Viewing Instructions:
The Introduction (below) contains a list of posters in the proceedings. Use the bookmarks to the left to jump to a specific poster. Bookmarks are in alphabetical order by poster title. To print a specific poster, use the bookmark then print selected pages. To print this page without these instructions choose the Document under Comments and Forms option.

2010 Poster Session Proceedings Omaha, Nebraska

Three calls for posters were made to the AAAE listserve for posters for display at the 2010 meeting in Omaha, Nebraska. The call for posters was also posted on the AAAE website. Submissions to the online site (http://www.agedweb.org/aaae) were accepted between 11/01/2009 and 03/03/2010. One hundred fifteen submissions were received with sixty-four submissions in the innovative idea category and fifty-one in the research category.

Thirty-one reviewers were asked to review 6-9 abstracts each between March 4th and April 1st. Reviewers were assigned posters so as to not review abstracts from their home institution or in the same category in which they may have submitted an abstract. Reviews were completed by April 8th.

Posters were ranked by reviewer mean Z score in each category (research and idea). Acceptance was based on Z score ranking, acceptance recommendation by the reviewers, and the reviewer's comments. Twelve posters in each category were accepted as regional winners. Twenty-seven of the reviewed posters were accepted in each category for a total of 39 posters in each category chosen for display*. The acceptance rate for innovative idea posters was 42% and research posters was 53%, for a combined acceptance rate of 46%. Guidelines for the poster session are posted on the AAAE Wiki.

All authors were notified by email on April 10th, 2010. Reviewer scoring and comments were made available to the authors on the web site: www.csuchicoag.org/aaae (reviewer is anonymous).

Posters will be judged at the conference using the guidelines and rubrics established by the Program Improvement Committee (see AAAE Manual: http://aaae.wikispaces.com/National+AAAE).

*Some of the accepted posters were regional winners. The total number of posters actually accepted to the conference is 73.

Poster Reviewers

The following people generously and professionally donated their time to review poster abstracts. Without their commitment the poster session would not be possible.

Anderson, Shawn	Oregon State University
Arnold, Shannon	Montana State
Aschenbrener, Mollie	California State University Chico
Broyles, Thomas	Virginia Tech
Clary, Cynda	New Mexico State University
De Lay, Ann	Cal Poly, SLO
Dodson, Brad	California State University, Chico
Duncan, Dennis	University of Georgia
Edwards, Stephen	Virginia Tech
Ellott, Jack	Texas A&M University
Epler, Cory	Virginia Polytechnic Institute and State University
Falk, Jeremy	The Ohio State University
Foster, Daniel	Penn State University
Harbstreit, Steven	Kansas State University
Harder, Amy	University of Florida
Jones, David	North Carolina State
Kasperbauer, Holly	Virginia Tech
Kieth, Lance	West Texas A&M UNiversity
Lawver, Rebecca	Utah State University
Luft, Vern	University of Nevada
Moore, Donna	Virginia Tech
Morgan, Chris	University of Georgia
Paulsen, Thomas	Iowa State University
Peng, Jiajiang	Purdue University
Rayfield, John	Texas A&M University
Ricketts, John	University of Georgia
Shinn, Glen	Texas A&M University
Spiess, Michael	California State University, Chico
Swan, Michael	Washington State University
Thoron, Andrew	University of Florida
Williams, Kevin	West Texas A&M University

Regional Winners

The following posters were regional winners. Regional winners are automatically accepted for display at the national conference.

North-Central Region

	Title	Author(s)	Institution(s)
Innovative Idea			
1	Professional Development through Winter Technical Institutes: Agricultural Electrification	P. Ryan Saucier & John D. Tummons	University of Missouri
2	Development of an Agricultural Mechanics Course for Pre-service Teachers	Michael Pate, Greg Miller & W. Wade Miller	Iowa State University
3	Jamaica: Dawn of a New Beginning	B. Allen Talbert, Mark A. Balschweid & Daniel Gottschalk	Purdue University, University of Nebraska-Lincoln, Purdue University
Research			
1	FFA Professional Development Needs of Missouri Agricultural Educators	P. Ryan Saucier, John D. Tummons, Leon G. Schumacher, & Robert Terry, Jr.	University of Missouri
2	Development of an Instrument to Measure the Agriscience Education Self-Efficacy of Middle School Students	Levon Esters	Purdue University
3	An Exploratory Study of Students' Oral Presentation Self-Efficacy	Levon Esters	Purdue University

Southern Region

	Title	Author(s)	Institution(s)
Innovative Idea			
1	Recruiting Future Agricultural Education Students into the Teaching Profession: The Development of an AGED CDE	Mandy Jo Campbell; J. Shane Robinson	Oklahoma
2	Transforming Education in Agriculture for a Changing World	R. Kirby Barrick	University of Florida
3	Blogging In The Classroom: Three Pedagogical Approaches To Using Blogs For Reflection	Nicole Stedman, Greg Gifford, Karen Cannon	University of Florida
Research			
1	A Model for Improving Faculty Instruction in Colleges of Agricultural & Environmental Sciences	Jason Peake,Diana King, Brian Parr	University of Georgia

	Title	Author(s)	Institution(s)
2	Tips from the Trenches: Teaching Advice for Beginning Academics	Kelsey Hall & Courtney Meyers	Texas Tech University
3	Perceptions of Instructional Methods in Biofuel Education of Secondary Students	Clayton Sallee, Don Edgar, Donald Johnson	University of Arkansas

Southern Region Students

	Title	Author(s)	Institution(s)
Idea			
1	Using Farm Tours to Enhance the Graduate Student Experience	Katie Abrams, Andrew Thoron, Rochelle Strickland	University of Florida
2	Using Q-methodology to Measure Student Teacher Perceptions while Interning:	Sheyenne Krysher, J. Shane Robinson	Oklahoma State University
3	An Evaluation of Hurricane Ike Recovery: A Collaboration Opportunity for Extension Evaluation	Scott R. Cummings, Billy R. McKim, Paul Pope, Shannon H. Degenhart	Texas A&M University
Research			
1	Identifying the Preferred Leadership Style of Secondary Agricultural Educators	John Hall	Texas A&M
2	Characteristics of Missouri Agricultural Mechanics Programs: A Generational Review	P. Ryan Saucier	University of Missouri
3	Understanding the Intended Outcomes and Impacts of Agricultural Leadership Development Programs	Rochelle Strickland	University of Florida

Western Region

	Title	Author(s)	Institution(s)
	Innovative Idea		
1	Enhancing Pre-service Teaching Advising by Adopting a Skills Inventory	Michael Spiess and Mollie Aschenbrener	California State University, Chico
2	Produce Your Own: A Community Gardening Program	JoLynn Miller, Dr. Shannon Arnold	Montana State University
3	Enhancing Career Development Event Preparation Utilizing Jing™ Audio/Video Recordings	Kimberley Miller; Dr. Theresa Pesl Murphrey	Texas A & M/Texas Tech
	Research		

	Title	Author(s)	Institution(s)
1	Northwest's Supply & Demand for 2009-2010: Who is filling the Ag Teaching Positions?	Ben Swan	University of Idaho
2	Students' new media use as a basis for advancing agricultural communications curricula	Bryan K. Ray, Traci L. Naile, K. Jill Rucker	Texas A&M University, Texas A&M University, Oklahoma State University
3	Improving Undergraduate Curriculum: What do our Alumni Think?	Kori Barr, Erica Irlbeck, Cindy Akers, Courtney Meyers, David Doerfert, & Alyx Shultz	Texas Tech University

Accepted Posters

The following posters were accepted as part of the peer review process for the national AAAE meeting.

