family partnership, and together they raised 2,400 baby chicks by the third year (Schmidt, 1930).

**Lebanon's class SAE.** F. A. Blauer (1930), agriculture teacher of Lebanon, Kansas, conducted a class poultry operation for seventeen students in an animal husbandry course who did not live on a farm. He shared the results of this class SAE in a *The Agricultural Education Magazine* article. The students built the poultry house, cared for the laying hens, and conducted experiments. The results of the production experiments were shared with the community, as well as the products the students' produced. Blauer reported that students were highly interested in the collaborative project. "A contest spirit prevails among the boys. Such questions as 'Whose pullets laid the most eggs this week?' 'How many eggs today?' and 'How are the birds doing?' are often heard" (p. 54).

**SAE awards.** The first student awards established for the National Organization FFA, were the FFA degree system. The varying levels of degrees were awarded partially based on the student's SAE. The degree system was designed to recognize students at the local chapter, state association, and national organization level. Nominations for an American farmer degree were privileges that went to the top students in each state (Groseclose, 1929). For instance, James Neal was nominated for the America farmer degree from Oregon in 1931. A quick read of his biography included:

Neal has been actively identified with the Oregon association and served the organization as its first president. He is a leading character in the Oregon Future Farmer motion picture film made by Southern Pacific Railway during the annual Smith-Hughes Week-end at Oregon Agricultural College, to explain the work of vocational agriculture as carried on in Oregon. James was also the president of his local chapter. (Crabtree, 1931, p. 192)

Soon after the establishment of the FFA degree award system, practitioners realized the power of SAE awards to motivate students (Bible, 1941).

## SAEs from 1947 to 1953

The researchers examined four SAE cases representing the time period from 1947 to 1953. The four defining characteristics of the SAE projects were found to be two required collaborative projects, one mandated placement project, and one student interest/student owned project. The required collaborative projects and mandated placement project was found to have extrinsic regulatory styles while the student interest/student owned project had an intrinsic regulatory style. The two required collaborative projects both had an external locus of causality, but for different reasons; one external locus of causality was derived from money while the other was viewed as a “burden” that must be continued due to its requirement. However, the mandated placement project had an internal locus of causality due to stimulation of the student’s interest. The student interest/student owned case was initially started based on the student’s intrinsic motivation and continued to be derived from an internal locus of causality. These data and case descriptions are displayed in Table 2.

Table 2  
*Interpretive Analysis of SAE Motivators from 1947 to 1953*

SAE Data and Cases	Defining Characteristic	Categories of Motivation	
		Regulatory Style	Locus of Causality
Kalispell FFA Chapter’s SAEs	Collaborative Projects	Extrinsic Motivation	External
Joe Harris’s Family Ranch	Student Interest/ Student Owned	Intrinsic Motivation	Internal
Battle Ground School Farm	Collaborative Projects	Extrinsic Motivation	External
Urban Placement SAEs	Mandated Placement Project	Extrinsic Motivation	Internal

**Kalispell FFA chapter’s SAEs.** The following excerpt comes from Deyoe’s book, *Farming Programs in Vocational Agriculture* (1953). Deyoe’s research and writings on SAEs has been some of the most extensive in the history of agricultural education. Deyoe included Kalispell in his section titled accomplishments in select chapter.

The flathead Chapter of the FFA at Kalispell, Montana, has won a national gold emblem award for ten consecutive years. The supervised farming programs of 112 individual boys in a recent year included an average of three improvement projects as well as the ownership projects. The chapter operates a farm of 100 acres on which is demonstrated the restoration of fertility, the reduction of alkalinity, and the control of weeds. Certified seeds of improved varieties of brome, clover, and barley are among the crops raised. The members are paid dividends on shares which they own in the chapter farm. (Deyoe, 1953, p. 218)

**Joe Harris’s family ranch.** The following excerpt also comes from Deyoe’s *Farming Programs in Vocational Agriculture* (1953) text. This particular text, along with the early edition of the same text (Deyoe, 1947), contained a multitude of detailed examples of SAEs.

Deyoe's presented this example within his section entitled accomplishments of individuals in their farming programs.

*Joe Harris, Cedarville, California* was Star American Farmer of the Pacific Region in 1951. When Joe was in the fourth grade, his father died. Joe, and older brother Sam, and his mother agreed to keep the 3,800 acre ranch going, and each brother was promised a one-third partnership upon graduation from high school. They developed an extensive cattle enterprise. To aid in hay-making on a large scale, they constructed buck rakes and hay stackers. When Sam was called into the armed forces, Joe became manager of the ranch and the herd of 700 cattle. A major development was the construction of a reservoir for impounding water from a spring; this increased the irrigation potential from 20 acres to 300 acres. While in high school, Joe was an outstanding student, held offices as chapter president and regional reporter. He held the chapter together for six months when the school was without a teacher of vocational agriculture. (Deyoe, 1953, p. 221)

**Battle Ground's school farm.** Bert Brown (1949), the agricultural supervisor from the Olympia, Washington reported on his program's school farm in *The Agricultural Education Magazine*. Brown described how they managed the labor and instruction of their 51 acre school farm:

The class program is kept flexible so that, if weather permits, a class can go to the farm on short notice. Lockers are provided in which each boy keeps farm work clothes and shoes. Acreage of each crop is rather small so that the labor does not become monotonous. A boy learns to prune raspberries in one or two hours. A week of it would have little or no educational value. Acreage of each crop is rather small so that the labor does not become monotonous. A boy learns to prune raspberries in one to two hours. A week of it would have little or no education value. Experience driving tractors, plowing, and disking, is possible for all boys in the department. (p. 62)

Interestingly, the profits were used to finance the program and students were paid a farm laborers' wage for their work.

**Urban placement SAEs.** Jamaica Plains and East Weymouth High Schools of Massachusetts, both near Boston, had to adapt to the SAE requirement to fit the placement experiences available to their students because most students did not live on farms (Deyoe, 1947; Nelson, 1950). Over a four year program, students of Jamaica Plains and East Weymouth agricultural programs were expected to spend their summers working with a variety of different local agricultural businesses. Students gained experience in the fields of marketing garden produce, poultry farming, dairy production, and greenhouse operations. This variety of experiences would be hard to duplicate in an individual student's entrepreneurial production experience, especially in an area near Boston. These types of placement experience arrangements were popular in ever increasingly metropolitan states, such as Massachusetts, because up to 90% of the students did not have the home facilities for an individual production or non-production agricultural experience (Taft, 1960).

## SAEs from 1966 to 1973

The researchers examined five SAE cases representing the time period from 1966 to 1973. The five defining characteristics of the SAE projects were found to be two mandated projects, one award driven project, one student interest/awards project, and one student interest project. All five projects were found to have extrinsic regulatory styles. Two of the five cases were interpreted to have developed an internal locus of causality originating from personal preference of the project. Three of the five cases were interpreted to have an external locus of causality derived from money, power, requirements, or seeking approval from others. These data and case descriptions are displayed in Table 3.

Table 3  
*Interpretive Analysis of SAE Motivators from 1966 to 1973*

SAE Data and Cases	Defining Characteristic	Categories of Motivation	
		Regulatory Style	Locus of Causality
New SAE Awards	Award Driven Projects	Extrinsic Motivation	Internal
Outdoor Recreation SAE	Student Interest & Award Driven Project	Extrinsic Motivation	Internal
South Rowan High School's Placement SAEs	Mandated Placement Project	Extrinsic Motivation	External
Loudonville's Production SAEs	Mandated Production Project	Extrinsic Motivation	External
A Dairy Operation	Student Owned Project	Introjected Extrinsic Motivation	Somewhat External

**New SAE awards.** School-based agricultural education, especially SAEs, changed after the Vocational Education Act of 1963. Agriculture curriculum had a broader perception of agricultural careers. Students began to have SAEs in those careers as well. Significantly, SAEs were no longer mandated for each student, though individual agriculture programs could still require students to have SAEs. Professionals argued for an update to the SAE award system of the FFA, including proficiency awards, to include more off-farm activities (Kantner & Bender, 1967; Selland & Vog, 1969; Sheppard, 1968). This change came in 1970 when proficiency awards were overhauled by the National FFA Organization. The changes included the addition of proficiency awards, such as outdoor recreation and forest management, and the inclusion of a placement category to many of the pre-existing proficiency areas (Seefeldt, 1970). These awards would motivate those students in these newer areas by providing them the same level of recognition as students with traditional project projects.

**Outdoor recreation SAE.** The following excerpt is from an interview with a former female FFA member. She represented new demographic, females in school-based agriculture, and her SAE was new as well, outdoor recreation. The decision to start the SAE was partially grounded in the likelihood that she could win a proficiency award.

He [the FFA advisor] would do home visits to each student home and interview the family and student to determine the student interest and capability to complete

the SAE. We were raising beef cattle and raised tobacco and tomatoes, yet my Advisor knew that I would not be competitive in those areas so we went with the area I was the strongest. My family had sold the dairy farm when I entered high school and bought 70 acres on which we developed a campground. I was able to compete in the outdoor recreation proficiency and won the Southern Region. The entire process within the Proficiency completion was exciting and eye opening. We do not do interviews on the local and state level which was very difficult when I got to the National Level. (personal communication, April 11, 2011)

**South Rowan High School's placement SAEs.** John W. Allison (1966) was an agriculture teacher that believed in the value of every student having a SAE. He was the agriculture teacher from South Rowan High School in China Grove, NC when we wrote this article for *The Agricultural Education Magazine*. The excerpt is brief, but Allison provided many details about how he managed his students' SAEs, including facilitating student's placement experiences.

For the first time, in 18 years of teaching vo-ag, we can reach all students enrolled in vocational agriculture by varied supervised practices in agriculture... Out of 113 students enrolled in vo-ag we have 55 engaged in work experiences away from their homes. These work experiences include work on highly specialized horticulture farms, dairy farms, general farms and produce farms.... Our boys realize they are being graded by the farm manager as well as the teacher of agriculture. Systematic raises in pay when earned get a good effort from all students. As students get more experience and exhibit leadership, they are used as field supervisors to direct fellow workers. (Allison, 1966, p. 53)

**Loudonville's production SAEs.** Jack Nowels, of Loudonville, Ohio, was another agriculture teacher that required students to have a SAE, but in this case students had to have ownership, production projects. Nowel's (1973) *Agricultural Education Magazine* article also included his philosophy of a complete program of school-based agriculture.

Students in our vocational agriculture department must carry a minimum of two production projects and three improvement projects per student.... In my 25 years of teaching vocational agriculture (21 years here at Loudonville) their requirement has always been met readily by interested students regardless of whether they live on a farm or in town. One hundred per cent of our membership has always exhibited projects at our Ashland County Fair and our local Loudonville Fair... Nearly all of our students have 100 per cent ownership of their production projects. (Nowels, 1973, 248)

**A dairy operation SAE.** The following quote is from a former FFA member in the later 1960s. His father was his FFA advisor and he eventually became an agriculture teacher himself. Interestingly, the man talked about his past experience in both the awards he won and life lessons he learned.

I was born into a dairy operation and that was the basis for my SAE. Dad gave me ownership in 2 cows as a freshman in return for milking every morning and afternoons when school or sport activities didn't interfere. I was also responsible for working the fields raising corn and hay for feed. I had a partnership with 5 acres of tobacco with Dad and my brother. My dairy operation expanded to 20 cows and replacement heifers through high school and first year of college. I placed 1<sup>st</sup> in dairy proficiency at the Middle TN regional level. I learned a lot of valuable skills related directly to dairy and crop production. Most importantly, I learned self-discipline and the importance of hard work which helped me get through college and eventually a successful teaching career. Although the dairy and most of the land are gone today, I am still able to have a part-time farming operation of 40 acres of wheat, a few beef cattle, and hay production to sell to the public. (personal communication, April 11, 2011).

### **Conclusions/Implications/Recommendations**

The purpose of this interpretive historiography was to examine student motivation for supervised agricultural experiences (SAEs) through the lens of Self-Determination Theory. From the cases occurring during the 1928-34 era, it was found that three of the four cases initiated participation in SAEs by means of externally motivating factors. Three of the four cases in this time period were sustained by an internal locus of causality. For the cases occurring during the 1947-53 era, it was found that three of the four cases began based on extrinsic motivation of the student. Two of the cases had an external locus of causality while two had an internal locus of causality. For the cases occurring during the 1966-73 era, it was found that all five cases began based on the extrinsic motivation of the student. Three of the five cases in this time period were sustained by an external locus of causality.

A conclusion from these findings was that initiating student participation in SAE projects during the selected time periods has been largely driven by external regulations. External motivators appeared in the form of mandating SAE participation, awards, or collaborative SAEs at school. This conclusion is supported by an existing body of literature stating that external motivators are sometimes necessary to begin an action (Deci, Eghart, Patrick, Leone, 1994; Deci & Ryan, 1985a). Agricultural educational researchers have identified external motivators, such as FFA awards, as a primary means to initiate student participation in SAEs (Bible, 1941; Retallick, 2010; Wilson & Moore, 2007). It can be implied from this conclusion that initiating student involvement in SAEs has and will continue to be initiated by external means under the current model. This study also implies the use of external motivators can be a positive means to introduce SAE participation opportunities (Retallick, 2010; Wilson & Moore, 2007). It is recommended that agricultural education practitioners continue to utilize external motivators to introduce students to SAEs, but practitioners should strive to find ways to internally motivate students to participate in SAEs as well. Strategies to develop intrinsic motivation for SAEs could include focusing on student's personal interests related to SAE areas, designing SAEs that would be personally meaningful to the student, or providing rationale to students as to how and why SAEs are important to their educational and/or personal development (Reeve, 2009).

Another conclusion from these findings was that five out of ten cases ended with students developing an internal locus of causality for their SAE. This demonstrated that student

motivation to participate in SAEs could be established by external motivators and later sustained by internal stimulus (Ryan & Deci, 2000). However, it seems that an internal locus of causality for SAEs declined through the time periods with external locus of causality becoming more prevalent in later years. Reaching a point of intrinsic motivation is ideal according to Self-Determination Theory (Deci & Ryan, 1985a). In cases when SAEs were deemed as only a requirement for the course or continuing based on money alone, external motivating forces were sustained (Deci & Ryan, 2000). When the defining characteristic was identified to be a form of requirement, the result was usually an external regulatory style and locus of causality. An implication of this finding could be that students who are exposed to high levels of external consequences can potentially miss the inherent value in the project. This could potentially result in a lowered chance of gaining an internal locus of causality for the project. This implication is supported by motivational research highlighting the decreased value individuals place on a task itself when external rewards or pressures are excessively utilized (Deci & Ryan, 1985a; Ryan & Deci, 2000). It is recommended that agricultural education practitioners use caution when assigning external rewards to activities such as SAEs. Overuse of external rewards such as money, trophies, or recognition can potentially reduce a student's acquisition of the "true" SAE values of enhanced learning and career exploration. As the years have passed in the agricultural education profession, fewer and fewer students come to agriculture programs with agriculture backgrounds or agriculture career entry intentions (National Research Council, 1988). It could also be implied from this finding that perhaps students have a less frequent internal locus of causality concerning SAEs as a result of fewer students with agricultural backgrounds or agriculture career interests. Practitioners should strive to help students realize the value of SAEs as a means to learn and transfer knowledge to contexts beyond agriculture.

The researchers acknowledge the limitations of transferability of the findings because of the historical cases studied. The researchers further acknowledge that the cases included in this study were only interpreted based on what information was provided by the sources. The researchers recognize that any of these cases could be more dynamic and complex than the information provided. It is recommended that historical researchers continue to identify detailed data sources in order to better understand the evolution of SAEs.

This historical analysis found that motivating students to participate in SAEs has been a concern since 1917. Navigating the boundaries between using extrinsic rewards/punishments and developing an intrinsic drive has been a continual challenge throughout the history of SAEs. SAEs can be an incredibly valuable learning tool, especially when students reach a level of inherent value for the project. It is recommended that future research continue to investigate the relationship between intrinsic and extrinsic motivating factors to improve the implementation of SAEs.

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## **Student Motivation for Involvement in Supervised Agricultural Experiences**

Chair/Discussant Comments by:  
Andy Baker, Western Illinois University

The authors did a fantastic job in using the self-determination theory to evaluate the motivational derivative of SAE's from the student perspective. The authors found that the primary source for the implementation of SAE's utilized forms of extrinsic motivation. This form of motivation has been utilized for decades and is still being utilized today. If implemented properly, it could lead to some form of intrinsic value or motivation for the student. They utilized qualitative means to take an evaluative look on how SAE's were implemented, by reviewing past publications in specific era's of time. It is a very innovative method in providing us with an insightful perspective into that specific timeframe. I was able to easily follow their methods to get a richer, deeper experience from the individuals that were entrenched in that time period.

The historical perspective allows us to follow along and just enjoy the ride through time. Certainly publications have a tendency to skew viewpoints, by writing on situations that have a positive impact, which ultimately leads to success. Most of the resources utilized for this study paint a picture on the reasoning behind the implementation of SAE's and were generally enforced through extrinsic means, which generally results in intrinsic outcomes. However, the likelihood of having similar results today using extrinsic methods fades. This study allows us to reflect somewhat to assess if traditional methods are still in line with today's student. If we still believe "if it ain't broke, don't fix it" mentality, then we may be facing issues in the near future with SAE development or we are currently experiencing these issues and we do not want to address them based upon traditional value systems. Again, we have to be careful on how we interpret findings based upon the information provided from each historical case that was used in the study. There were a few questions that were stimulated after reviewing this study.

1) How can we interrupt the findings of this study to what we are doing today to promote the value of SAE's? The study encourages caution when using extrinsic motivators to implement SAE's, but what are some alternatives? Do we need to turn the corner and eliminate the need for external variables to encourage the development of SAE's?

2) Based on the cases utilized in this study were there any cases that indicated any negative ramifications associated with SAE's? I am truly interested in what additional information that Deyoe provided in his book.

Again, I was blessed with a set of studies that were able to extend my perception on the development/implementation/value of SAE's. I would like to thank the authors for the relentless effort in uncovering valuable resources to utilize for their qualitative analysis utilized in this study, knowing that they had to sift through substantial amount of material to uncover their discoveries to cross reference publications for the purpose of linkage to the self-determination theory.

## **Supervised Agricultural Experiences and Learning Theories: Evaluating the Experience through a Cognitive Constructivist Lens**

Michael J. Martin, University of Missouri  
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*Supervised agricultural experiences (SAE) have been part of the curriculum model of school-based agricultural education for almost 100 years. Researchers have theoretically explained SAEs as experiential in nature, but SAEs have not been positioned within a grand learning theory. Furthermore, research has identified operational issues within SAEs that have jeopardized some of the positive student learning outcomes. This study examined SAEs through a philosophical approach and applied SAEs to the grand theory of cognitive constructivism. The researchers found the principles of SAEs aligned to the concepts of cognitive constructivism: problem-solving, metacognition, transferring, and self-regulation. Past SAE research has not focused on determining the effectiveness of SAEs to develop cognitive constructivist skills though. Thus, theoretically, SAEs aligned to cognitive constructivism, but research on SAE practices has not demonstrated this theory in practice. The researchers argued that testing and analyzing SAEs under a framework of cognitive constructivism would create meaningful findings for both research and practice. Considering the recent trend in agriculture classroom research towards measuring problem-solving and metacognition, practitioners should consider measuring the educational value of SAEs within these concepts.*

### **Introduction**

Supervised agricultural experiences (SAE) have formed a cornerstone of instruction in school-based agricultural education for the past 95 years. Broadly defined, SAEs are student projects in agriculture that are tied to careers in food, fiber, and natural resources industries. The agricultural experiences apply concepts taught in the classroom to real-life contexts using hands-on methods. The fundamentals of SAEs include the need for someone to direct or supervise the experience, experience relates to agriculture, have an educational value, occur outside of normal class time, and directly link to instruction (Newcomb, McCracken, Warmbrod, & Whittington, 2004; Phipps, Osborne, Dyer, & Ball, 2008; Talbert, Vaughn, & Croom, 2005). Yet, recent research has found that students are not fully participating in SAEs (Retallick, 2010b; Wilson & Moore, 2007). Furthermore, there are major issues that agriculture teachers face when implementing SAEs: including changing demographics and societal attitudes (Retallick, 2010b), teachers not requiring students to have an experience because of too many students in the program or a lack of time (Wilson & Moore, 2007), the inadequate levels of SAE supervision by the teacher (Dyer & Williams, 1997), and lack of classroom instruction about SAEs (Dyer & Osborne, 1996). These operational issues can jeopardize the educational effectiveness of SAEs, which this study explored.

Researchers have called for a need to re-examine SAEs (Camp, Clarke, & Fallon, 2000; Moore, 2006). In particular, there is a discrepancy between the described benefits of SAEs and what research has indicated as the reality of SAEs. Researchers have posited that SAEs are experiential in nature, develop students' entrepreneurial, career, personal, and critical thinking skills (Newcomb et al., 2004; Phipps et al., 2008; Ramsey & Edwards, 2011; Robinson & Hayes, 2011; Talbert, Vaughn, & Croom, 2005). One recent study indicated that "extensive evidence of the educational value of SAE exists in the literature" (Hanagriff, Murphy, Roberts, Briers, &

Linder, 2010, p. 72). Yet, researchers have also indicated that SAEs are problematic in practice (Camp, Clarke, & Fallon, 2000; Moore, 2006; Retallick, 2010b; Wilson & Moore, 2007). If school-based agriculture teachers are dedicating significant instructional time to SAEs, then they should be certain of the pedagogical processes involved with SAE participation. This study was guided by the premise that if there is operational discrepancies in SAEs then it stands to reason that there would be theoretical discrepancies worthy of further investigation.

While the evidence of the effectiveness of implementing high quality SAEs has been somewhat contradictory, the principles of SAEs have been well documented. Table one outlined the principles of SAEs listed in the three different textbooks of school-based agriculture (Newcomb et al., 2004; Phipps et al., 2008; Talbert et al., 2005). These principles were the espoused ideals of SAEs and necessarily grounded in research or practice. Each principle was mentioned in at least two textbooks.

Table 1

*Principles of SAEs found in Textbooks of School-Based Agriculture*

SAE Principle	Citation
SAEs apply classroom and laboratory instruction	Newcomb; Phipps; Talbert
SAEs are linked to some context of agriculture	Newcomb; Phipps; Talbert
SAEs are conducted outside of class time	Newcomb; Phipps; Talbert
SAEs are supervised by an adult	Newcomb; Phipps; Talbert
Students learn by doing with their SAEs	Newcomb; Phipps; Talbert
Students display initiative and control of SAE	Newcomb; Phipps
Students set SAEs goals	Newcomb; Phipps; Talbert
SAEs motivate students to learn	Phipps; Talbert
Students learn to plan and budget through SAEs	Newcomb; Phipps; Talbert
SAEs must be evaluated in some fashion	Phipps; Talbert
SAEs are a form of individualized instruction	Newcomb; Phipps; Talbert

Researchers have applied teaching and learning theories to SAEs as well. SAEs utilize experiential education (Knobloch, 2003; Roberts, 2006; Terry & Briers, 2010), which requires the learner to experience a phenomenon, reflect on the experience, and formulate generalizations to test the phenomena. Researchers also linked SAEs to the project method of teaching (Roberts & Harlin, 2007), which claims that learning occurs when the student interacts with their environment. However, experiential education and the project method represent only mid-range learning theories or teaching methods that can fit into a variety of grand learning theories. Retallick (2010a) in an *Agricultural Education Magazine* article argued for the development of

reflection and transferring skills through SAEs, both of which are concepts under the grand theory of constructivism. Yet, no systematic examination of SAEs within grand theories of education has been undertaken.

The practical and research value of situating SAEs within grand theories of education warrants this study. First, considering the current operational issues of SAEs (Camp, Clarke, & Fallon, 2000; Moore, 2006; Retallick, 2010b; Wilson & Moore, 2007), revitalizing SAEs along the concepts of grand educational theories would be beneficial to teachers. For instance, each grand educational theory has a set of teaching methods that apply to that theory, methods that can be applied by agriculture teachers for SAEs. Second, no contemporary research has measured the effects of SAEs on student learning. Situating SAEs within specific grand learning theories would provide researchers with concepts to measure and test. This same trend is happening with some recent school-based research on agricultural classroom instruction, including measuring the concepts of problem-solving and metacognition (Lamm et al., 2011; Pate & Miller, 2011). The need for theoretical and practical discussions about SAEs guided this philosophical study.

### **Purpose and Research Questions**

This philosophical examination argues that supervised agricultural experiences need to be situated in the grand theories of education. The following research question guided the study:

1. Which grand educational theory most aligns to the principles of supervised agricultural experiences?
2. How do the peer-reviewed research findings about supervised agricultural experiences align to the concepts of the identified grand theory?

### **Methods**

The researchers utilized philosophical research methods in this study. Specifically, the researchers proposed a new purpose for an educational practice that would benefit students, which Burbules and Warnick (2006) identified as a method of philosophical research in education. The researchers operated under a postpositivist epistemology and acknowledged the ability of theories to explain what happens in a classroom (Creswell, 2003, Guba & Lincoln, 2005). Following the postpositivist epistemology, the researchers examined a multitude of sources and perspectives within a framework of cognitive constructivism. The researchers wanted to back their assertions with peer-reviewed evidence and ground those assertions in the reality of practice. The resulting manuscript has findings that were grounded in the theory of cognitive constructivism and the peer-reviewed SAE research, and the discussion section focused on the conceptualizing SAE practices within a cognitive constructivist framework.

The researchers reviewed over 30 articles for this SAE philosophical study. These sources were all peer-reviewed articles from the *Journal of Agricultural Education*, and *Journal of American Association of Teacher Educators in Agriculture*. The researchers searched databases with the search code of SAE. The researchers realized that some research about SAE may have been overlooked because the author(s) used different terminology (i.e. Agriscience could also be about research SAEs). If these situations existed, the researchers did not include those findings so as to avoid confusion and maintain the intentionality of the author(s) research. The research was grounded in these disciplinarian publications because of the uniqueness of SAEs to agricultural education. The researchers examined 25 years of SAE research (1986-

2011) for peer-reviewed evidence of SAE practices of problem-solving (problem-solving and the type of SAEs), metacognition (goal setting, planning, and decision making skill development), transferring skills (classroom instruction and direct supervision), and self-regulated learning (students directing their learning). These concepts were defined in the findings section, which also served as the theoretical framework.

Qualitative standards of trustworthiness were applied to this research. Credibility was built by the researcher throughout the study. The researcher employed a triangulation method to the findings by reviewing multiple articles to build a broad theoretical perspective of SAE practice (Ary, Jacobs, & Razavieh, 2002; Creswell, 2001). The researchers also used peer-reviewed research findings to establish the credibility of the theoretical claims. Confirmability was maintained by the reflexivity of the researchers and peer debriefing meetings to discuss the researchers' claims. Furthermore, the researchers acknowledged that they were school-based agriculture teachers at one time in their careers. They attempted to mitigate these experiences by grounding their claims about SAEs in the peer-reviewed data rather than anecdotes from their experiences. An audit trail of the coded articles and research notes was kept to build dependability and confirmability. (Ary, Jacobs, & Razavieh, 2002).

### **Findings**

The findings were divided into two sections based on the objectives of the study; situating SAEs within grand learning theories and analyzing peer-reviewed SAE research to find evidence of cognitive constructivist concepts.

#### **Objective One: Situate SAEs within a Grand Learning Theory**

SAEs have not been situated to grand theories of learning, such as behaviorism, social cognitive, cognitive constructivist, and social constructivist. SAEs have been described as experiential in practice (Knobloch, 2003; Roberts, 2006; Terry & Briers, 2010), but experiential education is a middle-range theory, which functions between a grand theory and the working hypotheses of everyday life (Camp, 2001). Grand theories are abstract and deal with larger, global phenomena (Camp, 2001; Neuman, 2003). One study utilized the grand theories of education in describing the whole program of school-based agricultural education, but not just SAE. Roberts and Ball (2009) espoused that agricultural education “oscillates between cognitive and social constructivism based on the needs of individual learners” (p. 8).

This study examined the grand learning theories of behaviorism, social cognition, social constructivism, and cognitive constructivism (Doolittle & Camp, 1999; Powell, Agnew, & Trexler, 2008; Schunk, 2008) to identify which theory most represented the principles of SAEs. The researchers argue that while SAEs do align to some of the tenets of behaviorism, social cognition, and social constructivism, none of these theories represent the best possible match for SAEs. Behavioral learning theories describe learning in terms of environmental events that cause mental processes, or conditioning (Rachlin, 1991). An argument could be made that behavioral learning theories have been active in SAEs because the FFA award system motivates students to have a SAE. Yet, SAEs do not align to behavioral theory because SAEs encouraged students to grow their experiences based on their personal wants and not environmental factors. Social cognition involves learning in social environments through educational concepts such as modeling (Bandura, 1977, 1986). SAEs do include the social interaction, like the relationship between the student and SAE supervisor(s). But, the supervision that occurs does not happen to

such an extent to become truly social learning. Most of the learning through SAEs happens individually with the student's experience serving as the guide.

The principles of SAEs do match up to some of the tenets of social constructivism, which is theory that groups learn by collaboratively constructing knowledge (Phillips, 1995). SAEs do align to social constructivism because students actively seek knowledge, experiences are situated in real-world contexts, and students do interactive with supervisors. SAEs break from social constructivist's principles however as student's experiences are usually individualistic in planning and execution rather than being formed by social interaction. If SAEs involved students working together cooperatively then social constructivism would be more applicable. Table two describes how the three prior grand learning theories do and do not align to principles of SAEs.

Table 2  
*How Behaviorism, Social Cognition, and Social Constructivism do and do not represent SAEs*

Grand Learning Theory	Principles of SAEs that Align the Grand Theory	Principles of SAEs that Contradicts the Grand Theory
Behaviorism	SAEs motivate students to learn (through FFA awards)	Student display initiative and control of SAE; Students set SAEs goals
Social Cognitive	SAEs are supervised by an adult; SAEs apply classroom and laboratory instruction	SAEs are a form of individualized instruction
Social Constructivism	SAEs are supervised by an adult; SAEs apply classroom and laboratory instruction; Students learn by doing with their SAEs	SAEs are a form of individualized instruction

The researchers argue that SAEs function best within the cognitive constructivist learning theory which describes learning as the adaption of behavior and thought based on individual cognition (Cobb, 2005; Phillips, 1995).

The theory of cognitive constructivism postulates that learning is a change in the student's cognitive process based on their internalization and restricting of reality (Doolittle & Camp, 1999). SAEs align with cognitive constructivism because students set their own goals, display initiative and control the experience, and have prolong, individualized engagement in the SAE. Unlike social constructivism, students' accommodate and adapt knowledge, rather than work cooperative within their surroundings and cohorts to produce knowledge (Cobb, 2005; Powell & Kalina, 2009). Learning under cognitive constructivist does not happen by accident. Situations must be purposively designed to teach students the appropriate way to think and teachers must model the appropriate methods to solve problems (Snowman, 1986). The supervision of SAEs could be form of modeling, which is not necessarily cognitive constructivism, but supervision can also used to develop transferring skills, which is a middle-range educational theory. Cognitive constructivism has a variety of middle-range theories,

dynamic in their own regard, which substantiate cognitive constructivism from a practitioners' perspective. These middle-range theories include metacognition, problem-solving, transferring skills, and self-regulated learning (Doolittle & Camp, 1999; Schunk, 2008). Table three outlines how the fundamentals of SAEs align to these concepts of cognitive construction.

Table 3

*Aligning the Principles of SAEs with the Concepts of Cognitive Constructivism*

Principles of SAEs	Concept of Cognitive Constructivism that Relates to the SAE Principle
SAEs apply classroom and laboratory instruction	Transferring and Metacognition
Students learn by doing with their SAEs	Problem-solving
Students set SAEs goals	Self-Regulated Learning
SAEs motivate students to learn	Self-Regulated Learning
Students display initiative and control of SAE	Self-Regulated Learning
SAEs are a form of individualized instruction	Self-Regulated Learning

**Objective Two: Cognitive Constructivist Learning Concepts within SAEs**

The following section was divided into four parts, based on the major concepts of cognitive constructivism; problem-solving, metacognition, transferring skills and self-regulated learning. These concepts are grounded within the literature as important concepts within cognitive constructivism (Doolittle & Camp, 1999; Schunk, 2008). Following a brief description of each concept the researchers included a review of SAE research that applied to that concept.

**Problem-solving.** Problem-solving is recognized as an important cognitive process (Anderson, 1993). “Problem solving refers to people’s effort to achieve a goal for which they do not have an automatic solution” (Schunk, 2008, p. 203). Problems are generally understood as either well-structured, with one correct answer, or ill-structured, with multiple correct answers (King & Kitchner, 1994). Researchers have acknowledged the importance of utilizing ill-structured problems to develop cognitive constructivist learning processes. Problematic situations, typical of ill-structured problems, are needed so that students do not develop automatic solutions to problems. Ill-structured problems are also critical in developing metacognition skills in students (Flavell, Miller, & Miller, 2002; Hayes, 1988; Kitchener, 1983).

Research specifically on problem-solving in SAEs has been limited. Dyer and Osborne (1996) cited a dissertation by Chuatong which “revealed little relationship between student problem-solving ability and their level of involvement in SAEs (p. 26). Yet, the nature of SAEs could inform researchers on the potential level of problem-solving in SAEs. Substantial differences could exist in the problem-solving skill development of students between entrepreneurial SAEs (students own and make key decisions about problems) and placement SAEs (students do not own and some else makes key decisions about problems), though this has not been proven in research. While many programs still have substantial entrepreneurial SAEs (Hanagriff et al., 2010; Retallick & Martin, 2005), there has been a growing trend away from

entrepreneurial SAEs because of a variety of factors (Graham & Birkenholz, 1999; Retallick, 2010b). Teachers interviewed from Iowa for a study by (Retallick, 2010b) indicated that they struggled to find students traditional, entrepreneurial SAEs. Case in point, ownership SAEs have declined 25% and placement SAEs have increased 130% in Missouri from 1988-1997 (Graham & Birkenholz, 1999). The historical decline in the number of farmers (Danbom, 1995) could indicate that many other agriculture teachers would be facing the same situation as Missouri and Iowa teachers. Ultimately though, the level of problem-solving skill development in either entrepreneurial or placement SAEs has not been researched thoroughly.

**Metacognition.** Metacognition is the deliberate control of conscious thought (Flavell, 1979). In layman's terms, it is "our thinking about our thinking". Metacognition involves two processes; understanding what skills and strategies the task requires and when to use those skills and strategies to complete the task. Metacognitive abilities include the activation of prior knowledge, goal setting, awareness of actions, and ability to relate information (Stel & Veenman, 2010). Metacognition can be a difficult process for students because it involves learning new tasks along with the process of reflecting on what they learned (Alexander, Carr, & Schwanenflugel, 1995). Metacognition theory requires that students develop control of their own thinking (Shraw & Moshman, 1995).

Researchers have not specifically measured the metacognitive attributes of SAEs. Researchers have analyzed the perceptions of teachers and students towards the different components of metacognition, including the development of goal setting, planning, and decision making skills from SAEs participation. Teachers interviewed from Iowa indicated that students were seeking instant gratification and the easy way out, rather than developing decision making skills, though the teachers valued those skills (Retallick, 2010b). A delphi study of 36 agriculture teachers agreed that SAEs should involve goal setting and training plans for placement SAEs (Jenkins & Kitchel, 2009). The 150 Tennessee teachers surveyed by Swortzel (1996) agreed students should have written plans about their SAEs. Osborne (1988b) found that the Illinois teachers surveyed use class time often for SAE planning, but only sometimes required students to turn in short-term plans. While many of these teacher perceptions seem to be positive, these different concepts were only partially related to the larger, more complicated theory of metacognition and the concepts identified were not tested to determine level of metacognition development through SAE.

**Transferring skills.** Transferring skills are defined as pre-existing knowledge that is applied under different contexts and involved developing problem-solving skills (Royer, 1986). Transferring has also been synonymous with inductive reasoning (Klauer & Phye, 2008). Transferring requires students to construct general rules about specific problems. Students must then test and apply those general rules to other specific problems (Phye, 1989, 2001). The process is student driven, so advice on how to use the general rules from a teacher could debilitate the development of students' transferring ability (Phye, 2001). In other words, students cannot just be given solutions to a new problem. Furthermore, transferring skills need to be modeled for students (Klauer & Phye, 2008).

To develop transferring skills in SAEs teachers needed to be dedicating class time to discussing students' SAE problems. 150 Tennessee teachers agreed with the idea that "real problems encountered by students in their supervised agricultural experience programs should be used as topics for classroom instruction" (Swortzel, 1996, p. 50). The 36 agricultural educators

surveyed from across the country agreed that SAEs should be included in classroom instruction (Jenkins, & Kitchel, 2009). Dyer and Osborne's (1996) synthesis reported that classroom instruction could improve students' SAEs, though the number of teachers using class time for SAE instruction was not researched. Likewise, Steele (1997) found that New York teachers agreed that SAE in-class instruction was necessary. But, only limited research has shown that students' SAE problems have been part of classroom instruction. Alternatively certified agriculture teachers from Oklahoma reported that "discussing SAE programs aloud in class for all students, because, vicariously, there may be something said that helps another student with his/her SAE program (Robinson & Haynes, 2011, p. 52). Teachers studied by Retallick (2010b) indicated that they used class time to update SAE records or get freshman students interested in SAEs, but not discussing students' SAE problems. Fifty-seven teachers of Illinois agreed that they often used real problems encountered by students in their SAE programs as topics for classroom instruction (Osborne, 1988a). The limited research available indicated that few teachers were utilizing classroom instruction for students' SAE problems (Dyer & Osborne, 1996), but the research did not explore the effectiveness of the instruction in developing appropriate transferring skills.

Direct supervision and individual instruction of students' SAE could also develop transferring skills. The value of individual instruction and students' solving problems was identified as important by Tennessee teachers (Swortzel, 1996). A delphi study of 36 agriculture educators agreed that SAE involved continuous instruction and year round supervision (Jenkins & Kitchel, 2009). But, research also indicated that supervision of SAEs was declining (Dyer & Williams, 1997). Teachers surveyed in North Carolina felt that they only agree slightly that they had the knowledge for individualize instruction (Wilson & Moore, 2007). Foster (1986) surveyed 62 teachers in Nebraska and found that only 32 of them had two or more on-site SAE visits per student each year. Osborne (1988b) surveyed 57 teachers in Illinois and concluded that "teachers are not devoting a strong effort to conducting SAE supervisory visits" (p. 55). In a study of regional and national FFA proficiency winners, Herren (1987) found that even some of these exemplary students had no SAE supervision. Thus, the research was inconclusive about the level of direct and individual supervision provided for students' SAEs and no research examined what teachers were teaching students during supervision visits, which lent little anecdotal evidence for transferring skill development through SAEs.

**Self-regulated learning.** Self-regulated learning is an internally directed process and belief that a person can transform knowledge into some form of action. Learners have direct control of their thoughts and set their own learning goals (Dinsmore, Alexander, & Loughlin, 2008; Loyens, Magda, & Rikers, 2008; Zimmerman, 1986, 2008). The defining features of a self-regulated learning are the personal initiative, perseverance, and adaptive skill demonstrated by the students, which relates to the student's motivation and metacognitive ability (Zimmerman & Schunck, 2007). The utilization of self-regulated learning strategies could be challenging for students because it requires them to employ problem-solving, metacognition, and transferring skills.

Based on the principles of SAEs outlined in table one, intuition might guide someone to argue that SAEs should naturally promote self-regulated learning. But, the lack of problem-solving, metacognition, and transferring skills development in the peer-reviewed SAE research findings refute this claim. Research must demonstrate the evidence of problem-solving,

metacognition, and transferring skills development in SAEs before researchers can explore the presence and level of self-regulated learning in SAEs.

### **Discussion**

While the principles of SAEs aligned to the concepts of cognitive constructivism, the findings of past peer-reviewed SAE research did not allow for claims about the effectiveness of SAEs in developing students' cognitive constructivist skills. Recent research on SAE's has primarily focused on perception-based or program evaluation studies. Further research is needed to explore the influence of SAE's in developing students' metacognitive, problem-solving, transferring, and self-regulated learning abilities. These findings do not dispute the claim by Roberts and Ball (2008) that school-based agricultural education operates between cognitive and social constructivism. Indeed, the principles of SAEs fall within their spectrum. The findings of this study do raise questions about the learning theories occurring in functioning SAE. Researchers need to examine the practices of school-based agriculture education and not just the espoused principles of discipline in order to accurately identify the learning theories of school-based agricultural education. Considering the recent trend of agricultural education research to measure the problem-solving and metacognition development of students through classroom instruction (Lamm et al., 2011; Pate & Miller, 2011), measuring the same concepts in SAE research is within our capabilities.

The peer-reviewed research did not make many distinctions between the types of SAEs: entrepreneurial, placement, research, and exploratory (Phipps et al., 2008). A brief discussion about the types of SAEs in relation to cognitive constructivist strategies is warranted. The researchers believe that some types of SAEs are better designed for cognitive constructivist teaching strategies, such as entrepreneurial and research SAEs. Both types of SAEs emphasize student ownership of the business or idea and the student as the primary decision maker (Phipps et al., 2008; Talbert et al., 2005). The more control a student has over the experience the greater degree of control the student has over their learning. This individual control of learning factors well to the development of student's problem solving, transferring, metacognition, and self-regulated learning skills (Schunk, 2008). The design of entrepreneurial and research SAEs should not lull practitioners and researchers into low profile observation of students' SAEs. Teachers and supervisors still need to discuss and review the problems encountered in students' entrepreneurial and research SAEs. Learning needs to be intentional not accidental. While the design of these two SAE types favors cognitive constructivism, the intentionality of instruction and supervision is still critical.

Placement experiences may not readily involve the solving ill-structured problems on the job site. It seems unlikely that an employer would take the time and resources to design an ill-structured problem for a student employee. One possible example could involve a student working for a local greenhouse. The employer might discover a bug infestation in the greenhouse and approach the student with the problem. The employer would have to present the student with a method of how to solve the bug problem. The method could include talking the students through the symptoms of the infected plants, discussing the possible causes of the syndrome, illustrating ways to identify the pest, and outlining procedures to eradicate the infestation. Then the employer would give the students more authentic problems (more disease or bug infestations) that would require the student to use the same thought processes. In this way

the employer would be building the students' problem-solving, metacognition, and transferring skills, which ultimately develop into self-regulated learning. This elaborate and deliberate process might be too much to expect from a lay person that is focused on running a business. Furthermore, no school-based agricultural education text described this type of scenario at a SAE workplace. These concepts would be best developed by the teacher in the classroom (Hayes, 1988). If a class has students with placement experiences then the teacher can spend class time discussing problems that students had to solve or witnessed being solved while in their SAEs. For example, a student working in a veterinary clinic might not be allowed to medically treat animals because of insurance reasons. The student could bring veterinarian problems from their work to discuss in the classroom though. The teacher could then use the veterinary problem as the class problem for the day and discuss different ways to solve the problems. These situations highlight that problem.