Title	Author(s)	Institution(s)
Innovative Idea		
Agricultural Education "Un-Plugged": Using Wireless Slates (WS) during Student Teaching in Agricultural Education	Jon W. Ramsey, Jeffrey H. Whisenhunt, J.C. Bunch, M. Craig Edwards, and J. Shane Robinson	Oklahoma State University
Bringing Experience Into the Classroom Through the Use of Blogs	Wendy Warner, Kathryn Murray, Ann De Lay	North Carolina State University, California Polytechnic State University
Build Me, See Me, Touch Me, Remember Me: Display Boards for Student Teachers	Ed Franklin	University of Arizona
Developing a Diversified Program: The Madison County 4-H Youth Outreach Project	Billy F. Zanolini & Douglas D. LaVergne	Texas A&M University & West Virginia University
Developing a Leadership Assessment Instrument for Cooperating Teachers	Gaea Wimmer, Todd Brashears, Scott Burris	Texas Tech University
Facebook in the Virtual Classroom	Sarah Baughman and Jenna Genson	Virginia Tech
Food for Thought Curriculum: An Innovative, Collaborative Agricultural Literacy Project	Emily Holden, Peg Herring, Shawn M. Anderson, Jonathan J. Velez, Gregory Thompson	Oregon State University
Getting Their Feet Wet: Children's Water Festival Presentations as a Field Experience Component	Kellie Claflin &Tim Buttles	University of Wisconsin - River Falls
How Pre-service Teachers are Preparing to Serve the Deaf in AGED: Opting for American Sign Language (ASL) as a “Foreign Language” to Meet Teacher Certification Requirements in Oklahoma	Dayla Turner, J.C. Bunch, M. Craig Edwards, Jon W. Ramsey	Oklahoma State University
Implementing the Integration of STEM Curriculum in Agricultural Education: Implications for Pre-service Teacher Education	J. Chris Haynes, Jeffrey H. Whisenhunt, J.C. Bunch, M. Craig Edwards, J. Shane Robinson	Oklahoma State University
Improving Facility Evaluation Skills	Benjamin G. Swan, Kattlyn J. Wolf	University of Idaho
Incorporating College Success Tactics Into a Dual Credit Course Curriculum: Coaching Students On How To Enter College Efficiently and Effectively From The First Day	Alanna Neely, Cliff Ricketts and Warren Gill	Middle Tennessee State University
Innovations in Agri-Life Sciences: A Journal for Secondary Academic Excellence	Bryan Hains and Matthew Anderson	University of Kentucky

Title	Author(s)	Institution(s)
Integrating Teaching With Technology	Katie Undem and Dr. Shannon Arnold	Montana State University
Making Learning Meaningful for the Millennials: Podcasting with a Purpose in Agricultural Education	JC Bunch, J. Chris Haynes, Jon W. Ramsey, M. Craig Edwards, Tanner Robertson	Oklahoma State University
Mentoring "quick-starter" graduate students	Karen Cannon	University of Florida
Recruiting by Doing: Utilizing existing undergraduate student organizations to facilitate secondary student recruitment in agricultural teacher education	Ayla R. Detwiler, Daniel D. Foster, John C. Ewing	Pennsylvania State University
Social Media and Small Businesses – Creating Marketing Strategies in the Digital Age	Leslie D. Edgar; Jefferson Miller; Stacey W. McCullough; Kimberly B. Magee	University of Arkansas
SPARK: Lighting up student learning in knowledge translation and transfer	Owen Roberts	University of Guelph
Student Teaching Capstone Expedition	Benjamin G. Swan, James J. Connors, Kattlyn J. Wolf	University of Idaho
The Leadership Spot: A multi-institutional, online approach to leadership education	Heath E. Harding, Andrea Lauren Andrews, Dr. Gregory T. Gifford, Dr. Gina S. Matkin	University of Nebraska-Lincoln, University of Florida
Training the Teachers: An Agricultural Communications Career Development Event Training Workshop	Ashley Palmer, Erica Irlbeck, and Courtney Meyers	Texas Tech University
Transforming leaders through international experiential learning: A synergistic collaboration between nonprofit organizations and academia	Jill Casten & Marty Tatman	Virginia Tech & National FFA Organization
Using concept maps to better understand the discipline of agricultural education	Michael Retallick	Iowa State University
Using Interactive Whiteboards in the Agricultural Education Classroom: How Student Teachers are Using this Technology—Potential Implications for Teacher Educators	JC Bunch, Jeffrey H. Whisenhunt, M. Craig Edwards, J. Shane Robinson, Jon W. Ramsey	Oklahoma State University
Utilizing Virtual Field Trips in Pre-service Teacher Education	Catherine W. Shoulders; Brian E. Myers	University of Florida
Virtual Student Teacher Meeting: Implementing Face-to-Face Reflection at a Distance	Thomas Paulsen	Iowa State University
Research		
A Perceptual Analysis Of State Supervisors' Views Towards Inclusion In Secondary Agricultural Education Programs	Chastity Warren English, Antoine J. Alston, Anthony Graham, Dexter Wakefield,	NC A&T State University

Title	Author(s)	Institution(s)
	Frankie Farbotko	
An Analysis of Florida Career and Technical Education Teachers' Stages of Concern Regarding the Use of Content Area Reading Strategies	Adrienne Gentry, Catherine W. Shoulders, Brian E Myers	University of Florida
An Investigation of the Impact of Student Teaching on Attitudes Toward Teaching Secondary Agriculture	Rebecca G. Lawver, Amy R. Smith, Robert M. Torres	Utah State University, South Dakota State University, University of Missouri
BEEF, It's What Makes Leaders: Leadership Skills Developed through the Georgia Junior Beef Show Program	Chris Morgan	University of Georgia
Components of Teacher Identity as Indicated by Clinical Faculty	Katherine McKee	Virginia Polytechnic Institute and State University
Culturally Competent Secondary Agriculture Teachers: The Multicultural Awareness-Knowledge-Skill-Attitude Assessment	Stacy Vincent	University of Missouri
Describing The Cognitive Level Of Discourse Of A Secondary Teacher During An Animal Science Unit Of Instruction	Jeremy Falk, Ashley Batts, Dr. Susie Whittington	The Ohio State University
Desired Characteristics of Beginning Agricultural Education Instructors as Perceived by School Administrators	Ayla R. Detwiler, John C. Ewing, & Daniel D. Foster	Pennsylvania State University
Effectiveness of Integrating Video Clips into the Secondary Agricultural Education Curriculum	Gaea Wimmer and Dr. Courtney Meyers	Texas Tech University
Exploring the Indicators of an Effective Agricultural Educators' Professional Development Event: The DELTA Conference	Nina Crutchfield	Texas Tech/Texas A&M
How are Students Thinking Critically? Measuring the Difference between Seeking Information and Engagement	Alexa J. Lamm, Rochelle Strickland, Dr. Tracy Irani	University of Florida
Identifying Graduate Students' Areas of Concern	Courtney Meyers & Gaea Wimmer	Texas Tech University
Improving Undergraduate Curriculum: What do our Alumni Think? *	Kori Barr, Erica Irlbeck, Cindy Akers, Courtney Meyers, David Doerfert, & Alyx Shultz	Texas Tech University
Leadership and Decision-making Life Skill Development in 4-H Shooting Sports Participants	Shanna M. Holder, Dr. John L. Long, Dr. Michael E. Newman, Dr. Susan L. Holder	Mississippi State University
Northwest's Supply & Demand for 2009-2010:	Ben Swan	University of Idaho

Title	Author(s)	Institution(s)
Who is filling the Ag Teaching Positions? *		
Perceptions of Pre-service Agricultural Education Students Enrolled in a Model	Elizabeth B. Wilson, Kevin W. Curry Jr., Chad. V. Jordan, Char E. Farin	North Carolina State University
Perspectives on the Future of Rural Education in Nebraska	Caleb Harms and Dann Husmann	University of Nebraska-Lincoln
Professional Educators' Understanding of Agricultural Awareness and Literacy in a Mid-Western State	Vikram Koundinya, Robert Martin, and Ashley Batts	Iowa State University
Student Interest Survey in an Interdisciplinary	Robert Birkenholz	The Ohio State University
Students' Self-Perceived Critical Thinking Skills in an Agricultural Ethics Course	Courtney Quinn, Heath Harding, Gina Matkin, Mark Burbach	University of Nebraska-Lincoln
Students' Perceived Value of the Contribution of Instructional Methods Towards Understanding Risk & Crisis Communication	Mrs. Christy Witt, Dr. David Doerfert, Dr. Tracy Rutherford, Dr. Theresa Murphrey, & Dr. Leslie Edgar	Texas Tech University, Texas A&M University, & University of Arkansas
The Educational Processes: Relative Importance To Extension Educators	Nav R. Ghimire and Robert A. Martin	Department of Agricultural Education, Iowa State university
The Relationships between Instructional Efficacy and Motivational Orientations for Florida Master Gardeners	Dr. Robert Strong & Dr. Amy Harder	University of Florida
The Role of Animation Towards Cognitive Achievement	Ron Koch, Don Edgar	University of Arkansas
Tips from the Trenches: Teaching Advice for Beginning Academics*	Kelsey Hall	Texas Tech University
To Teach Or Not To Teach: What Factors Impact Pre-service Students' Decision to Teach?	Dr. Steven J. Rocca and Dr. Wendy Warner	California State University, Fresno and North Carolina State University
Using Mathematics Enrichment Activities in Preparation for the Agricultural Mechanics CDE	Kirk Edney & Tim H Murphy	Texas A&M University

* Regional Winner

A Model for Improving Faculty Instruction in Colleges of Agricultural & Environmental Sciences

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A Model for Improving Faculty Instruction in Colleges of Agricultural & Environmental Sciences

Introduction

As universities grow and establish satellite campuses to better serve students, teaching responsibilities are often placed on faculty that previously only focused on research. This situation, while providing opportunity to transfer new research findings directly to university students, also creates a situation where people with no education training are expected to teach successfully. To address this issue, the [University] [Department] held a series of workshops, in 2008, to improve college teaching. The entire [Satellite] Campus faculty and staff were invited to attend workshops delivered by agriculture education faculty and lunch was provided in order to encourage participation

Conceptual Framework

The [College] at [University] established undergraduate programs on the [Satellite] Campus in 2004. This campus has housed research faculty for many years, yet few faculty members had experience teaching undergraduate courses. Consequently, a series of faculty development workshops were developed and conducted that focused on the implementation of learner-centered teaching techniques to improve comprehension and retention (McKeachie, 2006). Participants were administered a pretest before the series of workshops to determine their level of knowledge concerning such techniques. Following the workshops, a posttest and a survey were administered to determine the change in participants' knowledge base as well as the participants' perceived value of each of the experiences (Waters & Haskell, 1989). Workshop topics covered a broad range of topics important for developing effective teaching skills. While the immediate intended result of this project was to assist faculty members to develop professionally as "new" instructors, the long range goals include the development of graduates who recognize the intricate relationship between math, science, and agriculture.

Methodology

The 2008 series of workshops were conducted beginning the Friday of the first week of the fall semester and continued each Friday for four weeks. The first workshop was scheduled for 90 minutes and subsequent workshops were 60 minutes. Topics covered during each workshop are listed in Table 1. All campus-wide faculty from the [College] were invited to attend and while topics were presented in a complimentary sequence, they were independent of each other, thus faculty could choose to attend any or all of the presentations. Participant responses were recorded using a pre and post test as well as a final evaluation form with open ended questions and statements with Likert-type responses. Means and standard deviations were calculated for pre and post test items and final evaluation items using SPSS 14.0.

Table 1
Teaching Faculty Workshop Series Topics

Meeting	Topics Covered	Pre Test	SD	Post Test	SD	Dif.
1	Teaching Theories	2.3	0.34	3.2	0.75	0.9
	Teaching Philosophies	2.9	0.25	4.1	0.34	1.2
	Teaching Styles	3.1	1.32	4.6	0.79	1.5
	Learning Styles	2.4	0.76	4.4	0.13	2.0
	Instructional Planning	3.7	0.34	4.9	0.65	1.2
2	Delivery Methods	3.2	0.39	4.5	0.25	1.3
	Instructional Technologies	4.0	0.23	4.9	0.41	0.9
3	Effective Teaching Methods	3.0	0.43	4.8	0.29	1.8
4	Evaluation of Student Learning	2.9	0.86	4.5	0.13	1.6

Findings

According to the pretest, participants self reported that they were least familiar with the concepts related to teaching theories (2.3) and learning styles (2.4); the participants were most familiar with instructional technologies (4.0) and instruction and instructional planning (3.7). Analysis of the posttest indicated that, following the workshops, participants were least familiar with teaching theories (3.2) and teaching philosophies (4.1); the participants were most familiar in the areas of incorporating instructional technology (4.9) and instructional planning (4.9). The survey revealed that participants showed the greatest self reported change in knowledge with learning styles (2.0) and effective teaching methods (1.8).