Exploratory SAEs can emphasize cognitive constructivist principles, though the short duration and limited size of the individual experiences could present barriers (Phipps et al., 2008). Situations that could develop problem-solving skills might be few for students that have projects for only a year or a small project for a few years (Anderson, 1993). Agriculture teachers could help students make the connections between the smaller individual projects within the exploratory SAEs though. For instance, teachers can help students connect decisions in their sheep project from a year before with the decisions in their forthcoming goat project. Issues such as feed composition and ration size share similarities across like species. Even if projects seem completely dissimilar there are still decisions that can be connected. Vegetable gardening and canine care projects involve different species and activities. But, both projects require students to develop managerial skills, like profitability and project expansion. This connection between different small projects would represent the development of transferring and metacognition skills within an exploratory SAE (Klauer & Phye, 2008; Stel & Veenman, 2010).

The researchers acknowledged the challenges that cognitive constructivism strategies present for teachers. The most daunting aspect of practicing cognitive constructivist learning with SAEs might be the need for teachers to discuss individual SAEs with a whole class. The following examples attempt to address some of those concerns. First, transferring skills can be facilitated by guided class discussion of the problems that students are experiencing in their SAE. Teachers need to focus on how to solve those problems and how those problems relate to other student's problems (Klauer & Phye, 2008). A student struggling with insect infestation in their home garden will solve the problem in almost the same way a student with a row crop insect infestation would. Second, ill-structured problems within SAEs need to be facilitated for each student. Students who have SAEs that are not ill-structured in nature, such as the typical work of a placement SAEs, need the teacher to devise ill-structured problems for them (Flavell, Miller, & Miller, 2002). This may seem daunting for teachers, but using ill-structured problems as a class project or discussion might be an easy solution. For instance, a young man wants to buy his date a corsage. She is wearing a red dress with white trim and he only has \$7 to spend. Using this scenario the groups have to design corsages that fit the situation. The teacher needs to require that students record their decision making process and defend their decisions. This can lead to metacognitive growth (Kuhn, 1999). So, there may be many ways for the students to make the corsages, but students must be able to explain their reasoning and decisions in constructing their corsage in order to facilitate metacognitive growth. If the students can utilize

these concepts on their own, then they have developed some level of self-regulated learning ability (Zimmerman, 1986, 2008).

The researchers felt obligated to recognize the immense time requirement and stress that SAEs can place on an agriculture teacher. High quality SAE instruction does not happen by accident. Thoughtful preparation is required to ensure that student learning is maximized (Schunk, 2008). SAE visits and one-on-one discussions demand valuable teacher time to conduct (Phipps et al., 2008; Talbert et al., 2005). Furthermore, using class time to talk about SAE problems requires teachers to have well managed classes and student driven discussions (Newcomb et al., 2004). All of these circumstances, and those not included in this short paragraph, can make SAEs seem unfeasible for some agriculture teachers. But, learning that occurs by best intentions is unintended learning. Student learning through SAEs requires teachers to purposefully design learning opportunities and time to ensure that learning happens.

The researcher acknowledged that the study had limitations. The SAE research reviewed for this study was peer-reviewed, but the researchers could not guarantee the accuracy of all of the articles' findings. Furthermore, few studies examined the actual implemented practices SAEs (Osborne, 1988a; Osborne, 1988b; Retallick, 2010; Steele, 1997; Wilson & Moore, 2007) Likewise, there are quite a few studies before 1994 that included agriculture students in the research (Arrington & Cheek, 1990; Cheek, Arrington, Carter, & Randell, 1994; Herren, 1987; Noxel & Cheek, 1988; Pals, 1988; Randell, Arrington, & Cheek, 1993; Tylke & Arrington, 1988), but most of these studies did not focus on the educational outcomes of SAE participation. Because of this research reality, the researchers had to base the study's findings on espoused principles of SAES. The findings also did not differentiate between the different types of SAEs. We reserved comments on the different types of SAEs until the discussion section. Despite these limitations the findings and discussions of this research can provide practitioners with examples of best practices and researchers with theoretical underpinnings.

Cognitive constructivism and the concepts of problem-solving, transferring, metacognition, and self-regulated learning can be built and developed in an agriculture class using SAEs, but teachers have to purposively implement these concepts in their lessons. Students that possess entrepreneurial and research SAEs may have more chances to develop their cognitive constructivist skills because of the level of control that they have in their experience. Teachers still need to guide those students with individualized instruction and supervision because cognitive constructivist skills do not usually happen by chance. The potential of developing student cognitive skills through SAEs is great, but it requires a high level of teacher and student engagement to reap the educational benefits of cognitive constructivism.

Finally, the researchers took a particular position on the application of grand learning theories to SAEs. The proceeding findings and discussions should not be the end of the debate. Researchers and practitioners will probably find disagreement with some or all of the researchers' arguments. The researchers recommend that more research be conducted that links educational learning theories, whether those theories are grand or middle-range, to SAEs. The debate and dialogue about SAEs will improve school-based agricultural education as whole.

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## **Supervised Agricultural Experiences and Learning Theories: Evaluating the Experience through Cognitive Constructivist Lens**

Chair/Discussant Comments by:  
Andy Baker, Western Illinois University

Wow! This study truly challenges our own metacognition on a topic that is near and dear to our own heart. The authors try to decipher, through past research publications, the findings to explain, which theoretical framework explains the foundational footing that expands from the concept of Supervised Agricultural Experiences. We have all conducted those student home visits, completed those state degrees, and assisted with proficiency awards applications knowing it had some intrinsic value to our students. Over the years, the development and completion of SAE's have been more challenging for teachers. How do you get students motivated to participate and complete a supervised agricultural experience? Where does their motivation reside? Is it because we tell them to?

We are challenged with this study to dig deep into our own philosophical mindset to remind ourselves of the theoretical framework utilized to instruct our students on the benefits of this experience. We know that the most contributing variable to this theoretical puzzle is the instructor. What theoretical framework and methodologies are used to develop the foundational knowledge base in our students? Does it stem from the learning process, personal development/responsibility, financial security, or the application of new knowledge? We are certainly left with a challenge/question after reading this study. As researchers, we are left with the challenge/question of how do we foster the concept of SAE's with our pre-service teachers? What framework do we house our instructional methodologies to ensure SAE's are nurtured among our students? There are certainly environmental variables that contribute to the answers to these questions. The State's philosophical opinion, the differences in recordkeeping systems, differences in student development, and what lens does the classroom teacher use to view the value of SAE's, I believe all have an effect on the theoretical framework used by our teachers. Trying to find the right fit is a true challenge!

I certainly salute the authors for their efforts on this study. They certainly give us the opportunity to experience the learning process through different lens, by using SAE's situations in the problem-solving approach to challenge our students and stimulate that intrinsic value in SAE's. The qualitative approach to this study allows us to view the SAE framework from a variety of angles. I would certainly encourage the profession to continue or begin their research efforts in linking educational learning theories to the process of implementation of supervised agricultural experiences. I believe our efforts will yield remarkable results.

## Parental Participation in Non-Formal Education Activities

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John C. Ewing, The Pennsylvania State University  
Rama B. Radhakrishna, The Pennsylvania State University

*“Research has long shown that parents’ positive involvement with their children’s schooling is related to many positive outcomes” (Horowitz & Bronte-Tinkew, 2007, p.1). The study examines barriers that influence parental participation in non-formal education activities with their children. Participants in the study were parents whose children had participated in a one-week non-formal outdoor education program. The research found that the parents perceived their participation with their children in non-formal learning to be important to their children’s academic performance. However, the barriers to parental participation in non-formal outdoor education programming which were found included: parents not having time to participate in their children’s education, and parents not having the financial resources to participate in non-formal education programs. Implications of these research findings could impact the planning and implementation of non-formal education programming in ways that would allow the involvement of parents. Recommendations are provided for non-formal education programmers, and parents in attempting to overcome the barriers identified in the research study.*

### Introduction

Children and adults lack connections with the natural world (Rodenburg, 1994). The fast-paced life most people operate in today makes outdoor experiences limited, causing a lack of contact with the natural world. Rodenburg believed that people need to be reminded of the connection to the natural world, establishing a clear perception of reality. If schools cannot provide this opportunity due to limited time to reach curriculum goals, it becomes more important that parents and guardians provide non-formal learning time for their children (Rodenburg, 1994).

According to Dewey (1997) students need the right kinds of experiences to increase their learning. Dewey felt traditional schools at his time were a “pattern of organization”, and lacked the proper experiences to help children become self-motivated, stronger learners. He did not feel, however, that learners should depart completely from tradition, but that “everything depend[ed] on the *quality* of the experience which [was] had” (Dewey, p. 27). Non-formal education provides the framework for experiences to *become* learning. Using academic standards that are already in place, non-formal educators and parents can help their children have the right types of learning experiences to enhance their cognitive abilities.

“Research has long shown that parents’ positive involvement with their children’s schooling is related to many positive outcomes” (Horowitz & Bronte-Tinkew, 2007, p.1). Schooling is often limited to meaning indoor, formal education, but learning needs to continue outside of the classroom too. Non-formal education provides this opportunity for continued growth of the child. Nationwide, non-formal education centers, such as nature centers, zoos, and

aquariums offer programs for children with and without their parents being present. Many parents recognize the importance of getting their children outside, but are unable or unwilling to do so (Horowitz & Bronte-Tinkew, 2007). With the busy world moving around them, parents have many reasons not to take their children outside.

Horowitz and Bronte-Tinkew (2007) investigated why parents, if they recognized their involvement in school is good for their child's learning, did not look to continue learning outside of school. They found that barriers to family involvement in outdoor education activities included: other responsibilities, access to the outdoors (limited by both location and time), and comfort level (Horowitz & Bronte-Tinkew). The authors found that parents often come home from work and barely have time to get dinner on the table and children's homework done before bedtime. Many parents might not have realized, however, that outdoor learning does not have to be an elaborate production. Suitable outdoor activities, such as a short walk around the neighborhood, only require 10 to 15 minutes, giving the child exercise and allowing both parent and child to explore the natural world (Newman, 1996).

If children are introduced to the outdoors at an early age, they feel an important connection with the preservation of the natural world. In a survey of 2,000 urban-living adults about their childhood, Wells and Lekies (2006) found that if the adults had time for free play in nature as children before age 11, they were more likely to have an appreciation for nature as adults. At this age children are developing abstract thinking skills. Until age seven, children develop concrete ideas that will serve from age's seven to 11 as the foundation for higher thinking later in life. Children at this age apply concepts and theories learned in a classroom to make meaning of their experiences in the real world (Kolb, 1984). If children are not allowed to expand on their concrete knowledge gained from classrooms, they will not fully develop their abstract thinking skills.

If schools cannot allow time to learn with children in non-formal settings, then the burden falls on parents, and many parents see it as a burden. Horowitz and Bronte-Tinkew (2007) wanted to investigate why parents, if they recognize that involvement in school is good for their child's learning, do not look to increase learning outside of school. Horowitz and Bronte-Tinkew's ultimate goal was to give suggestions to non-formal educational facilities to help them create new programs and get families involved. After defining family involvement as the participation of a child's family members in any aspect of an out-of-school program, Horowitz and Bronte-Tinkew went on to talk about why family involvement is important. Reasons for importance included helping children's relationships and academic performance, helping reduce teen's risky behaviors, helping outdoor education facilities create better programs, and helping parents do a better job of parenting. Horowitz and Bronte-Tinkew discovered three barriers to family involvement including other responsibilities, access to programs (which included time restraints), and comfort level. The researchers then suggested ways to get more families involved in their child's learning, including; defining involvement to the parents, addressing the barriers by increasing comfort level, engaging families regularly, and recognizing that engagement might take time.

Legault (1999) and Horowitz and Bronte-Tinkew (2007) agreed that parents and children can share in learning together if they just take the time. Legault found that children enrolled in a formal environmental education program in Ottawa, Canada were more likely to involve their parents in their learning experience. Through this program, the parents had an increase in environmental knowledge, and were more likely to work with their children toward common educational goals. Rodenburg (1994) explored the reasons students who come to his nature center view the outdoor world as strange. Most children experience nature through video images on television or video games. Rodenburg believed that with minimal planning, families can enjoy nature together while staying in their own backyards.

### Theoretical/Conceptual Framework

Kolb (1984) considered Dewey's theories and took them a step further to develop a model of three major themes that make up experiential learning. The first notion is that learning is a process. Kolb believed that what students learn is continually changing based on new experiences they have. Every student has different experiences, thus each individual forms their own understanding of the experience. The second notion of experiential learning Kolb laid out is that learning is a continuous process that comes from experiences. Each learning experience, while unique, is related to previous situations. Every learner goes into a new lesson with preconceived ideas on the topic they are about to learn, based on what that learner previously experienced. Kolb (1984) believed that educators should make students create new ideas while also disposing of old ideas. The third major notion in experiential learning is that learners have to adapt and resolve their ideas of the world (Kolb, 1984). Learners are constantly faced with opposing ideas, and it is the role of the learners with the help of educators to make sense of these differences. With Kolb's three pillars as the foundation, learning can be seen as experiences and the opportunity to make meaning of these experiences. Using these pillars of learning, Kolb created a model of experiential education (see Figure 1).

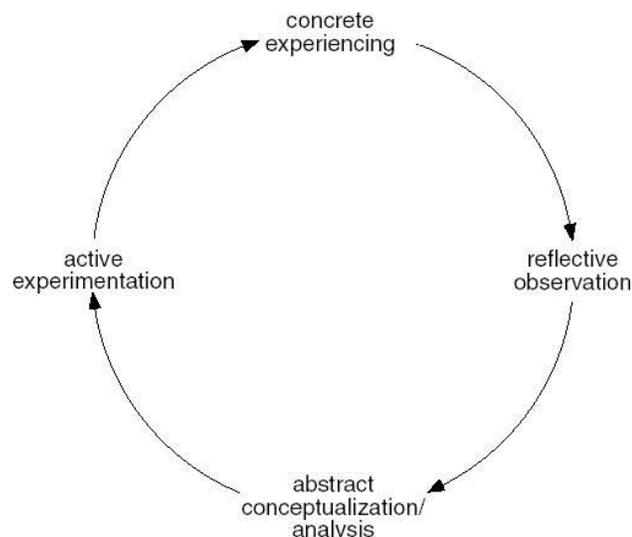


Figure 1. Kolb's experiential learning cycle.

The model shows how learners travel from having a concrete experience, to thinking about the experience in reflective observation, to conceptualizing the experience they had with

previously learned theories, to experimenting with the experience on their own, working to modify it (Kolb, 1984). Within this model parents can aid in their child's learning by being active participants. Parents can aid in reflecting on the experiences, encouraging their child to take part in opportunities, and to apply what they have learned. Kolb indicated that learners can start anywhere in the cycle, and that the learner can move in any direction within the cycle.

As the literature on this topic shows, and Rodenburg aptly summarizes, "kids, as well as adults, are losing the ability to relate to the natural world." The lack of time and learning outdoors leaves many children without a solid connection to reality (Fredriks et al, 2005). Researchers such as Legault (1999) and Horowitz and Bronte-Tinkew (2007) support the idea that families can share in learning together if they just take the time. Children need non-formal education experiences to help build their abstract knowledge (Kolb, 1984). Lieberman and Hoody (1998) support that using the environment as a learning context benefits students in the areas of general education, specific academic areas such as language arts, math, science, social studies, and personal development areas such as thinking and interpersonal skills. Students' using the environment as a contact for learning achieved significantly better when compared to their non-environmental learning peers (Leiberman & Hoody, 1998).

### **Purpose and Objectives**

This study examined parental involvement in non-formal education programs with their children and why these parents chose or do not chose to participate. Results from this study could help non-formal education programmers in creating and implementing new curricula that attract more parents to their programs.

The overall purpose of this study was to determine what factors impacted the involvement of parents in non-formal education through research completed at the Shaver's Creek environmental center Summer Camp 2009. The following objectives guided the study:

1. Determine why parents choose or do not choose to participate in non-formal education with their children.
2. Identify barriers preventing parents from participating in non-formal education with their children.

### **Methods**

#### **Description of the Program**

Shaver's Creek environmental center Summer Day Camp runs seven weeks every summer from late June to mid-August. Children from the local area attend camp Tuesday through Friday, with the exception of two extended weeks that run Monday through Friday. Tuesday through Friday campers spend six hours per day exploring the woods around the environmental center with their counselors and camp group. Themes of camp rotate throughout the years, and can include, but are not limited to songbirds, mammals, plants, and reptiles. Each day of camp covers a different sub theme, including biodiversity, interrelationships, natural cycles, and habitats. Campers participate in a range of activities throughout the week of camp, such as a stream study, building houses for oven birds and toads, and playing nature games with

other groups. Each camper's experience is unique based on the week they are enrolled, their counselors, and the mix of what nature provides for them.

This research focused on the portion of camp that involves camper's parents. On Friday night, parents have the option of staying overnight with their children for a picnic dinner, ice cream social, camp fire, and night hike. The next morning the counselors and camp staff serve a pancake breakfast to the families, and everyone reflects on the week at camp. The parents of children who attended this camp or a similar activity at Shaver's Creek environmental center were the population for this research study.

### **Instrumentation**

The research questions were addressed through a researcher-developed survey instrument. A panel of experts reviewed the survey instrument for content and face validity. Following these reviews, changes were made to the instrument prior to administering the pilot test. Reliability for this instrument was determined through a pilot test conducted before the actual data was collected. The pilot test was run during the first week of Shaver's Creek environmental center Summer Day Camp 2009 on a sample population ( $n = 14$ ) similar to the final research population.

Using SPSS 16.0, the instrument reliability was calculated for the entire survey instrument and was Cronbach's  $\alpha = 0.80$ . The *limitations* section of the instrument negatively impacted the overall reliability of the instrument. When this section of the instrument was removed the overall reliability for the survey instrument was determined to be Cronbach's  $\alpha = 0.90$ . The researchers determined that the questions asked in the limitations section of the instrument were addressed elsewhere in the survey. Therefore, this section was removed from the survey instrument.

The parents that were surveyed for this study had children who participated in Shaver's Creek environmental center Summer Day Camp 2009. Caution should be used in generalizing the results of this study beyond the current population of parents, as this group was a convenience sample. Also, the population used for the study is comprised of parents who choose outdoor education for their children, so the answers to the survey may reflect this bias.

### **Data Collection**

As parents dropped off their children for camp, they were asked to participate in the study and were informed of the purpose and timeline of the study. If parents agreed to take the survey, they were assigned a survey number to keep track of who returned the surveys, and to make sure no one completed the survey more than once. Surveys were distributed on the first day of camp during registration. The researchers distributed 69 surveys, and 41 usable instruments were returned for a response rate of 59.4%.

Data was collected using Dillman's (2000) survey research procedures. To aid in controlling for non-response issues, the researcher contacted the participants four times to get responses. The first contact was on registration day at camp (the first day of the camp week). The second contact occurred on the last day of camp before the sleepover. The third contact was through a reminder sent to the e-mail addresses that parents provided at the time when first given

the survey. This contact thanked families who had participated and reminded those who had not participated yet to send their surveys to the researcher. The final reminder was sent to only those who had not returned their surveys after a four week time period. A comparison of early to late respondents was utilized in determining whether those that responded late (4<sup>th</sup> contact) were significantly different than those that responded early (1<sup>st</sup> - 3<sup>rd</sup> contact). No significant differences were found, thus, the two groups were combined in the final statistical analysis. The parents' perceptions of barriers to involvement in non-formal education were recorded through self-reported answers to the survey questions. Averages and standard deviations of the perceptions were calculated to determine why parents chose or did not choose to participate in non-formal education with their children.

## Results

Objective #1: Determine why parents choose or do not choose to participate in non-formal education with their children.

There were several reasons parents chose to participate in non-formal education activities with their children. Ninety-five percent of participants (n=39) stated the main reasons for involvement in their children's non-formal education activities was so that their *children would learn new things* and *to teach their children about the natural world*. Approximately 93 percent of the participants (n=38) stated their second most important reasons for participating was that their *children have fun*. Most of the participants surveyed (84.5%; n=35) stated *helping their children avoid future risky behaviors* was not a reason they participated in non-formal education activities. The results for objective number one are shown in Table 1.

Table 1.

*Reasons parents participate in non-formal education activities with their children.*

	Yes		No	
	Number	Percent	Number	Percent
My children learn new things.	39	95.1	2	4.9
To teach my children about the natural world.	39	95.1	2	4.9
My children have fun.	38	92.7	3	7.3
To have fun.	35	85.4	6	14.6
To spend time with my children.	35	85.4	6	14.6
Helps my children build relationships with others.	27	65.9	14	34.1
Helps my children learn better in school.	18	43.9	23	56.1
Helps my children's academic performance.	17	41.5	24	58.5
Children like to meet new people.	15	36.6	26	63.4
Children not getting enough outdoor time in school.	13	31.7	28	68.3
My friends participate with their children.	10	24.4	31	75.6
To meet new people.	10	24.4	31	75.6

Helps my children avoid developing future risky behaviors.	6	14.6	35	85.4
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Objective #2: Identify barriers that prevent parents from participating in non-formal education with their children.

In general this population of parents did not have many barriers keeping them back from participating in non-formal education activities with their children. The factor that seemed to be the main barrier was time. Approximately seven percent (n=3) of the participants stated time as a major limitation to their participation, while 51% (n = 21) state that time was “somewhat of a limitation”. Approximately 64% of the respondents indicated that financial cost was a limitation (58% = somewhat of a limitation; 5% a major limitation) to their participation in non-formal education with their children.

The factor that was most reported as “not at all a limitation” was children not enjoying non-formal education (95.1%, n=39). Ninety percent (n=37) stated their children not enjoying being outdoors as the second least limiting factor. These results are reflected in Table 2.

Table 2.

*Factors limiting parental participation in non-formal education with their children.*

	Not at all a Limitation		Somewhat of a Limitation		A Major Limitation	
	Number	Percent	Number	Percent	Number	Percent
Children do not Enjoy Non-Formal Education	39	95.1	2	4.9	0	0
Children do not Enjoy Being Outdoors	37	90.2	4	9.8	0	0
Availability of Resources	33	80.5	6	14.6	1	2.4
Comfort Level in Nature	29	70.7	10	24.4	2	4.9
A Family Member’s Allergies	28	68.3	13	31.7	0	0
Transportation	28	68.3	13	31.7	0	0
Parent’s Knowledge of Nature	26	63.4	13	31.7	2	4.9
Time Required for Participation	17	41.5	21	51.2	3	7.3

Financial Cost	15	36.6	24	58.5	2	4.9
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The participants were asked to answer which factor was the most limiting to them in a free response format. Of the 25 participants who responded to this question, 17 stated a schedule conflict (time) as their main reason for not attending a non-formal education program. The second major limitation to parental participation was finances, as was stated by four participants. Other barriers listed included location, the program being full, or bad weather, as can be seen in Figure 2.

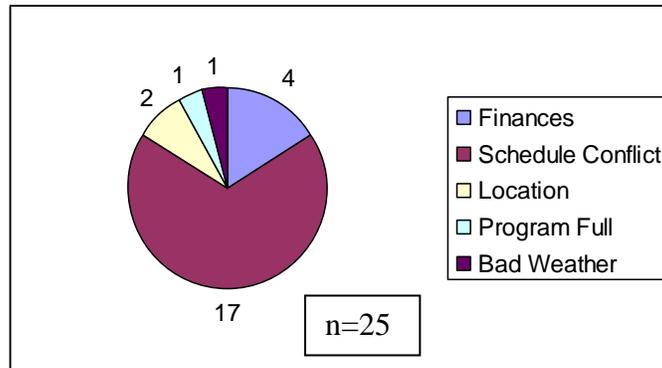


Figure 2. Barriers to parental involvement in non-formal education

### Conclusions, Recommendations, and Discussion

Objective #1: Determine why parents choose or do not choose to participate in non-formal education with their children.

According to the results of this study, parents want to participate in non-formal education activities with their children because both they and their children enjoy learning and being outdoors. With this in mind, non-formal educators should create programs for both parents and their children that combine fun and learning to attract participants. Allowing parents to be involved in their children's learning motivates the parents to enroll in non-formal learning activities. Parents want the opportunity to be involved in their children's lives, and non-formal education activities can provide these opportunities.

There were several reasons parents chose to participate in non-formal education activities with their children. The majority of participants (95.1%) stated their reasons for involvement in their children's non-formal education activities to be with their children learning new things and to teach their children about the natural world. Other participants (84.5%) stated their second most important reasons for participating were to have fun and to spend time with their children. This reflects the idea that the parents surveyed are a part of the population that enjoys being outdoors, so they think it is important for their children to be outdoors. These results confer with what Louv (2008) stated in *Last Child in the Woods*:

Not that long ago, summer camp was a place where you camped, hiked in the woods, learned about plants and animals, or told firelight stories about ghosts or mountain lions. As likely as not today,

“summer camp” is a weight-loss camp, or a computer camp. (p.32)

In the present day, children no longer have the opportunity to run free in the woods, building forts and learning their world like the back of their hand, but the parents in this study know their children should learn outside.

According to Horowitz and Bronte-Tinkew (2007), outdoor education helps children’s relationships and academic performance, helps reduce children’s risky behaviors, helps outdoor education facilities create better programs, and helps parents do a better job of parenting. The majority (84.5%) of the parents surveyed stated helping their children avoid future risky behaviors was not a reason they participate in their learning. The children of the parents in the population are young, so risky behaviors may not be a forefront concern to parents yet.

Objective #2: Identify barriers preventing parents from participating in non-formal education with their children.

As the participants are already interested in non-formal education, it makes sense there would not be many limitations to their participation. A schedule conflict is the main reasons for not being able to participate. If parents want to participate in non-formal education, time would be the main thing that would get in the way, as it is something that cannot be easily controlled. Programs offered by non-formal education facilities should be at times most convenient to parents schedules. They should be short enough to fit into busy schedules while still allowing time for learning to occur. These ideas would allow more parents to participate in non-formal education activities with their children.

In general this population of parents did not have many barriers keeping them from not participating in non-formal education activities with their children. The factor participants (7.3%) stated as a major limitation to their participation was time. In the free response section, this was also the reason parents (17) listed as the most important reason they do not participate in non-formal education activities with their children. This reason supports the idea that parents want to participate in non-formal education activities with their children, but cannot always make time in their schedules to do so.

The factor that was least limiting to the majority of the survey population (95.1%) was children not enjoying non-formal education. The survey population was largely comprised of people interested in non-formal education, as most participants (82.9%) already send their children to Shaver’s Creek Summer Day Camp.

The following are recommendations from the findings of this research.

- **For parents:** If parents see time and finances as the most problematic barriers to their participation in non-formal education, they should try to find inexpensive ways to increase involvement. This could include programs that are free or less costly, or activities at home such as reading books from the library or just observing nature in the backyard. As far as time, environmental educators such as Rodenburg (1994) believe that with minimal planning and time, families can enjoy nature together while staying in their own backyards.

- **For Shaver’s Creek Environmental Center and Other Non-Formal Education Facilities:** Non-formal education facilities, such as Shaver’s Creek, should attempt to create programs for parents that coordinate with busy work schedules. Programs offered at night (after 5pm) and on the weekends may increase parental attendance. Non-formal education facilities could also attempt to create free or price reduced programs. Application to grants and creative ways to save money would help reduce the cost of programs, allowing parents to attend. Many non-formal education facilities are not in the heart of town, so educators could travel to the audience. Travel would allow non-formal education facilities to incur most of the costs, as well as shorten time for families to attend, covering both of the barriers found in this study. Non-formal education facilities should also consider state education standards, especially those in environmental education, when designing programs for students that have an interest in the outdoors. This may encourage parents to take a more active role in participating in their child’s non-formal education.
- **For children:** The barriers do not really effect children directly, other than how it affects their families. Children cannot really help their parents with time or finance problems, but they can express how much they enjoy non-formal education. This might encourage parents to become further involved in such programs.

The research study outlined in this paper was designed to explore the reasons parents participate or do not participate in non-formal education activities with their children. It was found that parents know their influence is important on their children’s learning, but they do not always have the time to go to scheduled activities. Using the information found in this study, non-formal educators could create programs that meet the needs of parents and children. By incorporating these needs into programs, increased parental enrollment would benefit parents, children, and non-formal educators alike.

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## **Parental Participation in Non-Formal Education Activities**

Chair/Discussant Comments by:

Andy Baker, Western Illinois University

The authors try to capture why parents decide to participate or do not participate in non-formal education programs with their children and what are some of the participatory barriers for these types of events. They incorporate Kolb's experiential learning theory to frame the essence of their study. The authors try to reinforce Dewey's concept that students need the right kind of experiences to increase their learning process as well as parental involvement will also have positive outcomes on their child's schooling.

The researchers used a day camp that was available to them to collect parental data to aid in meeting the objectives of the study. Most of my questions are stimulated from the methods used in the study. I understand that the first week of camp was used as the pilot study to find reliability of the survey instrument, but how many weeks were used in the actual study? The limitations section was eliminated from the survey, because of the effect it had on the reliability, but what type of information was excluded from the study? Could any demographic data be collected on the non-respondents to determine any differences between parental participation? How many of the participants took advantage of staying overnight to spend time with their children? I also do not know that much about the children who participated in this summer camp. We would generally associate summer camps with learning at different levels, either at the introductory level or at the mastery level, so learning is the premise of most camps. I find it ironic that a vast majority of the parents wanted their children to learn new things, but had lower response rates on items like helps my children learn better in school or helps my children's academic performance. This separation truly puzzles me on why they would respond in this way. I would assume the essence of this summer camp centered on scientific principles, so why wouldn't parents believe that this camp would aid in the child's understanding in science? I would also like to know the difference between availability of resources and financial cost. I would speculate and say that there were no items on the list that were considered a major limitation on parental participation, so what would be a major limitation for their non-participation? According to the written feedback provided by parents, it was a schedule conflict, so if the conflict was eliminated would they participate?

The study does stimulate questions on the outcomes of this study, which certainly establishes questions for future studies. It is a unique study that focuses on parental participation in non-formal education activities. It certainly lends itself to stimulate the researchers to ask more questions in regards to parental participation in any educational function. For any parent, I would hope it would be to experience the environment from which our children learn best in. We would certainly like exploit those hidden talents/skills our children possess and expand their knowledge base to aid in the holistic learning process.

**Involvement in extra-curricular activities and leadership development**  
**Elizabeth A. Foreman, Iowa State University**  
**Michael Retallick, Iowa State University**

*The purpose of this quantitative study was to identify and describe those experiences of undergraduate extra-curricular involvement that result in increased leadership development. Senior students in the College of Agriculture and Life Sciences at Iowa State University completed an on-line survey about their extra-curricular experiences. Leadership development was conceptualized using the Social Change Model. The Socially Responsible Leadership Scale (SRLS-R2), specifically the group scale and total SRLS-R2, was used to measure leadership. Ninety-six percent of respondents indicated that they were involved in an extra-curricular activity, including 21% in the Greek system, 95% in clubs and organizations, and 29% in competitive teams. Students who reported serving as an officer of a club or organization and students who reported spending more hours per week involved in extra-curricular clubs and organizations scored higher on both the group SRLS-R2 and total SRLS-R2.*

### **Introduction**

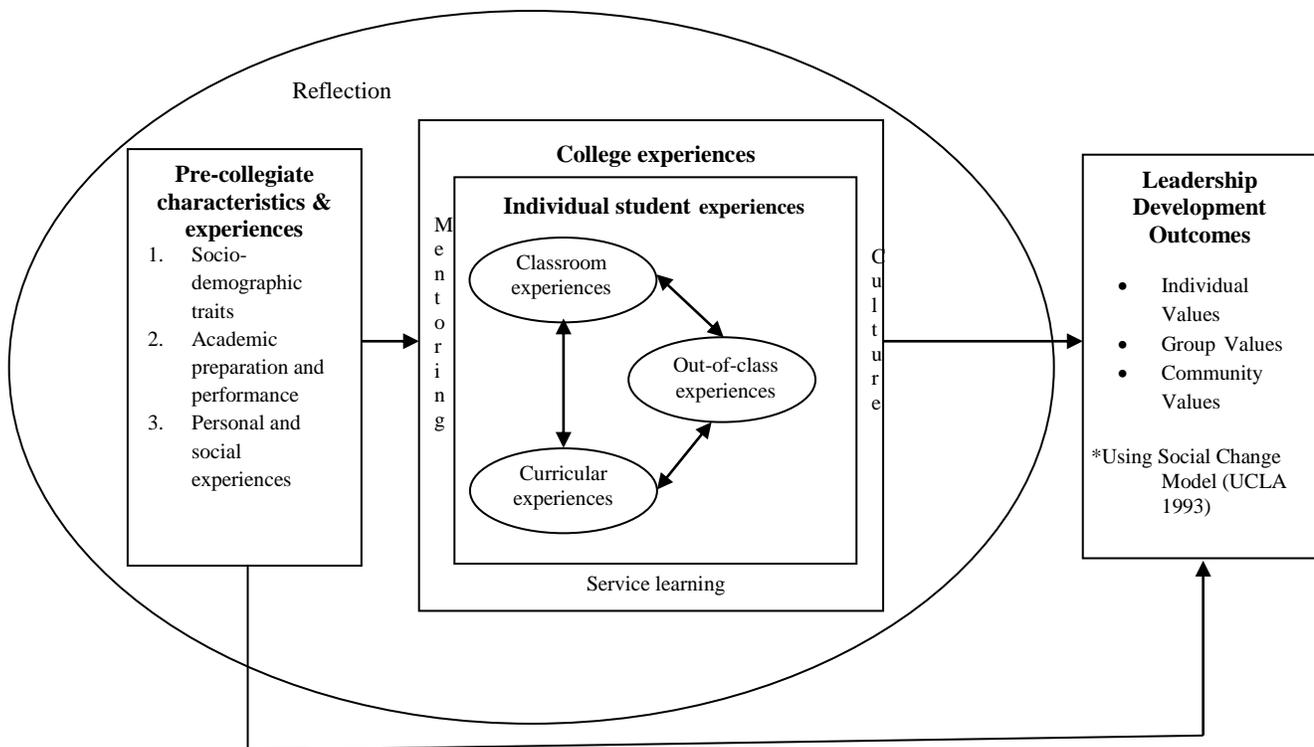
Utilizing extra-curricular activities, such as the National FFA Organization, to reach learning outcomes is an established strategy in Agricultural Education. According to Phipps, Osborne, Dyer, and Ball (2008), “The instructional components of agricultural education programs include classroom instruction, supervised agricultural experience (SAE) programs, laboratory instruction, and student leadership development through participation in programs and activities of the National FFA Organization” (p. 4). In more recent years, higher education has begun to recognize the role of extra-curricular activities as a strategy to reach learning outcomes, such as leadership development, and not simply as a social activity (Rubin, Bommer & Baldwin, 2002).

Leadership development is included in the mission statement of many institutions of higher education (Astin & Astin, 2000; Boatman, 1999). When talking about the role of extra-curricular component of agricultural education, Phipps, Osborne, Dyer, and Ball (2008) state, “The need for positive student leadership development experiences is also well recognized today as students navigate a much more complex school, community, and career environment than in past years” (p. 5). The Council for the Advancement of Standards in Higher Education (CAS) identified leadership development as one of 16 student learning and development outcomes and suggested that leadership can be intentionally learned. Previous literature has suggested that extra-curricular participation contributes to leadership outcomes (Ewing, Bruce, Ricketts, 2009; Layfield, Radhakrishna & Andresen, 2000; Birkenholz & Schumacher, 1994). However, to facilitate learning experience, educators need to know more about the specific experiences that result in increased leadership development. “By identifying specific learning tasks and goals associated with leadership development, one can intentionally create opportunities which foster such development in college” (CAS 2006, p. 93). The purpose of this quantitative study was to identify and describe those experiences of undergraduate extra-curricular involvement that result in increased leadership development.

### Conceptual/Theoretical Framework

A model developed by Terenzini and Reason (2005) explaining first year experiences, was adapted for the purposes of this study. Dugan (2006) identified a gap between research on college student leadership development and models used in practice, stating, “Researchers’ use of general measures of leadership development rather than those tied to existing models has contributed to a scarcity of empirical studies grounded in the theory that informs leadership practice” (p. 335). The model developed for this study has three components, and includes pre-collegiate and college experience constructs, which previous literature has suggested contribute to leadership development in undergraduate college students (figure 1). The third component, which is the outcome of the model, is leadership development which was conceptualized using the Social Change Model (Higher Education Research Institute, 1996).

Figure 1. Collegiate Leadership Development Model\*



\*Model adapted from Terenzini and Reason (2005)

### **Pre-collegiate characteristics and experiences**

The pre-collegiate construct for this model included socio-demographics that have been linked to leadership development, including race (Phinney, 1990; Armino, et. al, 2000; Kimbrough, 1998) and gender (Kezar & Moriarty, 2000; Kezar, 2002; Josselson, 1987). High school class rank was used to measure academic success prior to entering college. Additional personal and social experiences which have been found to be related to undergraduate leadership development, such as pre-collegiate extra-curricular experiences (Astin, 1977 and Park & Dyer, 2005), and leadership self-efficacy (Astin, 1999) were incorporated in the model as well.

### **College experiences**

The college experience construct in the model included three components of the individual student experiences that have been associated with leadership development: classroom experiences, including subject matter, teaching and learning strategies, and peer interactions; curricular experiences, including major, involvement in a departmental learning community, internships, and study abroad experiences; and out-of-class-experiences. This study focused on the out-of-class experiences component and specifically examined extra-curricular involvement in a student club or organization.

The role of extra-curricular experiences is oftentimes perceived as important in the social and personal growth of students. However, when extra-curricular activities are viewed solely as a social function, they are also seen as competing with academic work (Rubin, Bommer & Baldwin, 2002). Studies have shown that participation in extra-curricular activities contributes positively to interpersonal skills (Rubin, Bommer & Baldwin, 2002; Pascarella & Terenzini, 1991; Moore, Prescott, & Gardener, 2008; Ewing, Bruce, & Ricketts, 2009; Layfield, Radhakrishna & Andresen, 2000; Birkenholz & Schumacher, 1994), academic achievement and persistence (Wang & Shively, 2009; Astin, 1999), peer to peer interactions (Abrahamowicz, 1988; Astin, 1996; Pascarella & Terenzini, 1991), and positive faculty interactions (Abrahamowicz, 1988; Retallick & Pate, 2009; Campbell & Campbell, 1997).

Kouzes and Posner (2007) suggested that exposure to a variety of out-of-classroom experiences provides concrete experiences as students apply leadership theories and skills. Additional researchers have examined this idea and have concluded that participation in extra-curricular clubs and organizations contributes to positive leadership development (Ewing, Bruce, Ricketts, 2009; Layfield, Radhakrishna & Andresen, 2000; Birkenholz & Schumacher, 1994). Similarly, students who participate in extra-curricular clubs and organizations have been found to have higher scores in developing purpose (Cooper, Healy & Simpson, 1994) and establishing and clarifying purpose (Martin, 2000; Stanford, 1992). College juniors who were members of student organizations scored higher than non-members on educational involvement, career planning, lifestyle planning, cultural participation, and academic autonomy (Cooper, Healy & Simpson, 1994). Montlongo (2002) concluded that personal or affective development of attitudes, values, aspirations, and personality disposition were positive outcomes associated with extra-curricular participation.

### **Involvement.**

Using concepts prominent in cognitive structural and psychoanalytic theories, Astin (1999) developed a conceptual framework to explain how educational programs and policies

translate into student achievement and development and proposes that it is useful in helping researchers guide investigation of student learning as well as helping administrators and practitioners design more effective learning environments. Astin (1999) defined involvement as an investment of physical and psychological energy that occurs along a continuum, meaning different students exhibit different levels of involvement at different times. Involvement has both quantitative (how much time a student spends on an activity) and qualitative aspects (how focused the student is on the activity). Applying these principles, Astin (1999) proposed that the theory of involvement provides a conceptual framework to explain how educational programs and policies translate into student achievement and development, which is directly proportional to the quality and quantity of student involvement.

### **Positional leadership role.**

Another important aspect of extra-curricular organizations is the impact of serving in a positional leadership role has on the student. Holding an office in an extra-curricular organization is related to the richness and magnitude of learning experiences and personal development during college years (Astin, 1984). Researchers have examined the impact of serving as a club officer and have found it related to increased leadership development (Ewing, Bruce & Ricketts, 2009) and increased decision-making (Rubin, Bommer, & Baldwin, 2002). Kuh (1985) found that serving as an officer of an organization correlated positively with developmental gains in interpersonal competence, practical competence, cognitive complexity, and humanitarianism. Serving as a leader of an organization has been associated with higher levels of developing purpose, educational involvement, life management, and cultural participation (Cooper, Healy & Simpson, 1994). Dugan (2006) studied undergraduate students and found that students who served as positional leaders scored higher on the Socially Responsible Leadership Scale (SRLS-R2) group values scale and the SRLS-R2 societal values scale.

While much of the research has suggested that serving as an officer of a club or organization has added benefits for students, Foubert and Grainger (2006) studied the psychosocial development of students and found no increased benefit for students who served as officers of their extra-curricular clubs or organizations over students who were members. Similar findings have been reported concerning the impact of serving as a club officer on a student's initiative (Rubin, Bommer, & Baldwin, 2002) and in perception that belonging to the organization had a positive impact on leadership development (Ewing, Bruce & Ricketts, 2009).

### **Leadership Development Outcomes**

Finally, leadership development was used as the outcome construct of the model. While many different theoretical frameworks have been used to study leadership development, the Social Change Model (SCM), developed by the Higher Education Research Institute of UCLA in 1993, which has been a widely cited model of student leadership in higher education (Haber & Komives, 2009), was used for this model.

The SCM describes leadership as a purposeful, collaborative, values-driven process. Its central principles – social responsibility and change for the common good – are assessed through eight core values that describe students' level of self-awareness and ability to work with others. The model views leadership as a process, not a position and encourages leadership development

in all participants, including those who hold formal leadership positions and those who don't. The SCM promotes the values of equality, social justice, self-knowledge, personal empowerment, collaboration, citizenship, and service (Astin & Astin, 1996). The model includes all three elements of the SCM: 1) individual values, 2) group values, and 3) community values.