Conclusions

Participants in this series did show a marked increase in knowledge reflective of the workshops that were offered; they took away the highest self reported increase in knowledge regarding learning styles and effective teaching methods. While the increase in knowledge regarding the topics listed in the workshop is a positive indication that the workshops were effective the participants still showed a considerable lack of knowledge regarding teaching theories.

Recommendations

The majority of [College] faculty teaching on the [Satellite] campus have had no training in how to be effective teachers. The presence of faculty teaching agricultural education courses provides an opportunity to share information on teaching and learning in a format suitable for faculty continued professional development. The findings of this research suggest that future professional development workshops should be conducted by agriculture education faculty to assist other faculty in developing teaching skills.

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Poster Type (Research)

A Perceptual Analysis Of State Supervisors' Views Towards Inclusion In Secondary Agricultural Education Programs

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A Perceptual Analysis Of State Supervisors' Views Towards Inclusion In Secondary Agricultural Education Programs

Abstract

The purpose of this descriptive survey census study was to gauge the readiness of secondary agricultural educators throughout the United States to foster inclusive learning environments for all students as perceived by state directors and supervisors. Secondary agricultural education teachers were perceived to be prepared to serve women and socioeconomic diversity, but not ethnic minorities, learning style diversity, diversity of gender identification, religious diversity, and special needs populations. It was found that agricultural education is beneficial for ethnic minorities and women, but still there is a lacking by secondary agricultural teachers to handle these issues. Barriers to inclusion in secondary agricultural education were found to be guidance counselors, the perception of agriculture itself, the lack of role models, the lack of understanding student styles, and stereotypes. It was recommended that secondary agricultural education professionals receive preservice and inservice training in multicultural education and differentiated instruction, and that relationships be formed with school officials and the community in general in order to foster inclusion efforts.

Introduction

The United States has become more culturally and linguistically diverse (Faltis, 2006). Since the 1980's the population has grown at the rate of 9% per year, creating a significant increase Hispanic, Asian, Pacifica Islander, Native American, and multiracial populations (Files, 2005). These demographic changes have greatly impacted America's public schools, which has grown to an enrollment of over 50 million students, and contains multiple races, cultures, and other types of diversity (Feller, 2005). Given this factor diverse students are likely to experience conflicts if schools are not sensitive to their culture, language, family background, religion, sexual orientation, and learning styles (Short & Echevarria, 2005). When considering the teaching workforce in America is greatly European American (86%), female (75%), and middle-aged, many factors can affect the instructional environment, one of which is the communication channels between students and teachers that affect the development of inclusive learning environments (National Education Association, 2003). Given the fact 1 out of 6 jobs in America is agriculture related more emphasis needs to be placed on creating and implementing opportunities for inclusiveness through efforts of agricultural literacy.

Conceptual Framework

Inclusion is a philosophy that brings students, families, educators, and community members together to create schools and other social institutions based on acceptance, belonging, and community (Sapon-Shervin, 2003). Inclusion is based upon four major principles:

1. ***All Learners and Equal Access, 2. Individual Strengths and Challenges and Diversity, 3. Reflective Practice and Differentiated Instruction, 4. Community and Collaboration***

Methodology

The population for this census survey study consisted of all state Directors/supervisors of agricultural education. The survey utilized for this descriptive census study was adapted from a previous study conducted by Warren & Alston (2007). The survey was sent by email using a three round, one week interval formal. The final response rate was 85% (N = 42).

Findings

- With respect to working with women and socioeconomic diversity it was perceived that agricultural educators are prepared. In contrast it was found that secondary agricultural educators were somewhat prepared to work with English As a Second Language (ESL) students. Moreover, respondents were undecided if secondary agricultural educators were prepared to work with individuals with learning disabilities, learning style diversity, special needs populations, diversity of gender identification, and ethnic minorities.
- It was agreed upon by respondents that secondary agricultural education is beneficial for women and minority students in relation to their leadership and character development.
- It was found that inclusion is beneficial for secondary agricultural education and FFA programs overall. It was agreed upon that the lack of role models, the perception of agriculture itself, the lack of understanding a students' learning style, and stereotypes hinder the development of inclusion in secondary agricultural education.
- It was also agreed upon that guidance counselor are major barrier to inclusion in secondary agricultural education.
- It was agreed upon that forming relationships within the local community, with advisory groups, and with guidance counselors were inclusion solutions.
- Furthermore it was perceived that preservice and inservice training in differentiated instruction and multicultural education were solutions to fostering inclusion. It was also agreed upon that school administrator support and content analysis of curriculum materials were solutions to fostering inclusive learning environments.

Conclusions

- State Supervisors saw agricultural education as being beneficial to minorities, however they were unsure if agricultural education teachers were prepared to work with minorities. Given this perhaps agricultural education teachers do not receive enough training in relation to working with minorities.
- It was perceived that women benefit from participation in agricultural education and that agricultural education teachers are prepared to work with them. Perhaps agricultural education teachers are now receiving better training in relation to working with women.
- It was perceived that working with different learning styles was a barrier to creating inclusive learning environments in agricultural education, perhaps preservice and inservice agricultural education teachers are not receiving enough training in this area.
- It was found that Guidance Counselors have a major influence upon Agriculture Education Inclusion, perhaps stronger relationships need to be developed with them.
- State Supervisors indicated that Agriculture Teachers were not prepared to work with special need children, perhaps Agriculture Teachers lack training in this area.

Recommendations

- It is recommended that preservice and inservice agricultural education professionals receive training in differentiated instruction and multicultural education.

Implications

- In order for the United States to sustain its current agricultural rank, recruitment of a more diverse future workforce must be enhanced. The field of education and agribusiness as a whole must acquire an understanding of the motivational factors and rewards that would motivate or encourage diverse groups to pursue an agricultural career.

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Innovative Idea

Agricultural Education "Un-Plugged": Using Wireless Slates (WS) during Student Teaching in Agricultural Education

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Agricultural Education "Un-Plugged": Using Wireless Slates (WS) during Student Teaching in Agricultural Education

Introduction

The current budget constraints facing many school districts require teachers and administrators to review closely functionality and cost when selecting technology for the classroom. The use of "interactive whiteboards [IWBs] are becoming increasingly popular in educational environments" (Haldane, 2007, p. 257). The average cost to equip a classroom with an IWB is $2,100.00 (Bunch, Whisenhunt, Edwards, Robinson, & Ramsey, 2010) assuming the computer and projection technology to support the IWB is already in place. An alternative to IWBs that allows for similar functionality at a significantly reduced cost is the Wireless Slate (WS).

Wireless Slates can be used with or without IWBs; each combination has a different effect on teaching and learning. In classrooms that employ both IWBs and WSs, teachers and students are given flexibility and mobility options that are otherwise unavailable. However, when the WS is used as a stand alone device, it functions easily with a projected image, enabling students and teachers to control applications and write over text and images from anywhere in the room (*"The Truth about,"* 2007).

Teachers often teach as they were taught (Nelson & Thompson, 2005). Although most agriscience teachers actively explore and adopt technology for regular use in instruction, limited active experimentation and advanced integration of technology in instruction occurs (Kotrlik, Redmann, & Douglas, 2003). So, it is imperative that the use of technology-enabled classrooms in teaching methods courses for pre-service AGED students are facilitated.

How it Works

The spring 2010 student teaching block at XXX University included 27 student teachers. The "block" is comprised of two four-week courses that work in concert to prepare student teachers for the 12-week student teaching internship: AGED 4103, *Methods and Skills of Teaching and Management in Agricultural Education* and AGED 4113 *Laboratory Management in Agricultural Education.* AGED 4103 includes a lab that serves as the "micro-teaching" component of the block. The spring 2010 block required four lab sections. To insure that each lab was equipped with appropriate technology, WS was introduced in one of the microteaching laboratories.

The classroom in which the WS was used is traditionally equipped (i.e., chalkboard, pull down projection screen, and an overhead projector). To convert the classroom to a technology-enabled classroom required that a computer, projector, and WS be transported daily via a "technology cart." Introducing the WS into a traditional setting provided student teachers in that lab section the opportunity to practice teaching their lessons while employing all of the features their peers were using in the rooms equipped with IWBs.

Results to Date

Seven of 27 student teachers used the WS during the student teaching block in the spring 2010 semester. Those students were able to control applications (i.e., SMART Notebook and the tools associated with IWBs) and write over text and images from anywhere in the room. The WS allowed pupils with limited mobility or who were simply uncomfortable standing in front of the class to use the WS to manipulate images, words, and objects. Student teachers who used the WS initially struggled to implement the new technology into their practice. But most became more confident with each lesson they presented. For example, early in their experience, a student teacher commented that, "First use of the WS was uncomfortable and dissimilar from the IWBs." However, student teachers learned that by using the WS they were able to maneuver around the classroom and address student management issues with minimal negative impact on the learning environment. Attending to behavior issues in such a manner allowed the WS to gain support among the student teachers.

Future Plans

AGED faculty at this institution will continue to integrate WSs into microteaching settings during the student teaching block as well as earlier pre-service courses. Further, as student teachers complete their 12-week internships, an opportunity to introduce the WS to cooperating teachers exists. Student teachers are in a unique position to serve as change agents regarding the adoption of this technology by cooperating teachers. The professional relationship that develops between the student teacher and the cooperating teacher creates a situation for interpersonal communications that can impact the early stages of the innovation-decision process for potential adopters positively (Rogers, 2003).

Cost

Given the current economic down turn, public school administrators may consider the WS as a first step to creating technology-enabled classrooms. The WS used during the student teaching block was purchased for $340.00 (approximately an 80% cost savings compared to the average cost of an IWB as reported by Bunch et al., 2010).

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An Evaluation of Hurricane Ike Recovery: A Collaboration Opportunity for Extension Evaluation

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Introduction/need for innovation or idea

On September 13, 2008, a Category 2 hurricane known as Hurricane Ike, made landfall over Galveston, Texas. Hurricane Ike was one of the largest Hurricanes to hit the United States in recent years and has become one of the costliest hurricanes in the Nation's history (FEMA, 2008). Communities impacted by Hurricane Ike suffered immediate and long-term strains on families' financial stability and health and human services, such as child care, public education, and senior support systems. The Federal Emergency Management Agency's (FEMA) preliminary estimates have indicated that housing damages in the cities and counties impacted by Hurricane Ike will exceed $3.4 billion.

To aid individuals and families in their recovery processes, FEMA awarded a $58.2 million grant to a [State Government] Agency (Agency) to fund the Long-Term Disaster Recovery Case Management Pilot Program (DCM). The DCM was designed to provide disaster case management services to some 40,000 Texans impacted by Hurricane Ike. In order to provide case management services, the Agency contracted with three nonprofit organizations to deliver case management services to affected individuals and families living in 34 counties. Multiple government and non-government agencies will be necessary to facilitate the successful recovery efforts and return residents of affected areas to pre-hurricane status.

The Agency also contracted with [State] Extension to conduct a process evaluation to provide the Agency and FEMA with information that will allow them to develop a model for a federal disaster case management program for future disasters. Extension's role in partnerships is well noted in the literature (Carpenter, 1993; Patton, 1986; Ratchford, 1984) especially with providing expertise in evaluation. Because of its university foundation and roots in the local community, Extension is well suited to present an unbiased, well informed evaluation using the resources available in the Land Grant system.

How it works/methodology/program phases/steps

A process evaluation approach is being utilized to collect empirical data to assess the delivery of DCM programs. The [State] Extension process evaluation is documenting and analyzing the early development and actual implementation of the strategy and program to assess whether strategies were implemented as planned and whether expected output was actually produced.

The [State] Extension's process-based evaluation consists of a systematic three-tiered data collection approach, with an external Research Advisory Committee (RAC). The [State] Extension Evaluation Team closely collaborates with the evaluation teams of each nonprofit agency to ensure data consistency, adjust programmatic endeavors as practicable, fine-tune evaluation procedures and reporting processes, and provide overall evaluation results. The three-tiered data collection approach of the evaluation provides substantive evidence of DCM's usefulness and success in restoring clients to pre-Hurricane Ike status. The three tiers consist of:

1. Quantitative and Qualitative analysis using data mining of the nonprofit agencies program data collected and entered in the DCM Pilot Project central data collection site.

2. Focus groups and interviews of elected and county officials, case worker staff, county health department and social services unit, staff of associated organizations, etc. to determine agency and local government perceptions of the usefulness, practicality, and success of the DCM pilot test.

3. Interviews of a stratified random sample of DCM clients to determine client perceptions of the usefulness, practicality, and success of the DCM pilot test, and validation of clients' initial Tier assignment and movement to new Tier during the course of the DCM project.