The Social Change Model of Leadership Development, measured by the Socially Responsible Leadership Scale, has been used in the Multi-Institutional Study of Leadership (MSL). This study, which was first conducted in 2006 and has been conducted annually since 2009, includes nearly 200 institutions of higher education. In addition, studies have been conducted that examine the relationship between the Social Change Model and community service (Gasiorski, 2009 and Bonnet, 2008), military education programs (Wilson, 2009), and Greek membership (Dugan, 2006).

### **Problem Statement**

While professionals in higher education espouse the value of extra-curricular experiences, little research has been done to identify the specific experiences that contribute to student development (Von Stein and Ball, 2008). Literature has linked extra-curricular participation to leadership outcomes (Ewing, Bruce, Ricketts, 2009; Layfield, Radhakrishna & Andresen, 2000; and Birkenholz & Schumacher, 1994). However, the specific variables related to undergraduate extra-curricular club participation that result in desired outcomes are unclear. The purpose of this quantitative study was to identify and describe those experiences of undergraduate extra-curricular involvement that result in increased leadership development.

### **Research Objectives**

A better understanding of the extra-curricular experience of undergraduate students and which of those experiences are related to leadership outcomes is needed. Therefore, the purpose of this study was to identify and describe the undergraduate extra-curricular experiences that result in increased leadership development. The following research objectives were investigated to address this purpose.

1. Describe the demographics of students who participate in extra-curricular organizations.
2. Describe the extra-curricular experiences of undergraduate students.
3. Explore whether or not the average hours spent per week with extra-curricular clubs influence the level of leadership.
4. Determine if serving as an officer in extra-curricular clubs or organizations influence the level of leadership.

### **Methodology**

This study is a part of a larger study designed to use a purposive sampling technique using full-time, undergraduate college students who were classified as seniors in the College of Agriculture and Life Sciences at Iowa State University was used ( $N=969$ ). Students over 24 years old were excluded to reduce outliers in the data.

## **Instrumentation**

A researcher-designed survey instrument was developed to meet the research objectives. The survey instrument contained three sections, pre-collegiate experiences, collegiate experiences, and leadership development outcomes.

**Pre-collegiate characteristics and experiences.** For the purposes of this study, student records received directly from the university Registrar's Office were used to collect demographic and academic information of the subjects. These included, gender, age, race, high school class rank, college grade point average, and entry type (direct from high school or transfer). The researchers chose to obtain this information from the official student records to increase the accuracy of self-reported data and reduce the length of the on-line survey.

**College experiences.** Researcher-designed questions were used to collect data about collegiate experiences. Subjects were asked to indicate whether or not they participated in extra-curricular organizations, competitive teams, and the Greek system. Based on the responses to these questions, subjects were asked additional questions to learn more about their experiences.

Subjects who were involved in these extra-curricular activities were given a list of activities/organizations and asked to select the ones in which they participated. This list included college-level clubs that have a seat on the student council, judging or other competitive teams, Government of the Student Body, university-related clubs/organizations, social or recreational clubs/organizations, faith or religious-based organizations, community-based organizations, and the Greek system. "Other" categories were also included to allow participants to fill in additional organizations not included on the list. The list of clubs and organizations was developed by the researchers with input from current students, academic advisors, and college and university websites.

**Leadership development outcomes.** Leadership development outcomes were assessed using the Socially Responsible Leadership Scale (SRLS-R2)(National Clearinghouse for Leadership Programs, 2009). The scale includes 68 Likert-type items, which includes eight separate scales that measure specific constructs (Individual Values, Group Values, and Community Values) of the Social Change Model (SCM). Each of the eight scales is comprised of six to nine questions. The researchers chose to use the Group Values Scale and the Total SRLS-R2 Scale for this study. Permission to use the instrument for the purposes of this study was obtained. In return, the researcher agreed to acknowledge the "National Clearinghouse for Leadership Programs" and the "Center for Student Success" as well as send a final copy of the dissertation and anonymous data set to the National Clearinghouse for Leadership Programs. The reliability of the SRLS-R2 has been established by the Multi-Institutional Study of Leadership that used the SRLS-R2 with over 60,000 students (National Clearinghouse for Leadership Programs, 2009).

**Instrument Development and Design.** Face validity, content validity, and internal validity were established by two expert panels of students similar to those in the sample. To ensure that students on the expert panels were not a part of the sample population, all students on the panel had completed between 60 and 85 credits, equated to junior status. In addition to the

student panels, a group of professionals were asked for their input regarding face validity. Reliability for the SRLS-R2 Group and Total SRLS-R2 scales were computed for this study using Cronbach's alpha and were found to be .863 and .871, respectively.

### **Data collection**

Qualtric (19,973), a web-based survey instrument, was used to collect data because of the program's capabilities to improve the flow of the instrument. *Qualtrics* uses "skip/display logic" to customize which questions a subject receives. Therefore, based on initial responses, a subject was asked additional questions that related to their experiences.

Based on the suggestions of the students involved in the expert panels, Dillman's (2007) five step contact approach of data collection was modified. The panel suggested that undergraduates would view a pre-notice as junk mail and would be less likely to respond favorably to the follow-up e-mails. This recommendation resulted in including the survey link in the first e-mail contact. Subjects were contacted up to five times (over a 14 day period) via e-mail to reduce non-response. The distribution list was obtained from the university Registrar's Office ( $N = 969$ ). Those who responded were removed from the e-mail list and were not contacted again. The e-mail included the purpose of the study as well as information about general consent. This process resulted in 27% ( $N=270$ ) responses of which 20.5% ( $N=199$ ) were complete and useable.

Non-response error was controlled by comparing early respondents to late respondents as suggested by Lindner, Murphy, and Briers (2001). Independent sample t-tests were calculated to compare early to late responses, based on involvement in extra-curricular clubs and activities. Based on this analysis, the researchers were able to conclude that differences did not exist between early and late respondents.

### **Data analysis**

Survey results were automatically recorded by *Qualtrics* as subjects completed the survey. E-mail addresses were used to match the student record's information with survey results. To ensure confidentiality, all identifying data was removed before developing the spreadsheet for data analysis. SPSS was used to analyze the data.

**Objective 1 and 2.** Descriptive statistics, including frequencies, means, and standard deviations, were analyzed to address objective one and objective two. T-tests were computed to determine if participation in extra-curricular clubs and organizations varied based on gender and college entry type.

**Objective 3.** Average number of hours spent per week with extra-curricular clubs and organizations was a categorical variable with twenty possible answers. This variable was recoded into four categories. An ANOVA was computed using the recoded average hours per week as the independent variable and each of the leadership scales as the independent variable to determine the relationship between the amount of time spent in extra-curricular clubs and organizations and leadership development.

**Objective 4.** A t-test, using the dichotomous variable of serving as an officer as the independent variable and leadership development (measured by SRLS-R2) as the dependent variable, was calculated to determine the relationship between serving as an officer in an extra-curricular club or organization and leadership development.

## Results

Those that responded to this study consisted of 91 (45.7%) males and 108 (54.3%) females. All students were full-time students and were classified as seniors, 151 (75.9%) of them entered the university direct from high school and 48 (24.1%) entered as transfer students.

While in college, 96% of respondents indicated that they were involved in an extra-curricular activity, including 21% in the Greek system, 95% in extra-curricular clubs and organizations, and 29% on competitive teams. The number of extra-curricular clubs and organizations that students reported being involved in ranged from 0 – 11 clubs ( $M = 3.41$ ,  $SD = 2.44$ ). Females ( $M = 3.91$ ,  $SD = 2.29$ ) reported being involved in more clubs than males ( $M = 2.82$ ,  $SD = 2.48$ ),  $t(197) = -3.198$ ,  $p = .002$ .

### Time spent in extra-curricular clubs and organizations

The average amount of time students reported spending involved in extra-curricular activities ranged from 0 to 20 or more hours per week with the average being 5.33 hours. Gender differences were not found ( $p \leq .575$ ). Students who entered as freshman ( $M = 5.96$ ,  $SD = 4.8$ ) reported spending more hours per week involved in extra-curricular activities than those who entered as transfer students ( $M = 3.34$ ,  $SD = .66$ ),  $t(197) = 3.3$ ,  $p = .001$ . An ANOVA using the average hours per week as the independent variable and leadership development (SRLS-R2) as the dependent variable was computed to examine the relationship between average hours per week spent with extra-curricular clubs and organizations and leadership development showed that students who spent more hours per week involved with extra-curricular clubs and organization scored higher on both SRLS-R2 scales (Table 1). Because the ANOVA provided significant results, post hoc testing was conducted to compare and contrast mean differences between groups. Tukey post hoc test indicated that the only statistically significant differences were between students who spent 0-1 hours per week and those who spent 7 or more hours per week (Table 2).

Table 1. Analysis of Variance for average hours per week spent with extra-curricular clubs and organizations and leadership development (SRLS-R2).

Dependent Variable	Groups	SS	df	MS	F	p
SRLS-R2 Group	Between	1174.280	3	391.427	3.845	.011*
	Within	17813.855	175	101.793		
	Total	18988.134	178			
SRLS-R2 Total	Between	4395.216	3	1465.072	3.284	.022*
	Within	75830.973	170	446.065		
	Total	80226.190	173			

\*p ≤ .05

Table 2. Tukey HSD post hoc results for average hours per week spent with extra-curricular clubs and organizations and leadership development (SRLS-R2).

Test	(I) Hrs per week	(J) Hrs per week	Mean Differences (I – J)	Std. Error	p
SRLS-R2 Group Tukey HSD	0 – 1 hr per week	2 – 3 hrs per week	-1.96	2.23	.816
		4 – 6 hrs per week	-4.33	2.17	.186
		7 or more hrs per week	-6.91	2.17	.009*
SRLS-R2 Total Tukey HSD	0 – 1 hr per week	2 – 3 hrs per week	-6.20	4.73	.557
		4 – 6 hrs per week	-10.30	4.61	.118
		7 or more hrs per week	-13.79	4.61	.017*

\*p < .05

### Positional Leadership Role

One-hundred and forty-two students (71.4%) reported serving as an officer and 57 (28.6%) did not. Pearson Chi Square indicated no gender differences between those who

reported serving as an officer and those who did not ( $\chi^2(1, N = 199) = 1.076, p = .30$ ). However, those students who entered as freshmen were more likely to serve as officers than those who entered as transfer students ( $\chi^2(1, N = 199) = 23.434, p = .000$ ). In addition, the results indicated that officers ( $M = 7.02, SD = 4.69$ ) spend more time per week than those who don't serve as officers ( $M = 3.55, SD = 4.39$ ),  $t(196.957) = 5.40, p = .000$ . The results of a t-test show that students who reported serving as an officer in a club or organization scored higher on the SRLS-R2 scale (Table 3).

Table 3. *t*-test for serving as an officer and leadership development (SRLS-R2).

Dependent Variable	<i>t</i>	<i>df</i>	Sig.	Mean Difference	Std. Error Difference
SRLS-R2 Group	-2.634	167.582	.009*	-4.02751	1.51964
SRLS-R2 Total	-2.947	157.086	.004*	-9.49603	3.2228

\* $p < .05$

### Conclusions

Those students who responded to the survey were very active in extra-curricular clubs and organizations. Students who entered the university direct from high school reported belonging to more extra-curricular clubs and organizations, spent more time per week involved in these activities, and were more likely to serve as a club officer than those who entered as a transfer student. Although all of the students who participated in this study had completed at least 90 credit hours, they had not all been enrolled at the university the same amount of time. While, the number of semesters students had been enrolled at the university was not a variable in this study, it seems intuitive that it might play a role in student involvement.

Gender differences varied in this study. Females reported being involved in more extra-curricular clubs and organizations. However, they did not report spending more time per week involved in those organizations, and were not significantly more likely than their male counterparts to hold a club office.

Students who held a positional leadership role in a club and organization reported spending more time involved in clubs and organizations and scored higher on both the SRLS-R2 group and SRLS-R2 total. These findings are consistent with previous researchers who have examined the impact of serving as a club officer and have found it related to increased leadership development (Ewing, Bruce & Ricketts, 2009). Dugan (2006) found that students who served as positional leaders scored higher on the Socially Responsible Leadership Scale (SRLS-R2) group values scale and the SRLS-R2 societal values scale. However, the findings of this study differ from those of Foubert and Grainger (2006) who studied the psychosocial development of students and found no increased benefit for students who served as officers in their extra-curricular clubs or organizations over students who were members.

The amount of time per week spent with extra-curricular clubs and organizations was related to higher scores on both the SRLS-R2 group scale and SRLS-R2 total scale. These findings are consistent with Astin's involvement theory that posits that involvement is related to both the quality and quantity of involvement. These findings are also consistent with previous research findings that have connected the amount of time spent per week in extra-curricular clubs and organizations to leadership abilities (Astin 1999; Pascarella & Terrenzini, 1991; Rubin, Bommer & Baldwin, 2002). The results of the post hoc test revealed that statistically significant differences only exist between the least amount of hours per week spent in extra-curricular clubs and organizations (0-1 hrs per week) and the most amount of time spent per week (7 or more hours per week).

### **Implications and Recommendations**

Leadership development is an important outcome of the college student experience. The results of this study are consistent with findings by previous researchers (Ewing, Bruce, Ricketts, 2009; Layfield, Radhakrishna & Andresen, 2000; Birkenholz & Schumacher, 1994) about the importance of participating in extra-curricular clubs and organizations. Involvement in these activities has a strong relationship with leadership development and institutions should include the role of extra-curricular activities as they develop action plans for reaching leadership development outcomes.

Faculty and staff need to work to create meaningful opportunities for students and encourage students to participate. The results of this study suggest that this is especially important for transfer students who typically have less time on campus to become involved and therefore less time to take on meaningful leadership roles. While, some resources are available to inform the development of these experiences (Dunkel & Schuh, 1998; Yarbrough, 2002), additional research to identify specific characteristics or activities of extra-curricular involvement most likely to increase leadership outcomes is needed. This information would be very valuable as educators work with student leaders to create meaningful experiences.

The amount of time spent participating in extra-curricular clubs and organizations seems to be a common thread in increased leadership skills, since students who serve as officers had higher leadership scores than those who did not serve as officers and also spent more time participating in clubs and organizations. Shertzer and Schuh (2004) suggested that students holding leadership positions in college were often given additional leadership development opportunities when compared to those members who did not hold leadership positions. Therefore, the increased skills oftentimes attributed to serving as an officer may actually be associated with the additional training that officers receive. Another possible explanation for the added benefit of serving as an officer in an organization is the increased time associated with serving as an officer. Based on these findings, increasing the training as well as the amount of opportunities all students have to participate in extra-curricular clubs and organizations is recommended.

It is also noteworthy that a high percent of students who completed the survey were involved in extra-curricular clubs and organizations. Ninety-six percent of respondents indicated that they were involved in an extra-curricular activity. While this seems high compared to the

involvement at the university (Institutional Research, 2011), which indicates that 33% of seniors spent at least 6 hours per week participating in co-curricular activities such as student organizations and intramural sports, it is true that the culture of the College of Agriculture and Life Sciences encourages participation in extra-curricular clubs and activities. Further research is needed to determine if this percent is a result of non-response error or if extra-curricular participation is indeed that high. Further research is recommended to find the relationship between extra-curricular participation and additional unique characteristics of the college. For example, is there a relationship between what appears to be exceptionally high extra-curricular involvement and the college placement rate of over 98%?

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## **Involvement in Extra-Curricular Activities and Leadership Development**

Chair/Discussant Comments by:  
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One thing I really like about this study was the fact that the authors tried to pinpoint collegiate activities that foster leadership development to enhance the educational experience among its graduates. They were interested in finding out what were those extra-curricular activities that occurred outside the classroom that fostered leadership development. I think most of us have asked ourselves similar questions to ensure a well-rounded educational environment for our students. The authors found minimal studies that led them in the direction of finding specific activities that contributed to student development at the collegiate level, so they designed study to provide the foundational footing for additional studies in this area.

They had found that a very high percentage (96%) of the participants was involved with extra-curricular activities at the collegiate level. A vast majority (76%) of the participants indicated they enrolled at the university directly from high school. It would certainly indicate that Student Services was doing their part in communicating to the participants, the importance of becoming involved with events/organizations. They found that the students that spent more hours in extra-curricular activities per week and were a club officer scored higher on both SRLS-R2 scales. However, the study does stimulate certain questions.

1) What is the make-up of the non-respondents? The low response rate leads me to ask this question. Maybe the respondents to this study were the students who felt they had something to contribute to the survey, because of their heavy involvement in extra-curricular activities. Certainly demographic information could be reported on the non-respondent population through Registrar's Office data collected for the study, which leads to another question.

2) Were a majority of the non-respondents transfer students? For my prospective, transfer students have more financial responsibility linked to their college education, so they probably hold part-time jobs to assist them financially, which means less time for extra-curricular activities. Did the sample represent the university's demographics, which would indicate a similar make-up of 75% four-year students and 25% transfer students? Since the researchers excluded all participants that had reached the age of 24, could have possibly eliminated those transfer students who experienced transferability issues in their degree program.

Furthermore, I would like to congratulate the authors on tackling an issue we all believe exist. We certainly can walk into our introductory courses and explain to our students, "Get involved, because it will impact your ability to lead others"! It also leads us to believe that "Perfect Practice makes Perfect"!

## **Agricultural Education Early Field Experience Through The Lens of The EFE Model**

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*The purpose of this national descriptive study was to describe agricultural teacher education early field experience (EFE) practices using the EFE Model. The national descriptive study data were collected via an online survey instrument. The population for this study consisted of all agricultural education teacher preparation programs (N=83) identified using the AAAE Directory of University Faculty in Agricultural Education. The agricultural teacher education coordinator was identified as the contact person representing each institution. For this study an early field experience (EFE) was defined as all field experiences that occur prior to student teaching and the experiences could be offered within or outside of the agricultural education curriculum. Programs were requiring minimum number of contact hours and minimum number of lessons to be taught while in the field. The most commonly identified student assessments included the university supervisor's review of documents, cooperating teacher signatures, reflective writing and student journaling. This study has aided the profession in providing a more congruent EFE experience for preservice teachers.*

### **Introduction**

An early field experience (EFE) is one aspect of the preparation process for any student preparing to enter the agricultural teacher education profession. The EFE experience provides the opportunity for the preservice teacher to immerse into the classroom setting. This experience allows the preservice teacher to begin experiencing a real classroom environment.

Guyton and Byrd (2000) defined EFE as the range of school experiences that occur prior to student teaching for those students in preservice teacher education. The interaction with peers, cooperating teacher and teacher coordinator is known as the triad. This triad is vital if the preservice student is going to learn from the EFE experience and develop an understanding of the profession (McIntyre, Byrd & Foxx, 1996). Pierce (1996) suggested that learning is authentic in EFE and it should be taking place early and regularly.

Retallick and Miller's (2007a) study concluded that EFE programs have established requirements including a minimum number of contact hours as well as a minimum number of lessons planned and taught. Additionally, EFE offerings are driven by internal and external factors including licensure, state and national accreditation. Having a quality EFE is important for any preservice teacher educators to ensure they are prepared for the profession.

A major issue for many EFE programs is the lack of purpose and expectations. The National Council for Accreditation of Teacher Education (NCATE, 2008), identified the purpose of EFE as the application of preservice teacher knowledge and skills in various settings. This purpose can be accomplished by many early and continuous school opportunities, which could include

teaching lessons, tutoring students or observing in the classroom (NCATE, 2008). NCATE has addressed the lack of clear goals by requiring institutions to develop a purpose statement, outline the educational process and define student outcomes as part of a conceptual framework for their teacher education program, which begins to meld early field experiences and courses taught on campus (McIntyre et. al., 1996).

Educators have not disputed the importance of EFE (Guyton & Byrd, 2000). Pierce (1996) suggested EFE should take place regularly and earlier throughout the preservice training. Early field experiences create significant learning experiences for preservice teachers, suggesting the need for the design of authentic classroom experiences like EFE (Aiken & Day, 1999). To ensure the effectiveness, early field experiences should be aligned with the entire teacher preparation program (Little & Robinson, 1997).

McLean and Camp (1998) stated the call of reform of agricultural teacher education preparation has gained momentum in the last 15 years. In part, the momentum of reform of agricultural teacher preparation could be attributed to the impact of EFE in preservice teacher education. Myers and Dyer (2004) emphasized the importance of an EFE in agricultural teacher education programs because it assists students in decision making for the future. The impact and effectiveness of EFE has also been plagued with issues identified by Hudson, Bergin, and Chayst (1993). The issues identified include (a) lack of common goal, (b) lack of control, (c) limited learning due to the lack of experiences the preservice teacher can compare, (d) difference between what is being practiced in the classroom and what is being taught on campus, and (e) limited opportunities. Even though issues may still exist within EFE, Swortzel (1995) stated agricultural education faculty need to continue to evaluate their programs to determine whether or not they are accomplishing their mission of preparing qualified teachers.

### **Theoretical and Conceptual Frameworks**

This study is grounded in experiential learning theory. Phipps and Osborne (1988, p.19) wrote that experiential learning in agricultural education has an “emphasis is on learning by doing.” This emphasis is apparent in the attention given to laboratory work, field trips, problem solving, and supervised occupational experience programs. Kolb (1984) defined experiential learning as a “means for examining and strengthening the critical linkages among education, work and personal development” (p.4). The learning by doing philosophy is an important aspect of EFE in a teacher education program. This linkage brings the education and experience together for a preservice teacher educator. In EFE a preservice educator is able to have experiences, which resemble and model the activities a teacher will have when entering the teaching profession.

Mentkowski and Associates (2000) indicated experiential learning provides students with experiences, which will lead to transfer of information. The transfer of information is the starting point of a reflective educator (Mentkowski & Associates 2000). Rogers (1969) espoused that experiential learning happens continuously from meaningless to significant learning. Rogers (1969) identified five elements present in experiential learning: (a) direct, personal involvement, (b) learner initiation, (c) pervasiveness, (d) learner evaluation and (e) essence is meaning. Just as experiential learning provides students with experiences, an EFE will do the same for students interested in agricultural teacher education.

Building on experiential learning theory, the conceptual framework for this study is Retallick's (2005) structure and content model of early field experience in teacher education (Figure 1), which identifies three major components of EFE: the foundation, organization, and implementation of EFE. The foundation of the model includes the teacher education standards and a conceptual framework, which provides a basis of how EFE can evolve. Building upon the foundation of the model is the organization of EFE. In organizing EFE, teacher education programs must develop through various experiences. Within the organization stage it involves the documents of syllabi, forms and handbook, the placement of EFE and the experiences, which can be embedded or stand-alone. The implementation stage of the model includes four elements: (a) interaction among the EFE participants, university supervisors, cooperating teachers and peers; (b) the orientation to the outcomes and learning strategies; (c) the outcomes; and (d) the learning strategies necessary to accomplish the outcomes.

Smalley and Retallick (2010) further enhanced the EFE model using agricultural teacher education experts to identify the appropriate types of interaction and activities. The findings of this study, as established by a panel of expert who reached consensus, indicated that EFE should be documented via a combination of journaling and portfolio development. The verification of these documents should be completed by the cooperating teacher and through university assessments. Documentation of an EFE experience can be done through journaling, cooperating teacher signature, reflective paper or a review of collective documents. Since the development of Retallick's (2005) model and the refinement by Smalley and Retallick (2010), no research has been conducted to determine what practices are taking place in each of the components of the EFE model, what elements of EFE are practiced and extent the EFE model reflects practice in agricultural teacher education programs.



- 2) Are there elements of EFE in practice that are not represented in the model?
- 3) To what extent does the EFE model reflect actual practice?

## **Methods**

The population for this national descriptive survey consisted of all agricultural education teacher programs ( $N=83$ ) identified using the AAAE Directory of University Faculty in Agricultural Education (American Association of Agricultural Educators). The agricultural education teacher preparation coordinator was identified as the contact person from each institution.

Dillman's (2007) tailored design method was used in developing this descriptive survey design. The 19 principals for developing a survey instrument were used in developing the researcher-designed survey. For this study an early field experience (EFE) was defined as all field experiences that occur prior to student teaching. The experiences could either be offered in or outside of the agricultural education curriculum. This definition was provided in the cover letters and the introduction of the survey instrument.

The survey was divided into five parts: implementation, assessment, foundation, organization and demographics. Participants were asked to identify the purposes of EFE, which for this study were categorized as either exploratory or teacher development in nature. In this study, exploratory was defined as providing a student the opportunity to investigate the profession and develop an understanding what it means to be an educator. Teacher development was defined to participants as the stage of development after students have explored and determined that teacher education was the career for them. During this stage, preservice teachers begin to transition from student to teacher by developing and enhancing skills and knowledge prior to entering the teaching profession (Retallick, 2005).

The instrument was designed to ask dichotomous close-ended and open-ended questions to obtain unique and specific information (Dillman, 2007). A panel of experts including agricultural teacher educators and graduate students were used to review the instrument for content validity. Panel suggestions were integrated into the questionnaire. The instrument was pilot tested. The participants were asked to read the items carefully and indicate if any of the items were not suitable. Cronbach's alpha was computed using the pilot test to assess the internal consistencies of the summated scales in the questionnaire. The coefficients obtained for types of interaction were .84, .81 for activities, and .74 for assessments.

Data collection followed Dillman's (2007) electronic survey plan, which included four contacts and a special contact. For this study, a special contact was a phone call to non-respondents. Data collection began on June 1, 2010 and was concluded on June 20, 2010. Surveys were returned by 53 of the 83 agricultural education teacher preparation coordinators for an initial response rate of 59%. The lower than normal response rate was attributed to the timing of the data collection. Researchers wanted to improve the response rate to better represent the profession. Therefore, a modification to the data collection procedures was developed and approved by Institutional Review Board (IRB) to contact non-respondents after the start of the fall semester. An informational email was sent on September 1, 2010 to non-respondents notifying them this would be the only contact from the institution and encouraging their participation in the study. A

link was sent on September 2, 2010 from Survey Monkey to non-respondents. As a result, of the second phase of data collection 66 of the 83 agricultural education teacher preparation coordinators responded for an overall usable response rate of 79.51%. To control for non-response error early and late respondents were compared and no significant differences were found. All data were analyzed using descriptive statistics.

### Findings

The institutional makeup of this study consisted of 1862 land grant (57.14%), 1890 land grants (5.35%), regional/state (32.14%), and private institutions (5.35%). A majority of the programs offered a Bachelor of Science in agricultural teacher education (83.92%), 12.5% reported offering a Bachelor of Science plus one year, 44.64% offered a Master of Science in agricultural education and 25% indicated they offered other degrees in agricultural education besides a Bachelor of Science, Bachelor of Science plus one year or Master of Science.

#### *Foundation Stage*

The foundation of the EFE model is made up of the conceptual framework and standards of EFE. The standards include state, institutional, professional and national standards. When asked to identify the standards that drove the teacher education program including the EFE component, agricultural teacher education coordinator identified state standards (86.66%) as the most influential along with institutional standards (66.66%) (Table 1).

Table 1  
*Standards of EFE Program*

Driving the EFE Program ( <i>n=66</i> )	%
State	86.66
Institutional	66.66
Professional	46.66
National	43.33
Other Standards	5.00

Agricultural teacher education coordinators identified the agency or organization used to accredit the program. The National Council for Accreditation of Teacher Education (NCATE) was associated with the majority of programs (65.00%). During the time of the study, NCATE and the Teacher Education Accreditation Council (TEAC) voted to consolidate and formed a new accrediting body called the Council for the Accreditation of Education Programs (CAEP) (NCATE, 2010).

Table 2

*Accrediting of EFE Program*

Agency/Organization Accrediting ( <i>n</i> =66)	%
National Council for Accreditation of Teacher Education (NCATE)	65.00
State Accreditation	58.33
Teacher Education Accreditation Council (TEAC)	8.33
Other Accreditation	5.00
Did not have Program affiliated Accrediting Agency	5.00
National Board of Professional Teaching Standards (NBPTS)	3.33

***Organizational Stage***

The organizational stage of the EFE model is composed of the experience, placement and documents of the program. EFE programs can be implemented as part of a course or completed as a stand-alone experience. Agricultural teacher education coordinators were able to identify all ways that they offer an EFE experience. Program coordinators reported that their EFEs were most commonly embedded within a course (85.00%) while 65% of the experiences were considered stand-alone experiences. Programs require EFE students to complete unique EFE experiences throughout their teacher education program. Ten program coordinators reported their EFE students complete three (18.2%) to four (18.2%) experiences (36.4%).

***Placement***

EFE experiences are designed for many different stages of preservice teacher development. EFEs are offered at all grade levels and because of the various purposes of the EFE, including the effort to help students transition from student to teacher and the number of different experiences, no single grade level or combination of grade levels emerged from the data.

The placement of a student in an EFE is important for any preservice teacher to have a quality experience. Fifty-one percent of the agricultural teacher education programs reported that students were required to select an EFE site from an approved list. Seventy-five percent of the agricultural education programs required preservice teachers to complete the EFE in a high school/middle school program. One half of all programs did not require an EFE prior to admission to the teacher education program at the university. On average, the minimum numbers of hours expected of students to participate in EFE for licensure was 76 hours ranging from 30 to 200 hours.

An orientation program is offered to EFE students in most teacher education programs (94.54%). However, in most cases, EFE programs do not offer orientations for college/university staff (52.72%) or cooperating teachers (57.40%). Over half of the agricultural teacher education programs (54.38%) had minimum qualifications for inservice teachers to be eligible to serve as an EFE cooperating teacher. Fifty-two percent of programs did not require a minimum number of site visits to the secondary program by the preservice teacher as part of the EFE.

***Documents***

Documents of an EFE program can include various types and forms of documenting the experience including handbooks, planning of lessons and teaching a lesson. More than half (69.09%) of the EFE programs used a handbook or bulletin for communication with preservice

teachers. Preservice teachers were expected to plan a lesson (56.36%) as part of their experience. Additionally, fifty-two percent of preservice teachers were expected to teach a lesson as part of the required EFE. On average, agricultural teacher education coordinators indicated preservice teachers were expected to teach 14 lessons during the EFE.

***EFE Model Implementation Stage***

The implementation stage involves the interaction, activities and assessment of an EFE. Forty-eight percent of institutions indicated some collaboration occurs among the preservice student, the EFE cooperating teacher and the teacher educator during the required EFE, while eight percent indicated no collaboration occurs, 15.62% indicated very little collaboration occurs and 28.12% indicated much collaboration occurs during the EFE.

Types of interactions for EFE could be organized into two categories from the literature: exploratory or teacher development. Of the 16 types of interactions agricultural teacher education program coordinators were asked to identify the purposes of their EFE (Table 3). Most reported the purpose of an exploratory EFE was to identify the roles of professional educators (80.64%) and to have a positive experience (80.32%). Most agricultural education coordinators identified the purpose of a teacher development EFE was to recognize a successful teaching strategy (85.24%).

Table 3  
*Purpose Early Field Experience Identified within Exploratory or Teacher Development*

Types of Interaction ( <i>n</i> =66)	%
<b>Exploratory</b>	
Identify the roles of a professional educator.	80.64
Have a positive experience.	80.32
Observe classroom instruction.	75.80
Define and describe characteristics of effective teacher.	73.77
Affirm the desire for becoming an agricultural educator.	72.58
Develop an understanding of what is involved in being an agricultural teacher.	67.21
<b>Teacher Development</b>	
Recognize a successful teaching strategy.	85.24
Recognize a successful classroom and laboratory management strategy.	79.03
Educate preservice teacher about what it means to learn to teach as they reflect on why, whom and how they will teach.	75.00
Identify skill development (classroom instruction/management, program planning) of a teacher.	70.96
Identify cooperating teacher behavior/s that influences student behavior.	70.49
Interact with community members, school staff and administration.	69.49
Recognize awareness of student behavior.	67.74
Develop understanding of a complete Agricultural Education Program (i.e. classroom/laboratory, FFA, SAE)	67.21
Develop observational skills and techniques.	67.21
Recognize awareness of student engagement.	65.00

EFE activities are events, which take place prior to a student entering the student teaching experience. Table 4, represents 14 activities the agricultural education programs report using within their EFE program. Nearly all, agricultural education programs (93.75%) conduct an orientation where university faculty discuss the expectations of EFE. Programs are less likely to provide student-led preservice teacher discussions (45.31%) and use on-campus case studies (32.81%).

Table 4  
*Types of Activities Occurring in EFE program*

Activities occurring in EFE program ( <i>n</i> =66)	%
Orientation from university faculty on the expectations of EFE.	93.75
Observation of student's behavior by preservice teacher.	92.18
Develop reflection paper throughout experience (micro-reflections).	89.06
Note taking of observations while on EFE.	89.06
Preservice teacher observation of cooperating teacher.	89.06
Observation of student's learning by preservice teacher.	81.25
Preservice teacher teaching a lesson.	76.56
Observing the supervision of student FFA projects and activities.	75.00
Develop written portfolio documentation of experience.	75.00
Compile list of information regarding the EFE-program visit.	70.31
Interviewing middle/high school students, cooperating teacher, school counselor, principal, etc.	64.06
Observing the supervision of students SAE projects and activities.	64.06
Student-led discussion by preservice teacher.	45.31
Review case studies in a university setting.	32.81

Additional interactions identified by participants include FFA and SAE, attending shows/fairs, coaching and judging CDE students, visiting community partners (i.e. business/government agencies), working with a cooperating teacher to plan and conduct a demonstration and reflect on the experience. Other type of engagement activities identified include developing a service learning plan to implement with cooperating teacher, grading papers, tutoring students, observing special needs instruction and conducting a middle school lesson.

### ***Assessment Stage***

Two types of assessments are available in an EFE according to literature: program and student centered assessments. Agricultural teacher education coordinators were asked to identify how students EFE were documented in their program (Table 5). Nearly all agricultural teacher education programs indicated the program was being documented by university supervisors reviewing documents (95.08%), cooperating teacher signatures (88.52%), reflective writing (83.60%) and student journaling (80.32%).

Table 5.

*Assessment of Students EFE Experiences*

Student Documentation of EFE Experience ( <i>n</i> =66)	%
University supervisor review of documents	95.08
Cooperating Teacher – verification/signature	88.52
Preservice student completing a reflective paper on experience.	83.60
Journaling on EFE experience	80.32
Preservice student completing an observation of the visited agricultural education program (reviewing: teaching resources, curriculum, facilities, budget, etc.).	70.49
Collection of key resources and documents.	63.93
Cooperating Teacher Evaluation	63.93
Development of a Portfolio	60.65
Seminar for EFE students to discuss and compare experiences as a group.	54.09

Additional ways of documenting the students EFE experience identified by participants include online discussion posts, twitter, contacting cooperating teacher regarding the level of participation of preservice teacher, and a clinical interview. Participants also indicated preservice teacher develop a portfolio of lessons and review the program visited standards and do a comparison to state standards.

The program evaluation of an EFE program can be completed at various levels and is important to continue the success of an EFE program. Seventy-eight percent of agricultural teacher education coordinators indicated that their EFE program was evaluated (Table 6). An accreditation review (75.00%) was identified as the most common type of review.

Table 6

*EFE Program Evaluated*

Level of Review ( <i>n</i> =5)	%
Accreditation	75.00
Departmental	72.91
University	56.25
State Review	47.91
Other Levels	6.25

## Conclusions/Recommendations/Implications

The purpose of this national descriptive study was to describe agricultural teacher education early field experience (EFE) practices using the EFE model. The population for this national descriptive survey consisted of all agricultural education teacher preparation coordinators ( $N=83$ ) identified using the AAAE Directory of University Faculty in Agricultural Education. The agricultural education teacher preparation coordinator was identified as the contact person from each institution.

According to the agricultural teacher education program coordinators in this study, a majority (76.55%) of the programs has either some or much collaboration occurring between the preservice teacher, the EFE cooperating teacher and the teacher educator during the required EFE experience. This interaction of peers, cooperating teacher and teacher coordinator is known as the triad. This triad is vital if the preservice student is going to learn from the EFE experience and develop an understanding of the profession (McIntyre et al., 1996). This collaboration is essential to ensure the preservice teacher is going to have a successful EFE (McIntyre et al., 1996).

Most programs report having specific requirements and expectations of an EFE. Programs were requiring minimum number of contact hours and minimum number of lessons to be taught while in the field, which is consistent with Retallick and Miller (2007a). Most of the agricultural teacher education programs were offering an orientation to the preservice teacher prior to the preservice experience.

Most agricultural teacher education programs used a variety of student assessments. The most commonly identified student assessments included the university supervisor's review of documents, cooperation teacher signatures, reflective writing and student journaling. This is consistent with and validates the findings of Smalley and Retallick (in press) national Delphi study.

Retallick's (2005) structure and content model of EFE represent's three major components of EFE: the foundation, organization, and implementation of EFE. The findings from this study can be incorporated into the foundation, organization, implementation and assessment stage of this model. This study adds to the depth and substance of EFE research and Retallick's (2005) EFE model by identifying the type of interactions as exploratory or teacher development, activities, assessment methods, and documentation methods.

This study has implications for teacher education programs that are planning to evaluate their current programs or preparing to revamp their EFE programs. The results from this study can be used as comparisons for agricultural teacher education programs from across the country. By developing consistency among teacher education programs, EFE will provide a better experience for all students involved in the EFE. By expanding opportunities of a preservice teacher during the exploratory and teacher development stage it will increase the number of real-world opportunities a preservice teacher has prior student teaching. Increasing the number of opportunities to a preservice teacher it could impact the recruitment and retention of preservice agricultural education students and the 20X15 goal in agricultural education (Team Ag Ed,

2010). The 20X15 long-range goal for agricultural education is to create new programs in communities not yet served by agricultural education/FFA and to strengthen the current programs by 2015 with having 10,000 quality agricultural education programs in operation.

The findings of this study provide early field experience coordinators types of interactions taking place, types of activities, and forms of assessments being used in the EFE. Results from this study can be used by the EFE program coordinators to ensure the experience is the best of quality for all taking part.

Further research needs to take place to determine if all teacher education programs associated with career and technical education areas are using the same or similar methods to assess or document the EFE experience. Little information is known if career and technical education programs' EFE experiences are being reviewed or how recommendations are being handled.

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## **Agricultural Education Early Field Experience Through The Lens of The EFE Model**

W. Wade Miller, Discussant

This paper reports on the findings of a national descriptive study that examined early field-based experience practices in agricultural education programs at the collegiate level. A model for early field experience (EFE) was developed in 2006 and was utilized as a basis for examining early field-based experiences. Early field experience was defined by Guyton and Byrd in 2000 and this definition became the basis for how EFE was studied. Previous research concerning EFE was presented in the Introduction and the Theoretical and Conceptual Framework. The work cited provided a sound platform on which to build this study. The value of EFE was presented along with a tie to “Learning by Doing”, which has long been a part of agricultural education as a part of career and technical education. Experiential learning theory was utilized to provide a basis for studying early field experience. The EFE model provided a visual way to explain the concept. The model is somewhat difficult to understand without further explanation. A narrative explaining the model would be useful.

The Methods section provided a detailed explanation on how the study was designed and conducted. The study was conducted as a population study in that all teacher education programs in agricultural education were contacted for data. A detailed explanation was offered explaining how the data collection instrument was developed and tested. The return rate was high (79.51%). Descriptive statistics were used to summarize the data. Since this was a population study, no inferential statistical procedures were used. This appears appropriate for this study.

The findings are presented in four sections organized along the EFE model. These included: Foundation Stage, Organizational Stage, Implementation Stage, and Assessment Stage. These sections served to not only present and organize the findings, but to also help the reader understand the EFE model. The authors concluded that most agricultural education programs do have early field experiences that include collaboration between the pre-service teacher, the cooperating teacher, and the teacher educator. They concluded that most programs have specific requirements and expectations in regard to the EFE. Differences were observed among the institutions. Are there enough similarities among the various early field experiences to provide a common basis for further study? Would an increase in the amount or intensity of EFE change the outcome of teacher education programs? Would it have a measurable effect among students?

## **The Relationship Between Coping and Mentor Support of Novice Agricultural Educators**

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**Erica B. Thieman, University of Missouri**  
**Tracy Kitchel, University of Missouri**

### **Abstract**

*The beginning agriculture teacher experiences a multitude of stressors in their daily work. This descriptive-correlational study explored the stress coping styles and perceived mentor support in response to stressors for early-career teachers in Missouri. When faced with a stressful situation, individuals tend to respond with emotion-focused coping, which leads to stress and burnout, or problem-focused coping, which leads to resilience. Early-career teachers respond to stressors utilizing problem-focused coping strategies in the program areas of advising FFA activities, teaching in the classroom / laboratory, and supervising SAE programs. A common response to beginning teacher stress is a formal mentor program to acclimate teachers into the profession. Beginning teachers felt supported to a large extent by their mentors in the mentor roles of counseling, friendship, acceptance, and role models. A statistically significant ( $p < .05$ ) positive relationship was found between the level of counseling mentor support and supervising SAE programs for teachers employing problem-focused coping; a statistically significant ( $p < .05$ ) negative relationship was found in the supervising SAE program component for teachers employing emotion-focused coping and the level of social mentor support.*

“Essentially, we humans live well enough and long enough, and are smart enough, to generate all sorts of stressful events in our heads... Surely we have the potential to be uniquely wise enough to banish their stressful hold.” (Sapolsky, 2004b, pp. 4, 418)

### **Introduction/Review of Literature**

The first years of teaching can be a very taxing time for a novice agricultural educator, evidenced by high attrition rates within the first few years of teaching (Camp, Broyles, & Skelton, 2002). This factor has amplified illumination when considering that roughly only half of the qualified graduates who are certified to teach agricultural education choose employment within public schools upon graduation (Kantrovich, 2007). It was posited in a 2007 study of the supply and demand of agricultural educators that the profession has reached a critical tipping point with a serious shortage of teachers threatening if the current path is followed (Kantrovich).

The profession of teaching is unique from many others in that the amount of responsibility placed on the shoulders of the novice teacher is often comparable to that of much more experienced teachers (Tait, 2008). Over a decade ago, the practicality of expectations and responsibilities placed on agricultural educators, novice and veteran alike, was brought into question (Mundt & Connors, 1999). It appears, based on Kantrovich's study, this question still looms in the profession (2007). If not equipped with proper coping mechanisms, said responsibilities and expectations can lead to increased stress in the educator. Exposure to stress can have adverse effects on humans. Through anecdotal knowledge, we know that individuals

exposed to stress for extended periods of time undergo physical changes (e.g. looking haggard and tired) and appear to age quicker than their counterparts who have lower stress levels (Epel, 2004; Epel, 2009). The study of the effects of stress on the physical self began with research by Hans Selye in the 1930's with rats. While conducting an unrelated study on an extract from the ovary, Selye induced ulcers in his rats through constant exposure of stress resulting from less than exemplary rodent-handling expertise, this led to landmark findings and an enormous body of research linking stress and illness (Sapolsky, 2004). The term "stress" was borrowed from the study of physics, as anyone with experience in the metal shop can attest when evaluating quality of metal welds; the medical field then applied the term through the findings of physiologist Walter Cannon (Sapolsky, 2004). Selye demonstrated that "stress" is what happens when emotional or physical disturbances upset the delicate balance of the human body (Sapolsky, 2001).