Results to date/implications

To date, both tier-one and tier-two of the evaluation strategy are operational. Data collected via central data collection site has provided comprehensive information on case management services for those needing assistance. However, extracting data from these systems has proven to be challenging; largely because the data collection site was designed to serve as a means to track disaster survivors' progress toward recovery rather than provide useable data to an external evaluation component.

Tier-two data collection has focused on face-to-face interviews with county personnel and case managers. More than 175 interviews have been conducted. Preliminary data indicates a strong need for case management services, including housing, food/nutrition, and employment needs. Challenges facing case managers include a lack of resources to help clients meet their needs and the time it takes for services to be made available. The project is currently fully operational. Future plans include completing Tier-one and -two of the evaluation. Tier-three will begin once clients begin to steadily complete the recovery process.

Costs/resources needed

A four-person management team conducts oversight of the overall Extension evaluation of the DCM Pilot Project. A five-person field evaluation team conducts field interviews and produces reports for submission to the Agency. The Management Team collaborates closely through regular meetings with the RAC to determine effectiveness of data collection and appropriateness of evaluation direction.

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An Exploratory Study of Students' Oral Presentation Self-Efficacy

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An Exploratory Study of Students' Oral Presentation Self-Efficacy

Introduction

A major goal of undergraduate educators should be to produce graduates with communication skills sufficient for success in the workplace (Zinn, Faustman, & Riesen, 1993). For example, enhancing communication skills will contribute to a student's ability to work together, to speak to diverse audiences, and to communicate their knowledge and expertise more widely to a variety of audiences (NRC, 2009). In a recent presentation to the American Agricultural Economics Association, Boteler (2006) noted that communication skills were two of the top three rated skill sets that agribusiness employers sought in new college graduates. This finding is important considering that the inability to communicate effectively is a significant disadvantage for agricultural graduates (National Council for Agricultural Education, 2009).

In recent years, calls have been made for graduates to be proficient in oral communication skills so that they can function effectively the workplace (Crosling & Ward, 2002). Oral communication covers a wide area, ranging from formal presentations to participating in teams and meetings. Because the development of oral presentation skills has received little research attention (De Grez, Valcke, & Roozen, 2009; Brown & Morrisey, 2004; Alshare & Hindi, 2004; Campbell, Mothersbaugh, Brammer, & Taylor, 2001), we sought to explore undergraduate students' level of oral presentation self-efficacy using a measure based on the principles of Bandura's social cognitive theory.

Theoretical Framework

The theoretical foundation for this study is Bandura's (1986) Social Cognitive Theory (SCT). Social cognitive theory has been noted to be very well suited to explain the development of complex behavior such as oral presentation skills (Grez, Valcke, & Roozen, 2009). In particular, we were interested in self-efficacy, one of the core constructs of Bandura's theory. Self-efficacy is defined as, "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p. 391). Self-efficacy beliefs are constructed from four principal sources of information: mastery experiences, vicarious learning, verbal persuasion, and emotional arousal (Bandura, 1997). Numerous studies have found that as self-efficacy, or a person's confidence in his/her ability to perform a task increase, performance measured after training also increases (Bandura, 1986; Brown & Morrisey, 2004). In fact, several researchers have noted the importance of confidence in giving successful oral presentations (e.g., Tucker & McCarthy, 2001; Crosling & Ward, 2004; De Grez, Valcke, & Roozen, 2006; Adams, 2004; Brown & Morrisey, 2004; Huiberts & Leeds, 2009).

Methods

Participants

Sixty-nine percent of students were male and 31% were female. Students' age ranged from 19 to 24 (M= 21.0, SD = .47). Forty-five percent of students were seniors, 49% were juniors, 4% were sophomores, and 2% were freshmen.

The research design of the study was a one-group pretest-posttest design. The dependent variable was oral presentation self-efficacy score. The intervention involved the integration of the four principal sources of self-efficacy information. Participants for this study were undergraduate students enrolled in an oral communications course in the College of Agricultural and Life Sciences at [Midwestern State University] (n = 75). The measure used to collect data was the Presentation Self-Efficacy Scale (PSES; Authors, 2007). The PSES is comprised of 15 items which measure the level of confidence students have in their ability to complete oral presentation-related tasks. Internal consistency for the measures was assessed during a pilot test resulting in an alpha reliability of .92. Descriptive statistics used included frequencies, percentages, means, and standard deviations. Paired t-tests were used to describe differences between pretest and posttest scores on the PSES.

Findings

Fifty-two percent of students had no previous course or courses that required a large number of presentations while 60% had no previous work-related experiences that required giving a large number of presentations (e.g. workshops, seminars, or meetings). Results of the paired t-tests showed significant differences in mean pretest and posttest oral presentation self-efficacy scores (Pretest mean = 4.30, SD=.80, Posttest mean =5.10, SD =.57, t=-8.436, p<.001).

Conclusions and Implications

Despite the limitations of the study, the findings indicate that the use of an intervention involving the integration of the four principal sources of self-efficacy information enhanced the oral presentation self-efficacy of undergraduate students. It should be noted that the current version of the PSES did not specifically measure the four sources of self-efficacy, hence a logical next step will be to develop a revised version of the PSES that include items measuring mastery experiences, vicarious learning, verbal persuasion, and emotional arousal. One of the major implications resulting from this study is the potential benefit to instructors seeking to enhance the oral communication skills of their students.

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An Analysis of Florida Career and Technical Education Teachers' Stages of Concern Regarding the Use of Content Area Reading Strategies

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An Analysis of Florida Career and Technical Education Teachers' Stages of Concern Regarding the Use of Content Area Reading Strategies

Introduction/Theoretical Framework

The initiatives toward better readers have stated that "all teachers in all subjects share the responsibility for literacy development" (Vacca, 2002, p. 7). Other studies indicate that content area reading instruction is essential for success in the content areas as well as "overall achievement in school subjects" (Moore, Readence & Rickelman; 1983). However, research indicates that non-reading teachers, such as those in Career and Technical Education (CTE), feel that it is not their role to implement reading strategies and thus, rarely employ reading strategies (Park & Osborne, 2006a).

Some argue that CTE teachers are not employing content area reading strategies (CARS) is because they do not feel confident with their knowledge and skill level in implementing the strategies (Park & Osborne, 2006a). However, "with increased professional development… content-area teachers will make more effective use of strategies" (Vacca, 2002, p. 6).

In Florida, the Florida Reading Initiative is a reform effort aimed at achieving 100% literacy among its students (North East Florida Education Consortium, 2009). The Florida Reading Initiative provides training and additional support for teachers to implement reading strategies aimed at improving reading proficiency.

While reform efforts such as the Florida Reading Initiatives are a great step in improving literacy, assessment of the initiative's effectiveness is necessary in determining its value in career and technical education teacher training. This study utilizes the Stages of Concerns Questionnaire, developed by George, Hall, and Steigelbauer (2006) to assess the level of comfort CTE teachers of varying levels of training feel regarding the use of CARS.

Francis Fuller's Concerns-Based Adoption Model provides the framework for the stages of concern (George, Hall & Steigelbauer, 2006). When teachers make changes, the stages of concern can determine how easily and willingly the changes were implemented. The seven stages of concern rank from 0-7 and include Unconcerned, Informational, Personal, Management, Consequences, Collaboration, and Refocusing. Generally, people will move through the stages based on their familiarity with the innovation, and concerns in higher stages will typically only appear after lower-level concerns have been alleviated.

Purpose and Objectives

The purpose of this study to determine the stages of concern Florida CTE teachers experience regarding the implementation of CARS. In order to meet this purpose, the following objectives provide the focus of this study:

1. Determine the number of Florida CTE teachers with CARS training and the number of years of training experience these teachers have.
2. Determine differences in stages of concern percentiles regarding CARS implementation of Florida CTE teachers grouped by quantity of CARS training.

Methodology

An invitation for an electronic SoCQ was sent through e-mail to the population of CTE teachers in the state of Florida (N=2814). The initial invitation with the link to the survey was sent, with two follow-up reminder e-mails. Overall participation rate was 11% (*n*=315). This study is only generalizable to the CTE teachers in Florida.

The SoCQ was used because of its long and tested history of improvement as well as its high levels of reliability and validity (Bailey & Palsha, 1992; George, Hall, & Steigelbauer, 2006; Shoulders, 2010; Warner, 2009). Data was analyzed using the calculations recommended by George, Hall, and Steilbauer (2006) in Excel format developed by Scott and Persichette (2006).

Findings

Respondents were grouped by quantity of CARS training to determine potential differences between stages of concern and length of training. Forty percent of respondents had 0 years of CARS training (n=127). Approximately 27% of respondents had 1 to 2 years of CARS training (n=84). Fourteen percent had 3 to 4 years of CARS training (n=45), and approximately 19% of respondents had 5 or more years of experience with CARS (n=59).

Based on George, Hall and Steigelbauer's recommendations for data analysis (2006), concern profiles for each group were analyzed. Teachers in all groups display highest concerns in Stage 0, which demonstrate that they are concerned about many initiatives and activities, and are not strictly concerned with CARS at this time. All groups with the exception of teachers with 5 or more years of experience are concerned about their management of time and how long it takes to implement CARS, indicated by their high levels of Stage 3 concerns. All groups with the exception of teachers with zero years of CARS training indicate that they could think of alternatives to CARS that might be more efficient, and thereby may be resistant to implement CARS, through the profiles' tailing up at Stage 6. Alternatively, the tailing down at Stage 6 of those with 0 years of experience demonstrates that they are willing to change, and do not display resistance to CARS implementation.

All profiles for teachers in all categories were indicative of a negative one-two split which shows that all teachers have doubts and demonstrate resistance to CARS (George, Hall, & Steigelbauer, 2006). The higher score on Stage 2 indicates that teachers are more concerned about their professional statuses and job security than they are concerned about spending time to learn more about CARS (Shoulders, 2010).

Conclusions/Recommendations

Based on the concerns profile, CTE teachers are not completely aware of CARS or the importance of implementing CARS in their classrooms, and are resistant to their implementation, regardless of their level of training. This concurs with Warner's (2009) findings with Florida Agriscience teachers.

To properly distribute the implementation of CARS, professional development opportunities should be made available to CTE teachers in Florida. The researchers recommend that qualities leading to successful of professional development identified by previous research Garet, Porter, Desimone, Birman, & Yoon, 2001; Supovitz & Turner, 2000) should be incorporated into CARS training in order to increase the level of success teacher feel upon CARS training completion.

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RESEARCH

An Investigation of the Impact of Student Teaching on Attitudes Toward Teaching Secondary Agriculture

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An Investigation of the Impact of Student Teaching on Attitudes Toward Teaching Secondary Agriculture

Introduction/Need for Research

In a supply and demand study, conducted among 2006 agricultural education graduates, only 53 percent (401 of 785 prospective teachers) would actually choose to teach in the fall of 2007 (Kantrovich, 2007). Such research illustrates the importance of recruiting and retaining teachers into the field of agricultural education. Hammond (2002) suggests students who choose teaching as a career, generally have a positive attitude about the career. However, the question remains, how can teacher educators better understand undergraduate students' attitude toward teaching agricultural education?

Within agricultural education, research in the area of teacher recruitment and what attracts students to a career in teaching secondary agricultural education is lacking. To that end, the purpose of this study was to determine agricultural education students' change in attitudes about becoming secondary agriculture teachers as a result of participating in a student teaching internship. The following research objectives guided the research.

1. Describe students' attitude toward teaching secondary agriculture.
2. Compare students' attitude toward teaching secondary agriculture before and after student teaching.

Theoretical Framework

The Factors Influencing Teaching-Choice (FIT-Choice®) framework provides a comprehensive model to guide systematic investigation into the question of why people choose teaching (Richardson & Watt, 2006). The framework, based on the Expectancy-Value Theory (Fishbein & Ajzen, 1975), determines the strength of influence for a range of attitude, motivation and intent from individuals choosing teaching as a career. Understanding students' motivations for choosing a teaching as a career has implications for teacher education, curriculum design, and recruitment.

Methodology

This study utilized a descriptive research design method. Two agricultural education programs located at land-grant institutions were included in this study. Convenience sampling was utilized, yielding a total of twenty-two student participants. The data collection instrument used was adapted from the FIT-Choice® Scale (Watt & Richardson, 2007). Forty statements related to students' attitudes toward becoming an agricultural education teacher were asked. To analyze the impact student teaching has on attitudes of students, each participant completed the instrument twice, once immediately before and after a 15-week student teaching experience. Responses were analyzed using SPSS.

Results/Findings

Means and standard deviations for each of the twelve constructs are reported from the two administrations of the instrument (see Table 1). Cohen's *d* is reported as a measure of effect size. Because of space limitations, statistics for individual items are not provided.