*Stress*, as it relates to the educator, has been clearly defined and is a commonly studied phenomenon in the field of agricultural education, as evidenced by the numerous studies that can be found relating to the topic. Many studies have examined sources of stress (Anderson, 2010; Kyriacou, 2001; Lazarus & Folkman, 1984; Montgomery & Rupp, 2005; Mundt & Connors, 1999; Torres, Lambert, & Lawver, 2009; Torres, Lawver, & Lambert, 2008) and causes and symptoms of *burnout* in educators (Byrne, 1998; Croom, 2003; Evers, Tomic, & Brouwers, 2004; Freudenberger, 1974; Maslach, 1982; Straquadine, 1990; Zunz, 1998). With the abundance of literature on the phenomenon of stress, the next logical step is to take into account *coping mechanisms* in order to shift the focus from the negative, "What is wrong?" to a more positive, "What can be done?"

In a conceptual model linking teacher resilience to educator stress and burnout, Thieman, Ball, and Kitchel (2011) posited coping style can exacerbate or moderate the outcome of stress on the educator. Coping style refers to the manner in which an individual works to reduce the burden resulting from a stressful experience (Carmona, Buunk, Peiro, Rodriguez, & Bravo, 2006). The model implies teachers who use a problem-focused coping style are more likely to be *resilient* teachers. Problem-focused behaviors include strategies of action; teachers using this style are empowered through viewing themselves as having power to change their environmental conditions (Kyriacou, 2001). Conversely, those who employ a more emotion-focused coping style will display augmented levels of stress and burnout while viewing their environment as unchangeable (Thieman, et al., 2011). Emotion-focused coping style mechanisms include strategies of the defensive, escapist, or avoidance nature, all of which work to reduce the intensity of the emotions resulting from the stressful event, rather than resolve the issue causing the stress (Kyriacou, 2001).

It has been concluded that the constant, regular daily activities of the agriculture program contribute more to overall stress of the agricultural educator, when compared to sporadic, critical incidences' (such as a student crisis or fight) effect on stress (Thieman, et al., 2011). Chronic, long-term stress, combined with inefficient coping mechanisms, has been recently linked to adverse health behaviors, aging, age-related diseases, and mortality (Kiecolt-Glaser & Glaser, 2010). Not surprisingly, experiments by Epel (2004; 2010) found overlap in the data when comparing the caregivers to the control population, meaning some caregivers were coping effectively, while some of the subjects in the control group were inadequately coping, even

though not exposed to such a high level of chronic stress (Epel, et al., 2004; Epel, et al., 2010; Sapolsky, 2004a). A similar phenomenon can be observed in teachers, where some appear adept at handling stressful experiences adequately while others, when exposed to similar stressful experiences, fail to thrive and bounce back. There seems to be few studies regarding how teachers, especially agricultural educators, cope with on-the-job stress, resulting in a major gap in contemporary literature regarding the coping ability and mechanisms of educators.

“Beginning agricultural education teachers were not prepared for isolation and socialization issues that are part of the organizational environment of schools” (Greiman, Walker, & Birkenholz, 2005, p. 102). This study also concluded that beginning agricultural education teachers were in need of more socialization and interaction; this could be especially beneficial in the early portion of the school year through more frequent interactions with mentors, faculty, and staff (Greiman, et al., 2005). Support, guidance, and orientation programs have been found to help teachers combat the often stressful environments in which they work; induction programs are designed to serve as a link from “student of teaching to teacher of students...to improve the performance and retention of beginning teachers” (Ingersoll & Strong, 2011, p. 203). These programs typically emphasize teacher socialization, adjustment, development, and assessment and can be found in many different amalgamations of these emphases. Mentoring programs are designed for seasoned veterans to provide personal guidance to novice teachers and have recently become the most common form of teacher induction, with the two terms frequently used interchangeably (Ingersoll & Strong, 2011).

Formal induction and mentoring programs are a relatively new and up-and-coming phenomenon in the U.S.; in 1990, approximately 40% of all teachers participated in some form of early induction program, by 2008, this number had risen to almost 80%. In the same year, 25 states were requiring and funding mentoring programs for novice teachers (Tapping Into Teaching: Unlocking the Key to Student Success, 2008). In a study of mentors and protégés in a formally assigned mentor program, Greiman indicated that formal mentors in agricultural education are “assisting novice teachers in developing the skills necessary to be an effective teacher” (2007). To expand upon this point, in the context of the current study, the mentor teacher ideally should be assisting the novice teacher in cultivation of their problem-focused coping behaviors in response to the stresses a beginning teacher experiences on a regular basis.

### **Theoretical Framework**

The model of agricultural educator resilience and burnout by Thieman, Ball and Kitchel (2011), based on Howard and Johnson’s (2004) findings, served as the theoretical framework for this study, with model components of coping style and degree of mentor support as an asset or risk factor being examined.

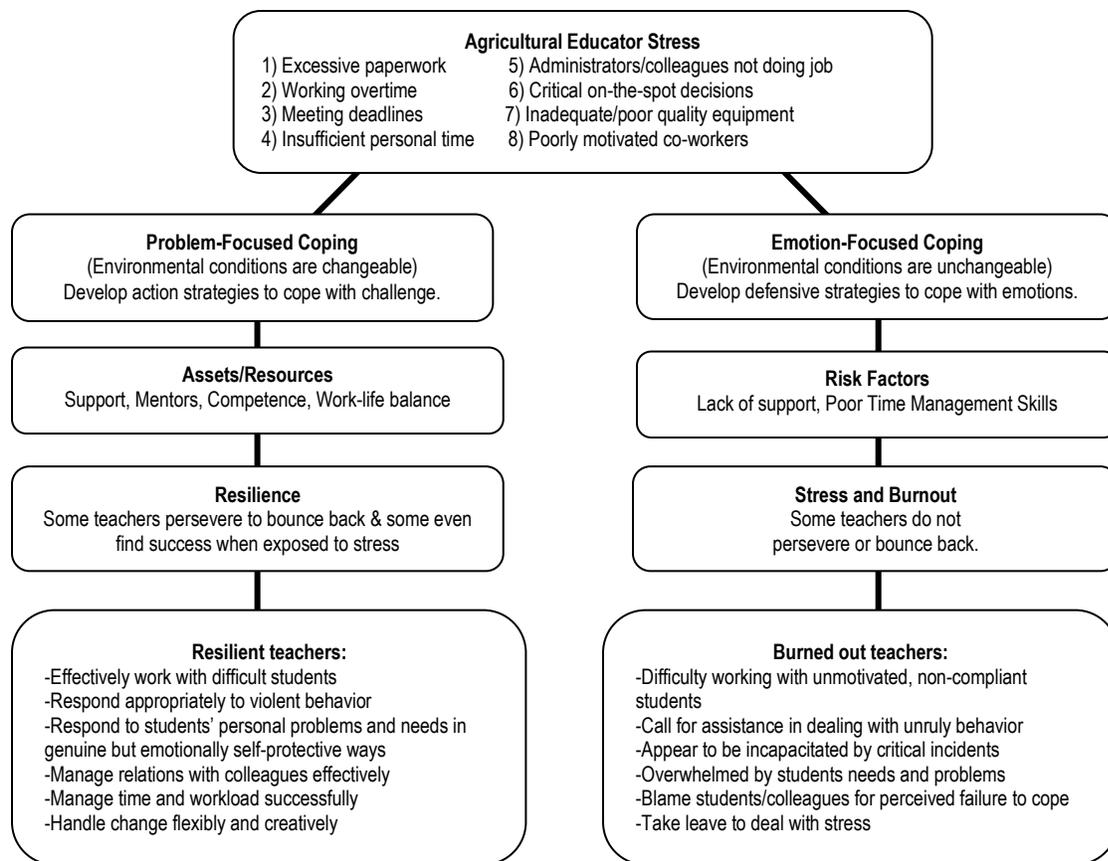


Figure 1. Conceptual model of the relationship between teacher resilience and agricultural educator stress and burnout (Thieman, Ball, & Kitchel, 2011, p. 11).

The study of resilience, dating to the 1970's, is described as success in spite of adversity. It has a foundation in the field of positive psychology, focusing on the positive, rather than negative aspects of the individual and speaks to a person's potential (Bandura, 1997; Luthans, Youssef, & Avolio, 2007; Masten, 2001; Reivich & Shatte, 2002). Teacher resilience, a line of inquiry in it's infancy, is operationally defined as "the capacity to adjust to adverse conditions to increase one's competence, achieve school goals, and remain committed to teaching" (Thieman, et al., 2011, p. 6).

Many researchers have described coping styles as being dual in nature. The COPE instrument developed by Carver, Scheier, and Weintraub (1989) is one such instrument used to measure the coping style utilized by educators, which have been classified into two categories: emotion-focused (palliative) and problem-focused (direct action) (Admiraal, Wubbels, & Korthagen, 2000; Carver, et al., 1989; Kyriacou, 2001; Leiter, 1991).

The mentoring portion of this study was informed by Kram's Mentor Role Theory (Ragins & Kram, 2007). Within agricultural education, Greiman utilized Kram's theory to develop the Mentoring Relationship Questionnaire (MRQ) for beginning and mentor teachers (2003). Kram postulates that the mentor offers two natures of functions to the protégé: career and psychosocial. In the career function, the mentor will help the protégé navigate the political

landscape of the workplace, preparing them for hierarchical progression; this function depends on the mentor's power position within the organization. Psychosocial functions include behaviors such as "offering acceptance and confirmation and providing counseling, friendship, and role modeling" designed to "enhance the protégé's profession and personal growth, identity, self-worth, and self-efficacy" (Ragins & Kram, 2007, p. 5). The current study focused on the psychosocial function of the mentor, as constructs clearly align with assets and resources, a major component of teacher resilience.

### **Purpose and Research Questions**

Beginning teachers must cope with stress while fulfilling the many roles and responsibilities required of agriculture teachers. Formal mentoring programs are designed to assist novice teachers in acquiring the knowledge, skills, and dispositions needed to succeed as a professional educator. The purpose of this study was to investigate the relationship among utilized coping mechanisms, perceived stress levels, and mentor support among early career agriculture teachers in [State]. The study was guided by the following research questions:

What coping strategies do early career teachers utilize in response to stress from classroom, supervising SAE programs, and advising FFA activities?  
To what extent do early career teachers feel supported by their formal assigned mentor?  
What is the relationship between utilized coping mechanisms and mentor support?

Based on literature, the following non-directional research hypothesis was developed to guide the study while the null version of the hypothesis was tested statistically:

H1 : A statistically significant difference exists between the frequency of problem-focused and emotion-focused coping strategies in response to stress in early-career agriculture teachers.

### **Methodology**

The study was descriptive-correlational in design. The target population was all first and second year secondary agriculture teachers in Missouri. The sample represents a time and place sample of the 2010-2011 school year ( $N=58$ ) in Missouri. The frame was obtained by the state coordinator of the mentor-induction program.

Two instruments were used in the data collection process. Information regarding coping strategies was collected using an instrument developed for this study that was informed by the COPE instrument (Carver, et al., 1989). The instrument used a 5-point Likert-type scale (1= not at all; 5=always) to measure self-perceived strategies for coping with stress (Griffith, Steptoe, & Cropley, 1999). Individual response items for the coping strategy instrument solicited a frequency response to emotion-focused (e.g. "When I am feeling stressed, I sleep more than usual") behavior or a problem-focused (e.g. "To solve a problem, I focus on the problem and put other activities aside") behavior. Emotion-focused coping consisted of statements describing mental and behavioral disengagement and avoidance; Problem-focused coping consisted of statements describing active planning and suppression of competing behaviors as well as seeking

support. Each coping strategy (emotion and problem-focused) was isolated within the three components of the agricultural education model (classroom, SAE and FFA). Therefore, six constructs were created based on the two coping strategies viewed separately in each of the three agricultural education components. For mentor support, researchers utilized the Mentoring Relationship Questionnaire (MRQ), based upon research by Ragins and McFarlin (1990) and modified by Grieman (2002). Teachers responded to 15 questions using a 7-point Likert-type scale to describe to what extent their formal mentor provided support in each of the five psychosocial functions of acceptance, counseling, friendship, role modeling, and social. Each function was based one three items each and were treated as separate constructs.

Researchers utilized a panel of experts to assess face and content validity of the instruments. The panel of experts consisted of teacher educators with experience with the mentor program and state staff with mentor program experience. A pilot test was conducted with third and fourth year [State] agriculture teachers and reliability for coping constructs was estimated using Cronbach's Alpha. Construct reliability for emotion-focused coping were: Teaching in the Classroom / Laboratory (.89), Supervising SAE (.82), and Advising FFA Activities (.90). Reliability estimates for problem-focused coping were Classroom / Laboratory (.81), Supervising SAE (.73), and Advising FFA Activities (.79). Reliability estimates for the Mentoring Relationship Questionnaire were taken from previous research (Greiman, 2002) and included mentor acceptance (.89), Counseling (.83), Friendship (.82), Role Model (.84), and Social (.93). All constructs were considered reliable as they exceeded a .70 threshold (Nunnally, 1978).

Data from the two instruments were collected simultaneously through an online questionnaire in January. Researchers made initial face-to-face contact with teachers in January at the beginning teacher meeting notifying participants of the project. The initial questionnaire was emailed in January to all first and second-year agriculture teachers in Missouri and contained a short description of the study and a link to the online questionnaire. Four follow-up emails were sent to non-respondents from different investigators, followed by phone calls to respondents who had started the questionnaire but had not completed it. All data, including questionnaires, responses, and emails were managed through an online questionnaire service. Usable data were collected from 37 first and second-year teachers, yielding a response rate of 63.8%. The use of a time and place sample, as suggested by Oliver and Hinkle (1982), was justified because the beginning teacher population could be considered representative of future populations of beginning agriculture teachers in Missouri.

Frequencies, percent, and measures of central tendencies and variability were used to summarize the data for objective one and two. Mean differences for question one were compared using a paired-samples t-test, as the variables represented two different observations of the same individual. For question three, Pearson-Product moment correlations were used to describe relationships among variables. Davis' (1971) conventions were used to label the effect size of relationships. An alpha level of .05 was established a priori for all statistical tests used.

## Results

Question one sought to describe coping strategies utilized by early career teachers in response to stress from advising FFA activities, working in the classroom / laboratory, and supervising SAE programs. First-year teachers utilized problem-focused coping to a greater extent than emotion-focused coping in response to stress in all three components of the educational program (See Table 1). Teachers reported often ( $M = 3.63, SD = .43$ ) utilizing problem-focused coping strategies when feeling stress while advising FFA activities, while rarely ( $M = 1.99, SD = .56$ ) turning to emotion-focused coping strategies when stressed. When experiencing stress in the classroom / laboratory, teachers describe often ( $M = 3.62, SD = .38$ ) utilizing problem-focused coping strategies while rarely ( $M = 2.11, SD = .63$ ) turning to emotion-focused coping strategies when stressed. Similarly, educators described often ( $M = 3.59, SD = .45$ ) employing problem-focused coping strategies when feeling stress in Supervising SAEs while rarely ( $M = 2.06, SD = .62$ ) turning to emotion-focused coping strategies when stressed.

The null of hypothesis one was that there were no statistically significant differences between the frequencies of coping strategies used when beginning teachers encountered stress in the three secondary agriculture programs components of FFA, classroom, and SAE. The null hypothesis was rejected for all three components ( $p < .05$ ). There is a statistically significant ( $p < .05$ ) significant difference in the frequency beginning teachers employ problem-focused coping and emotion-focused coping strategies when confronted with stressors in the program areas of advising FFA activities, teaching in the classroom / laboratory, and supervising SAE activities.

Table 1  
*Emotion and Problem-Focused Coping Strategies Employed by Early-Career Teachers in Response to Stress (n = 37)*

Coping Strategy	Coping Strategy <sup>a</sup>				<i>t</i>	<i>p</i>
	Problem-Focused		Emotion-Focused			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Advising FFA Activities	3.63	.43	1.99	.56	13.31*	.01
Classroom/Laboratory	3.62	.38	2.11	.63	12.14*	.01
Supervising SAE Programs	3.59	.45	2.06	.62	11.18*	.01

*Note.* <sup>a</sup>5-point scale (1 = not at all; 2 = rarely; 3 = sometimes; 4 = often; 5 = always). \* $p < .05$

Question two aimed to capture early-career teachers' self-perceived level of support by their formal assigned mentor in each psychosocial function (see Table 2). Beginning teachers were matched with a veteran agriculture teacher as a formal mentor as part of the state beginning teacher assistance program. Beginning teachers felt supported to a large extent ( $M = 5.24, SD = 1.47$ ) in the construct of counseling, friendship ( $M = 5.24, SD = 1.40$ ), acceptance ( $M = 5.21, SD = 1.47$ ).

=1.29), and as a role model (M =4.96, SD =1.68). See Table 3. Early career teachers felt supported some extent (M =3.93, SD =1.88) in the social function.

Table 2

*Psychosocial Support from Assigned Mentors as Perceived by Early-Career Teachers (n = 37)*

Support Constructs	M	SD	Extent of Support
Counseling	5.24	1.47	Large
Friendship	5.24	1.40	Large
Acceptance	5.21	1.29	Large
Role Model	4.96	1.68	Large
Social	3.93	1.88	Some

Note. 7-point scale (1 = not at all; 3 = some extent; 5 = large extent; 7 = very large extent).

The goal of question three was to describe relationships between stress coping strategies and psychosocial support (see Table 3). The data were analyzed at the construct level. There was a positive relationship for all mentor support constructs and problem-focused coping in all three program components for early-career teachers. For teachers utilizing problem-focused coping strategies, there was a moderate association ( $r = .32$ ) in the SAE context with the mentor role of counseling; a low association with was found in the SAE component for the mentor roles of friendship (.13), acceptance ( $r = .14$ ), role model ( $r = .11$ ), and social ( $r = .22$ ). A low association was found between the mentor counseling role and FFA ( $r = .22$ ) and Classroom ( $r = .17$ ) program components. For teachers who utilized problem-focused coping strategies, there were negligible associations among the friendship ( $r = .05$ ), acceptance ( $r = .07$ ), and role modeling ( $r = .03$ ) when faced with stress in advising FFA activities. Similarly, a there was a negligible relationship problem-focused coping strategies and friendship ( $r = .05$ ), acceptance ( $r = .08$ ), and role model ( $r = .03$ ) mentor functions in the classroom / laboratory program component.

Conversely, there is a negative relationship for all mentor support constructs and emotion-focused coping strategies when confronted by stress in all three program components. The social function of mentors was found to be moderately associated with the program areas of advising FFA activities ( $r = -.31$ ), teaching in the classroom / laboratory ( $r = -.30$ ), and supervising SAE programs ( $r = -.33$ ) for teachers utilizing emotion-focused coping strategies. For teachers who favored emotion-focused coping when facing stress when advising FFA activities, low relationships were found for the mentor functions of counseling ( $r = -.17$ ), friendship ( $r = -.12$ ), and role model ( $r = -.21$ ). Similarly, low relationships were found for counseling ( $r = -.13$ ), friendship ( $r = -.11$ ), and role model ( $r = -.21$ ) when supervising SAE programs. A negligible association was found for mentor acceptance in all three components ( $r = -.09$  for FFA;  $r = -.05$  for classroom and supervising SAE programs). There was also a negligible relationship for counseling ( $r = -.08$ ) and friendship ( $r = -.06$ ) in the classroom context.

Table 4

*Pearson Product-Moment Correlations Among Coping Strategies and Perceived Psychosocial Mentor Support among Early-Career Teachers (n = 37)*

Coping Strategy	Counseling	Friendship	Acceptance	Role Model	Social
Problem-Focused Coping					
Advising FFA Activities	.22	.05	.07	.03	.05
Classroom / Laboratory	.17	.05	.08	.01	.02
Supervising SAE Programs	.34*	.16	.23	.14	.15
Emotion-Focused Coping					
Advising FFA Activities	-.17	-.12	-.09	-.21	-.31
Classroom / Laboratory	-.08	-.06	-.05	-.14	-.30
Supervising SAE Programs	-.13	-.11	-.05	-.21	-.33*

Note. \*  $p < .05$

In the SAE program area, there was a statistically significant ( $p < .05$ ) positive relationship for teachers utilizing problem-focused coping and perceived support in the counseling function. Also in the SAE program area, there was a statistically significant ( $p < .05$ ) negative relationship for teachers utilizing emotion-focused coping and perceived social support from their formal mentor.

### Discussion/Conclusions

Research question one queried what coping strategies do early career teachers utilize in response to stress from classroom, supervising SAE programs, and advising FFA activities? When faced with a stressor, early-career secondary agricultural educators in [State] typically utilized a problem-focused coping mechanism to deal with the stress. Teachers employed problem-focused strategies in all three program components: advising FFA activities, teaching in the classroom / laboratory, and supervising SAE projects. Teachers who cope with stress by employing problem-solving strategies were more resilient and are better able to survive the demands placed on them as agriculture teachers (Thieman, et al., 2011). This proposition was supported by retention data of beginning teachers in [State]: in the past five years, 92% (150/164) first-year agriculture teachers have returned to teaching for their second year (Education, 2011) in comparison to the retention rate of non-CTE beginning teachers (78.1%) and CTE teachers without a formal mentor (64.6%) (Watkins & Scott, 2008). Early identification of and intervention for high-risk teachers may positively affect retention and job satisfaction among early professionals. Such action requires a programmatic approach and more in depth answers to questions such as the following. Are agriculture teachers unique in their ability to deal with stressors utilizing problem-solving approaches? Is their ability to problem-solve an outgrowth of their background in agriculture or a product of the teacher preparation curriculum? Or, are problem-focused individuals disproportionately drawn to the profession of teaching agriculture?

Research question two asked, “To what extent do early-career teachers feel supported by their formal assigned mentor?” Overall, early career teachers felt supported to a large extent by their formal assigned mentor. Early career teachers feel well supported by their mentors in the areas of counseling, friendship, acceptance, and role modeling. This is consistent with previous research (Greiman, 2002). Beginning teachers felt less supported in the construct of social support; this is also consistent with Greiman’s findings (2002). As defined in the study, the social role of mentors included interactions way from work on a social and informal basis. Perhaps beginning teachers felt less supported because the formal mentor is located in a different, possibly distant school district; other reasons could be the perceived confines of the professional nature of this mentorship. Again, the conclusions bring about more areas of inquiry. Are beginning teachers receiving social support from another, informal and independently chosen mentor? Do beginning teachers actively seek out their own informal mentors, and if so, who are these mentors?

Research question three posed, “What is the relationship between utilized coping mechanisms and mentor support?” The findings from this study indicate as mentor support in counseling function increases, beginning teachers more often employ problem-focused strategies in supervising SAEs. In contrast, as decreased levels of social support from mentors surfaced, beginning teachers were more likely to turn to emotion-focused coping strategies when supervising SAEs. These statistically significant relationships suggest mentor function could be highly relevant in helping beginning teachers foster and develop the appropriate, problem-focused mechanisms to cope with stressors associated with supervising SAE programs. Are the mentor teachers modeling problem-focused coping? Do the mentor teachers recognize the influence they have in the development of coping mechanisms of their protégés?

Although no other statistically significant relationships were found, interesting patterns emerged that may be of practical significance. Beginning teachers who employ problem-focused coping strategies when dealing with stress tended to have a positive perception of mentor support across all role constructs and in all program components. When beginning teachers employ emotion-focused coping strategies to deal with stress, they tended to have a negative perception of mentor support across all role constructs and in all program components. It is important for beginning teachers to identify a local, independently chosen mentor (in addition to their formal mentor) who can meet their social mentoring needs, helping them to be “uniquely wise enough to banish [the] stressful hold” that stressors can have on an agricultural educator’s life (Sapolsky, 2004b, p. 418).

### **Recommendations**

When examining coping style, stressors, and mentor support, researchers must take into consideration the infinite number of variables that influence each of these characteristics within each agricultural educator. The use of questionnaires and quantitative data definitely comes up short in attempting to fully capture the essence of coping, stress, and mentor support. Contemporary literature and anecdotal evidence in agricultural education seems to corroborate the truth that the profession of agricultural education needs to better address the issue of agricultural educator stress and begin to more globally understand the concept of stress and coping. This more global understanding can be accomplished through the use of diverse research

methods that can then lead to better practices for all stakeholders in the profession of agricultural education.

Teacher educators and state staff should encourage teachers to approach daily stressors utilizing a problem-focused approach; beginning teacher in-service should include identification of beginning teachers' problem-solving tendencies and instruction in utilizing problem-focused coping strategies. Further, state staff and mentors may want to prioritize scarce time resources to help teachers who use emotion-focused coping because of their increased risk for burnout.

Mentor teachers should be commended for their work in supporting novice teachers in the roles of counselor, friend, professional supporter, and role model. Best practices of mentors should be showcased to perpetuate this level of support in the state. State staff and mentors should design specific environments in which mentors can serve beginning teachers in these roles. Finally, formal mentor training programs for new mentors should include instruction to highlight these important mentor roles; effective mentors should share strategies for successful mentoring of early professionals.

Little research in the field of agricultural education and education in general has been published on the physiological aspect of teacher stress; the majority of measures used include some form of self-reporting. Research in the medical field has shown that self-reported stress and physiological stress often differ, begging the need for measures of stress in the educator not solely based on self-reported methods. Further research should investigate the mentor support social function's role to see where, if any, it is being provided – and more rudimentarily, if it is needed in this context. Various qualitative methodologies, specifically phenomenology and case study, could greatly inform the lines of inquiry related to educator stress, coping style, and the mentor-protégé relationship.

Qualitative research could expressly inform the context of stressors, unique and individual coping mechanisms, and specific support needs of beginning teachers in SAE supervision. Researchers should also examine individuals leaving the teaching profession to examine coping style utilized and the extent coping strategies influenced their decision. Additionally, those highly effective teachers who have demonstrated tremendous resilience and are nearing retirement in the profession of agricultural education should be studied and used as exemplars for effective coping resources. In addition, investigation into how state staff and teacher educators can better support both the mentors and the protégés as the protégés are ushered through their first years of teaching through the formal mentoring program would be beneficial. It is essential to the future sustainability of the profession of agricultural education that researchers identify how mentors can better support beginning teachers.

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## **The Relationship Between Coping and Mentor Support of Novice Agricultural Teachers**

W. Wade Miller, Discussant

This paper focuses on how beginning agriculture teacher copes with stressors he/she may experience as they enter the profession. It highlights the role a mentor can play in helping a beginning teacher cope with these stressors. In the introduction section the authors make the case that the first years of teaching can be stressful and may lead to high attrition rates. They state that a beginning teacher has a great amount of responsibility placed upon them when entering the profession. Literature is cited indicating that stress can lead to physical changes. Coping styles and conceptual models are described as well. Is the level of stress and the number of stressors similar or different for other teachers in school systems?

The theoretical framework describes a model of agricultural educator resilience and burnout by Thieman, Ball, and Kitchel which mentions the use of mentors as resources. This model draws a dichotomy between problem-focused coping and emotion-based coping. This model was developed in 2011. A more lengthy description of the development and use of this model would be useful to the reader. Other theories and models on coping mechanisms are described. The role of the mentor is highlighted in these models as well. The theory behind mentoring is from Kram's Mentor Role Theory. A discussion of this theory would also aid the reader in understanding this study. This study utilized two instruments: the COPE instrument and the Mentoring Relationship Questionnaire. Beginning teachers in Missouri were the subjects of this study.

Hypotheses were formulated to guide the analysis and interpretation of the data. This proved to be particularly useful in understanding what the researchers found. Beginning teachers used different strategies when addressing stressors in the classroom, FFA, and SAE. Relationships between coping strategies and psychological support were found indicating that mentoring support has some value. In the conclusions, the authors discussed the findings and made suggestions in regard to identifying high-risk teachers and intervening early. As with many studies, questions were raised that may lead to further research in this area. One question asked was, "Are problem-focused individuals disproportionately drawn to the profession of teaching agriculture?" Another finding indicates that there is a role for a mentor to play. Again, another question is asked, "Do beginning teachers actively seek out their own informal mentors, and if so, who are these mentors?" This too, is an interesting question. The study highlights the need to study the role of mentors in helping beginning teachers cope with the stressors they will experience. The authors also make the case that qualitative research in this area needs to be conducted to more fully understand the phenomena of stress and the role of mentors in assisting beginning teachers cope with stress.

## Differences in Student Teaching Stressors by Gender

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### Abstract

*Teaching agricultural education is regarded by some as very challenging within the profession of education (Knobloch & Whittington, 2002). In a Delphi study, Mundt and Connors (1999) found that first year agricultural education teachers identified 25 stressors related to the career. Student teachers also experience stress. Teacher preparation curriculum allows teacher candidates to assume the responsibilities associated with teaching through a carefully structured student teaching experience. The purpose of this study was to identify the stressors of student teachers at University of Kentucky (N=14) and at Oklahoma State University (N=25) and make comparisons based on sex and institution attended. It was concluded that student teacher stressors are similar to the stressors of first year teachers. Student teachers at both institutions collectively self-identified classroom/behavior management, time management, and lesson planning as stressful components of the experience. Stressors collectively identified by the derived questionnaire included self-identified classroom/behavior management, time management, and technical competency in agricultural content.*

### Introduction and Theoretical Framework

“Sometimes, coping with stress consists of blowing down walls. But sometimes it consists of being a blade of grass, buffeted and bent by the wind but still standing when the wind is gone”(Sapolsky, 2004, p. 417).

Teachers in the field of agriculture face challenges that other teachers may not, similarly to the quote above, there are a wide range of experiences that can cause teacher stress, each of which is accompanied by a large array of coping mechanisms as responses. Agriculture teachers are not only required to create and present curriculum for the subject area, but are also expected to participate in several activities including, but not limited to: coaching extracurricular contest teams, leading adult education programs, serving on school committees, participating in community activities, and maintaining a healthy lifestyle outside of school (Mundt & Connors, 1999). Agriculture teachers often exit the profession quickly, which is a possible indication of the level of difficulty novice teachers face in the first years of teaching (Camp, Broyles, & Skelton, 2002). Within the first three years of teaching, 17% of teachers leave the profession (Knobloch & Whittington, 2002). Due to the rapid turnover of new teachers, teacher attrition is one of the most important issues facing education (Ingersoll & Strong, 2011; Kantrovich, 2007). Being able to identify how agriculture teachers cope with the stressors associated with the profession may give them confidence to maintain their position as a teacher (Mundt & Connors, 1999; Thieman, Ball, & Kitchel, 2011). A logical place to start this identification is during the student teaching portion of a pre-service teacher’s development.

The student teaching experience is arguably the most important part of the agricultural education teacher preparation program (Borne & Moss, 1990; Harlin, Edwards, & Breirs, 2002). The emotional welfare of a student teacher is a vital component of the outcome of the student teaching experience (Kaldi, 2009). To meet the demand for qualified teachers resulting from the high level of teacher turnover, teacher education programs at colleges and universities across the country strive to adapt their curriculum to address the emotional needs of students. Such programs need to consider more effective ways to provide needed support to student teachers during the student teaching experience (Kaldi, 2009; Lawver & Torres, 2011; Swan, Wolf, & Cano, 2011). Through identifying student teacher stressors, the teacher educator could adapt the curriculum to fit the individual student teacher needs, thus providing timely instruction and advice on how to cope with unique stressful experiences.

“Student teachers do change as a result of student teaching, especially in the area of teacher attitude,” (Juergeson, 1966, p. 25) studies from as early as 1966 have described the development that takes place within the preservice teacher during the student teaching experience, resulting in a student who is walking and talking like a professional teacher. During the student teaching experience, a student teacher is expected to assimilate to the role of a professional. Student teachers are required to shadow a teacher, then fulfill a teachers’ duties during their field experience (Borne & Moss, 1990; Harlin, et al., 2002). For agricultural education, these duties are related to all aspects of the teaching profession including: classroom preparation and delivery, program funding, FFA contest preparation, SAE student home visits, and other school related duties (Mundt & Connors, 1999). A student teacher’s skill level upon exiting the program is dependent on their field experience during student teaching; the extent that the student teacher participates in the activities of the total program will affect their ability to teach (Kaldi, 2009). Research suggests that during the student teaching field experience, there is room for improvement of teaching skills, self-esteem, and well being (Hascher, Cocard, & Moser, 2004).

Often, prior classroom observations in early field experiences foster unreal expectations within preservice teachers, causing adverse effects on their student teaching experience. There is a common misconception that success in university classes will lead to success during the preservice teachers’ field placement. Much of the previous research completed in this area concludes that student teachers view student teaching as a rite of passage in order to determine their competency in the field (Wadlington, Slaton, & Partridge, 1998). Events that occur during the student teaching experience cause high levels of anxiety in student teachers, leading to unhealthy levels of stress (Rieg, Paquette, & Chen, 2007; Wadlington, et al., 1998).

Stressful experiences do not exist in a vacuum; there are factors both internal and external to the person that influences the coping response that is initiated. It is widely known in the medical field that the way in which a person copes with stress on several levels, including responses of the neuroendocrine, autonomic, and behavioral systems varies on the basis of sex (Handa & McGivern, 2000). The experiences of women in agricultural education have been sporadically studied, with increasing depth in more contemporary times. Kelsey examined the experiences of a group of women in a preservice secondary agricultural program seeking to determine if barriers to career entry were present. The study found that while being supported and encouraged while in the university setting, the women felt unprepared to cope with the

gender bias that was experienced in the profession on a larger scale (Kelsey, 2006a). Women have cited gender bias and lack of administrative support as reasons for leaving the profession of agricultural education (Kelsey, 2006b). Studies of professional women often refer to a lack of balance between personal and professional life as a factor that could contribute to stress levels, indicating this is not a problem unique to women agricultural educators (Foster, 2001, 2003; Murray, Flowers, Croom, & Wilson, 2011; Ricketts, Stone, & Adams, 2006).

Mundt and Connors (1999) asserted that agriculture teachers in the field attribute high levels of stress to the profession, ultimately creating a disconcerting feeling toward teaching. Mundt and Connors used a Delphi technique to develop a list of 25 problems and challenges associated with the first year of teaching. In the first round of the Delphi, respondents were asked to list up to ten problems or challenges that they face with teaching agricultural education. The second questionnaire asked respondents to rate the level of importance of the identified challenges. And the third questionnaire compiled all responses asked respondents to again rate the identified challenges (Mundt & Connors, 1999). The conclusion of student teaching should result in a teacher candidate that is prepared for their first year in the profession. The Mundt and Connors (1999) study serves as the framework for the study to look at student teaching through the lens of the first year teacher. This study of first year teachers was purposefully selected as the framework for this study, because the researchers were interested at how the student teachers viewed the stresses of their upcoming first year of teaching. The limitation to be noted for use of this framework is Mundt and Connors (1999) use of award-winning teachers versus a more generalizable group of subjects.

### **Purpose and Objectives**

The purpose of the census study was to determine if practical differences exist in perceived degree of stress of student teachers when disaggregated by sex and institution. To accomplish this purpose, the following objectives were developed:

1. Describe the student teachers by sex and institution.
2. Describe the perceived degree of stress of student teachers as a group.
3. Describe the perceived degree of stress of student teachers by institution.
4. Describe the perceived degree of stress of student teachers by sex.

### **Methodology**

The design of this study was descriptive in nature. The population was all agricultural education student teachers at two universities ( $N = 39$ ). These universities were chosen as part of this study due to similar teacher education curriculum and requirements. Because this was a census, sampling procedures were not utilized and no generalizations were made beyond these two groups of student teachers.

Data regarding other basic demographic information, which was not a part of the objectives, were collected to give description to the population. Regarding background, the majority ( $N = 29$ ; 74.4%) of the teacher candidates were from rural, farm backgrounds. At the University of Kentucky, nine (64.3%) of the teacher candidates came from rural, farm backgrounds and five (35.7%) of the teacher candidates came from rural, non-farm backgrounds. At Oklahoma State University, 20 (80.0%) of the teacher candidates came from rural, farm

backgrounds, two (12.0%) of the teacher candidates came from urban, non-metropolitan backgrounds, and 2 (8.0%) of the teacher candidates came from rural, non-farm backgrounds. The total mean age for both institutions was 22.25 with a standard deviation of 0.35.

The instrument for this study was a directly administered questionnaire. Both populations were surveyed during their final student teaching seminar. All (100%) student teachers from both universities chose to participate. The questionnaire was based on Mundt and Connors (1999) 25 identified stressors from their Delphi study. An interval scale of 1 (not at all) to 5 (to a great extent) was used to determine the degree of stress experienced by the student teacher. An additional sixth choice was available for participants to select if they had no responsibility with this item during their student teaching experience. A panel of experts established face and content validity for the entire instrument. This panel included three graduate students who had student taught prior to the study and three faculty.

Test-retest reliability was conducted for the questionnaire. From the test-reliability, all but two items were found to have coefficients of stability from 0.75 to 1.00. The other two items (time management; learning structure, policies and procedures of the school) had a coefficient of stability of 0.52 and 0.53, respectively. Some caution, in terms of their reliability, should be noted for these items.

In terms of analysis, descriptive statistics were utilized. Means and standard deviations were calculated for the population. Mean scores were broken out by university and then by gender. In addition, differences were calculated between institutions and between males and females for ease of interpretation.

## Findings

Objective one sought to describe the number of students by gender and institution. Table 1 outlines data by the variable institution. According to the table, 14 students were from [UNIV1] and 25 were from [UNIV2]. Table 2 outlines data by gender. Overall, 14 (35.9%) of the student teachers were female and 25 (64.1%) were male. It was important to acknowledge that one institution may have more of one gender than another. Although not reported in either table, the interaction between the two variables is as follows. Eight (57.1%) student teachers at [UNIV1] were female and six (42.9%) were male. [UNIV2] had mostly males ( $N = 19$ ; 76.0) student teachers opposed to female student teachers ( $N = 6$ ; 24.0%).

Objective two sought to describe the degree of stress student teachers perceived as a group. Teacher candidates collectively identified three stressors with a mean score of 3.00 or greater ("Total" column of Table 1 or 2): being technically competent in all areas of agriculture ( $M = 3.21$ ;  $SD = 1.17$ ;  $f_{\text{no resp}} = 1$ ), time management ( $M = 3.08$ ;  $SD = 1.16$ ;  $f_{\text{no resp}} = 0$ ); classroom management/student discipline ( $M = 3.00$ ;  $SD = 1.05$ ;  $f_{\text{no resp}} = 0$ ). Student teachers collectively identified nine stressors with a mean of 2.00 or less, with the lowest being: working with other school faculty and staff ( $M = 1.87$ ;  $SD = 1.01$ ;  $f_{\text{no resp}} = 0$ ). In regard to the choice 'having no responsibility' three stressors were identified with a frequency of seven or greater: building school and community support for program ( $f_{\text{no resp}} = 7$ ), program budgets and funding ( $f_{\text{no resp}} = 11$ ), and developing a local program improvement plan ( $f_{\text{no resp}} = 11$ ).

The third objective was to describe the degree of stress student teachers perceived by institution. Student teachers from University of Kentucky identified five stressors with a mean score of 3.00 or greater: being technical competent in all areas of agriculture ( $M = 3.71$ ;  $SD = 1.07$ ;  $f_{\text{no resp}} = 0$ ), balancing teaching with personal life ( $M = 3.57$ ;  $SD = 1.02$ ;  $f_{\text{no resp}} = 0$ ), teaching methods and lesson planning ( $M = 3.36$ ;  $SD = 1.22$ ;  $f_{\text{no resp}} = 0$ ), time management ( $M = 3.07$ ;  $SD = 1.00$ ;  $f_{\text{no resp}} = 0$ ), classroom management/student discipline ( $M = 3.00$ ;  $SD = 1.11$ ;  $f_{\text{no resp}} = 0$ ). In addition, student teachers from the University of Kentucky identified nine stressors with a mean score of 2.00 or less, with the following items having the lowest mean scores: working with other school faculty and staff ( $M = 1.36$ ;  $SD = 0.50$ ;  $f_{\text{no resp}} = 0$ ). In regard to the choice 'having no responsibility' two stressors were identified with a frequency of five or greater: program budgets and funding ( $f_{\text{no resp}} = 8$ ); developing a local program improvement plan ( $f_{\text{no resp}} = 6$ ).

Student teachers from Oklahoma State University identified five stressors with a mean score of 3.00 or greater: paperwork ( $M = 3.13$ ;  $SD = 1.26$ ;  $f_{\text{no resp}} = 1$ ); time management ( $M = 3.08$ ;  $SD = 1.26$ ;  $f_{\text{no resp}} = 0$ ); identifying... resources, curriculum issues ( $M = 3.05$ ;  $\sigma = 0.95$ ;  $f_{\text{no resp}} = 2$ ); classroom discipline... ( $M = 3.00$ ;  $SD = 1.04$ ;  $f_{\text{no resp}} = 0$ ); curriculum issues ( $M = 3.00$ ;  $SD = 1.00$ ;  $f_{\text{no resp}} = 0$ ). Student teachers from Oklahoma State University had no stressors with a mean score of 2.00 or less. In regard to the choice 'having no responsibility' one stressor was identified with a frequency of five or greater: developing a local program improvement plan ( $f_{\text{no resp}} = 5$ ).

In terms of differences, there were 16 items that showed differences of 0.50 or higher. The item where the stressor scores was highest for the University of Kentucky than Oklahoma State University was: balancing teaching with personal life (diff = 1.13). The item where the stressor scores was highest for Oklahoma State University than the University of Kentucky was: program budgets and funding (diff = -1.41). When comparing the frequency of "having no responsibility" marked between the institutions, the University of Kentucky had 35 instances and Oklahoma State University had 20 instances. Again, note that the University of Kentucky had 14 student teachers while Oklahoma State University had 25.

Table 1

*Stressor Themes of Student Teachers by Institution, Based Upon the Mundt and Connor (1999) Items (N=39)*

Stressor	TOTAL			UNIV1 (N = 14)			UNIV2 (N = 25)			Difference UK- OSU <sup>2</sup>
	M	SD	f NR <sup>1</sup>	M	SD	f NR <sup>1</sup>	M	SD	f NR <sup>1</sup>	
Being technically competent in all areas of agriculture	3.21	1.17	1	3.71	1.07	0	2.92	1.14	1	0.79
Time management	3.08	1.16	0	3.07	1.00	0	3.08	1.26	0	-0.01
Classroom management/student discipline	3.00	1.05	0	3.00	1.11	0	3.00	1.04	0	0.00
Teaching methods and lesson planning	2.97	1.25	0	3.36	1.22	0	2.76	1.23	0	0.60
Identifying, securing, inventorying, up-to-date teaching resources	2.92	1.11	3	2.71	1.33	1	3.05	0.95	2	-0.34
Curriculum issues (organizing and scheduling)	2.92	0.98	0	2.79	0.98	0	3.00	1.00	0	-0.21
Paperwork (not including teaching assignments)	2.89	1.20	1	2.50	1.02	0	3.13	1.26	1	-0.63
Balancing teaching with personal life	2.85	1.25	0	3.57	1.02	0	2.44	1.19	0	1.13
Dealing with individual student needs	2.77	1.06	0	3.00	1.04	0	2.64	1.08	0	0.36
Student motivation and feedback	2.77	1.06	0	2.79	1.31	0	2.76	0.93	0	0.03
Program budgets and funding	2.61	1.29	11	1.50	0.55	8	2.91	1.26	3	-1.41
Keeping up with technology	2.56	1.29	0	2.07	1.14	0	2.84	1.31	0	-0.77
FFA events and activities	2.54	1.05	0	2.00	0.78	0	2.84	1.07	0	-0.84
Educating and working with administrators	2.50	1.16	1	2.15	1.07	1	2.68	1.18	0	-0.53
Organizational issues	2.41	1.14	0	2.21	1.31	0	2.52	1.05	0	-0.31
Organizing/managing the facility	2.35	1.03	2	1.83	0.58	2	2.60	1.12	0	-0.77

Building a relationship with community and resources and people	2.34	1.21	1	1.71	0.61	0	2.71	1.33	1	-1.00
Working with parents, volunteers, and other adult groups	2.31	1.22	3	1.64	0.67	3	2.60	1.29	0	-0.96
Dealing with the reputation of the previous student teacher	2.30	1.38	6	2.00	1.41	3	2.45	1.37	3	-0.45
Learning structures, polices, and procedures of school	2.21	0.99	1	1.79	0.70	0	2.46	1.06	1	-0.67
Student recruitment	2.21	0.98	4	1.78	0.67	4	2.36	0.91	0	-0.58
Developing a local program improvement plan	2.18	0.98	11	1.88	0.99	6	2.30	0.98	5	-0.42
Building school and community support for program	2.16	1.08	7	1.50	0.53	4	2.45	1.14	3	-0.95
Public relations, image of agriculture, and the agriculture program	2.14	1.18	3	1.55	0.52	3	2.40	1.30	0	-0.85
Working with other school faculty and staff	1.87	1.01	0	1.36	0.50	0	2.16	1.11	0	-0.80

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*Note.* The scale for this questionnaire was 1: Not at all to 5: To a great extent, with an additional category: I had no responsibility for this. The mean score does not reflect responses from the additional category. <sup>1</sup>No Responsibility. <sup>2</sup>UK=University of Kentucky, OSU=Oklahoma State University

The fourth objective was to describe the degree of stress student teachers perceived by gender. Table 2 summarizes the findings. Male student teachers identified three stressors with a mean score of 3.00 or greater: paperwork ( $M = 3.12$ ;  $SD = 1.33$ ;  $f_{\text{no resp}} = 1$ ); identifying, securing, inventorying, up-to-date teaching resources ( $M = 3.09$ ;  $SD = 1.02$ ;  $f_{\text{no resp}} = 3$ ); being technical competent in all areas of agriculture ( $M = 3.04$ ;  $SD = 1.16$ ;  $f_{\text{no resp}} = 1$ ). In addition, male student teachers identified one stressor with a mean score of 2.00 or less: working with other school faculty and staff ( $M = 1.92$ ;  $SD = 1.12$ ;  $f_{\text{no resp}} = 0$ ). In regard to the choice 'having no responsibility' two stressor were identified with a frequency of four or greater: program budgets and funding ( $f_{\text{no resp}} = 5$ ); building school and community support for the program ( $f_{\text{no resp}} = 4$ ).

Female student teachers identified seven stressors with a mean score of 3.00 or greater, with the following items topping the list: balancing teaching with personal life ( $M = 3.57$ ;  $SD = 1.16$ ;  $f_{\text{no resp}} = 0$ ); being technically competent in all areas of agriculture ( $M = 3.50$ ;  $SD = 1.16$ ;  $f_{\text{no resp}} = 0$ ). In addition, female student teachers identified four stressor with a mean score of 2.00 or less: developing a local program improvement plan ( $M = 1.83$ ;  $SD = 0.75$ ;  $f_{\text{no resp}} = 8$ ); working with other school faculty and staff ( $M = 1.79$ ;  $SD = 0.80$ ;  $f_{\text{no resp}} = 0$ ); public relations, image of agriculture, and the agriculture program ( $M = 1.75$ ;  $SD = 0.45$ ;  $f_{\text{no resp}} = 2$ ); building school and community support for program ( $M = 1.64$ ;  $SD = 0.51$ ;  $f_{\text{no resp}} = 3$ ). In regard to the choice 'having no responsibility,' two stressors were identified with a frequency of four or greater: developing a local program improvement plan ( $f_{\text{no resp}} = 8$ ); program budgets and funding ( $f_{\text{no resp}} = 6$ ).

In terms of differences, there were six items that showed differences of 0.50 or higher. The items where the stressor scores were higher for males than females were: building school and community support for program (diff = 0.79); paperwork (diff = 0.62); public relations, image of agriculture, and the agriculture program (diff = 0.58). The items where the stressor scores were higher for females than males were: balancing teaching with personal life (diff = -1.13); dealing with individual student needs (diff = -0.81); dealing with the reputation of the previous student teacher (diff = -0.64). When comparing the frequency of "having no responsibility" marked between males and females, males had 28 instances and females had 28 instances; note that there were 14 female student teachers and 25 male student teachers.

Table 2

*Stressor Themes of Student Teachers by Gender, Based Upon the Mundt and Connor (1999) Items (N=39)*

Stressor	TOTAL			Male (N = 25)			Female (N = 14)			Difference Male- Female
	<i>M</i>	<i>SD</i>	<i>f</i> NR <sup>1</sup>	<i>M</i>	<i>SD</i>	<i>f</i> NR <sup>1</sup>	<i>M</i>	<i>SD</i>	<i>f</i> NR <sup>1</sup>	
Being technically competent in all areas of agriculture	3.21	1.17	1	3.04	1.16	1	3.50	1.16	0	-0.46
Time management	3.08	1.16	0	2.92	1.19	0	3.36	1.08	0	-0.44
Classroom management/student discipline	3.00	1.05	0	2.84	1.07	0	3.29	1.00	0	-0.45
Teaching methods and lesson planning	2.97	1.25	0	2.88	1.27	0	3.14	1.23	0	-0.26
Identifying, securing, inventorying, up-to-date teaching resources	2.92	1.11	3	3.09	1.02	3	2.64	1.22	0	0.45
Curriculum issues (organizing and scheduling)	2.92	0.98	0	2.84	1.03	0	3.07	0.92	0	-0.23
Paperwork (not including teaching assignments)	2.89	1.20	1	3.12	1.33	1	2.50	.86	0	0.62
Balancing teaching with personal life	2.85	1.25	0	2.44	1.12	0	3.57	1.16	0	-1.13
Dealing with individual student needs	2.77	1.06	0	2.48	1.01	0	3.29	1.00	0	-0.81
Student motivation and feedback	2.77	1.06	0	2.80	1.04	0	2.71	1.14	0	0.09
Program budgets and funding	2.61	1.29	11	2.65	1.27	5	2.50	1.41	6	0.15
Keeping up with technology	2.56	1.29	0	2.48	1.30	0	2.71	1.33	1	-0.23
FFA events and activities	2.54	1.05	0	2.56	1.08	0	2.50	1.02	0	0.06
Educating and working with administrators	2.50	1.16	1	2.58	1.32	1	2.36	0.84	0	0.22
Organizational issues	2.41	1.14	0	2.56	1.19	0	2.14	1.03	0	0.42

Organizing and managing the facility	2.35	1.03	2	2.25	1.00	1	2.54	1.13	1	-0.29
Building a relationship with community and resources and people	2.34	1.21	1	2.46	1.35	1	2.14	0.95	0	0.32
Working with parents, volunteers, and other adult groups	2.31	1.22	3	2.37	1.35	1	2.17	0.94	2	0.20
Dealing with the reputation of the previous student teacher	2.30	1.38	6	2.09	1.27	3	2.73	1.56	3	-0.64
Learning structures, polices, and procedures of school	2.21	0.99	1	2.21	1.06	1	2.21	0.89	0	0.00
Student recruitment	2.21	0.98	4	2.13	1.01	2	2.36	.92	2	-0.23
Developing a local program improvement plan	2.18	0.98	11	2.27	1.03	3	1.83	0.75	8	0.44
Building school and community support for program	2.16	1.08	7	2.43	1.21	4	1.64	0.51	3	0.79
Public relations, image of agriculture, and the agriculture program	2.14	1.18	3	2.33	1.37	1	1.75	0.45	2	0.58
Working with other school faculty and staff	1.87	1.01	0	1.92	1.12	0	1.79	0.80	0	0.13

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*Note.* The scale for this questionnaire was 1: Not at all to 5: To a great extent, with an additional category: I had no responsibility for this. The mean score does not include responses from the additional category. <sup>1</sup>No Responsibility.

## Conclusions and Recommendations

Teacher candidates at both universities collectively identified classroom management/student discipline, time management, being technically competent in all areas of agriculture as the most stressful aspects of student teaching, based on the Mundt and Connors (1999) inspired items. In addition, the preservice teachers at both institutions collectively sensed varying levels of stress during the student teaching experience, indicating that stressors are unique to the individual and that context is essential to understanding the concept of stress. It is recommended that a qualitative approach be utilized to further contextualize and understand the dynamic concept of student teacher stress.

Student teachers at the University of Kentucky had a greater range of stressors than Oklahoma State University student teachers did. Granted, University of Kentucky student teachers responded with higher frequencies to the choice 'I had no responsibility' among many of the items with lower mean scores. Because the mean scores did not reflect the choice of "No Responsibility," mean scores could be skewed. However, this finding does imply preparation and/or experience differences between the two institutions. It is recommended the institutions collaborate to determine why these differences occur. This collaboration could result in the bettering of practices for both institutions. It is not recommended that institutions strive towards providing identical teacher preparation programs, as it is essential that institutions maintain the autonomy needed to serve their unique stakeholders in the best manner possible.

Disparities in the amount and level of stressors reported when the group is disaggregated by sex support previous empirical findings, both within the profession of agricultural education and in the much broader context of the medical field (Foster, 2001, 2003; Handa & McGivern, 2000; Kelsey, 2006a, 2006b; Murray, et al., 2011; Ricketts, et al., 2006). The researcher should question the underlying causes of these disparities. Investigation into these variances could shed light on practices promoting the better preparation of preservice teachers for both men and women in order to foster more effective coping mechanisms in response to the stressors that uniquely affect men and women.

Further research is recommended to follow-up with respondents in this survey, and identify their stressors as a first year agricultural education teacher to determine if the stressors they identified as a student teacher remained that same as a first year teacher. Although the Mundt and Connor (1999) study gives us an idea of first year teacher stressors, the study was conducted over 10 years ago with a specific sample of award-winning teachers. In addition, agricultural education student teachers at other institutions should also be surveyed. This study gave indication that differences exist between these two institutions. Perhaps, differences amongst other institutions could be isolated as a way to view program strengths and weaknesses. If this study was to be replicated, it is recommended that respondents be interviewed to determine the depth and rationale for their responses. Qualitative analysis of the participants would allow the researcher to probe for the cause of a specific stressor and possible coping mechanisms. This feedback could offer explanations for specific stressors. Referring back to the current study, curriculum at these institutions should be analyzed and compared to determine if one institution is including teacher preparation course content that should be taught in the other programs or vice versa.

As this line of inquiry continues to grow, the current study surfaces more gaps which can help the profession understand stress and coping with this particular sector of agriculture teachers. There is a great need for studies that move in the direction of identifying components of a teacher education program that can be modified and utilized to increase teacher consciousness of stressors and effects of stress on the individual, as well as methods for effectively combating those stressors. In order to reduce stress levels, it is necessary to educate teachers on how to identify signs of physiological stress and how to apply stress reduction techniques and coping mechanisms.

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## **Differences in Student Teaching Stressors by Gender**

W. Wade Miller, Discussant

This study seeks to further study first-year teaching stressors identified in previous studies going back to 1999. A list of 25 stressors have been identified that affect first-year teachers in various ways. This study utilizes the list of 25 stressors with student teachers. Further, it examines the differences with respect to gender. The Introduction and Theoretical Framework contain information suggesting that student teachers in agriculture may face challenges that teachers in other areas do not. Some of these challenges are related to activities not directly related to instruction. The authors list examples such as coaching extramural contest teams, adult education programs, school committees, and community activities. Previous studies related to stressors are cited. In addition, literature describing teacher turnover rates is presented. The authors suggest that student teaching is the most important part of teacher preparation and that unreal expectation can be fostered through the student teaching experience. An explanation on why there may be differences in student teaching stressors by gender is offered. This study was conducted to find out if measurable differences can be observed.

In the Methodology section, a detailed description was provided on how the study was designed and conducted. Student teachers from two institutions were studied. The reasons for selecting these two institutions were similar teacher education curriculum and requirements. The list of stressors was obtained from the Mundt and Connors (1999) study of first-year teachers. Test-retest reliability was conducted and the results were mostly consistent, with the exception of two items. These two items were identified and the reader was cautioned about making generalizations with respect to these two items.

Results from both institutions were provided. There were some differences between the two institutions. There were some common stressors identified and described. Male student teachers identified three stressors with a mean rating of 3.0 or greater while female student teachers identified seven. Other differences were noted from the discussion and the table of data. A more detailed discussion related to the stressors identified by all student teachers and the different stressors identified by gender would be welcomed. This discussion could provide the basis for further research in this area.

## **Agricultural Education Teacher Beliefs Regarding Instructional Supervision**

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### **Abstract**

*The purpose of this study was to identify perceived beliefs held by agricultural education teachers regarding the supervision of instruction. This study was based upon the work of Ferguson and Bargh (2004) regarding how social perception can automatically influence behavior. Data is reported on ten general beliefs regarding instructional supervision. Agricultural education teachers indicated that instructional supervision should be used in all teachable moments, is collaborative in nature, conducted to help the learner, and is more art than science. Female agricultural education teachers exhibit slightly higher beliefs regarding location and collaboration of the instructional supervision process. It is recommended that agricultural education teachers become engaged in a holistic approach to supervision that takes into consideration the formal and non-formal aspects of their professional practice.*

### **Introduction**

Student achievement in schools in the United States is receiving an ever greater emphasis, placing more accountability on the classroom teacher (Salinas & Kritsonis, 2006). Administrators responsible for the supervision of classroom teachers have also felt pressures to maintain student achievement at levels consistent with state and national mandates (Danielson & McGreal, 2000). One of the primary strategies used by administrators to guide teachers in increasing student achievement is through supervision of instruction in traditional classroom settings (Andrews, Basom, & Basom, 1991). Brophy (1986) indicated that teachers who successfully blend several qualities of successful instruction “produce significantly more achievement than those who do not” (p. 1076). Instructional supervision has been defined by Sullivan and Glanz (2000) as, “the process of engaging teachers in instructional dialogue for the purpose of improving teaching and increasing student achievement” (p. 24).

To increase student achievement, agricultural education programs utilize a whole person approach to education (National Council for Agricultural Education, 2009). These programs include a classroom and laboratory component where traditional instruction takes place utilizing a wide variety of teaching strategies. In addition, these programs allow students the opportunity to participate in an experiential learning component referred to as Supervised Agricultural Experience (SAE). In this program component, students participate in individual experiential learning endeavors that are an outgrowth of the “...actual, planned applications of the concepts, principles, and skills learned in formal Agricultural Education courses in high school” (Iowa Governor’s Council, 2003). These programs are developed under the supervision of agricultural education instructors, parents or guardians, employers or supervisors, and other interested adults that assist students in developing skills that could lead to a career in one of the seven career areas of agriculture (National Association of State Directors of Career Technical Education Consortium [NASDCTEc], 2011).

For agricultural education, supervision takes on a unique perspective due to the nature of the program. A factor that makes an agricultural education program unique from its traditional curricular cousins is its inclusion of a co-curricular, career and technical student organization—the National FFA Organization. This organization provides opportunities for student learning and achievement outside the traditional classroom setting through planned activities that concentrate on leadership development and personal growth. The mission of the National FFA Organization states “FFA is dedicated to making a positive difference in the lives of young people by developing their potential for premier leadership, personal growth and career success through agricultural education” (National FFA Organization, 2010).

This three-pronged approach to learning with classroom/laboratory, leadership development, and a personalized experiential learning component subscribes to a constructivist philosophy (Savery & Duffy, 1996) that includes experiential and service learning opportunities in conjunction with instruction in the highly scientific and business-oriented curriculum known as today’s agriculture education. Although this model dates back to the implementation of vocational education in secondary schools with the enactment of the Smith-Hughes Act of 1917, it still serves as a model of educational instruction for today’s schools in utilizing a whole person approach to education (Moore, 1988). Since agricultural education teachers should use the three-component model of agricultural education (Phipps, Osborne, Dyer, & Ball, 2008), the formal classroom components of their programs should be complimented by the non-formal educational components of Supervised Agricultural Experience (SAE) and the FFA. No studies have been identified that analyzed perceptions of the instructional supervision agricultural education teachers receive regarding these non-formal components of the program.

Secondary school principals have a variety of supervisory models available for their use in supervising agricultural education instructors. Regardless of the model used, these supervisors exhibit (or fail to exhibit) various instructional supervisory practices. However, Blase and Blase (1999) contended that only scant descriptions of these practices have been generated. In a study by Marquit (1968), the perceptions of the supervisory practices of secondary school principals and the teachers they supervise were evaluated. Supervisors and their teachers were asked to rate several statements relating to instructional supervision practices in the areas of: curriculum development, instructional organization, staffing, providing instructional aids, orienting new staff, providing inservice education, coordinating special services, school community relations, and evaluation. In Marquit’s calculated composite stimulus perception score, principals tended to perceive themselves as exhibiting selected supervisory behaviors more frequently than did the teachers they supervised.

In a study of Canadian teachers’ preferences for whom should provide their supervision, Bouchamma (2005) found that teachers preferred supervision by the school principal over self-evaluation, peer assessment, and student assessment, with the least preferred being no evaluation. Bouchamma suggested the use of a combination model for supervision, where principals provide the summative evaluation while the formative supervision is provided through self-assessment, by peers, and by students.

In a census study of agricultural education teachers in Iowa, Thobega and Miller

(2003) compared the interpersonal approach to supervision experienced with job satisfaction and intention to remain in the profession. Although the study concluded that the interpersonal approach to supervision was not a useful predictor for satisfaction or intent to remain in teaching; agriculture teachers receiving collaborative supervision did indicate a slightly higher, yet significant, level of job satisfaction compared to those supervised by other methods.

Teachers tend to show a high level of concern about their lack of supervision from principals as well. Ziolkowski (1965) found that two-thirds of the teachers in a Canadian study indicated that they received no formal supervisory visits from principals. Croft (1968) reported that most teachers in one school district had not been observed very often. Approximately twenty-percent of agriculture teachers from Iowa were not formally observed teaching in their classroom during an entire academic year and one-half had not participated in a pre-observation conference (Thobega & Miller, 2003).

In an attempt to determine teachers' perceptions of the instructional supervisory behaviors of their educational supervisors, Zepeda and Ponticell (1998) examined the perceptions of 114 elementary and secondary teachers in Oklahoma and Texas. In their study, teachers were asked to share their "best" and "worst" experiences regarding instructional supervision. Specific instructional supervisory behaviors were identified. Zepeda and Ponticell concluded, "Far more research is needed from many contexts examining teachers' perceptions on supervision" (p. 71).

Since the agricultural education delivery model is unique by allowing for the implementing of both formal and non-formal instructional components, the following question arises: What do agricultural education teachers believe regarding instructional supervision as it is applied to the overall agricultural education program?

### **Theoretical/Conceptual Framework**

The theoretical framework underlying this study originated from Ferguson and Bargh's (2004) work regarding how social perception can automatically influence behavior. According to Ferguson and Bargh, social knowledge, activated through perception, can shape and guide complex human behaviors automatically without one's knowledge of how or why these behaviors are taking place. Dijksterhuis and Bargh (2001) and Prinz (1997) wrote that the connection between perception and behavior derives from the natural tendency for humans to act as others act. This is due to the way the mental representations made by the brain for both perception and behavior overlap. According to Bargh (1990), goals and behavior responses correspond to mental representations similar to attitudes and perceptual interpretations. It is this connection that can cause the trigger of automaticity between a developed perception and a particular behavior.

Therefore, agricultural education teachers' overall perceptions of supervision may impact the manner in which they respond to administrator instructional supervision and approach their personal instructional practice. Priority 4 of the National Research Agenda: Meaningful, Engaged Learning in All Environments, 2011-2015 (American Association for Agricultural Education [AAAE], 2011) calls for research that should "deepen our understanding of effective

teaching and learning processes in all agricultural education environments” (AAAE, Priority 4 section, para. 1). Using Ferguson and Bargh’s theory (2004), one might reasonably infer that agricultural education teachers with favorable perceptions regarding the instructional supervision process would demonstrate behaviors different from those with unfavorable perceptions. Those with positive perceptions should therefore be more interested in participating in activities to enhance the instructional supervisory process for the overall improvement of teaching and learning within the total agricultural education program.

### **Purpose/Objectives**

Few studies have been identified by the researchers about teachers’ perceptions of the instructional supervision process to which they are subjected. No studies have been identified by the researchers that consider this relationship through the lens of non-formal instructional settings in agricultural education. The purpose of this descriptive study was to identify perceived beliefs held by agricultural education teachers regarding the supervision of instruction. The specific objectives of the study were to 1) identify demographic characteristics of agriculture teachers including gender, age, experience, highest level of education, and state category; 2) identify beliefs held by agriculture teachers regarding instructional supervision; and 3) compare and contrast the findings based upon demographic characteristics.

### **Methods/Procedures**

This descriptive, base-line study was designed utilizing a cross-sectional survey design and implemented through an internet-based instrument using the tailored design method (Dillman, Smyth, & Christian, 2009). Survey items were developed from a thorough review of the literature regarding instructional supervisory practices by those who are responsible for the evaluation of teachers, primarily high school principals, in several settings (Blase & Blase, 2004; Marquit, 1968; Pajak, 1990; Thoebega & Miller, 2003; Zepeda & Ponticell, 1998). A panel of experts was engaged to review the instrument for content, face, and construct validity. The panel included five professors from the Agricultural Education Department at Iowa State University and two Iowa high school agricultural education instructors pursuing advanced degrees—one in agricultural education and the second in educational administration. The panel was asked to review and provide feedback on the instrument in four areas: 1) clarity of the statements and relevance to the study, 2) suggestions for additional beliefs and/or supervisory behavior statements, 3) frame of the questions, and 4) length of the questionnaire.

A pilot-study was conducted with 20 randomly selected agricultural education instructors from the target population using the recommendations of Sudman (1976). Pilot-study participants’ responses were not included in the final data. Feedback from participants in the pilot-study was used to improve the instrument. The instrument included 10 general belief concept statements regarding instructional supervision. A five-point Likert-type scale was used (1 – Strongly Disagree, 2 – Disagree, 3 – Neutral, 4 – Agree, or 5 – Strongly Agree) to determine the participants’ general beliefs regarding instructional supervision.

The target population for this study consisted of high school agriculture teachers in the United States who were identified in available, electronic state agricultural education instructor

directories. The following states were identified: Arizona, Georgia, Illinois, Iowa, Louisiana, Maine, Montana, New Jersey, New Mexico, North Dakota, Oklahoma, Pennsylvania, South Dakota, Tennessee, Utah, Washington, and West Virginia. The states were stratified by the size of the state FFA membership (National FFA Organization, 2010). A disproportionate stratified random sampling technique was used to determine the number of respondents to sample from each available state (Ary, Jacobs, & Sorenson, 2010).

A random selection of participants was drawn from each state using a random number generator add-in for Microsoft<sup>®</sup> Excel. A total of 293 agricultural education teachers from 17 states responded from the original 664 potential respondents, for a 44.13 percent response rate. Fifty-nine respondents provided incomplete data and were removed, leaving 234 usable responses.

To control for non-response error as a threat to the external validity of this study, a comparison between early and late respondents was used. There are several techniques in which non-response bias can be controlled (Miller & Smith, 1983). Pace (1939) indicated that subjects who respond late are similar to non-respondents. This method has been reported in the *Journal of Agricultural Education*, however there has been no agreed-upon operational definition for “late respondent” (Lindner, Murphy, & Briers, 2001). For the purpose of this study, “early respondent” was operationally defined as subjects who responded as a part of the first wave of respondents. “Late respondent” was then operationally defined as those who responded to the final two waves of contacts. The final two waves were used as recommended by Lindner et al. (2001) since the final wave of this study only secured five respondents. By including the last two waves, the number of late respondents was increased to 31, meeting the recommendation of 30 or more responses to be “meaningful practically and statistically” (Lindner et al., 2001, p 52). An independent samples t-test was used (level of significance,  $\alpha = .05$ ) to determine if there were statistically significant differences between early and late respondents (Ary et al., 2010). Of the 10 supervision beliefs statements in part one of the questionnaire, only one statement—*instructional supervision is all about the teacher including what he/she does or does not do in the learning situation*, showed a statistically significant difference ( $MD=.015$ ) between the early and late respondents. Although statistically significant, the practical significance of the difference is negligible.

Data from the survey instrument were coded and entered into the Predictive Analytics SoftWare (PASW 18.0) Statistics Package and was analyzed to determine frequencies, percentages, mean scores, and standard deviations for each general belief item regarding instructional supervision. A mean score  $\leq 1.49$  was considered *strongly disagree*, between 1.5 to 2.49 as *disagree*, between 2.5 to 3.49 as a *neutral level of agreement*, between 3.5 to 4.49 as *agree* and  $\geq 4.5$  as *strongly agree*.

This study was limited to agricultural education teachers in the United States who were identified from all available and usable, online, electronic state directories on July 12, 2010 (N=17). Since a disproportionate stratified random sample was drawn from the available online directories and not from directories of all the states, caution must be used in generalizing anything beyond the sample contacted.

## Findings/Results

The average respondent was male (70.6%), 40.62 years of age, held a Bachelor's degree (58.4%), and had 14.86 years of teaching experience. Table 2 provides the response frequencies, percentages, mean rating, and standard deviation for each of the ten statements regarding the respondents' general beliefs related to instructional supervision. A mean score of  $\leq 1.49$  was considered as a supervisory belief in which the respondent *strongly disagreed*, between 1.5 to 2.49 as *disagreed*, between 2.5 to 3.49 as *neutral level of agreement*, between 3.5 to 4.49 as a statement with which respondents *agreed* and  $\geq 4.5$  as a statement in which the respondents *strongly agreed*.

Table 1  
*Frequencies, Percentages<sup>a</sup>, and Mean Ratings<sup>b</sup> of Perceptions of Agricultural Education Teachers Regarding Selected Beliefs Related to Instructional Supervision*

Instructional supervision...	$\frac{f}{\%}$					<i>N</i>	<i>Mean</i>	<i>SD</i>
	1	2	3	4	5			
should be used in all teachable moments	1 .4	8 3.4	11 4.6	131 55.3	82 34.6	233	4.22	.726
is participatory development of the teaching and learning process	2 .8	10 4.2	26 11.0	157 66.2	39 16.5	234	3.94	.724
is conducted ultimately to help the learner	4 1.7	28 11.8	32 13.5	126 53.2	43 18.1	233	3.76	.949
is more art than science	5 2.1	16 6.8	74 31.2	114 48.1	25 10.5	234	3.59	.851
is basically an administrative tool used by principals and superintendents	24 10.1	79 33.3	48 20.3	64 27.0	18 7.6	233	2.88	1.152
is all about the teacher including what he/she does/does not do in the learning situation	1 .4	8 3.4	11 4.6	131 55.3	82 34.6	234	2.79	1.004
is mainly for professional development purposes	14 5.9	92 38.8	65 27.4	53 22.4	9 3.8	233	2.79	.989
is solely for evaluation of performance	24 10.1	120 50.6	45 19.0	35 14.8	10 4.2	234	2.52	1.007

is best conducted in a structured, teacher-centered situation	15 6.3	136 57.4	50 21.1	31 13.1	1 .4	233	2.43	.818
is best done in formal classroom settings	26 11.0	136 57.4	52 21.9	19 8.0	1 .4	234	2.29	.786

<sup>a</sup> Percentages may not equal 100% due to missing cases.

<sup>b</sup> The belief statements were rated on a Likert-type scale of 1 to 5, where 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree.

According to the data, agricultural education teacher respondents exhibited a high level of agreement with the following statements regarding instructional supervision: *should be used in all teachable moments* (M=4.22), *is participatory development of the teaching and learning process* (M=3.94), *is conducted ultimately to help the learner* (M=3.76), and *is more art than science* (M=3.59).

In contrast, respondents had a lower level of agreement with the following statements: *is best conducted in a structured, teacher-centered situation* (M=2.43) and *is best done in formal classroom settings* (M=2.29).

Differences in perceptions of agricultural education teachers regarding their general beliefs about instructional supervision were compared, based on their demographic characteristics of gender, age, highest level of education, experience, and state sampling group, using independent samples t-tests and analysis of variance ANOVA. When comparing the means of general instructional supervision beliefs by these demographic categories, gender was the only characteristic that revealed statistically significant differences. Table 2 displays the four belief statements that differed, the *t* statistic, degrees of freedom, significance, and the mean difference between genders. Since gender was coded 1=male and 2=female, a positive mean difference indicates that the male response was higher than the female response.

Female agricultural education teacher respondents felt more strongly than males about the following belief statements: *instructional supervision is participatory development of the teaching and learning process* and *instructional supervision should be used in all teachable moment situations where teachers and learners interact*. Males felt more strongly that *instructional supervision is more art than science* and that *instructional supervision is best conducted in a structured, teacher centered situation*.

Table 2  
*Independent Samples t-test for the Perceived Mean Ratings Related to General Instructional Supervisory Beliefs by Gender*

Instructional Supervision Beliefs	<i>t</i>	<i>df</i>	t-test for equality of means	
			<i>Sig.</i> (2-tailed)	<i>Mean</i> <i>Difference</i> <sup>a</sup>
Instructional supervision is more art than science	3.213	232	.002	.384**
Instructional supervision is participatory development of the teaching and learning process	-2.365	232	.019	-.243*
Instructional supervision should be used in all teachable moment situations where teachers and learners interact	-2.110	231	.036	-.218*
Instructional supervision is best conducted in a structured, teacher-centered situation	3.754	147.867	.000	.404**

<sup>a</sup> Male was coded as 1 and female was coded as 2.

\*Mean difference is significant at the p=.05 level. \*\*Mean difference is significant at the p=.01 level.

## Discussion

Respondents agreed that instructional supervision *should be used in all teachable moments* (M=4.22). This finding was consistent with that of Nolan and Hoover (2008) who identified the first core principle of effective instructional supervision as being “broad and comprehensive in nature, accounting for all of the duties that teachers are expected to perform” (p. 166). Ovando (2001) stated that teacher evaluation systems should “recognize teachers’ contributions that go beyond classroom instruction” (p. 217), and Blase and Blase (1999) professed that teachers believed supervisors should talk with them “in and outside of instructional conferences” (p. 59). Kralovec (2010) stated, “Looking at *all* the work teachers do, not just their time in front of a class, moves us to a more robust understanding of which teaching practices have a significant effect on student learning” (What We Learned section, para. 4).

Respondents also agreed that instructional supervision *is participatory development of the teaching and learning process* (M=3.94). Ellett and Teddlie (2003) reported that one of the most significant developments in the supervision and evaluation of teachers was “changing the focus of classroom-based evaluation systems from teaching to learning” (p. 107). Involving the teacher in this process became more common through state and national mandates for educational evaluation. The work of Danielson (1996) and her development of four specific domains of professional practice introduced teachers and their supervisors to the critical importance of the process of learning. Her seminal work in this area set the stage for many of the supervision and evaluation standards for teachers in the United States.

Additionally, the collaborative approach of supervision as espoused by Glickman (1990) provided teachers the opportunity to participate in the development of the teaching and learning process within the classroom. Several studies support this assertion. Ziolkowski (1965) found that teachers perceived principals in superior schools as more likely to involve the teacher in decision-making. This finding is also supported by Cogan (1973) and Goldhammer (1969), who

developed the clinical supervision model that encourages supervisors and teachers to work together to examine and interpret data that supports the work of the teacher. Thobega and Miller (2003) recommended that supervisors use a collaborative approach in instructional supervision, while Zepeda and Ponticell (1998) suggested that supervisors should make teachers feel empowered in the instructional supervision process.

Respondents also felt that instructional supervision *is conducted ultimately to help the learner* (M=3.76). In a study of teachers who were enrolled in an educational administration program in south central Texas, Ovando (2001) found that teachers believed learner-centered teacher evaluation “may have some potential benefits to enhance teaching and student learning” (p. 228), while Iwanicki (2001) wrote that instructional supervision is most effective when it is connected to student achievement.

Finally, respondents indicated that instructional supervision *is more art than science* (M=3.59). Marzano’s (2007) text, *The Art and Science of Teaching*, concluded that although effective teaching can be identified quantitatively, not all research-based strategies work with all students all of the time. More than twenty years prior to Marzano’s text, Berliner (1986) concluded that effective teaching is a dynamic mixture of understanding research-based instructional strategies coupled with a deep knowledge of the students found in the classroom. It can be assumed that if an important component of teaching is art, then effective supervision must also go beyond the purely scientific realm as well. Alfonso, Firth, and Neville (1984) supported this assertion when they stated that a supervisor must utilize a unique managerial, human, and technical skill-mix to be effective with teachers. Ebmeier and Nicklaus (1999) also wrote that the collaborative supervision process is complex: utilizing listening, responding, analysis, and problem-solving skills.

Deviating from those practices that were rated with a very high level of agreement, agricultural education teachers disagreed with the following general instructional supervisory beliefs: *is best conducted in a structured, teacher-centered situation* (M=2.43), and *is best done in formal classroom settings* (M=2.29). Since respondents agreed strongly with the statement *should be used in all teachable moments* (M=4.22), it is not surprising that belief statements that limit instructional supervision to structured, teacher-centered situations or only classroom settings were not supported by these respondents. This finding is supported by Blase and Blase (1999) and Ovando (2001), as identified above.

Four of the general belief statements revealed a statistically significant difference between male and female respondents. Females felt more strongly than males about the following belief statements: *instructional supervision is participatory development of the teaching and learning process* and *instructional supervision should be used in all teachable moment situations where teachers and learners interact*. Males felt more strongly that *instructional supervision is more art than science* and that *instructional supervision is best conducted in a structured, teacher centered situation*.

This finding suggests that female agricultural education teachers tend to have stronger positive beliefs regarding collaborative supervision as espoused by Darling-Hammond and Goodwin (1993), Ebmeier and Nicklaus (1999), Glickman, Gordon, and Ross-Gordon (2004),

and Sullivan and Glanz (2000), the learner-centered focus of instructional supervision through the works of Danielson (1996), Ovando (2001), and Iwanicki (2001), and the importance of supervision throughout the entire agricultural education program as emphasized by Blase and Blase (1999), Kralovec (2010), Nolan and Hoover (2008), and Ovando (2001).

Conversely, males tend to prefer the more traditional types of classroom-centered supervision. This finding is generally supported by a census study of Ohio agricultural education teachers (Castillo, Conklin, & Cano, 1999) that found male agricultural education teachers rated supervision as the factor most highly correlated with job dissatisfaction. In the present study, their belief that supervision is more art than science may suggest frustration with supervisors who attempt to utilize learner-centered strategies throughout the entire agricultural education program.

Agricultural education teachers believe in the agricultural education model (Retallick, 2010). When considering the non-formal components of their programs within the context of instructional supervision (or lack thereof), agricultural education teachers draw upon their knowledge, experiences, and expectations to determine their perceptions of a given situation (Hockenbury & Hockenbury, 2010). Agricultural education teachers believe that the non-formal educational settings (SAE and FFA) within the agricultural education model are important for developing the whole student and that supervision should be conducted ultimately to benefit the learner. It is therefore not surprising that their general beliefs relating to supervision in the non-formal educational settings of agricultural education support the notion that instructional supervision should be used in all teachable moments. Since activities within the non-formal components of an agricultural education program do not take place solely in classroom settings where most instructional supervisory visits tend to take place, agriculture education teachers believe that high school principals should supervise instruction beyond the traditional classroom setting.

Agricultural education teachers also believe that they should be involved in the instructional supervisory process. Their background experience providing instruction in the non-formal components of the agricultural education program utilizes student interest to develop experiential learning activities within the SAE component as well as with student planning, implementing, and evaluating of the activities within the leadership and personal development component of the program—the FFA. Likewise, it is logical that agricultural education teachers believe high school principals should also involve them in the process of supervision.

### **Conclusions/Implications/Recommendations**

Agricultural education teachers are not typically supervised outside of the traditional classroom setting. They are not always engaged by their supervisors. Past research shows that they prefer collaborative supervision when given the choice (Thobega & Miller, 2003; Zepeda & Ponticell, 1998). They also believe strongly that supervision should be conducted to help the learner. When considering each of these components collectively, agricultural education teachers consider instructional supervision to be more art than science. These beliefs have been part of the socialization of agricultural education teachers and have an impact upon their behaviors. When considering Ferguson and Bargh's (2004) work regarding social perception's causation of

automaticity of behavior, it is critically important that agricultural education teachers perceive that their principal is performing instructional supervisory practices that support the teacher's beliefs.

Respondents supported Ovando's (2001) claim that teacher evaluation systems should "recognize teachers' contributions that go beyond classroom instruction" (p. 217). They also prefer to be collaboratively engaged (Thobega & Miller, 2003; Zepeda & Ponticell, 1998) in a supervisory process that impacts student learning (Iwanicki, 2001). Agricultural education teachers also believe that instructional supervision *is more art than science*. Since perceived beliefs regarding instructional supervision can impact instructional practice (Ferguson & Bargh, 2004), agricultural education teachers must become engaged in a holistic approach to supervision that takes into consideration the formal and non-formal aspects of their professional practice.

Instructional supervision is a complex activity that should transcend the traditional classroom setting; therefore agricultural education instructors should invite their high school principals to supervise them in all aspects of their teaching, especially in activities within the program components of Supervised Agricultural Experience and the FFA. Additional research is needed regarding teachers' perceptions of instructional supervision (Zepeda & Ponticell, 1998). Further research is needed to determine the importance of specific instructional supervisory practices as well as the frequency in which these practices are experienced. By further exploring instructional supervision, a list of appropriate supervisory strategies could be developed that could be used to positively impact student achievement through instructional supervision in agricultural education.

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## **Agricultural Education Teacher Beliefs Regarding Instructional Supervision**

W. Wade Miller, Discussant

This paper reports on a research project designed to ascertain the beliefs of high school agricultural education teachers concerning instructional supervision. One of the theories about instructional supervision is that the process of engaging teachers in this process may improve their teaching and may result in an increase in student achievement. In the theoretical framework, the authors cite work by Ferguson and Bargh that describes how social perception can automatically influence behavior. Further work cited advanced the idea that the perception and behavior are interconnected due to the natural tendency for humans to act as other humans act. The authors state that teacher's overall perceptions of supervision may affect how they act in regards to instructional supervision and instructional practice. The theoretical framework provides a solid platform upon which to build the study. It provides a reason for finding out what agricultural education teachers' beliefs are and why that might influence their teaching. The authors did not hypothesize what the beliefs would be. Supporting studies or literature outlining instructional supervision beliefs of teachers and how those beliefs affect teaching would be of value.

This is a descriptive study designed to provide base-line information regarding the beliefs of agricultural education teachers. The methods outlined in the paper provided a detailed procedure was used to develop the data-collection instrument. A pilot study was utilized to further develop and refine the instrument and data-collection procedures. The study took place in a cross section of states and the return rate was acceptable for data-analysis and conclusions. A difference between early and late respondents on one of the ten beliefs statement was found and the authors presented the case that the data was representative. Appropriate cautions regarding the generalization of the data were made.

The findings indicated that teachers agreed that instructional supervision should be used in all teachable moments, that it is a participatory development of the teaching-learning process, it is conducted to help the learner, and that it is more of an art than a science. These beliefs appear to be very positive in regards to instructional supervision. It appears that teachers value instructional supervision. It also appears that they believe that it is related to student achievement. It is suggested that further studies take a look at the possible link between instructional supervision and student achievement. Is this something that can be observed and measured?

## **History of Agriculturally Related Merit Badges Offered by the Boys Scouts of America**

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### **Abstract**

Merit badge programs offered by the Boy Scouts of America (BSA) have been used to instruct youth about agriculture for more than 100 years. Agriculturally related subjects, such as beef cattle production, rabbit raising, gardening, agricultural mechanics, and landscaping, have been offered to Scouts since before the founding of the National FFA Organization or passage of the Smith-Hughes Act. This historical research examined the development and evolution of BSA merit badges on subjects related agriculture. The study focused on dates these badges were offered, their popularity, their requirements, and the materials provided by BSA to support them. Over the years, 32 separate merit badge programs have been offered relating directly to agriculture. Forestry and Soil and Water Management have been the most popular of these offerings, while badges for Animal Science and Plant Science have been among the least popular of all badges. Requirements for these badges involve both lower- and higher-level cognitive objectives. Materials provided by BSA to support these badges are excellent sources of information that could be useful curriculum references for agricultural educators. It is recommended that agricultural educators support and utilize these merit badges as a method to teach youth about agriculture.

### **Introduction**

“Besides the campfire and the uniform, nothing is more emblematic of the Boy Scout experience in the public mind than merit badges” (Wills, 2009, p. 162). Less well known, however, is the fact that the merit badge program offered by the Boys Scouts of America (BSA) has delivered agricultural knowledge and skills to hundreds of thousands youth for the last 100 years.

The issuing of award badges to Scouts who gained proficiency in particular areas of interest has been a part of the Scouting since the very beginning of the movement. The preface of *Scouting for Boys*, written in 1908 by the founder of the movement Lord Robert Baden-Powell, included a description of the four components of the Scouting program. The second of those components was, “Handicrafts or hobbies which may help a boy to make his way in life, for which we give ‘Proficiency’ badges” (Baden-Powell, 2004, p. 5). Two years later, the American version of the Scouting movement was incorporated. The original edition of *The Official Handbook for Boys* (BSA, 2007) was published in 1911 to standardize the program. In addressing merit badges, known at that time as Badges of Merit, the manual stated, “These badges are intended to stimulate the boy’s interest in the life about him and are given for general knowledge” (p. 23). That purpose has changed little since those early days. The 12<sup>th</sup> edition of the *Boy Scout Handbook* (BSA, 2009a) stated, “A merit badge is an invitation to explore an exciting subject” (p. 185). It continued, “some merit badges encourage you to increase your skill in subjects you already like, while others challenge you to learn about new areas of knowledge ... a merit badge can even lead you toward a lifelong hobby or set you on the way to a rewarding career.” (p. 185).

Thomas Seton, an author, nature artist, and naturalist from New York, was commissioned to adapt *Scouting for Boys* into a manual for the new BSA organization (Wills, 2009). His original work, published in 1910, included 14 Badges of Merit (Murray, 1937). The following year, a more comprehensive manual was released by the organization (BSA, 2007). Considered the original handbook for BSA, *The Official Handbook for Boys* listed 57 different merit badges available to Scouts. From that point on, leaders of the organization have considered and approved merit badges on subjects that interest boys and help achieve the purposes of BSA (Wills, 2009). Currently, there are 126 merit badges offered (BSA, 2009a). The most badges ever offered at one time was 127 in both 1975 and 1987 (Duersch, 2008). As of 2007, more than 115 million merit badges had been earned by Scouts (“Merit Badges Earned,” n.d.).

Over the years, BSA has offered many merit badges related directly to production agriculture. From 1943-1954, as many as 21 agriculturally related merit badges were available (BSA, 1944; BSA, 1955). Although only ten of these badge offerings remain (BSA, 2009a), records show that the merit badge programs have delivered agriculturally related content and experiences to hundreds of thousands boys and young men (“Merit Badges Earned,” n.d.). Nevertheless, a review of literature yielded no historical examination of agriculturally related merit badges offered by BSA.

### **Purpose and Objectives**

The purpose of this study was to examine merit badges that focus on agriculturally related subjects offered by BSA from its founding until the current time. The following objectives were formulated to guide this research:

1. Identify merit badges related to agriculture offered by BSA since 1911.
2. Describe the popularity, as measured by number of badges earned, of merit badges related to agriculture.
3. Describe requirements for earning merit badges related to agriculture.
4. Describe sources of information used to provide information related to merit badges related to agriculture.

### **Methods and Procedures**

Historical research methods were employed in this study. Ary, Jacobs, and Sorensen (2010) defined historical research as “the attempt to establish facts and arrive at conclusions concerning the past” (p. 467). Gall, Borg, and Gall (1996) stated that historical research allows for better understanding of the present by answering questions about the past.

Many of the documents and other artifacts used in this study were gathered on site at the Archives of the BSA located at the National Scouting Museum in Irving, Texas. In addition, the researcher gathered data at the Edmon Low Library at Oklahoma State University and online. A number of primary sources were used for this study, including: Annual reports of the BSA; merit badge pamphlets for the badges of interest, ranging from original to current editions; minutes and notes from National Council meetings, including committee and subcommittee meetings; articles in *Boys Life* magazine; original and subsequent editions of *The Boy Scout Handbook*; the original edition of *Scouting for Rural Boys: A Manual for Leaders*; the original edition of *Scoutmaster’s Handbook: A Manual for Troop Leadership*; and, Scouting.org, the official website of BSA.

Secondary sources included books on the history of the Scouting movement, the history of BSA, and the *Merit Badge Field Guide (3<sup>rd</sup> Ed)*. Additional secondary sources included websites related to Scouting and merit badges. Authentication and accuracy of materials are concerns when conducting historical research. External criticism is the process of determining the genuineness of historical materials (Ary et al., 2010) and internal criticism is the process of evaluating the accuracy and worth of historical documents (Gall et al., 1996). Steven Price, the BSA archivist, provided the necessary assurances regarding these issues. Comparison of multiple sources of information allowed for triangulation of information to assure the credibility of the results.

The 12<sup>th</sup> printing of the 5<sup>th</sup> edition of the *Handbook for Boys* (BSA, 1958a) listed each of the merit badges offered at that time into one of 15 “Merit Badge Groups” (p. 424). Twenty-four of the 101 badges offered at that time were marked with a notation stating, “These badges may be earned by a 4-H’er completing a club project in this subject. Or an FFA member may meet these or equivalent requirements through the FFA supervised farming program” (p. 425). Only the badges with that notation, encompassing their predecessors and successors, were included in this study.

The Taxonomy of Educational Objectives developed by Bloom, Engelhart, Furst, Hill, and Krathwohl (1956) was used to describe the cognitive level of merit badge requirements. This classification was simplified into two categories: Lower-Order Cognitive Level, composed of Knowledge and Comprehension and Higher-Order Cognitive Level, composed of Application, Analysis, Synthesis and Evaluation (Ulmer & Torres, 2007).

## Findings

As shown in Table 1, the origin of eight agriculturally related merit badges can be traced to the introduction of the BSA program in 1911 (BSA, 2007; Duersch, 2008; BSA, 2009a;). Merit badges for Animal Industry, Bee Farming, Dairying, First Aid to Animals, Forestry, Gardening, Horsemanship, and Poultry Farming and were among the 57 merit badges described in the original handbook for the BSA (BSA, 2007).

In his column, *The Scout World*, from the July, 1928 issue of *Boys Life* magazine, Chief Executive Scout James E. West announced that 12 new merit badges had recently been added (West, 1928). West said the new badges were “of particular interest to rural and farm boys” (p. 61), though any Scout was eligible to pursue them. The newly introduced badges were: Animal Industry, Beef Production, Corn Farming, Cotton Farming, Farm Home and Its Planning, Farm Layout and Building Arrangement, Farm Mechanics, Farm Records and Bookkeeping, Fruit Culture, Nut Culture, Sheep Farming, and Soil Management (BSA, 1928a). Interestingly, approval of the new badges followed closely the formation of a new division of the BSA National Council called the Department of Rural Scouting (BSA, 1928a). The charge of this department was to develop plans to adapt BSA programs to the “needs and conditions of ‘farm’ and rural boys” (p. 16). In addition, this division was to cooperate with other agencies working in rural America to serve boys effectively in these areas (BSA, 1928a). This group even published a handbook for BSA leaders working in rural areas (BSA, 1938a).

In the 1930s, five new badges related to agriculture were added to the list of offerings. Landscape Gardening—renamed as Landscaping in 1959 and then Landscape Architecture in 1967—was first offered in 1930 (BSA, 1930). Citrus Fruit Culture and Cotton Farming were approved in 1930 (BSA, 1931a). Pigeon Raising was approved in 1931 (BSA, 1932) and

Table 1

*Evolution BSA Merit Badges Related to Animal Agriculture, by Year Approved*

Merit Badge	Year First Offered	Year Last Offered	Notes
Agriculture	1911	1975	
Beekeeping	1911	1955	Originally Bee Farming (1911-1914).
Dairying	1911	1975	Merged into Animal Science.
Forestry	1911	Present	
Gardening	1911	Present	
Horsemanship	1911	Present	
Poultry Keeping	1911	1975	Originally Poultry Farming (1911-1913). Merged into Animal Science.
Veterinary Medicine	1911	Present	Originally First Aid to Animals (1911-1972), then Veterinary Science (1973-1994).
Animal Industry	1928	1975	Replaced by Animal Science.
Beef Production	1928	1975	Merged into Animal Science.
Corn Farming	1928	1975	Merged into Plant Science
Farm Arrangements	1928	1979	Originally Farm Layout & Building Arrangement (1928-1959), then Farm Arrangement (1960-1973).
Farm Home & Its Planning	1928	1959	Merged into Farm Arrangement in 1960.
Farm Mechanics	1928	Present	
Farm Records	1928	1980	Originally Farm Records & Bookkeeping (1928-1958).
Fruit Culture	1928	1954	Merged into Fruit & Nut Growing.
Hog Production	1928	1975	Originally Hog & Pork Production (1928-1958). Merged into Animal Science.
Nut Culture	1928	1954	Merged into Fruit & Nut Growing.
Sheep Farming	1928	1975	Merged into Animal Science.
Soil & Water Conservation	1928	Present	Originally Soil Management (1928-1952).
Landscape Architecture	1930	Present	Originally Landscape Gardening (1930-1958), then Landscape (1959-1966).
Citrus Fruit Culture	1931	1952	Merged into Fruit & Nut Growing.
Cotton Farming	1931	1975	Merged into Plant Science
Pigeon Raising	1933	1980	
Forage Crops	1938	1975	Originally Grasses, Legumes & Forage Crops (1938-1958).
Rabbit Raising	1943	1993	

Small Grains	1943	1975	Originally Small Grains & Cereal Foods (1943-1958). Merged into Plant Science.
Fish & Wildlife Management	1952	Present	Originally Wildlife Management (1952-1972)
Fruit and Nut Growing	1953	1975	Merged into Plant Science
	Year First Offered	Year Last Offered	Notes
Animal Science	1975	Present	Replaced Animal Industry, Beef Production, Dairying, Hog Production, Poultry Keeping and Sheep Production.
Plant Science	1975	Present	Replaced Corn Farming, Cotton Farming, Fruit & Nut Growing, and Small Grains.
Food Systems	1978	1987	
Farm & Ranch Management	1980	1987	
Agribusiness	1987	1995	

Grasses, Legumes & Forage Crops—later renamed Forage Crops—was first offered in 1938 (Duersch, 2008). The latter four badges have each been merged into other offerings or discontinued (Duersch).

Merit badges for Rabbit Raising, and Small Grains and Cereal Foods were first offered in the early 1940s (BSA, 1946). Rabbit Raising was discontinued in 1993, while Small Grains and Cereal Foods morphed into Small Grains in 1958 (Duersch, 2008). Wildlife Management—first offered in 1953 (BSA, 1956)—was broadened to Fish and Wildlife Management in 1972 (Duersch, 2008).

The next substantive change with agriculturally related merit badges came in the mid-1970s. In 1975, six badges related to animal agriculture—Animal Industry, Beef Production, Dairying, Hog Production, Poultry Keeping, and Sheep Farming—were discontinued in favor of a single badge called Animal Science (BSA, 1974). Similarly, three badges related to agronomic crops, Corn Farming, Cotton Farming, and Small Grains, plus the Fruit and Nut Growing badge, were eliminated in favor of a new badge named Plant Science (BSA, 1974).

In the late 1970s and 1980s, three more merit badges on agricultural subjects were introduced, though these offerings were short lived. Food Systems existed from 1978-1987, Farm and Ranch Management was offered from 1980-1987 and Agribusiness was offered from only 1987-1995 (Duersch, 2008).

Currently, ten merit badges related to agriculture are available to Scouts (BSA, 2009a). Those badges are: Animal Science, Farm Mechanics, Fish and Wildlife Management, Forestry, Gardening, Horsemanship, Landscape Architecture; Plant Science, Soil and Water Conservation, and Veterinary Medicine (BSA, 2009a). Forestry, Gardening, and Horsemanship are three of the few badges that have been offered since the inception of BSA without undergoing a name

change. Veterinary Medicine has also been offered for 100 years, though it has had two name changes. It was known as First Aid to Animals from 1911-1972 and then Veterinary Science from 1973-1994 (Duersch, 2008).

According to data from a BSA report posted on a website for the Merit Badge Research Center (“Merit Badges Earned,” n.d.), the only agriculturally related merit badges awarded to more than one million Scouts were Soil and Water Conservation (1,009,930 total; 12947.82/year) and Forestry (1,041,526 total; 10415.26/year). The next most popular badge was Fish and Wildlife Management, with an average of almost 9278 badges awarded per year (547,394 total). Though it was discontinued in 1947, Animal Industry was the fourth most popular agriculturally related badge with 7876.64 awarded per year (370,202 total). These data are displayed in Table 2.

Table 2

*Number of BSA Merit Badges Related to Agriculture Awarded*

Merit Badge	Number Awarded <sup>a</sup>	Years Offered	Average/Year
Soil & Water Conservation	1,009,930	78	12947.82
Forestry	1,041,526	100	10415.26
Fish & Wildlife Management	547,394	59	9277.86
Animal Industry	370,202	47	7876.64
Horsemanship	541,721	95	5702.33
Farm Home & Its Planning	135,174	31	4360.45
Veterinary Science	413,544	95	4353.09
Gardening	370,749	95	3902.62
Farm Mechanics	201,874	78	2588.13
Poultry Keeping	162,794	64	2543.66
Farm Arrangements	127,667	51	2503.27
Rabbit Raising	118,925	50	2378.50
Beekeeping	72,666	44	1651.50
Hog Production	74,085	47	1576.28
Dairying	96,598	64	1509.34
Corn Farming	69,932	47	1487.91
Agriculture	85,831	64	1341.11
Beef Production	60,261	47	1282.15
Animal Science	32,082	31	1034.90
Pigeon Raising	48,522	47	1032.38
Farm Records	51,527	52	990.90
Plant Science	28,547	31	920.87
Landscape Architecture	69,391	76	913.04
Agribusiness	6,716	8	839.50
Fruit and Nut Growing	14,412	22	655.09
Sheep Farming	30,195	47	642.45
Forage Crops	19,109	37	516.46
Fruit Culture	11,877	26	456.81
Small Grains	14,333	32	447.91
Food Systems	3,100	9	344.44
Cotton Farming	13,853	44	314.84

Farm & Ranch Management	1,921	7	274.43
Citrus Fruit Culture	4,017	21	191.29
Nut Culture	3,613	26	138.96

<sup>a</sup> Up to and including 2006

Rounding out the five most popular badges based on the number awarded per year was Horsemanship with an average of 5702.33 (541,721 total). Fourteen (43.75%) of the 32 agriculturally related merit badges were awarded to fewer than 1000 Scouts per year. The least popular badge from this group was Nut Culture (138.96), immediately preceded by Citrus Fruit Culture (191.29), Farm and Ranch Management (274.43), Cotton Farming (314.84), and Food Systems (344.44).

None of the 10 agriculturally related merit badges currently available rank among the most popular 30% of all badges offered (“Merit Badges Earned,” n.d.). To the contrary, several of the badges on agricultural subjects rank among the lowest of the 122 badges offered in 2006 (see Table 3). Interestingly, Plant Science and Animal Science, two badges created to consolidate several merit badges for which interest had decreased (BSA, 1974), were among the seven least popular badges offered.

Table 3

*Ranking of Popularity of Merit Badges Related to Agriculture Compared to All BSA Merit Badges Offered in 2006*

Merit Badge	Overall Ranking
Forestry	36
Soil & Water Conservation	38
Horsemanship	49
Fish & Wildlife Management	50
Gardening	66
Farm Mechanics	78
Landscape Architecture	106
Veterinary Science	112
Animal Science	116
Plant Science	117

*Note:* Rankings are out of 122 merit badges offered in 2006 (“Merit Badges Earned,” n.d.).

The founders and early leaders of BSA intended merit badges to be a form of experiential learning. In his book chronicling the first 25 years of BSA, Murray (1937) stated that the requirements of merit badges were “to put the emphasis on ability ‘to do’ rather than to know; the aim was to get boys to apply their knowledge” (p. 464). Examination of the agriculturally related merit badges that were among the 57 original badge programs revealed, however, that a variety of cognitive levels were employed in the early merit badge requirements. Although some requirements called on Scouts to employ higher-order cognitive behaviors (see Table 4), others focused on knowledge and comprehension of concepts and facts related to the subjects of the badges (see Table 5).

Table 4

*Examples of Experiential Learning Activities Listed Among Requirements for Agriculturally Related Merit Badges in the Original BSA Handbook*

Badge	Requirement (Including the requirement number) <sup>a</sup>
Agriculture	“2. Grow at least an acre of corn which produces 25 per cent better than the general average” (p. 24).
Dairying	“4. Test at least five cows for ten days each, with the Babcock test, and make proper reports” (p. 32).
Forestry	“4. Determine the height, and estimate the amount of timber, approximately, in five trees of different sizes” (p. 33).
First Aid to Animals	“2. Be able to treat a horse for colic” (p. 33).
Gardening	“4. Plant and grow successfully six kinds of vegetables or flowers from seeds or cuttings” (p. 34).
Horsemanship	“1. Demonstrate riding at a walk, trot, and gallop” (p. 34).
Poultry Farming	“4. Raise a brood of not less than ten chickens” (p. 40).

<sup>a</sup> Direct quote from *The Official Handbook for Boys* (BSA, 1911).

Table 5

*Examples of Knowledge and Comprehension Learning Expectations Listed Among Requirements for Agriculturally Related Merit Badges in the Original BSA Handbook*

Badge	Requirement (Including the requirement number) <sup>a</sup>
Agriculture	“7. Have a general acquaintance of the routine seasonal work on the farm, including the care of cattle, horses, sheep, and pigs” (p. 24).
Bee Farming	“1. Have a practical knowledge of swarming, hiving, hives and general apiculture, including a knowledge of the use of artificial combs” (p. 27).
Dairying	“1. Understand the management of dairy cattle” (p. 31).
Forestry	“5. State laws for transplanting, grafting, spraying and protecting trees” (p. 34).
First Aid to Animals	“1. Have a general knowledge of domestic and farm animals” (p. 33).
Gardening	“2. Know the names of a dozen plants pointed out in an ordinary garden” (p. 34).
Horsemanship	“7. Be able to identify unsoundness and blemishes” (p. 35).
Poultry Farming	“1. Have a knowledge of incubators, foster-mothers, sanitary fowl houses, and coops and runs.

<sup>a</sup> Direct quote from *The Official Handbook for Boys* (BSA, 1911).

Beginning in 1929, alternative requirements for some agriculturally related merit badges were provided to Scouts who were involved in other agricultural youth organizations (BSA, 1929a). The list of requirements for Bee Keeping, Beef Production, Citrus Fruit Culture, Corn Production, Cotton Production, Dairying, First Aid to Animals, Forage Crops, Gardening, Hog

and Pork Production, Poultry Raising, Rabbit Raising, and Sheep Farming all concluded with a statement allowing compliance with 4-H or home project requirements to substitute for the BSA requirements of the badge (BSA, 1929a; BSA, 1929b; BSA, 1929c; BSA, 1930b; BSA, 1930c; BSA, 1931b; BSA, 1936; BSA, 1938b; BSA, 1939; BSA, 1941; BSA, 1942; BSA, 1943; BSA, 1939; BSA, 1954). Beginning in 1957, acknowledgement was given to Scouts involved in Future Farmers of America. The alternative requirement statement for Bee Keeping, Beef Production, Corn Farming, Cotton Farming, Dairying, Farm Mechanics, Farm Records, Gardening, Hog Production, Poultry Raising, Sheep Production, and Small Grains allowed FFA members' supervised farming program, or supervised vocational agriculture program, to substitute for the BSA requirements (BSA, 1957a; BSA, 1957b; BSA, 1957c; BSA, 1957d; BSA, 1958b; BSA, 1958c; BSA, 1958d; BSA, 1966; BSA, 1968; BSA 1969; BSA, 1974). In 1973, however, The Merit Badge Development Subcommittee of the National Scouting Committee decided to discontinue the substitution policy based on the recommendation of 4-H officials (BSA, 1973, February 19).

Analysis of requirements for the ten current merit badges related to agriculture shows that expectations for these badges continue to vary in number, rigor, and complexity. The expectations do, however, continue to emphasize the acquisition of knowledge and the demonstration of skills.

Requirements for the Animal Science merit badge, which were updated in 2007, include six general requirements to be met by all Scouts pursuing the badge (BSA, 2008a). To earn the badge, Scouts must name 24 breeds of livestock, list 30 livestock diseases, explain differences in digestive systems for livestock, describe management practices, explain livestock breeding programs, and explore a career related to animal science. Next, one of five options—Beef Cattle, Dairying, Horse, Sheep, Hog, or Avian—is to be selected. Each option is composed of 4-6 requirements focusing on the particular type of livestock. These requirements include expectations such as learning and using specialized terminology, visiting with livestock producers, touring livestock operations, and sketching facilities. Some of these options allow Scouts to substitute personal experience raising livestock for some requirements (BSA, 2008a).

Requirements for Plant Sciences are structured similarly to those for the Animal Science badge (BSA, 2008b). All Scouts interested in the badge must meet five general requirements. Then, they select a track of optional requirements that allow for specialization. The options available are Agronomy, Horticulture, and Field Botany. Within these options are further routes that allow Scouts to focus their learning even more. For instance, the Agronomy Option has requirements that lead to general knowledge about how field crops are grown, but then require Scouts to select a specific set of requirements for either corn, cotton, forage crops, small grains, or oil crops. Similarly, the Horticulture Option allows Scouts to focus on one of four categories of that industry (BSA, 2008b).

To achieve the first requirement of the Farm Mechanics merit badge, Scouts must demonstrate knowledge and ability to use tools and equipment safely. Scouts are also required to explain power production or transfer, and demonstrate skilled use of tools and machines. There are also two requirements that expose Scouts to careers related to agricultural mechanics (BSA, 2009b).

The Gardening merit badge is also focused on hands-on learning (BSA, 2010a). Scouts are required to grow vegetable and ornamental plants, conduct germination tests, visit horticultural sites and experts, identify garden pests and diseases, and construct a gardening related project such as a compost bin, vermipost bin, hydroponic garden, or water garden.

Scouts interested in earning the Forestry merit badge must complete seven requirements, including expectations that they conduct observations and collect samples from local forests (BSA, 2005a). They must also describe the environmental contributions of forests as well as report on proper forest management and careers in the forestry industry. Requirements for the Fish and Wildlife Management merit badge are focused similarly on observing wilderness areas, reporting on conservation practices, management techniques, and careers (BSA, 2004).

The Horsemanship merit badge has 11 requirements (BSA, 2010a). To earn this badge, Scouts must show knowledge about horse breeds, anatomy, health, and care. They must also demonstrate proper grooming, saddling, and riding techniques. Although the Horsemanship merit badge is focused on the application of learning, requirements for the Landscape Architecture badge are focused more upon evaluation. For this badge, Scouts report on landscape designs, identify plants and other landscaping materials, develop a landscape plan, and investigate career opportunities.

Requirements for the Soil and Water Management merit badge require students to demonstrate knowledge about soil and water for agriculture and other uses (BSA, 2010b). Scouts must be able to define terminology, describe the hydraulic cycle, report on management practices, and conduct a conservation project.

The Veterinary Medicine merit badge requirements center on the exploration of careers related to animal health (BSA, 2005c). Through earning this badge, Scouts learn about training required to be a veterinarian as well as the duties and roles of various animal health professionals.

Although the original BSA handbook included a list of requirements for each of the original 57 merit badges (BSA, 1907), Scouts and their leaders were left to their own devices to locate materials needed to complete those requirements. Beginning in the late 1920s, BSA began publishing merit badge pamphlets for each badge (BSA, 1927). The introduction provided in the preface of those early pamphlets described the purpose of the booklets. It explained that the pamphlets were a “library on Scout activities and vocational guidance ... prepared by experts” (BSA, 1929a, p. iii). The introduction explained that these pamphlets were intended to provide a more comprehensive outline of the merit badge subject than was practical to include in the *Handbook for Boys*. It went on to say, however, that the pamphlets were not intended to “cover the requirements so completely as to make unnecessary the boy’s using his own initiative and resourcefulness in seeking further information to enable him to meet the requirements successfully” (BSA, 1929, p. iii).

The authors of the original pamphlets included experts with impressive credentials. E. A. Trowbridge, the Chairman of the Animal Husbandry Department at the University of Missouri, wrote the original version of the pamphlet for Animal Industry (1928a) and E. F. Phillips, of the Department of Entomology at Cornell University, authored the pamphlet for Bee Keeping

(1930b). Not all pamphlets listed the author by name. For instance, the Beef Production merit badge pamphlet included a statement crediting the Bureau of Animal Industry of the USDA for providing material contained therein (BSA, 1929b). The Plant Sciences merit badge pamphlet, first published in 1975, acknowledged the contributions of a committee that included H. N. Hunsicker, the National FFA Advisor, as well as agencies such as the USDA and Interstate Printers and Publishers (BSA, 1975). The most recent edition of the Farm Mechanics pamphlet acknowledges six individuals for their contributions including Rick Elmore, an agriculture science and technology teacher at Decatur High School in Decatur, TX (BSA, 2009b).

Through the years, these pamphlets evolved in terms of content and design. The original 41 page pamphlet for Dairying, authored by Dr. J. C. McDowell of the Bureau of Dairy Industry at the USDA, included subjects such as dairy breeds, cow and bull selection, cow feeding and nutrition, milking procedures and equipment, milk testing processes, and cow care and management (BSA, 1936). The booklet, which except for the cover was printed in black on white paper, contained photos, illustrations, tables, and scorecards. Several pamphlets for agriculturally related merit badges included a list of land grant universities as resources for more education on the subject of the badge (BSA, 1944).

Latest editions of merit badge pamphlets are more comprehensive and more visually appealing. These full color publications include maps, tables, graphic illustrations, and action photos (BSA, 2005a; BSA, 2005c; BSA, 2008a; BSA, 2009ba; BSA, 2010a). For example, the 81-page Gardening merit badge pamphlet contains information about growing regions and seasons, soil types, identification and treatment of various pests and diseases, and information about organic and chemical fertilizers (BSA, 2010a).

### **Conclusions, Recommendations, and Implications**

Agriculturally related merit badges have been a part of the BSA program since its inception (BSA, 2007). Eight of the original 57 merit badges were on subjects related closely to agriculture. In the late 1920s, the number of agriculturally related merit badges increased four-fold as Scouting programs began to emphasize expansion of the organization into rural areas (BSA, 1938). Though the number of badges in this area has decreased from its peak, agricultural education continues to be a fixture in this fundamental component of the BSA program with 10 current merit badges on agricultural subjects among the total of 126 offered presently.

Based on the number of badges awarded per year, Forestry, Soil and Water Management, Fish and Wildlife Management, and Horsemanship, are the most popular merit badges related to agriculture. None of these programs, however, rank in the top quartile of all merit badges. It should be noted that the most popular badges are those that are required for the Eagle Scout rank (BSA, 2011). So, why are the subjects listed above most popular among the 10 agriculturally related merit badges? Upon examination of the topics and their requirements, it is clear that these three particular merit badges have a contextual foundation and application beyond agriculture. In fact, Forestry, Soil and Water Management, and Fish and Wildlife Management each relate closely to the natural resources and conservation emphases that have long been components of Scouting. In contrast, the Animal Science and Plant Science merit badges, which are much more narrowly focused, are among the least popular 10% of all merit badges offered by BSA.

From analysis of the requirements for merit badges related to agriculture, it can be concluded that these programs are an effective form of agricultural education. The requirements for these badges and the materials contained in the pamphlets associated with them compare favorably to activities and curricula used for instruction in these topics in school-based agricultural education courses. Requirements for each badge are comprehensive and rigorous. They are updated frequently to assure current trends and discoveries related to the subject are addressed. Each badge involves learning activities that encompass lower and higher cognitive behaviors, with special emphasis placed on experiential learning. These merit badges also include a career exploration component that should appeal to the most ardent supporters of career and technical education.

The merit badge pamphlets developed and provided by BSA to support these merit badges serve as excellent educational resources for agricultural education for formal and informal settings. The content is current and was developed by experts in the given fields. Information in each pamphlet is presented in a logical, well-sequenced format with ample use of appealing visuals including photos, colorful illustrations, maps, and tables. They also include guidelines for experiential learning activities to enhance learning experiences such as the instructions and illustrations for constructing a hydroponic garden system in the Gardening merit badge pamphlet (BSA, 2010a).

The findings and conclusions of this study lead to several recommendations and implications for professional agricultural educators. Agriculturally related merit badges provide a delivery system through which an audience of more than one million youth can learn about agriculture. Interestingly, the idea of fusing BSA programs with agricultural education is not new. As early as 1929 a teacher of agriculture noted that Scouting programs reinforce “splendidly our class and home project work in agriculture” (as cited in BSA, 1930, p. 198).

It is recommended that school-based agriculture teachers and extension professionals offer courses on agriculturally related merit badges to Scouts. These merit badges can serve as excellent agricultural literacy programs as they may provide many youth their first exposure to agriculture and how food and fiber production impact them on a daily basis. An additional benefit is that agriculturally related merit badges can be valuable recruiting tools for 4-H clubs and FFA chapters. The badge programs can serve to spark interest leading to broader and deeper study of agriculture provided through these organizations. Young people simultaneously involved in BSA and an agricultural youth organization can also be served well through these merit badges. Work on agriculturally related merit badges allows them to advance in Scouting through areas in which they are interested. In turn, agricultural merit badge programs can serve as excellent exploratory SAEs, benefiting the student in class and contributing to opportunities for awards and recognition through FFA.

Students and faculty associated with agriculture teacher education programs at universities should become engaged in these and other BSA merit badge programs. An excellent example of this recommendation in action is the annual College of Agriculture, Food and Natural Resources Merit Badge Center offered by the Department of Agricultural Education at the University of Missouri. Students in the curriculum design and construction course offered by the department

teach the merit badges as a capstone project. This service learning activity allows the college students to apply concepts they have learned in class with a live group. Successively, the Scouts are able to earn badges that are not frequently offered at summer camps or through other merit badge centers. Opportunities also exist for agricultural education faculty and students to teach these merit badges through local troops and summer camps.

This researcher recommends that additional historical research be conducted to examine other ways BSA engaged in agricultural education and rural development. Further research should also be conducted to investigate the relationships between BSA and other agriculturally based youth organizations such as the National FFA Organization and 4-H.

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History of Agriculturally Related  
Merit Badges Offered by the Boy Scouts of America

Critique  
Robert A. Martin

This paper was an enlightening description of the relationship that exists between the agriculturally focused merit badge program of the Boy Scouts of America organization and the agricultural education instructional program including the FFA organization and the supervised agriculture experience program. The author is commended for developing and presenting this historical perspective through this study.

There is much for which the author of this paper should be commended. The paper has a clear focus and justification statement. There is a clear conceptual framework. The methods and procedures are clearly defined, documented, and supported by the literature. There is a clear description of what was done and why. Each section of the paper clearly built a foundation for each of the following sections. The flow of the paper was clear. There is a clear set of conclusions, recommendations and implications based on this study.

This study raises a few questions.

1. How does this study contribute to the Agricultural Education research agenda? While interesting and clearly presented, how does this study contribute to this agenda?
2. Is it "Boy Scouts" or "Boys Scouts"? It is presented both ways in the paper (and the title).
3. How does one explain the decrease in interest in agriculturally related merit badges? There was some attention given to this issue, but could it be explained a bit more? I think it would help the reader to better understand the issue. The author cites ways to counter this trend. How could this situation be reversed locally, statewide and nationally? I assume that we want more students having more interest in agriculturally related projects rather than less.
4. The author refers to the idea that "these programs are an effective form of agricultural education". What brings you to this conclusion? What is meant by the term "effective" in this situation? It seems to depend on the definition of "effective" doesn't it?

I would venture to say most people in Agricultural Education are not aware of the agriculturally focused programs available in the Boy Scouts of America organization. Thanks for bringing this topic to our attention.

## **The Relationship between Student Involvement in FFA Chapter Civic Engagement Activities, Experienced Autonomy, and Self Perceived Civic Responsibility**

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*The National FFA Organization claims to develop citizenship skills through programming such as civic engagement activities; limited research exists documenting this claim. The researchers proposed that students' (n = 767) self perceived level of civic responsibility could be partially explained by their level of participation and autonomy experienced during FFA civic engagement activities. This non-experimental, descriptive-correlational study tested hypotheses related to level of civic engagement participation, level of autonomy experienced during community development activities, and FFA member's self perceived civic responsibility. Findings revealed that significant differences existed in students' civic responsibility when compared by level of participation in FFA civic engagement activities. Autonomy was found to have a significant positive relationship with civic responsibility scores.*

### **Introduction**

Civic engagement activities unite human efforts and resources toward identifying and correcting existing societal problems (Camino & Zeldin, 2002; Jans, 2004). Civic engagement activities encourage community members to form stronger bonds with each other, enhances the sense of pride individuals feel towards their community, and are intended to help increase an individual's concern for improving the status of the community (Flanagan & Faison, 2001). Youth civic engagement activities are important because they provide an opportunity for youth to form attachments with their surrounding community (Balsano, 2005). The communal attachment youth form during civic engagement activities provide skills necessary to solve community problems or issues and ultimately lead to creating a stronger democracy within the community (Balsano, 2005). In recent years, a decreasing trend of adolescent involvement in civic engagement activities has emerged; this includes 58% involvement in 1999 (National Center for Educational Statistics, 1999), 50% involvement in 2002 (Tourney-Purta, 2002), and participation rates largely below 50% from 2000 to 2009 (Flanagan, Levine, & Settersten, 2009).

Schools can often serve as a practical avenue to providing civic engagement experiences to youth (Youniss et al., 2002). In 1998, approximately 83% of all United States public high schools provided some form of organized civic engagement opportunities to students in an effort to teach citizenship skills. Forty six percent of all public high school students reported participation in at least one or more of these school-based civic engagement activities. Out of all students who participated in school sponsored civic engagement activity, only 27% were students from a rural area (Skinner & Chapman, 1999). While it appears that the majority of United States public schools provide some type of outlet for students to become involved with civic engagement activities, a particularly low number of youth from rural areas are able to take advantage of these experiences.

It is important that all students at least have the opportunity to be involved in civic engagement activities because civic engagement activities provide the beginning steps to

becoming engaged contributors to the betterment of American society (Hart & Atkins, 2002; Langston, 1987). It is problematic that rural youth are less civically engaged because they may miss an opportunity to acquire the knowledge and skills necessary to improve societal problems (Balsano, 2005). However, a solution to this problem is that many school-based agricultural education departments are located in rural areas (Team Ag Ed Report, 2006). FFA chapters within those departments can provide opportunities for rural students become involved with civic engagement activities through FFA programming at multiple levels (Horstmeier & Ricketts, 2009; National FFA Organization, 2010). FFA civic engagement activities can be an important context for enhancing the citizenship skills of youth. FFA civic engagement activities are especially important for students from rural areas because they may not have other opportunities to become engaged with their community or improve their citizenship skills (Brandell & Hinck, 2005; Skinner & Chapman, 1999).

The National FFA Organization historically and currently claims to develop responsible citizenship skills in student members (National FFA Organization, 2010). Enhanced citizenship skill development is reported through many official statements of the National FFA Organization. The FFA Mission states, “FFA makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth, and career success through agricultural education” (National FFA Organization, 2010, p. 5). The National FFA Organization has 11 specific objectives to accomplish the mission statement, three of which are related to citizenship skill development: encouraging wise management of the community’s economic, environmental and human resources; building character and promotes citizenship, volunteerism and patriotism; and promoting cooperation and cooperative attitudes among all people (National FFA Organization, 2010, p. 5). These statements would lead one to consider citizenship skill development a fundamental outcome of involvement in the National FFA Organization. A common practice of local FFA chapters is the organization and implementation of community service oriented activities. These activities can provide a link between students and their communities while also resulting in positive behaviors such as improved personal, social, and moral responsibilities (National FFA Organization, 2010). Investigation into the effects of civic engagement on student development is warranted to examine current and future FFA programming practices, inform professionals who prepare educators to serve as FFA youth leaders, and better understand developmental outcomes of students in the National FFA Organization (Alfeld et al., 2007; Horstmeier & Ricketts, 2009; Smith, Garton, & Kitchel, 2010; Zirkle & Connors, 2003).

### **Theoretical/Conceptual Framework**

This study was based upon a conceptual model developed by the researchers framed within existing youth development literature in civic engagement contexts. The first component of this model is an individual’s sense of civic responsibility. Civic responsibility is conceptualized as a person’s connection to their community, awareness of existing community needs, and an individual’s civic efficacy (Balsano, 2005; Evans & Prilleltensky, 2005; Furco, Muller, & Ammons, 1998). Connection to the community is the sense an individual is linked to other members in a community and can collaborate with those community members for community improvement actions (Balsano, 2005; Mondak & Gearing, 1998). Community needs awareness is an individual’s ability to identify and initiate steps to resolve societal issues (Evans

& Prilleltensky, 2005). Civic efficacy is the feeling that an individual can and should become involved in activities that solve existing community problems (Giles & Eyler, 1994).

The second component of this model involves theories of intrinsic motivation and how autonomy within an educational setting enhances intrinsic motivation and ultimately contributes to positive learning outcomes (Deci, Vallerand, Pelletier, & Ryan, 1991). Self-Determination Theory has a foundation for intrinsic motivation and proposes that humans maintain a constant need to feel a sense of competence, relatedness, and autonomy (Ryan & Deci, 2000). Cognitive Evaluation Theory, a subtheory of Self-Determination Theory, suggests that autonomy experienced within a learning environment is most crucial to prompting intrinsic motivation (Ryan & Deci, 2000). Intrinsic motivation can be potentially reduced when individuals are subjected to highly controlling learning environments (Reeve, Deci, & Ryan, 2004; Shcunk, Pintrich, & Meece, 2008). When autonomy is experienced within an educational environment and student intrinsic motivation is initiated, student appreciation, understanding, and conceptualization of content is enhanced far more than within a highly controlling environment (Reeve, 2009).

Autonomy in an educational environment is developed when students experience volition, perceived control, internally perceived locus of causality, and desire to continue an activity in the future (Reeve, 2006). Volition refers to doing an activity free from external pressure such as extreme incentives or punishments. An example of volition would be a student participating in an activity because they wanted to do so as opposed to being forcefully pushed to participate. Perceived control involves making conscious decisions that affect the outcome of an activity. Perceived control will typically come in the form of allowing students to choose, plan, and/or control the direction of an activity. Perceived locus of causality identifies an individual's choice to attempt and continue an activity based on internal drive and freedom of action. An example of perceived locus of causality would be the student recognizing a personally meaningful part of an activity before, during, or after an activity. Continuance of an activity often indicates competence developed during the immediate activity (Reeve, 2002). These four elements are proposed to be necessary to provide an autonomous learning context. However, it is up to the teacher to structure these elements that expose students to autonomy within a classroom. According to theory, these elements should subsequently intrinisc motivation learning (Reeve, Bolt, & Cai, 1999).

The third component of this model is breadth of involvement in civic engagement activities. Rarely does one single civic engagement experience significantly change the social beliefs of an individual (Rose-Krasnor, Busseri, Wilooughby, & Chalmers, 2006). Adolescents will "maximize the potential for intrapersonal growth and interpersonal advantages" when they are exposed to a wide breadth of learning situations, each having distinct developmental features (Busseri, Rose-Krasnor, Willoughby, Chalmers, 2006, p. 1322). Participation in a wide breadth of activities may also prevent youth from developing negative feelings based on their experience in a single activity (Fredricks & Eccles, 2006). An example in the context of civic engagement would be a student who felt they had little or no impact on their community during one activity but thought themselves to be very impactful in a subsequent civic engagement activity. The continued exposure to community issues can positively affect student's capabilities to think and act as responsible members of society (Balsano, 2005; Rose-Krasnor, Busseri, Wilooughby, & Chalmers, 2006).

In summary, intrinsic motivation can positively enhance educational outcomes for students. Cognitive Evaluation Theory, a sub-theory within Self Determination Theory, suggests that autonomy experienced within a learning context can lead to an increase in intrinsic motivation that may positively affect learning outcomes. Intrinsic motivation is important in educational settings because it enables students to organize new knowledge using internally meaningful ways, transfer and apply new knowledge to alternative situations, and lead individuals to continue developing and applying skills acquired from the learning context. The programming structure of local FFA chapters provides a unique opportunity for students to develop citizenship skills by experiencing autonomy in a breadth of FFA civic engagement activities. The framework for this study focuses on the effects of autonomy experienced during civic engagement activities, breadth of civic engagement activities, and how autonomy and breadth of these activities influence the development of civic responsibility during FFA civic engagement activities. Figure 1 displays the conceptual model guiding the current study.

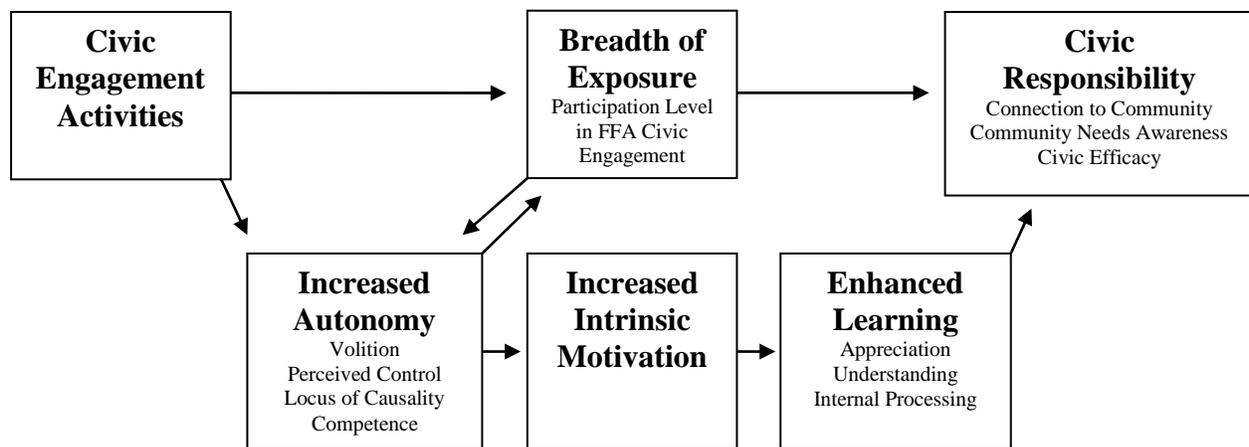


Figure 1. Conceptual model describing the relationships between autonomy, breadth of exposure, and citizenship skill development.

### Purpose/Objectives

FFA provides multiple opportunities for students to plan and conduct civic engagement activities. These activities potentially provide an autonomous learning context for students to develop or enhance citizenship skills such as civic responsibility. The purpose of this study was to examine the effects of student participation in FFA civic engagement activities on students' self perceived level of civic responsibility. Based on the review of literature and the theoretical framework, the following research objectives were developed:

1. Describe student's self perceived level of civic responsibility according to their level of participation in FFA civic engagement activities.
2. Describe the level of autonomy students experienced while participating in FFA civic engagement activities.
3. Describe the relationship between autonomy experienced by students during FFA civic engagement activities and students' self perceived level of civic responsibility.

Two null hypotheses were developed and tested *a priori* at  $p < .05$ :

Ho<sub>1</sub>: There is no statistically significant difference between students' self reported level of civic responsibility when the students' level of participation in FFA civic engagement activities changes.

Ho<sub>2</sub>: There is no statistically significant relationship between autonomy experienced by students during FFA civic engagement activities and students' self perceived level of civic responsibility.

This research follows the guidelines set forth by the National Research Agenda specifically addressing the Research Priority Area 5 of the agricultural education in schools section, "How does student participation in agricultural education programs contribute to premier leadership, personal growth, and career success?" (Osborne, 2007, p.8).

### **Methods/Procedures**

This study utilized a non-experimental, descriptive-correlational research design method. This type of research is often used to gather information from groups of subjects utilizing questionnaires (Ary, Jacobs, & Razavieh, 2008). The target population was all Missouri students enrolled in 32 school-based Agriculture programs with an FFA chapter receiving the National FFA Chapter Award during the 2009-2010 academic school year ( $n = 3336$ ). The selection criterion was access to students enrolled in school-based Agriculture programs with an FFA chapter receiving the National FFA Chapter Award during the 2009-2010 academic school year and was established *a priori*. The National FFA Chapter Award is an award application and can have ambiguous meaning related to overall FFA program effectiveness. However, the researchers believed the National FFA Chapter Award to be the best available indicator that an FFA chapter *had provided multiple civic engagement activity involvement opportunities to students* enrolled in the Agriculture program. All participating FFA chapters offered a range of up to four local civic engagement activities throughout the academic year for student to participate. It should be noted that the National FFA Chapter award criterion was not a quality indicator of the civic engagement activities, but that those activities were available for students.

Nine school-based Agriculture programs were initially identified for reasons of access to the program, cost, and proximity to the University of Missouri providing the researchers an accessible sample of students ( $n = 1043$ ). Eight school-based Agriculture programs agreed to participate providing the researchers an accepting sample of students ( $n = 834$ ). Questionnaires with missing or unusable information were removed from the sample yielding usable sample of ( $n = 767$ ). All other students within the one non-participating program were deemed not accessible by the researchers. Students within these eight programs served as pre-existing defined cohort groups and were viewed as a time and place sample. A time and place sample is used when subjects within a cohort in a given year are reasonably representative of the subjects who are followed over time within the same defined cohort. Inference to the abstract population of past, present, and future students in the eight programs is reasonable assuming the same methods and criteria for FFA programming in each school remains similar across time (Huck, 2008). Therefore, the researchers made the assumption that the results from this study can be

inferred to past, present, and future individuals within the eight defined cohorts and inferential statistics are appropriate (Oliver & Hinkle, 1982).

The researchers created a paper and pencil questionnaire for data collection titled The FFA Civic Engagement Activity Assessment containing three sections. The first section was used to collect student demographic information including gender, ethnicity, age, home setting, GPA, and years of FFA membership. The second section of the questionnaire assessed the level of autonomy students experienced during each FFA chapter civic engagement event activity. The autonomy scale consisted of four constructs with two questions each (eight autonomy scale questions possible for each individual civic engagement activity). The autonomy constructs and each construct's description were (a) volition, the student participated without positive or negative influence from others; (b) perceived control, the student was given opportunities to make important decisions before, during, or after the activity; (c) locus of causality, the student participated because it was internally meaningful to them; and (d) continued involvement, the student had aspirations to continue involvement in that activity in the future on their own (Reeve, 2002). Responses were based on a six-point Likert-type scale with anchors of 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Slightly Disagree*, 4 = *Slightly Agree*, 5 = *Agree*, and 6 = *Strongly Agree*. A higher numeric value indicated a higher level of agreement with each construct.

The third section of the instrument measured the dependent variable of perceived civic responsibility. The Civic Responsibility Scale (Furco, Muller, & Ammons, 1998) was developed to assess student efficacy in their ability to recognize and correct problems in their surrounding community. The civic responsibility scale consisted of three constructs with five questions each. The constructs and each construct's description were (a) connection to the community, students felt they had a relationship with their community; (b) community needs awareness, students felt they could identify existing societal issues; and (c) civic efficacy, students felt they had the skills and ability to influence community issues in a positive way. Responses were based on a six point Likert-type scale with anchors of 1 = *Strongly Disagree*, 2 = *Disagree*, 3 = *Slightly Disagree*, 4 = *Slightly Agree*, 5 = *Agree*, and 6 = *Strongly Agree*. A higher numeric value indicated a higher level of agreement with each construct.

A panel of seven experts consisting of current agricultural education teachers and university faculty examined the questionnaire for face and content validity. Recommended changes were made to the instrument and given back to the panel of experts for a final examination. A pilot test was conducted in October 2010 with a group of students ( $n = 28$ ) enrolled in a school-based Agriculture program with an FFA chapter receiving the National FFA Chapter Award that was not included in the study. The pilot test served to identify needed modification for the final instrument and to estimate reliability of the constructs. The reliability estimates for the autonomy constructs had a Cronbach's alpha range of .71-.83. The reliability estimates for the civic responsibility constructs had a Cronbach's alpha range of .72-.82. Reliability estimates at .70 or above are considered to have an acceptable level of reliability (Nunnally, 1978). The researchers determined the instrument to be a reliable measure of experienced autonomy and self perceived level of civic responsibility.

Data were collected using three points of contact. The researchers contacted the agriculture teachers by telephone to invite schools to participate in the research project and to

gain permission for the researchers to come to each school to collect data directly from students. Agriculture teachers agreed to share information regarding the research with students. Each student, advisor, and administrator gave their consent to participate in the survey. Any student wishing to not participate or terminate their participation during data collection was allowed to do so without penalty. The researchers visited each participating school during the November 2010 to collect data directly from all students within each program. The final contact with subjects was made by agriculture teachers for students who were absent the day the researchers had visited the school to complete the questionnaire and mail them to the researchers. Usable questionnaires were returned from 767 out of 834 students representing a 92% response rate. Students were predominantly male ( $n = 420$ , 54.80%) and were largely White ( $n = 724$ , 94.40%) ranging in age from 14 to 19 years of age. A majority of students identified themselves as living on a farm or in the country ( $n = 495$ , 64.40%) and believed their grades in school to be Mostly A's and B's or above ( $n = 515$ , 67.10%). Most students were in their first or second year of FFA membership ( $n = 511$ , 66.60%), and a majority of students had participated in at least one or more FFA chapter civic engagement activity ( $n = 431$ , 56.20%).

### Results/Findings

Objective One described student's self perceived level of civic responsibility according to their level of participation in FFA civic engagement activities. The mean student civic responsibility scores and standard deviations are displayed by construct and by level of participation in up to four possible activities available for students in the eight chapters (Table 1). Connection to the community had a mean score of 4.64 ( $SD = .86$ ) and a range of 4.49 to 5.25. Community needs awareness had a total mean score of 4.08 ( $SD = 1.03$ ) and a range of 3.93 to 4.73. Civic efficacy had a mean score of 3.93 ( $SD = 1.26$ ) and a range of 3.65 to 4.88.

Table 1  
*Self Perceived Civic Responsibility Scores by Level of Participation in FFA Civic Engagement Activities (n = 767)*

Civic Responsibility Construct	Total (n = 767)		No Activities (n = 336)		One Activity (n = 171)		Two Activities (n = 134)		Three or Four Activities (n = 126)	
	M	SD	M	SD	M	SD	M	SD	M	SD
Connection to Community	4.64	.86	4.49	.91	4.61	.81	4.65	.82	5.10	.68
Community Needs Awareness	4.08	1.03	3.93	.94	4.08	1.37	4.10	.85	4.51	.80
Civic Efficacy	3.93	1.26	3.66	1.05	3.97	1.46	3.95	1.05	4.62	1.43

Note. 1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Slightly Agree, 5 = Agree, and 6 = Strongly Agree.

The null of hypothesis one stated there was no statistically significant difference among students' self perceived level of civic responsibility and students' level of participation in FFA civic engagement activities. The hypothesis was tested using a one-way analysis of variance

(ANOVA) to identify if differences existed among the dependent variable of students' self perceived level of civic responsibility when compared to the first independent variable of student involvement level ranging from 0 to 3-4 FFA civic engagement activities. All civic responsibility constructs were summated to determine if differences existed among levels of participation in FFA civic engagement activities. Significant main effects were found to exist among all constructs of civic responsibility including Connection to Community,  $F(3, 766) = 15.85, p < .05$ ; Community Needs Awareness,  $F(3, 766) = 9.90, p < .05$ ; and Civic Efficacy  $F(3, 766) = 19.02, p < .05$  (Table 2).

Table 2  
*One-way Analysis of Variance of Differences Between Level of Participation in FFA Civic Engagement Activities and Civic Responsibility Construct Scores (n = 767)*

Construct		SS	df	MS	F	p
Connection to Community	Between Groups	33.64	3	11.21	15.85	.01*
	Within Groups	539.65	763	.71		
	Total	573.28	766			
Community Needs Awareness	Between Groups	31.00	3	10.34	9.90	.01*
	Within Groups	796.34	763	1.04		
	Total	827.40	766			
Civic Efficacy	Between Groups	85.18	3	28.39	19.02	.01*
	Within Groups	1138.77	763	1.49		
	Total	1223.95	766			

\* $p < .05$ .

A one-tailed independent samples t-test and Cohen's  $d$  coefficients (1988) were used to examine where differences existed and compare total civic responsibility mean score differences between participation level (Table 3). The connection to community construct mean score comparison of 0 activities to 1 activity revealed a mean difference that was not significantly different ( $t = 1.33, p > .05$ ). The connection to community construct mean score comparison of 0 activities to 2 activities revealed a statistically significant difference ( $t = 1.77, p < .05$ ) and had a negligible effect size ( $d = .18$ ). The connection to community construct mean score comparison of 0 activities to 3-4 activities revealed a statistically significant difference ( $t = 7.67, p < .05$ ) and had a medium effect size ( $d = .78$ ).

The community needs awareness construct mean score comparison of 0 activities to 1 activity revealed a mean difference that was not statistically significant ( $t = 1.25, p > .05$ ) and had a negligible effect size ( $d = .13$ ). The community needs awareness construct mean score comparison of 0 activities to 2 activities revealed a statistically significant difference ( $t = 1.92, p < .05$ ) and had a negligible effect size ( $d = .19$ ). The community needs awareness construct mean score comparison of 0 activities to 3-4 activities revealed a statistically significant difference ( $t = 6.62, p < .05$ ) and had a medium effect size ( $d = .66$ ). The civic efficacy construct mean score comparison of 0 activities to 1 activity revealed a statistically significant difference and had a small effect size ( $d = .25, p < .05$ ). The civic efficacy construct mean score comparison of 0 activities to 2 activities revealed a statistically significant difference ( $t = 2.46, p$

< .05) and had a small effect size ( $d = .30$ ). The civic efficacy construct mean score comparison of 0 activities to 3-4 activities revealed a statistically significant difference ( $t = 6.88, p < .05$ ) and had a large effect size ( $d = .80$ ).

Table 3

*One-tailed Independent Sample t-test of Student Civic Responsibility Construct Mean Scores by Level of Participation in FFA Civic Engagement Activities (n = 767)*

Construct	Participation Level Comparison	n	M	SD	t-value	p-value	Cohen's d	
Connection to Community	0 Activities	336	4.49	.91	1.33	.09	.13 <sup>a</sup>	
	1 Activity	171	4.61	.81				
	0 Activities	336	4.49	.91	1.77	.04*	.18 <sup>a</sup>	
	2 Activities	134	4.65	.82				
	0 Activities	336	4.49	.91	7.67	.01*	.78 <sup>c</sup>	
	3-4 Activities	126	5.10	.68				
Community Needs Awareness	0 Activities	336	3.93	.94	1.25	.11	.13 <sup>a</sup>	
	1 Activity	171	4.08	1.37				
		0 Activities	336	3.93	.94	1.92	.03*	.19 <sup>a</sup>
		2 Activities	134	4.10	.85			
		0 Activities	336	3.93	.94	6.62	.01*	.66 <sup>c</sup>
		3-4 Activities	126	4.51	.80			
Civic Efficacy	0 Activities	336	3.66	1.05	2.46	.01*	.25 <sup>b</sup>	
	1 Activity	171	3.97	1.46				
		0 Activities	336	3.66	1.05	2.71	.01*	.30 <sup>b</sup>
		2 Activities	134	3.95	1.05			
		0 Activities	336	3.66	1.05	6.88	.01*	.80 <sup>d</sup>
		3-4 Activities	126	4.62	1.43			

Note. Effect size determined by Cohen, J. (1988).

<sup>a</sup> Negligible effect size, <sup>b</sup> Small effect size, <sup>c</sup> Medium effect size, <sup>d</sup> Large effect size

\* $p < .05$ .

The null of hypothesis one stated there was no statistically significant difference among students' self perceived level of civic responsibility and students' level of participation in FFA civic engagement activities. As a result of the findings, the first null hypothesis was rejected.

Objective Two described the level of autonomy students experienced while participating in FFA civic engagement activities. Autonomy experienced by students during FFA civic engagement activities was the second independent variable used to explain the variance in the

dependent variable of self perceived level of civic responsibility. This was measured with the constructs of autonomy: continued participation in the activity, locus of causality, perceived control, and volition. Table 4 displays the descriptive statistics of summated autonomy constructs experienced by students during FFA chapter civic engagement activities. Continued participation had a mean score of 5.36 ( $SD = .60$ ) and a range of 1.00 to 6.00. Locus of causality has a mean score of 4.88 ( $SD = 1.31$ ) and a range of 1.00 to 6.00. Perceived control had a mean score of 3.43 ( $SD = .86$ ) and a range of 1.00 to 6.00. Volition had a mean score of 3.38 ( $SD = .80$ ) and a range of 1.00 to 6.00.

Table 4  
*Summated Autonomy Construct Scores Reported by Students during FFA Chapter Civic Engagement Activities (n = 431)*

Construct	<i>M</i>	<i>SD</i>	Range	
			Minimum	Maximum
Continued Participation	5.36	.60	1.00	6.00
Locus of Causality	4.88	1.31	1.00	6.00
Perceived Control	3.43	.86	1.00	6.00
Volition	3.38	.80	1.00	6.00

*Note.* 1 = Strongly Disagree, 2 = Disagree, 3 = Slightly Disagree, 4 = Slightly Agree, 5 = Agree, and 6 = Strongly Agree.

Objective Three described the relationship between autonomy experienced by students during FFA civic engagement activities and students' self perceived level of civic responsibility. All constructs of autonomy and civic responsibility were summated and correlated using a Pearson-product moment correlation (Table 5). A statistically significant positive correlation with a substantial effect size was found between locus of causality and connection to community ( $r = .52, p < .05$ ). Statistically significant positive correlations with a moderate effect size were found between locus of causality and community needs awareness, locus of causality and civic efficacy, continued participation and connection to community, perceived control and community needs awareness, perceived control and connection to community, perceived control and civic efficacy, and continued participation and community needs awareness ( $r = .34$  to  $.46, p < .05$ ). Statistically significant positive correlations with a low effect size were found between continued participation and civic efficacy, volition and community needs awareness, volition and connection to community correlated, and volition and civic efficacy ( $r = .14$  to  $.29, p < .05$ ).

The null of hypothesis two stated there was no statistically significant relationship between autonomy experienced by students during FFA civic engagement activities and students' self perceived level of civic responsibility. As a result of the findings, the second null hypothesis was rejected.

Table 5

*Pearson Product-Moment Correlation Coefficient between Summated Autonomy Constructs and Summated Civic Responsibility Constructs (n = 431)*

	Connection to Community		Community Needs Awareness		Civic Efficacy	
	<i>r</i>	Effect Size	<i>r</i>	Effect Size	<i>r</i>	Effect Size
Volition	.14*	Low	.15*	Low	.14*	Low
Perceived Control	.36*	Moderate	.40*	Moderate	.35*	Moderate
Locus of Causality	.53*	Substantial	.46*	Moderate	.42*	Moderate
Continued Participation	.41*	Moderate	.34*	Moderate	.29*	Low

*Note.* Effect size determined by Davis (1971).

\* $p < .05$ .

### Conclusions/Implications/Recommendations

Some limitations to the current study must be acknowledged. Caution must be used when interpreting the findings of this study. First, correlation does not equate to causation. This study was a one place in time measure and does not imply that only FFA civic engagement activity involvement caused students civic responsibility scores to increase. Secondly, these findings can only be generalized to the target population of Missouri FFA chapters receiving the FFA National Chapter Award in 2009-2010 due to the sampling procedures. Future research should be conducted on a larger scale so findings can be generalized to larger populations. Finally, it must be acknowledged that the sample was chosen from the Missouri FFA National Chapter Award recipients for the 2009-2010 school year. The researchers used this award as an indicator of FFA chapters that provide numerous FFA civic engagement activities in which students can become involved. Four civic engagement activities were the most any one chapter offered to students. There may be FFA chapters not receiving this award that provide students with a similar amount or type of civic engagement activities.

Objective One described student's self perceived level of civic responsibility according to their level of participation in FFA civic engagement activities. The first hypothesis tested whether statistically significant differences existed among students' level of civic responsibility as level of participation in FFA civic engagement activities varied. Significant differences existed among students' levels of civic responsibility when compared to students' level of participation in civic engagement activities. Students with no participation in FFA civic engagement activities had the lowest levels of civic responsibility. Additionally, an increase in level of participation in FFA civic engagement activities revealed an increase in students' level of civic responsibility. Participation in one or two civic engagement activities can be beneficial for the development of civic responsibility. However, civic responsibility development appears to be maximized when students become involved in three or more civic engagement activities. It was concluded that students who became increasingly involved in FFA civic engagement activities also demonstrated a higher level of self perceived civic responsibility. This conclusion supports previous research highlighting increased student development resulting from increased breadth and intensity of involvement in service oriented activities (Hamilton & Fenzel, 1988; McMahan, Singh, Garner, & Benhon, 2004; Rose-Krasnor, Busseri, Willoughby, & Chalmers,

2006; Denault, Poulin, & Pedersen, 2009). This finding implies that “more is better” concerning FFA civic engagement activities. If FFA advisors are going to provide these experiences with the intent of developing civic responsibility, they need to offer three or more activities.

Objective Two described the level of autonomy students experienced while participating in FFA civic engagement activities. Objective Three described the relationship between autonomy experienced by students during FFA civic engagement activities and students’ self perceived level of civic responsibility. Objectives Two and Three were used to test the second hypothesis of whether or not a statistically significant relationship existed between autonomy experienced during FFA civic engagement activities and students’ level of civic responsibility. It was concluded that statistically significant positive relationships existed between all autonomy construct scores and all civic responsibility construct scores. This conclusion aligns with a broad range of empirical research supporting the benefits of incorporating autonomy into educational settings (Deci & Ryan, 1985; Deci & Ryan, 2000; Parker et al., 2009; Reeve, 2009; Ryan & Deci, 2000; Sibthorp, Paisley, Gookin, Furman, & Nate, 2008). It can be further concluded that the largest positive correlation was found between locus of causality and connection to community. In other words, when students were able to participate in civic engagement activities that were of internal personal importance, students demonstrated a stronger bond with their immediate community. This conclusion is consistent with that of Pearce and Larson (2005) who identified internal meaningfulness as a precursor to development occurring during civic engagement.

A clear implication can be made based on this finding. Autonomy undoubtedly enhances students’ civic responsibility development during FFA civic engagement activities. Students will have an enhanced learning experience if they can participate in an activity free from extreme rewards or punishments, play a role in planning or controlling the progress of the activity, and experience competence that translates into continued involvement in the activity. It can be further implied that civic responsibility is maximized when the civic engagement activity itself has an internal meaningfulness to the individual student. FFA programs can potentially provide a unique opportunity for adolescent youth that combines autonomy and citizenship skill development activities within their immediate communities.

Several practical recommendations can be made for Agriculture teachers and FFA advisors. Providing multiple civic engagement activities can enhance the development of citizenship skills such as civic responsibility. More specifically, it is recommended that practitioners provide three or more civic engagement activity opportunities if citizenship skill development is a priority of the program. However, we don’t know when students’ level of participation in FFA civic engagement activities is “too much” and reaches a point of diminishing returns. The programs in this study offered a maximum of four activities; at what level of participation beyond four activities do significant civic responsibility scores cease to be significantly different? Agriculture teachers should take these benefits into consideration when working with students, parents, administrators, and community leaders to plan and design FFA chapter activities. The researchers recommend longitudinal investigation of the same data sample to identify changes over time among students’ participation in FFA civic engagement activities, level of experienced autonomy, and self perceived civic responsibility.

Situating learning environments around autonomous approaches can have numerous positive effects for students (Reeve, 2009). Practical implementation of autonomous experiences during civic engagement could include reducing extreme incentives or coercions for student participation; allowing students to play active roles in identifying, choosing, and carrying out the civic engagement activity; structuring the activities so that students find the experience personally meaningful; and striving to provide activities that have outcomes from which students can evaluate their own competence. However, it is ultimately the responsibility of the teacher/FFA advisor to incorporate these autonomous strategies during civic engagement activities as well as other activities that can be enhanced with intrinsic motivation. It is recommended that professional development be implemented to help current and future teachers acquire the skills necessary to implement autonomous strategies effectively.

The National FFA Organization continues to be one of the largest youth organizations in the United States (National FFA Organization, 2011). FFA provides multiple opportunities in a variety of contexts for youth development to occur (Phipps, Osborne, Dyer, & Ball, 2008). The current study was intended to provide better understanding of how civic engagement activities transpire in rural FFA chapters. Agricultural educators at all levels of the agricultural education profession should continue to investigate, understand, and implement effective FFA programming strategies for FFA to continue serving as an effective context for youth development.

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The Relationship between Student Involvement in FFA Chapter Civic Engagement Activities, Experienced Autonomy, and Self-Perceived Civic Responsibility

Critique  
Robert A. Martin

The paper describes an interesting study focused on civic engagement. This paper was associated with the previous paper on the same subject but with a different objective. The authors did a good job of setting the stage for the study including a strong introductory statement and an extensive theoretical and conceptual framework. The authors established a strong justification for the study and tied it to the national research agenda in agricultural education. The design of the study appears to be appropriate and the findings were described thoroughly and were supported by a review of the literature.

The authors are correct in suggesting caution when considering the importance of the findings to a broader context. This was one study in one state at one time focused on National Chapter award criterion, which may or may not have anything to do with civic engagement. We don't know how students from chapters not awarded the National Chapter award would score.

There are a few questions to be addressed based on this study.

1. Some students were 14 - 19 years of age, did you have parental permission for students 17 or under? How was consent handled through your institutional human subjects research office for students under 18 years of age?
2. Since you used the National Chapter criterion in this study, isn't there a bias or direct expectation that there will be the likelihood of a greater number of civic engagement activities conducted by these chapters?
3. When you report "more is better" do you imply that more is learned or that there is a likelihood of scoring higher on the questionnaire's scales? What does "more is better" mean exactly?
4. What is meant by "increased student development?"
5. Isn't it true that if students have a choice in selecting the activities in which to participate, they have a deeper appreciation for that involvement? How many of these National Chapter award programs presented a choice to students or planned activities that called for students to conduct pre-determined activities because the chapter conducts these activities each year?

## **The Meaning Ascribed to Rural FFA Chapter Civic Engagement Activities**

William A. Bird, University of Missouri  
Anna Henry, University of Missouri

*Civic engagement activities are believed to have numerous positive benefits and are often offered within public schools to enhance students' citizenship skills. However, youth in rural schools experience civic engagement opportunities less often than youth in urban or suburban settings. School based agriculture programs and FFA chapters are most often located in rural areas, and can be an important vehicle for rural youth to develop citizenship skills. The National FFA Organization provides civic engagement opportunities through a range of local FFA chapter activities. This would lead one to conclude that FFA civic engagement activities may provide unique citizenship skill enhancement opportunities for rural youth that may not be experienced elsewhere. This collective case study sought to explore the experiences of students and FFA advisors within three rural agriculture programs providing multiple civic engagement opportunities. Three themes emerged across cases which include making connections with community and adults, experiencing authentic and transformational learning, and a broad outreach. Recommendations are made concerning future FFA program delivery strategies and directions for research related to civic engagement as it occurs in agricultural education.*

### **Introduction**

Civic engagement is the participation in community activities that unite human efforts and resources toward identifying and fixing existing community problems (Camino & Zeldin, 2002; Jans, 2004). Civic engagement can occur in many forms, including helping other community members in need, community issue advocacy, or leadership roles within the community (Camino & Zeldin, 2002). Individuals form stronger bonds with other community members, enhance the sense of pride felt towards their community, and increase their concern for improving the status of the community during civic engagement activities (Flanagan & Faison, 2001). Short-term results of civic engagement can include increased community stability, feelings of equality among members within a community, and advocacy for problems which exist in a community (Langston, 1987). Additionally, the long term effects of civic engagement include both improvement of the community and citizens within the community. This is considered by researchers to be crucial to the betterment of American society (Hart & Atkins, 2002; Langston, 1987).

Citizenship skill development through civic engagement has become an increasingly larger component within public schools throughout the United States (Mohamed & Wheeler, 2001). Approximately 83% of all U.S. public high schools provide some form of civic engagement opportunities to students (Skinner & Chapman, 1999). These findings indicate that a large population of public secondary school students has the opportunity to become involved with civic engagement activities. However, only 46% of students in rural schools are provided school sponsored civic engagement opportunities (Skinner & Chapman, 1999). This disparity is often due to a lack of organized and accessible civic engagement outlets available to youth in rural schools (Hart & Atkins, 2002); therefore, rural youth are less likely to experience a valuable learning opportunity through civic engagement.

The National FFA Organization historically and currently claims to develop citizenship skills in student members through FFA civic engagement activities (National FFA Organization, 2010). Enhanced citizenship skill development is reported through many official statements of the National FFA Organization. The National FFA Organization lists 11 specific objectives to accomplish the mission statement, three of which are related to citizenship skill development: encouraging wise management of the community's economic, environmental and human resources; building character and promotes citizenship, volunteerism and patriotism; and promoting cooperation and cooperative attitudes among all people (National FFA Organization, 2010, p. 5). The FFA motto expresses the importance of helping others stating, "Learning to do, doing to learn, earning to live, living to serve" (National FFA Organization, 2010, p. 17). These statements would lead one to consider citizenship skill development an outcome of involvement in the National FFA Organization.

The positive effects of civic engagement activities have been investigated in agricultural education as well. Undergraduate students were found to have a heightened sense of "understanding and acceptance of other ethnicities and cultures" resulting from a course linked service learning activity (Webster & Hoover, 2006, p. 98). FFA members involved with the National FFA Organization's project to aid the gulf coast following hurricane Katrina believed they and their FFA chapter's image in the community had improved while developing relationships with members of the community (Horstmeier & Ricketts, 2009). Civic engagement activities had positive effects on leadership skill development of 4-H youth, especially when reflection followed the activity (Stafford, Boyd, & Lindner, 2003). However, none of the existing literature has specifically addressed civic engagement experienced by youth in rural FFA programs.

A gap seems to exist in civic engagement activity outlets available for students in rural schools. Approximately 84% of school-based agricultural education programs and FFA chapters are located and serve students in rural areas of the United States (Team Ag Ed Report, 2006). FFA chapters in rural school-based agriculture programs, and FFA sponsored civic engagement opportunities, can potentially fill the existing civic engagement gap for rural students. These opportunities potentially provide a unique learning experience for rural students who may not have these experiences elsewhere. Despite the National FFA Organization's significant emphasis on citizenship skill development, little research has explored this area of youth development. Thus, a study examining student's experiences during rural FFA chapter civic engagement activities is warranted.

### **Review of Literature/Conceptual Framework**

In an ever changing world, it is crucial for students to understand how to productively function inside the school environment and society (Larson, Wilson, Brown, Furstenberg, & Verma, 2002). School-based civic engagement activities are conceptually thought to develop students' citizenship skills and sense of responsibility for their community (Zeldin, 2000). Many scholars have sought to identify the inherent development of students who participate in civic engagement activities. Service activities have been found to increase students' sense of responsibility, helped them to understand the demands necessary to plan and complete complex

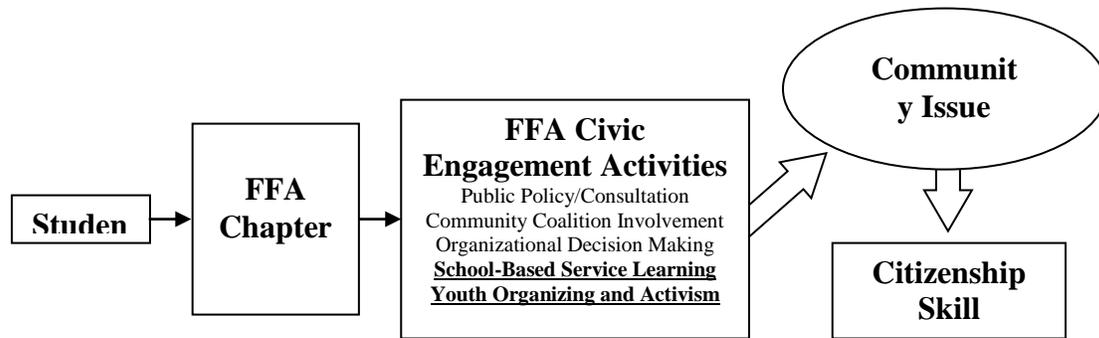
tasks, and build awareness that one's actions can affect others (Wood, Larson, & Brown, 2009). Civic engagement activities have been found to help students transcend their current status by giving them the ability to realize they could positively impact community problems (Conrad & Hedin, 1983). Civic engagement aids in student identity formation by 1) exposing students to situations requiring attention and effort towards a common goal over a long period of time; 2) understanding the importance of controlling impulses, feelings, and stress; and 3) forming new connections with peers and adults through social interactions outside the students' immediate "inner circle" (Larson, Hansen, & Walker, 2005; Yates & Youniss, 1996).

The most important component of citizenship education is the existence of "meaningful and desirable opportunities for action in the community" (Watts & Flanagan, p. 786). Five structured pathways for youth civic engagement commonly utilized include:

- public policy/consultation pathways, where youth serve in leadership roles with public leaders/policy makers to direct community decisions;
- community coalition involvement pathways, where youth serve as a voice for community problems to public leaders/policy makers;
- youth in organizational decision making pathways, where youth serve in decision making roles within community civic organizations;
- school-based service learning pathways, where classroom learning is linked to solving problems that exist within a community; and
- youth organizing and activism pathways, where youth organizations work with school and community resources to create positive action and change within the community and youth simultaneously (Camino & Zeldin, 2002, pp. 215-218).

Although all five pathways differ in their approach, FFA civic engagement activities could be potentially classified into any of these pathways. As an intra-curricular component of the agricultural education model, FFA civic engagement activities might be classified as a service learning pathway when connected to agriculture curriculum (Phipps, Osborn, Dyer, & Ball, 2008). FFA civic engagement activities can take on characteristics of public policy pathways, community coalition involvement pathways, or youth in organization pathways if the FFA chapter works with community leaders or organizations to solve community problems. Despite the potential flexibility, FFA civic engagement activities would most often be classified as a youth organizing and activism pathway due to the organization being a student led entity (National FFA Organization, 2010).

Civic engagement activity experience is intended to enhance the students' citizenship skills (National FFA Organization, 2010). The researchers developed a conceptual model (Figure 1) based on the literature review to explain how youth experience civic engagement within the context of a rural FFA chapter.



*Figure 1. Conceptual Model of Student Experience in FFA Civic Engagement Activities*

Students can experience a variety of civic engagement pathways through FFA chapter civic engagement activities but most often take on characteristics of school-based service learning or youth organizing and activism due to the structure of FFA programming (Camino & Zeldin, 2002). FFA civic engagement activities expose students to community issues and allow students to acquire and exercise the abilities to solve community issues (Camino & Zeldin, 2002; Jans, 2004). These events are theorized to enhance students’ citizenship skills and are especially important learning experiences for students in rural areas who have few or no other outlets for civic engagement (Balsano, 2005). FFA chapters in rural areas can and do currently provide student opportunities to become involved with civic engagement activities that may otherwise not be experienced by the student (National FFA Organization, 2010; Team Ag Ed, 2006). This qualitative case study served to inform stakeholders, agricultural education teachers, and teacher educators about the experiences of individuals associated with rural FFA chapter civic engagement activities.

### **Purpose of the Study**

The purpose of this collective case study was to explore the experiences of students and FFA advisors participating in FFA sponsored civic engagement activities in three rural agriculture programs. This study was guided by the following central question: What meaning do students and teachers ascribe to FFA chapter civic engagement experiences? This research follows the guidelines set forth by the National Research Agenda (Osborne, 2007), specifically addressing the Research Priority Area 5 of the agricultural education in schools section, “How does student participation in agricultural education programs contribute to premier leadership, personal growth, and career success?” (p.8).

### **Methodology**

The current study adopted an intrinsic collective case study investigation to illustrate the meaning of FFA chapter civic engagement activities across multiple rural agriculture programs. Case study allows the researcher to access how the subjects view the world as well as the meaning they place on phenomena by utilizing subjectivity and reflexivity throughout the data collection, analysis, and interpretation process (Stake, 1995). The collective case study design allowed the researchers to explore the common topic of civic engagement through cross-site

analysis to provide a broader understanding of common phenomena as it occurs in differing rural FFA chapters (Yin, 2009).

Participants in the three case schools were all purposefully selected school-based agriculture programs located in central Missouri during the 2010-2011 academic school year. Schools were identified through the Missouri FFA Association by first searching FFA chapters recognized as National Chapter Award recipients. The researchers asserted the FFA National Chapter Award provided an indication of FFA chapters currently providing multiple community service activities to students, as the application was comprised of pictures and descriptions of these activities. Cases were then selected based on their location in a community of 10,000 residents or less. Programs meeting these criteria were then selected based on their proximity to researchers at the University of Missouri. Additionally, the current study was part of a larger mixed methods research project. Students at each case school who were seniors and who had participated in at least three or more of the FFA chapter civic engagement activities during the 2010-2011 academic school year were invited to participate in the study ( $n = 27$ ). Nineteen of the 27 students agreed to participate. The agriculture teacher(s) who also served as FFA chapter advisor(s) ( $n = 7$ ) were invited to participate in the study. Case schools are identified by pseudonyms to protect the identity of participants. The student participants were almost equally split between male and female, all were Caucasian, most were currently an FFA officer, and all were from rural home settings. The teacher participants were mostly male, all were Caucasian, and had worked as a agriculture teachers from 4 to 20 years. Table 1 displays a summary of descriptive characteristics for each case.

Table 1  
*Description of Cases and Participants within Cases*

Characteristic	Case 1 Clarion FFA	Case 2 Preston FFA	Case 3 Smithton FFA
Students Participating in Current Study	6	7	6
Agricultural Education Teachers	4	2	1
Students Enrolled in Agriculture	212	122	62
FFA Chapter Membership	212	87	60
Population of Surrounding Community	9096	3116	5834
School Enrollment Grades 9-12	662	186	293
Free/Reduced Lunch Grades 9-12	37%	30%	31%

The researchers went to each case and collected data by interviewing 19 students and seven teachers, collecting multiple program documents, performing field observations, and having participants complete a paper and pencil questionnaire to provide demographic information. All interviews were tape recorded, following a semi-structured protocol while also engaging participants in probing questions that evolved throughout data collection. Interviews were later transcribed verbatim. All observations were recorded as field notes and then typed as logs. Six documents describing each case's FFA civic engagement activities were also analyzed. All transcripts, logs, and documents were assimilated into a single document, over

5,000 lines of data, which facilitated data analysis. The researchers individually read and coded all data, then collectively created a matrix of emergent themes and sub-themes. The researchers operated under a constructivist epistemology that emphasized openness in data coding and preserving multiple realities (Creswell, 2007). Themes and subthemes were used to create an overall depiction of the experiences across all three cases.

The researchers utilized several standards of validation to increase credibility of the findings. Data source triangulation was utilized by cross referencing all data sources in an attempt to form meaning from similarities across cases (Stake, 1995). Triangulation was also upheld by maintaining through collecting and analyzing multiple forms of data from a variety of sources. Credibility was addressed as researchers maintained a case study data base and chain of evidence that was updated throughout data collection (Yin, 2009). Peer examination and collaborative research were maintained by regular meetings and collaboration with an advising agricultural education faculty member throughout the research project (Merriam, 1988). Detailed descriptions of participant's experiences provided an ability to make generalizations back to their experiences (Stake, 1995). The researchers acknowledged previous experiences to clarify personal bias that may have influenced data interpretation (Creswell, 2007). All researchers have extensive prior experience within the agricultural education profession and National FFA Organization as students and teachers.

## **Findings**

Three major themes emerged regarding the experiences of students and teachers in rural areas participating in FFA sponsored civic engagement activities including student connections with the community and adults, authentic and transformational learning, and a broad outreach.

### **Theme 1: Student Connections with the Community and Adults**

Students and FFA advisors from all three cases identified civic engagement activities as a way for students to acquire resources in the community which could be valuable later in life. The experiences were viewed as a means to establish relationships and forms of future resources that may help the students advance once they became a member of the community. A student from Preston said, "...it's worth making friends with the community. This is where we live, and these are the people we'll be working with and doing business with everyday. At least for a while." A young lady from Smithton described her experience as a means to create a "social network" with community leaders that could possibly assist her when entering a career later in life. A Preston advisor saw the experience as an opportunity to force students to make connections with leaders in the community. He said, "It's a true life preparation. You have to work with people, and that will help them in future relationships and job relationships..."

One student viewed the experience as a means to remove communication barriers that existed between adults in the community and students who participated in civic engagement activities simultaneously remarking, "We've got so many connections now. You see anybody in town you've worked with [during a civic engagement activity], you pretty much know them... you can talk to them." Some students believed the experience created feelings of trust between adults and youth because it "builds a name for yourself" in the community. The local news

media reported extensively during one FFA civic engagement activity at Smithton. The students and advisor felt this experience fostered a “strong attachment to their community.”

Students within each FFA chapter felt the experience had provided an opportunity to change or improve the opinions of community members concerning youth. A student from Smithton stated, “We put this together, we wanted to do this. It shows that [youth] do care.” One student from Clarion said, “We’re always in the newspaper [for civic engagement activities] so people always have something positive to say. It’s like your reassurance that you did something positive...” One young lady from Smithton expressed feelings of being taken more seriously by adults once the adults knew she had taken part in civic engagement activities. The student stated, “People write high schoolers off a lot as being immersed in their own problems... but because we do so much... [community members] treat you like an adult because you care about [community issue].” The advisor from Preston FFA stated, “When you are more fortunate, you should be helping out with those who are less fortunate. And [FFA chapter] is in a position where we can do that... it really changes how people view students.” Several students noted expressions of gratitude and praise from community members continued to be received long after the civic engagement resulting in positive feelings. One student from Smithton said, “I still hear people talking about [civic engagement activity] and saying ‘Thank you!’ ... that is really cool.”

Students and advisors both demonstrated feelings that the experiences had been mutually beneficial for strengthening their relationship with one another. Students explained that they had an opportunity to form closer relationships with the FFA advisor because they could see a more caring side to the person which had not been experienced previously. After working with the advisor conducting a project raising money to buy toys for underprivileged families in the community, a Preston student saw a different side to their advisor, saying:

I know [teacher’s] feelings. The night that we went to get the toys, he was debating about getting a bike for a kid, like ‘This boy is getting a bike, the girls should get one too. We have the money, we’re going to do this.’ And he was so happy, it was just overwhelming seeing the happiness that he got from helping someone like that.

An advisor from Clarion had a similar thought saying, “... because we have extra time with them [during civic engagement activities]... they show us that side of themselves, a lot deeper, a lot stronger than what they show other teachers.” A student from Smithton described her advisor as “... not only an advisor, she’s like a mentor...” because the student and teacher had forged a stronger relationship during multiple civic engagement activities. Another student from Preston thought the relationship with the advisors during civic engagement activities was “... special because they help us find that ‘extra gear’... they’re depending on me, I don’t want to let them down.” Advisors from Preston and Smithton both mentioned how crucial it was to “stay as positive as possible” and maintain an attitude that the activity was “important and you are excited about it” when working with students during civic engagement activities.

## Theme 2: Authentic and Transformational Learning

Expressions of personal change resulting from FFA civic engagement activity experiences were mentioned several times by students and advisors alike, across all cases. Advisors tended to see the experience as an opportunity for students to become a more aware as a community member. The Clarion advisor suggested “We’re more opening their eyes... we’re just exposing the kids to what real life is like and that they’ve actually seen it and they understand it somewhat,” The Smithton advisor commented similarly with, “I’d like to say that all of it is an internal desire to help people. But they’re high school students...that desire on the inside evolves over time.”

Many students believed the experience to have almost immediate effect on how they perceived themselves and their community. “This really opened my eyes... sometimes I complain because I want a new pair of jeans or something. And it’s really selfish when you think about it, because some kids don’t have jeans at all,” reflected a student who recently worked with the FFA chapter’s annual Christmas Family Adoption program. A student from Clarion discussed his experience working with a local food bank the previous summer and how it had affected his outlook:

It makes you know you have it good... It was so hot, I was drenched in sweat. But I wasn’t going to complain, because other people don’t get to eat. I get to eat three meals a day. They don’t get to eat.

Advisors and students made reference to how helping others in the community often appeared difficult or nearly impossible before a civic engagement experience, but the experience within FFA civic engagement activities helped students realize helping others was a task not impossible to achieve. The Smithton advisor commented, “The greatest thing to see is that ‘I can do this’ look on their face.” A student from Clarion said, “I think that doing community service has made me realize that it’s so easy to give back a little bit to the community.” One student from the Preston chapter shared her realization experienced during the chapter’s community wide recycling drive:

[FFA advisor] was like, ‘we have to get this done.’ And I think everybody maybe ... realized we had an extra gear. No one else was going to do this. We had to get this done. So we had to find it in ourselves to get that project done. And we had to do it for...4 more days after that. But when you realize that you have to get something done within the community, and no one else is going to do it, it just drives you that much harder.

Students and advisors both mentioned FFA civic engagement activity experiences provided physical or measurable outcomes when the activity was finished. Some participants spoke of being able to actually see and meet those people in the community they had helped, while other FFA civic engagement activities provided tangible results such as dollar amounts raised for charities. One student from Preston commented on the opportunities to see the tangible outcomes of his efforts during various FFA civic engagement activities saying, “I always felt better after [civic engagement activity] and you literally helped them, that is just a

great feeling. There's a feeling of achievement. Like with [recycling project], there was a huge pile." An advisor from Preston made similar comments, referring to students being able to visually see what they had accomplished during a Christmas fundraiser:

... to some of our students, \$600 is a lot of money, but it's not really. And we can fill the bed of a pickup truck with items going to 15 or 20 families, and when it hits them, that's pretty powerful.

Experiences during FFA civic engagement experiences were often compared to experiences in other organizations that did not provide students a tangible outcome that they could see or observe. A student from Clarion shared her experience from a non-FFA civic engagement activity:

During the summer, I help at the car show. That's community service. I don't get anything out of it... but it's a lot different because it's just a whole bunch of rich people with nice cars. Doing the community service at FFA you get to see what you're doing, and how people appreciate it. At the car show, if you don't get something for someone they get mad. At FFA, they appreciate it.

A student from Clarion discussed his extensive participation with his local church's community service, but noted the distinct difference to the experience in his FFA chapter saying, "Like at church, we give money, but unless you're the person getting the money, you don't really know what's going on. At FFA, you get to see how what you did is affecting people." The advisor from Smithton also described the experiences during FFA civic engagement activities as, "A pure sense of accomplishment... in community service they can see it and know it...that they made an impact."

A student from Smithton spoke of peers who had never been involved with the agriculture program or FFA civic engagement activities stating, "I feel like I have friends who don't think twice about people not having food or other necessities, they just don't think about it. They just haven't been able to have the [civic engagement] experience that we've had." One of the advisors from Clarion spoke about how the FFA chapter provided civic engagement outlets that are rarely or never experienced by students outside the program:

But I do believe that in today's society I believe that it's somewhat sad that organizations like ours have to show them that, because they're not getting it at church, we do have parents that think they need to be paid to do some of the stuff that we do. [Students] grow up and it's "What's in it for me first?" and it takes us to show them that what's in it for you is some kind of reward that's not financial.

### **Theme 3: A Broad Outreach**

The unique programming structure of FFA civic engagement activities was discussed by participants in each case. Students often viewed FFA civic engagement activities as a broader, more diverse range of activities in which they could participate. One student from Clarion said, "Like in Student Council we do community service, but it's all for Special Olympics... but in

FFA, it's a broader range of [civic engagement] activities." When a Preston student was asked to compare the service activities in FFA to those in other organizations, she identified the "... sheer amount of time that we put into it year round..." as the most unique part of the FFA chapter's civic engagement activity structure. A student from Smithton said:

"You can ask any other club, they'll say that FFA is our biggest one here in the community. Most of the other clubs have a main [civic engagement] event... FFA goes the whole year, even in the summer. We've got stuff going all the time.

Many advisors believed the broad range of civic engagement activities to be an opportunity for more students to become involved with their FFA chapter, in addition to helping improve the community. The Clarion advisor remarked, "If you really break that down, a small group of them get to see above the local level [career development events]. But, everybody can become involved in all of our service activities." The Preston advisor commented on student participation in FFA civic engagement activities saying, "... there's some kids who... maybe they've been on a contest team once, but don't want to ever do it again. But when it's time to pick up trash, they're there every time."

Students and advisors in each case attested to the fact that the FFA chapter was providing a civic engagement opportunity that other students in the school seldom experienced. When referring to his FFA civic engagement experiences, one student at Preston said:

We've gotten a taste of it, a good dose of it. A lot of people don't experience that in high school, or ever, for what it feels like to help people. And I think whatever we end up doing, in school or careers... in our community, we'll remember what it feels like and we'll want to keep going.

### **Discussion and Recommendations**

This collective case study explored the experiences of students and FFA advisors within three rural FFA chapter civic engagement activities. Findings revealed three common emerging themes across all cases. Limitations to these findings must be acknowledged. Caution must be used when interpreting the findings, as they can only be applied to the cases included in this study. However, the findings may be helpful to understanding FFA programming in similar settings.

The first theme described the connections made with the community and adults as a result of participation in FFA civic engagement activities. Students and advisors viewed the experience as a means to form relationships with resourced adults in the community that could potentially help students in the future. Participants from each case recognized the mutual benefits of the deeper connection formed between students and FFA advisors during FFA civic engagement activities. Furthermore, it was found that participants in all cases viewed the experience as a means to enhance or improve the community's perception of youth's role within the community. It can be concluded that the experience within rural FFA civic engagement activities led to the creation or enhancement of numerous youth-adult relationships within the school and immediate community. The relationships created a feeling of student empowerment

for their future, gave students an opportunity to learn from adults in the “real world,” and helped youth feel that they were responsible contributors to the community. This conclusion supports numerous researchers who have proposed positive youth-adult relationships are developmentally beneficial as adolescents begin to explore the world beyond their home and school (Larson, Hansen, & Walker, 2005; Yates & Youniss, 1996; Zeldin, Larson, Camino, & OConnor, 2005). An implication is that these relationships can help students link classroom learning to real world applications as well as better develop humanistic skills usable throughout their lives (Astin, Vogelgesang, Ikeda, & Yee, 2000; Stukas, Clary, & Snyder, 1999; Sullivan & Larson, 2010). It is recommended that FFA programming continue to provide students with civic engagement activities that facilitate the development of youth-adult partnerships within the school and community. Further research should look more specifically at the process of youth-adult relationship formation within agriculture programs and surrounding communities. In addition to investigating how these relationships are formed, research on the outcomes of positive youth-adult relationships could reveal long term effects of agricultural education programs.

The second emergent theme described the FFA civic engagement activities as an authentic and transformational learning opportunity. Students and advisors both believed that learning was occurring as a result of the experience, but each viewed learning in different ways. Advisors viewed the experience as an introduction to citizenship skill development, while students described how experiences changed their immediate beliefs. Students and advisors both described the experiences as “eye opening,” often referring to a better understanding of community problems that were previously not well understood. Students and advisors from all cases discussed how FFA civic engagement activities were different as compared to other service activities because students could “see” the results or impacts of the activity. It can be concluded from this finding exposure to solving a “real” community problem beyond the classroom serves as a concrete experience that helps students better conceptualize the multifaceted dimensions of citizenship skills. This finding is supported by existing research stating that the “realness” component of civic engagement experiences leads to better understanding of one’s ability to impact social issues within a community (Balsano, 2005; Camino & Zeldin, 2002). An implication from this finding is that civic engagement activities serve as a concrete experience for enhanced learning beyond the classroom. It is recommended that youth development practitioners within agricultural education and beyond continue to craft civic engagement opportunities that allow students to face “real” problems beyond the school building that have tangible results.

The third theme that emerged was FFA civic engagement programming as a broad outreach. Students and advisors described multiple FFA civic engagement activities occurring throughout the school year and summer as a means to increase civic involvement. Students and advisors both identified FFA civic engagement activities as one of few, and sometimes the only outlet for local youth to become routinely involved in civic engagement activities within their communities. Many students shared experiences of peers who never had opportunities to experience civic engagement experiences, as well as other organizations which lacked the breadth of civic engagement opportunities offered by the FFA chapter. It can be concluded that these FFA chapters are providing rural students a unique opportunity that they might not otherwise experience if not for the local FFA chapter. Previous literature posited rural youth experience civic engagement less frequently than youth from urban or suburban settings (Hart &

Atkins, 2002; Skinner & Chapman, 1999). It can be further concluded from the participant's descriptions that increased civic engagement opportunities can enhance citizenship skill development. This finding is supported by literature proposing the breadth of activities in youth organizations is often equated with enhanced learning (Bohnert, Fredricks, & Randall, 2010; Rose-Krasnor, Busseri, Wilooughby, & Chalmers, 2006). It can be implied that the structure of FFA civic engagement programming is more effective in developing responsible citizenship qualities because of the wide range of civic engagement activities across a long range of time. School-based agriculture teachers are encouraged to consider providing multiple civic engagement outlets within their agriculture program so the citizenship learning experience may be enhanced. In addition, future research should address the following question: At what point is the level of FFA civic engagement involvement "enough" for citizenship skill development to happen?

The National FFA Organization continues to be one of the largest youth organizations in the United States (National FFA Organization, 2011). FFA provides multiple opportunities in a variety of contexts for youth development to occur (Phipps, Osborne, Dyer, & Ball, 2008). The current study was intended to provide better understanding of how civic engagement activities transpire in rural FFA chapters. Agricultural educators at all levels of the agricultural education profession should continue to investigate, understand, and implement effective FFA programming strategies for FFA to continue serving youth development needs within the context of school-based agriculture programs.

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## The Meaning Ascribed to Rural FFA Chapter Civic Engagement Activities

Critique  
Robert A. Martin

This paper was an interesting collective case study of selected FFA members and agricultural education teachers in Missouri as they reflected on the meaning of civic engagement activities. The authors cautioned readers to limit the conclusions and implications of the results of the study, and wisely so. There are limits to all case study investigations but that should not stop researchers from gaining some perspective from these investigations.

The authors should be commended for clearly defining the terms used in the study and documenting these definitions with a thorough citing of the literature. The authors did a good job of framing the issue and providing a justification for the investigation. The conceptual framework was clear.

The authors related the study to the agricultural education research agenda and did a thorough job of describing the methods and procedures used in the study. The results were tied to the literature so this provided an appropriate way to support the findings in the proper context.

The study raises some important questions.

1. What level were the students in this study? (freshmen, sophomores, juniors, seniors?) What age were they? If 17 or younger, did you get parental approval? Was this study approved by the institutional review board on use of human subjects?

2. Students and advisors viewed learning from these experiences in different ways as reported in the paper. This begs the question then, what is being learned from these experiences/activities? This finding raises the important question related to specific learning objectives/competencies/skills being developed or acquired from participation in these civic engagement activities? If there is a mixed message as to what is to be learned from these activities, it is likely not clear how we can properly construct these activities to be focused on "learning". Experiences in themselves do not necessarily mean learning has taken place. Civic engagement may warm the heart and raise the feeling meter, but if we can't describe specifically the learning objective then what do we have? Mostly "feelings." Would we not be better served to add competencies/skills to the feelings of good will encased in these activities? In these times of accountability it seems appropriate to specify the learning outcomes of all activities.

## **Goin' to Kansas City - The National Congress of Vocational Agricultural Students**

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*Early agricultural education included youth judging activities, where farm boys matched skills with students from neighboring schools. In 1925, students competed in a National Dairy Judging Contest in Indianapolis held specifically for vocational students. Based on the success of this contest, the Federal Board for Vocational Education requested the contest committee make arrangements for hosting a national livestock judging contest for vocational students the following year. Representatives from the American Royal Livestock Show agreed to provide a livestock contest and educational program specifically for vocational students. In 1926, students from twenty-two states converged in Kansas City, Missouri to compete in the first national livestock judging contest. Cooperation between Kansas City agri-business leaders and Department of Education staff led to the development of a National Congress of Vocational Agriculture Students, consisting of agricultural youth showing and judging at the American Royal. This program played a role in the formation of the Future Farmers of America and shaped many traditions still held by the organization today.*

### **Introduction**

Why last week when I was there, there was 1700 young boys and girls brought there by that great Paper, the *Kansas City Star*, from over 30 states. They were taking vocational training and had led their various districts back home in the studying of farming, and stock raising, and had been brought to see the American Royal Live Stock Show. To see the Kings and Queens of Cattle, Sheep, Hogs, Horses. Real Kings and Queens that produced something... These not only have the breeding, but they got to face the judges and be marked on their merit. -Will Rogers (Rogers, 1978, p. 250)

The largest gathering of junior farmers which had ever officially attended a livestock show in the United States marked the inauguration of the National Congress for Vocational Agriculture Students at the 1926 American Royal (All Gather at Royal, 1926). The success of this gathering was the result of countless hours of work by many individuals and businesses who shared a common vision; to create a national livestock judging contest for vocational agriculture students from across the country. In 1926, over 900 vocational agriculture students and 400 4-H club members registered as members for the first annual National Congress, which included the first annual national livestock judging contest specifically held for vocational agriculture students. But perhaps even more significant, the events which transpired in Kansas City in early November of 1926 proved to be much bigger than just a judging contest. With collaboration and support from businesses, agricultural industries, local newspapers, and the United States Federal Board for Vocational Education, leaders created a week-long festival celebrating youth achievement in agriculture. The overwhelming success of student judging and supplemental events brought increased attendance and attention from students across the continental United States. Two years later, 33 delegates from 18 states met in Kansas City at the Third National Congress of Vocational Agriculture Students and created the Future Farmers of America.

## **Purpose and Objectives**

Students have demonstrated their agricultural knowledge through organized judging contests for almost 100 years. However, with some states today looking to these judging contests (Career Development Events) as a summative measure of agricultural classroom skill attainment, an investigation to explore the history of judging contests and possible connections with agricultural industry was warranted. The purpose of this historical study was to examine the history of the National Congress of Vocational Agriculture Students and the significant events in Kansas City which contributed to the success of the National Congress of Vocational Agriculture Students. The following objectives were developed to guide this study:

1. Describe the events leading to the formation of the National Congress of Vocational Agriculture Students.
2. Describe the meetings of the National Congress of Vocational Agriculture Students.
3. Identify the contributions of the National Congress to the formation of the Future Farmers of America Organization.

## **Procedures**

Historical research methods were used to accomplish the objectives of this study. Both primary and secondary sources were utilized to obtain needed information to address research objectives. Primary sources included newspaper articles in the Kansas City Star and the Kansas City Weekly Star, whose editor was instrumental in the formation of the National Congress. Additional primary sources included personal diaries, programs from the convention, Federal Board for Vocational Education reports and documents, books, organizational histories, and texts of speeches given by prominent leaders. Secondary sources included websites, newspaper articles, and journals. Information was obtained from locations such as the Journal of Agricultural Education, the Missouri Historical Society, the American Royal, the Agricultural Education Magazine, the National FFA Archives, and the University of Missouri Library. Sources were subject to both internal and external criticism. External criticism was controlled by the use of newspaper articles, federal documents, national databases, and historical records of organizations involved which were written by professionals at the time of the event's occurrence. Internal criticism was facilitated through comparing historical accounts of the same events from varying authors and artifact types.

## **Early Contests in Agricultural Education**

Although the first competition among farmers competing against neighbors for bragging rights predates historical documentation, youth in vocational agriculture classes began formal competition in the Midwest in the form of corn-growing clubs and in the South as cotton-growing clubs early in the twentieth century (Hummel & Hummel, 1913). Records showed state-wide judging contests were facilitated for vocational students in Virginia and Alabama in 1919, and in North Carolina, Nebraska, and New Mexico in 1920 (Tenney, 1978). In Virginia, local judging winners were sent as a team to compete at the state fair in Richmond, where they engaged in competition to determine the best judging team in the state. These interschool

vocational contests served as the first type of recognition for students' outstanding abilities related to in-school agricultural instruction (Virginia FFA, 2011).

The grassroots development of secondary agriculture judging contests did not go unnoticed by national leaders in vocational education. In 1924, the National Society for Vocational Education appointed a special committee to investigate the possibility of hosting a national judging contest for vocational students, to be chaired by C. H. Lane, and included representatives from agricultural extension and state supervisors of agriculture. The judging contest would be held in conjunction with the 1925 National Dairy show in Indianapolis (Stimson & Lathrop, 1954), and included a vocational exhibit (Federal Board for Vocational Education, 1925). Upon committee inquiry, W. E. Skinner, general manager of the National Dairy show, presented the idea of a separate show for vocational agriculture students to the executive committee of the Dairy Show. The committee agreed to host a separate dairy contest for students in vocational agriculture, on the condition the show was not responsible for providing prizes nor for funding the separate contest (Stimson & Lathrop, 1954). Vocational pupils were allowed to compete if they met the following conditions:

- 1) judges were under 21 years of age
- 2) judges had not competed in a dairy-judging contest of interstate or national character;
- 3) judges had not exceeded four years of training in any approved vocational course in agriculture in less than college grade
- 4) judges were, at the time the vocational team is selected by the State supervisor of agriculture, a bona fide vocational pupil enrolled in either an all-day, part-time, or evening class in vocational agriculture (Federal Board for Vocational Education, 1925, p.120)

Seventeen states competed in the first National Vocational Dairy Judging Contest held at the National Dairy Show at Indianapolis, Indiana on October 12, 1925 (Tenney, 1978). Prizes were donated by the four major dairy breed associations and from businesses within the dairy industry. The top individual in the judging contest was Arthur Kothe from Keytesville, Missouri (Stimson & Lathrop, 1954).

In 1925, the national contest committee reported the success of the vocational judging contest to the National Society for Vocational Education at a Cleveland meeting (Stimson & Lathrop, 1954). Notes from this meeting indicated the existence of many states holding livestock and dairy judging competitions, with Illinois being recognized as a model for contest work, using 10 districts to qualify teams for the state judging contest held at the state university (Federal Board for Vocational Education, 1926). States in the southern region were engaging in contests featuring cotton growing, essay-writing, and livestock judging. "Nearly every state in the holds an annual judging contest of some kind" (Federal Board for Vocational Education, 1926, p.81). Contests included judging farm crops, repairing Ford cars, and agricultural mechanics contests. Arkansas students matched production hens in an egg-laying contest; horticulture, dairy foods (Babcock test), and a shop work contest were also held on a state level. Other vocational-specific contests in 1925 included a potato judging contest for students of Washington, Oregon, and Idaho; Idaho leaders facilitated a transportable state-wide seed and grain judging contest, sponsored by Union Pacific Railroad (Federal Board for Vocational Education, 1926).

In his report, Dr. Lane acknowledged many students were judging at separate vocational contests in Portland's Pacific International (35 teams), the Rocky Mountain Livestock Show, and the Denver Livestock Show. Students from Washington and Wyoming traveled to Chicago in 1925 to compete in the non-collegiate division of the International Livestock Judging Contest in Chicago (Federal Board for Vocational Education, 1926). At this meeting, another committee chaired by Dr. C.H. Lane was appointed. This committee was asked to investigate hosting another vocational judging contest at the 1926 National Dairy Show in Detroit. Additionally, the committee was charged with arranging a similar vocational student judging contest, specifically for livestock, at the 1926 International Livestock Exposition in Chicago (Stimson & Lathrop, 1954).

For the previous five years, the International Exposition in Chicago had hosted a non-collegiate judging contest (Tenney, 1978) which included vocational students (Federal Board for Vocational Education, 1926). The Federal Board committee wished to provide a national contest for state winners at the International Exposition, where state vocational student winners would compete as a separate group for national honors. However, when the Federal Board committee presented this proposal, the Board of the International Exposition objected. The chief concern, raised by Dean of Agriculture Curtis of the Iowa State College, was the use of competition livestock for the judging contest. Undaunted by Curtis' denial, the committee secured commitments from external groups to provide non-show livestock specifically for the judging contest. The Ohio State University agreed to provide sheep, Michigan State College to provide hogs, University of Illinois to provide cattle, and the Union Stockyards in Chicago to provide horses for this contest (Stimson & Lathrop, 1954).

After the committee made arrangements to address the livestock concerns of the judging contest presented by Dean Curtis, the special committee again prepared a statement of reasons justifying a separate vocational contest. The statement was submitted to the International Livestock Exposition Board of Directors and was read at a board meeting on April 28, 1926. The board decided to continue the current non-collegiate contest and voted against a separate vocational contest (Stimson & Lathrop, 1954).

### **Kansas City Opens Doors to Youth**

After this rejection, Dr. C.H. Lane traveled to Kansas City to discuss the idea of a national vocational livestock judging contest with representatives from the American Royal, the Kansas City Chamber of Commerce, the *Kansas City Star*, and various breed organizations (Stimson & Lathrop, 1954; Tenney, 1978). In May, 1926, C.H. Lane spent two days meeting with local agricultural leaders. These meetings yielded the following agreements:

- 1) The officials at the American Royal Livestock Show, the Kansas City Chamber of Commerce, and various breed associations enthusiastically offered to host a national livestock judging contest and promised every means at their disposal to make the event a success.
- 2) The officials agreed to host a separate contest for vocational students, provide judges, facilities, trophies, animals, and clerical help for the contest to be held on November 15 and 16, 1926. (Stimson & Lathrop, 1954, p.579).

On May 22, 1926, the committee recommended to the Federal Board that the American Royal's invitation should be accepted. Approval of the national livestock contest at the American Royal was also sought and received from the Secretary of Agriculture and the Federal Board of Vocational Education (Stimson & Lathrop, 1954).

In addition to the national contests in dairying, as reported in the 1925 report, arrangements have been made for a National Congress of Vocational Agriculture Students in connection with the American Royal Livestock Show in Kansas City. There will be a national livestock judging contest for vocational pupils held in connection with the congress and conducted along similar lines to that of the national dairy cattle judging contest reported last year (Federal Board for Vocational Education, Annual Report, 1926, p.81).

The committee moved quickly to seek permission of the United States Department of Agriculture (USDA) to conduct the vocational student and boys' and girls' contests through the office of extension work. On June 7<sup>th</sup>, 1926, Dr. Lane met with C.W. Warbuton, Director of Extension for the USDA, where he received the blessing for the committee to work under the auspices of the office of extension work. On June 24, 1926, Dr. Lane sent a call to state supervisors; this letter provided preliminary contest information and sought commitments of state supervisors.

The committee has decided to accept the offer of the officials of the American Royal Livestock Show and provide a contest and program at Kansas City, November 15 and 16. It is believed that we should make this contest national in scope and of sufficient importance to cause the officials of the American Royal to feel that it is worth their while to set up a separate contest and program for our group.

What are the prospects for your State being represented at Kansas City? Announcements concerning details of the contest will be sent to state supervisors of vocational agriculture in the course of a couple of weeks.

Sincerely yours,  
C. H. Lane (Stimson & Lathrop, 1954, p.580).

### **The Journey to Kansas City**

In November of 1926, agricultural youth from across the country converged in Kansas City to compete in the first national livestock judging contest specifically for vocational students. Event organizers quartered vocational students at the Hotel Baltimore and 4-H youngsters were stationed at the Commonwealth Hotel. Each youth group stayed with its leader and special chaperone. Organizers made special efforts to organize students by region in an effort to reduce feelings of homesickness. Vocational students traveled from great distances to come to Kansas City; groups such as California to the west, Michigan and Minnesota from the north, Louisiana from the south, and Pennsylvania from the east. In total, twenty-two state organizations sent their state champion livestock judging teams to compete in the inaugural livestock judging contest (Educating for the Farm, 1926).

Many of the vocational boys who attended the 1926 American Royal were sponsored financially by local civic clubs or by the communities they represented. Community representatives from Willowa, Oregon raised \$600 by "popular subscription" to finance the trip to Kansas City for a team of three judges, one alternate, and a coach. Students from Santa Rosa, California were provided a total of \$171 to each student from the local community. This donation offset the entire cost of the trip. The state winning team from Idaho rode on a stock train to avoid the expense of railroad fare. However, at Denver, they were forced to abandon the stock train and boarded a passenger train, as taking the stock train would have placed them in Kansas City too late for the contests (A Parade of Youth Tonight, 1926).

### **Youth in Kansas City**

The tremendous growth of vocational education throughout the entire country has necessitated the holding of an annual congress of vocational agriculture students. The American Royal has been designated as the official home of this congress. Livestock judging contests will feather the meeting. A splendid educational program has been worked out for boys and girls during the Royal Week. (The National Livestock Shows, 1926, p.6)

The largest gathering of young farmers at a livestock show in the United States marked the inauguration of the National Vocational Agriculture congress at the 1926 American Royal. In all, more than 2,000 boys and girls registered as delegates to the Royal, including youth livestock exhibitors and those involved in the livestock judging contest. Of the 2,000 youth, 1,524 were vocational agricultural students and more than 500 members of 4-H clubs (All Gather at Royal, 1926). Twenty-two teams of vocational agriculture students judged classes of cattle, swine, sheep and horses at the American Royal on Monday, November 15<sup>th</sup>, 1926, starting at 8:00 am (Paxton, 1999). W.J. Kennedy, from St. Joseph, Missouri, served as the official for the contest. W.L. Nelson, from Columbia, Missouri, served as the contest superintendent (Club Honor to Oklahoma, 1926).

In addition to the judging events, agricultural youth from the National Congress of Vocational Agriculture students and the 4-H Royal Congress participated in several other events in Kansas City during their stay. Student representatives attended banquets, traveled on sightseeing trips, and enjoyed entertainment throughout Kansas City during the 1926 American Royal. (Junior Farmers at the Star, 1926). During the American Royal Horse Show on Monday, November 16<sup>th</sup>, over 1,300 boys, champions in stock judging from 22 states, paraded in the tan-bark arena. The featured speaker at the 9:00 pm parade was James E. Gorman, President of the Rock Island railroad. Following the student parade, showmen led a parade of cattle which represented a value of approximately 1 million dollars. Each school's stock judging team was designated in the parade by a banner held by the students. The students were preceded by a band and bagpipes of Scottish Highlanders (A Parade of Youth Tonight, 1926).

The highlight of the entertainment for the first Congress of Vocational Agriculture Students was Tuesday's dinner given by the *Weekly Star* in the Hotel Baltimore. The dinner was held in the Pompeian room at 5:45pm. W.A. Cochel, editor of the *Weekly Star*, presided as toastmaster at the dinner for 900 vocational agriculture students and 400 members of 4-H clubs.

Featured guests included John R. Tomson, President of the American Royal; George A Collett, President of the Kansas City Stockyards Company; Congressman W. L. Nelson of Columbia, Missouri; Dr. C.H. Lane, Chief of Agricultural Education; and Will Rogers, the keynote speaker (Will Rogers at Royal, 1926). Will Rogers was invited to speak to the group by his friend W.A. Cochel, editor of the *Weekly Kansas City Star* and sponsor of the dinner (Knopp, Potts, & Holloway, 2008). A telegram to the *Weekly star* from Rogers at Spartanburg, S.C, told of his pleasure in being asked to entertain “the kids” (Will Rogers at Royal, 1926).

Will spent an hour entertaining the youth at the *Weekly Star* dinner. A few minutes before Mr. Rogers spoke, the Oklahoma delegation sang a song about Oklahoma that brought a wide grin to the face of Rogers. As Rogers began to speak to the crowd, he pointed out he had arrived to the dinner late and hadn't eaten anything, so if his talk was rotten, he didn't owe them anything (Rogers Jokes at Farmer, 1926).

I was introduced as a farmer. That's not right. I've had a farm for 20 years and haven't made the taxes yet. The only reason I still got that farm is that I can act the fool...In a more serious vein,...more was being accomplished along agricultural lines than in any other field of instruction. When you all finish your course, you know much more than your grandfather or father does about farms. You can't say that about other lines (Rogers Jokes at Farmer, 1926, p.2).

Accounts from the *Weekly Star* indicated Mr. Rogers talked for more than an hour. His actions and his imitations of famous persons evoked much laughter and merriment from the youth in attendance. Rogers was interrupted time and again with laughter and applause, to the point he was forced to stand silent for several moments before resuming (Rogers Jokes at Farmer, 1926).

Results of the livestock judging contest, eagerly awaited by student judges, were announced by Dr. C.H. Lane at the banquet following Rogers' talk. First place honors were taken by the team from Oklahoma, Washington placed second, Arkansas placed third, Texas fourth, and Ohio fifth (Club Honor to Oklahoma, 1926). W.I. Drummond, chairman of the board of governors of the American Farm Congress, on behalf of the Kansas City Merchants Association awarded a \$500 scholarship to Oliver Newton from Abbott, New Mexico, as he was the top scoring individual in the contest. Drummond awarded a check for \$300 to Howard Lindstrom from Fairfield, Washington as second high individual, and \$200 to Cecil Fry, third individual, from Ponca City, Oklahoma. In addition to the livestock judging contest, William Woods of Bowling Green, Missouri was awarded the Kansas City Stockyards trophy in the ton litter contest (American Royal Juniors in Big Congress, 1926).

### **Youth's Effect on the American Royal**

Youth is whooping through the American Royal; happy, stout heated junior farmers, who are to be the cattlemen and agriculturalists of the future. It used to be that youngsters in livestock and agricultural shows were merely tolerated they had to handle their work some way. It's a nice thing to keep the boys interested. Their place is permanent. Today the American Royal management would not start planning for the big annual exhibit

without making a place for junior farmers. There are almost 1,600 of them at the American Royal. Hear them cheer out there in the sheep pens, in the arena or in the livestock walkways. See them moving, marching, looking, asking, making notes, judging cattle, viewing sheep and hogs. And what a time those boys and girls are having at the American Royal. Roaming through the exhibits, munching “hot dogs” while they inspect the livestock, making the high roof rattle with their school songs. Theirs is a song of the happiness in American rural life, of the hope in agriculture which sounds good to ears that have heard so much lately of the other side of agriculture’s story in congress and in the political campaign (Educating for the Farm, 1926, p.1).

Beyond the judging events, the American Royal provided additional educational opportunities for rural students who had traveled to Kansas City. Over 1,000 youth visited the headquarters of the *Kansas City Star* on Wednesday, November 17<sup>th</sup> (Junior Farmers at the Star, 1926). Further, students learned about livestock marketing opportunities for their agricultural products. Outside the 4-H room in the American Royal Building, the following poem was posted for all to read:

Mary had a little lamb  
Its tail was long and white  
But as the lamb grew older  
Its tail became a sight.

She took the lamb to market  
The buyer shook his head  
“If I bought lambs with tails like that,  
I’d soon go broke” he said.  
And so he “docked” her on the price,  
Tears filled poor Mary’s eyes,  
But then she learned a lesson  
Which you must realize

And now since Mary docks her lambs  
She finds a ready sale,  
For packers like to buy the kind  
Without a “surplus” tail.

(Youth comes into Own, 1926, p.1)

George A. Collett, chairman of the Executive committee of the American Royal, pointed to the cheering students at the 1926 parade and said:

That means life itself to Kansas City. You may ask why. Many of those boys come from sections of the country where nothing will grow except grass, and where cattle feed on that grass. Those boys are learning that they can get better prices for those grass cattle if the animals are beefier, if they have been developed by better siring. Those boys have seen the advantages of Kansas City as a livestock market. (Educating for the Farm, 1926, p.1)

Collett further asserted students learned valuable lessons in animal production and the value of Kansas City as an agricultural market. In their short visit, students gained “more information and knowledge of industrial manufacturing and distributing agencies than any other group of similar numbers which could be assembled in the city itself” (All Gather at Royal, 1926, p.6). Collett recognized the stock show was the attraction and was a reason students traveled to Kansas City, but the education and entertainment provided by the business men of Kansas City made the inaugural congress a success (All Gather at Royal, 1926).

### **Growth in the Congress**

The number of students registered increased in 1927 as did the number of states represented, number of activities, and the addition of a meats judging contest. More than 1,600 vocational students registered for the 1927 Vocational Agricultural Congress in Kansas City. That November, livestock judging teams from twenty-seven states and meats judging teams from seventeen states arrived in a chilly Kansas City to crown the national champions in vocational judging (Student Judging a Feature, 1927). The 1927 youth program began with the judging of the vocational livestock exhibits on Saturday, November 12. At 5:30 pm on Saturday, the Kansas City, Kansas Chamber of Commerce hosted a banquet for exhibitors and members of the judging teams, followed by a horse show in the Tan-Bark Arena at the American Royal. Sunday’s proceedings began with a church service at 10:30 am, followed by a concert at 2:00 pm, an automobile tour of Kansas City (sponsored by the Kansas City Implement, Hardware, and Tractor Club), and a 7:00 pm conference of coaches and officials, with J.A. Linke presiding (Program, 1927).

On Monday at 8:00 am, the National Vocational Student Livestock Judging Contest began in the main arena of the American Royal. Mr. J.A. Linke, Federal agent in charge of vocational education in Agriculture for the North Central States, served as superintendent of the livestock contest. At 2:00 pm, the National Vocational Meat Judging Contest kicked off, headed by Mr. Lester B. Pollum, Superintendent (Student Judging a Feature, 1927). Student judges were treated to a buffet supper at 6:00 pm at the motion picture booth on the first floor of the American Royal grounds. At 6:30 pm, C.H. Lane presided over a meeting for the organization of the Future Farmers of America (Program, 1927). At 8:30pm, vocational students marched in a parade and watched the horse show in the American Royal tan-bark arena (Students Throng the Royal, 1927).

Tuesday morning’s agenda included a tour of the Kansas City Stockyards, making motion pictures of vocational activities, and a tour of the Armour and Company Packing Plant (Students Throng the Royal, 1927). Tuesday afternoon activities included students viewing the American Royal horse show and the horse pulling contest, followed by the banquet for judges and coaches in the Hotel Baltimore at 6:00 pm (Program, 1927). The results in the annual livestock judging contests were announced at the banquet by toastmaster Dr. C.H. Lane. The top individual in the livestock judging contest was Gordon Reese of Hillsboro, Texas. He was presented a \$500 scholarship from the Kansas City Stockyards. The second high individual was James Kyle from Rural Retreat, Virginia. Mr. Kyle received a \$300 scholarship from the Kansas City Stockyards. The third Individual was Willie Martin from Merrimec, Oklahoma and was awarded a \$200 scholarship from the Kansas City Stockyards. The top teams in the livestock

contest included: 1) Oklahoma; 2) Texas; 3) California, 4) Virginia; and 5) Colorado (Record in Boys' Congress, 1927). In the meats judging contest, the top individual was Paul Davies from Manhattan, Kansas, second high individual was H. Johns from Lodi, California, and third individual was Billy Daniels from Manhattan, Kansas. In the team competition, top honors went to the team from Kansas, second place the team from California, Kentucky placed third, Missouri fourth, and Colorado fifth. Lester A. Pollom of Topeka, Kansas served as the meat judging superintendent. (Record in Boys' Congress, 1927).

Student education and entertainment filled Wednesday's agenda. Students visited the Southwestern Bell telephone building and inspected the plant. A trip to the Kansas City Sears-Roebuck and Company building followed. That afternoon, students attended a matinee. Wednesday night students were guests at a Kansas City, Kansas Chamber of Commerce dinner at Ararat Temple (Student Judging a Feature, 1927). Additional activities for student judges on Wednesday included a morning parade in downtown Kansas City, a tour of the Ford Motor Company, and a visit to the Dinner Bell radio program, which was broadcast by vocational agriculture students (Program, 1927).

A constitution and bylaws for the National Congress were adopted in 1927. The constitution outlined the rules and regulations for the livestock judging contest and the meats judging contest. Each contest division included rules regarding the organization and control of the contest, eligibility of the contestants, superintendents, judges, contestant expectations, classes to be judged, and educational resources available (Federal Board for Vocational Education, 1927). Although the document was identified as Misc. 526 of the Federal Board of Vocational Education (Stimson & Lathrop, 1954), the original copy was titled as Misc 826, written by a committee including Dr. C. H. Lane, chairman; Ray Fife, Ohio; Guy E. James, Missouri; William Kerr, Idaho; and E.B. Nelms, Oklahoma (Federal Board for Vocational Education, 1927).

Other business conducted at the 1927 Congress included adoption of an official cap for vocational agriculture students. This blue and gold cap, the ceremonial colors of the American Royal, was adopted by the American Vocational Association as the official cap for vocational agriculture students throughout the United States (Stimson & Lathrop, 1954).

### **Future Farmers Band**

Out of the American Royal livestock show this year will grow a national organization of vocational agriculture students, to be known as Future Farmers of America. The organization will be perfected at 2:30 pm tomorrow at the Hotel Baltimore as an outgrowth of the 3<sup>rd</sup> annual National Congress of Vocational Agriculture Students. The organization has been active the last 2 years, since its founding in Virginia, but it has been a state and local organization. Now its widening scope makes a national organization feasible, and such will be accomplished tomorrow. Representatives of approximately 25 states will join in the new league for the promotion of agriculture among high school students. (Future Farmers to Band, 1928, p.2)

Much of the organization and structure of the Future Farmers of America can be traced to the Future Farmers of Virginia, founded in 1925 (Hillison, 1993). Henry Groseclose of Virginia was asked to write a constitution and by-laws for the Future Farmers of Virginia; these documents were to be presented to vocational students and teachers at a rally day of judging and athletic events in Blacksburg, Virginia in April of 1926 (Tenney, 1978). Walter Newman, state supervisor of Agricultural Education in Virginia, presented the idea of an agricultural youth organization to the 500 boys in attendance (Bryant, 2001). The first annual meeting of the Future Farmers of Virginia was held in Blacksburg the next year. In 1927, a survey by Henry Groseclose found state-wide young farmer organizations in existence in 12 states; 15 states reported having vocational agriculture youth clubs in operation within their state. Agricultural state supervisors and teacher trainers, gathered at the conference of Southern States, submitted a resolution recommending each state develop a state vocational youth organization, "looking forward to a regional or national federation" (Tenney, 1978, p.19).

By the spring of 1928, all regional agricultural education conferences had discussed and adopted definite proposals defining the type and kind of vocational agriculture student organization desired (Tenney, 1978). During the summer of 1928, a committee was formed to draft a constitution. C.H. Lane charged W.T. Spanton of Missouri with the assignment of constructing the temporary constitution to obtain a charter under the corporate laws of Virginia (Johnson, 1971). Spanton's work, in cooperation with the other committee members, was largely based upon the constitution of the Future Farmers of Virginia (Tenney, 1978).

Over 2,700 vocational agriculture students and 4-H club members participated in the 1928 American Royal (The Greatest American Royal, 1928). Thirty states were represented at the National Vocational Agricultural Congress in Kansas City in 1928. C.H. Lane presided over the banquet at the Hotel Baltimore, where Idaho was crowned the 1928 national livestock judging champions. Kansas scored first in the meat judging contest and was awarded a silver cup (Idaho wins in Judging, 1928).

The Board of Trustees for the Future Farmers of America held a meeting on November 18<sup>th</sup>, 1928. In attendance were Drs. Lane, Messrs, Maltby, Linke, Groseclose, and Sampson. Business conducted at the trustees meeting included providing keys to each state, discussing dues, preparing a handbook, awarding keys to American Farmers, the nominating committee, and the FFA program of work for 1928-29 (Groseclose, 1929). On Tuesday, November 20<sup>th</sup> at 2:30 pm, the first meeting of the National Future Farmers of America was called to order by Dr. C.H. Lane in the Hotel Baltimore (Groseclose, 1929). Dr. Lane outlined the aims and purposes of the FFA organization. Delegates heard a speech from J.C. Swift, President of the American Royal, where he posited how the American Royal had long since ceased to be merely a horse and cattle show. Students also heard from author John F. Case, author of "*Tom of Peace Valley*". Eight American Farmers were named at the first congress, a constitution was adopted, and Leslie Applegate and five regional officers were elected to national office (Hail Future Farmers, 1928).

The work of C.H. Lane as director of Vocational Agricultural Education was instrumental to the success of the National Congress of Vocational Agriculture Students and the eventual founding of the Future Farmers of America (FFA). "No organization has even been formed with

a greater promise for productive work than the Future Farmers” (Hail Future Farmers, 1928, p.3). Dr. Lane was named the first advisor of the FFA.

## Conclusions

Many separate events in the early 1900s led to the formation of the Future Farmers of America. With the passage of the Smith-Hughes Act in 1917, student numbers in vocational agriculture classes quickly increased. By 1926, agriculture classes were in 25% of schools, providing instruction to over 100,000 students (Educating for the Farm, 1926). Judging events, father-son banquets, and thrift clubs allowed students to socialize with their peers outside of school time. Boys’ and girls’ clubs further influenced the formation of the Future Farmers. However, one cannot overlook the critical contribution of the National Congress of Vocational Agriculture Students and related judging events in the formation of the Future Farmers of America. The National Congress continued to sponsor the national judging contests until 1936 (Tenney, 1978). Much of the structure and tradition we see today in the National FFA, especially National FFA Convention, can be traced to those early days in Kansas City. Examples include:

- 1) Sponsorship from Business and Industry. The National Congress had strong ties to local business and industry in Kansas City. Agricultural tours, speakers, livestock expositions, award and meal sponsorships were key components to the success of the National Congress. In 1929, The *Kansas City Star* awarded Carlton Patton \$1000 in recognition of his achievement as American *Star* Farmer. The award was sponsored by the *Star* for twenty years, before being taken over by the National FFA Foundation. The award still carries the *Star*’s name to this day. (Tenney, 1978).
- 2) Entertainment. Each meeting of the National Congress included guest speakers, animal shows, and meals. Many meetings included meal functions, well known guest speakers, or livestock shows. The National FFA Organization routinely schedules entertainment events as part of the National FFA Convention schedule
- 3) Judging Contests. Agricultural judging contests were a central function and foundation of the National Congress. Today, Career Development Events still represent a significant component of the agricultural youth organization.
- 4) Education. Events of the National Congress included educational components designed to disseminate information through students to local homes and communities to better society. Student activities, including tours of industry and manufacturing and livestock markets, served to educate youth of current agricultural and industrial practices. Today, the National FFA Organization facilitates industry tours, workshops, and the career show to provide students attending the National FFA Convention with educational opportunities.

Based on the finding of this historical research, The National Congress of Vocational Agriculture Students played a substantial role in the development of the Future Farmers of America. Further, early Kansas City agricultural leaders developed and implemented rigorous convention youth programs which remain largely intact to this day.

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Goin' to Kansas City - The National Congress  
of Vocational Agricultural Students

Critique  
Robert A. Martin

This paper was an interesting description of the influence of several entities on the formation of the Future Farmers of America organization. The authors are commended for developing this historical investigation. Most students in agricultural education programs today are probably not aware of the origins or many of the events and activities that led up to the forming of the national FFA organization.

The procedures followed by these researchers appear to be appropriate for historical research. While it appears the purpose and the three objectives of this investigation were achieved, I am curious and cannot keep from wondering about the "premise" of this investigation as represented in the purpose statement regarding some states are looking to judging contests as a ". . . summative measure of agricultural classroom skill attainment . . . ?" It would have been helpful to expand this apparent justification for the study more fully. Also, I was surprised to learn that long before the FFA allowed women to be members of the FFA, the national judging events allowed women to participate in those judging events. Yet the authors made no mention of this fact. Historical researchers need to be aware of all the issues, obvious as well as hidden in the details of the information they are investigating. Also, be sure to proofread the paper for spelling errors (Curtiss, sought, findings). A review of this study raises the following key questions.

1. What are the implications of this study? What is the take away message as applied to today's situation?
2. What have we learned in a practical sense from a review of these events and activities? How does this study contribute to the Agricultural Education research agenda?
3. How could the paper have been organized to flow a bit better? It seemed to jump from one activity or event to another without a clear connection to the previous section.
4. I can't help but wonder if the history of the national judging contests and other events addressed in this paper were made public to the delegates at the time regarding the debate on moving the convention out of Kansas City, the results might have been different? Sometimes history has a way of being lost in the heat of the debate to later appear as a clearer indication of what might have been had we only studied it a bit more. The conclusion might not be much or any different but the debate might be more enlightening.
5. What recommendations could the researchers make regarding the results and conclusions of this study?