Table 1
Attitudes of Student Teachers by Construct

	Time of Administration				
	Before *n* =22		After *n* = 22		Cohen's
Construct	*M*	*SD*	*M*	*SD*	*d*
Ability	3.92	.47	3.33	.33	1.49 [e]
Work with Adolescents	3.82	.60	4.08	.51	.48 [c]
Fallback Career	3.02	.77	3.29	.57	.41 [c]
Prior Teaching and Learning	4.03	.57	4.17	.62	.24 [b]
Time for Family	2.69	.60	2.55	.62	.23 [b]
Job Transferability	3.30	.57	3.18	.76	.18 [b]
Make a Social Contribution	4.24	.46	4.30	.47	.13 [a]
Intrinsic Career Value	3.86	.55	3.91	.55	.09 [a]
Job Security	3.83	.49	3.86	.41	.08 [a]
Shape the Future	4.32	.51	4.35	.44	.06 [a]
Enhance Social Equity	3.59	.51	3.61	.66	.03 [a]
Social Influence	3.85	.59	3.85	.61	.00 [a]

Note: Real limits scale for mean scores is 0.00 – 1.00=Definitely Disagree, 1.60 - 2.50=Disagree, 2.60 – 3.50=Not Sure, 3.60 – 4.00=Agree, 4.60 – 5.00=Definitely Agree; Thalheimer & Cook's (2003) descriptors for describing relative size of Cohen's *d*: [a] = negligible, [b] = small, [c] = medium, [d] = large, [e] = huge.

Conclusions/Implications/Recommendations/Impact

Prior to student teaching, the constructs of *shape the future*, *prior teaching and learning*, and *make a social contribution*, were rated most highly. At the conclusion of the student teaching experience, the means for those three constructs continued to rate quite high, exceeding 4.00. Additionally, *working with adolescents* was rated over 4.00. Overall, this indicates students have a favorable attitude toward teaching agriculture. The construct, *time for family*, was rated the lowest by students, both before and after the student teaching experience. Such mean scores suggest concerns regarding how one balances family life with a career as an agriculture teacher. It is disconcerting that students' considering the profession already have an uncertain attitude regarding teaching agricultural education and family life.

Perhaps most concerning is the huge effect size noted on the *ability* construct. Such an effect size suggests that student teachers are more confident in their abilities prior to student teaching. Although students may realize during student teaching that they have much more to learn, what could be done to maintain or improve students' confidence during the experience?

Teacher educators should become more aware of student attitudes toward teaching. Because there are numerous career options for agricultural education graduates aside from becoming a teacher, innovative and aggressive steps should be taken to make the profession more attractive. Such efforts will help to improve students' attitudes regarding the profession and ultimately, contribute to more successful recruitment and retention efforts.

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Poster Type (Research)

BEEF, It's What Makes Leaders: Leadership Skills Developed through the Georgia Junior Beef Show Program

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BEEF, It's What Makes Leaders: Leadership Skills Developed through the Georgia Junior Beef Show Program

Introduction/Need for the Research

As a leadership development activity, the Georgia Junior Beef Show program includes, but is not limited to market lambs, market goats, market hogs, breeding ewes, breeding gilts, equine, commercial dairy heifers, market steers, and breeding heifers. One of the largest and most expensive sectors of the youth livestock program is the beef project which includes market steers and breeding heifers. This study was conducted to help determine the leadership impact of the beef project for Georgia participants.

Theoretical Framework

The educational theory of John Dewey serves as the framework for this study. Specifically, Dewey's theory of value proposes that an individual needs to appreciate the topic about which they are learning, but it also believes that to value something means to perform an intellectual act of comparing or judging. According to Dewey's theory of knowledge, knowledge is developed only through live experiences. In Dewey's theory of human nature everything distinctively human is learned (Emand, 2000). Naturally, for active show participants, experiences/learning would include leadership skills that are developed through the experience of the beef project, as key leadership skills are developed through the livestock project (Rusk, Summerlot-Early, Machtmes, Talbert, & Balschweid, 2003). This study examined leadership skills developed during the time participants were engaged in beef exhibition experiences.

Methodology

This descriptive study investigated sought to employ a retrospective-post comparison of leadership skills before and after beef exhibition experiences. The population for this study consisted of senior participants in the Georgia National Junior Livestock Show. The convenience sample (n = 24) consisted of randomly selected students who were in the tie barn on the day of data collection. Of everyone given a retrospective-post version of Townsend's (1981) LSI, 100% responded with completed surveys. A examination of the show participant database indicated that the sample was representative of the population in major demographic categories. For this reason, the researcher was confident in employing inferential statistics. Paired sample t-tests were used to determine differences between retrospective and post LSI scores. The instrument used to assess changes in the students' self-perception of leadership skills was a researcher-adapted retrospective-post version of the Leadership Skills Inventory (LSI) developed by Townsend (1981). Specifically, the original instrument claimed the following Cronbach's alpha reliabilities for the LSI constructs: Communicating (.74), Working with Groups (.69), Making Decisions (.69), Understanding Self (.78) and Leadership (.84).

Results/Findings

Students were questioned in the retrospective and post-test on various aspects of leadership before they began showing after they have been showing. Students showing beef agreed that they possessed competence in each of the LSI areas [Working with Groups (Retro *M* = 1.5, *SD* = .50; Post *M* = 1.36, *SD* = .48), Understanding Self (Retro *M* = 1.64, *SD* = .56; Post *M* = 1.35, *SD* = .44) , Making Decisions (Retro *M* = 1.81, *SD* = .74; Post *M* = 1.47, *SD* = .56), Leadership (Retro *M* = 1.83, *SD* = .66; Post *M* = 1.49, *SD* = .48), and Communication (Retro *M* = 1.75, *SD* = .57; Post *M* = 1.45, *SD* = .44)] prior to and following their showing experience. LSI scores were higher following beef exhibition experience for each of the constructs. This gain in LSI scores was significant at the .05 alpha level for Understanding Self ($t = 3.225$; $p = .004$), Leadership ($t = 3.404$; $p = .002$), Making Decisions ($t = 2.842$, $p = .009$), and Communicating ($t = 2.932$; $p = .007$). In fact, these significant gains in LSI scores also had effect sizes in the medium range for Understanding Self ($d = .580$), Leadership ($d = .596$), Making Decisions ($d = .523$), and Communicating ($d = .594$), according to Cohen (1977).

Table 1
Retrospective and Post Mean LSI Scores (n = 24)

	M	*SD*	*t*	*p*	Cohen's *d*
Working With Groups Retro	1.50	.50			
Working With Groups Post	1.36	.48	1.726	.098	.286
Understanding Self Retro	1.64	.56			
Understanding Self Post	1.35	.44	3.225	.004	.580
Leadership Retro	1.83	.66			
Leadership Post	1.49	.48	3.404	.002	.596
Making Decisions Retro	1.81	.74			
Making Decisions Post	1.47	.56	2.842	.009	.523
Communicating Retro	1.75	.57	2.932	.007	.594
Communicating Post	1.45	.44			

Note. 1 = Strongly Agree; 2 = Agree; 3 = Undecided; 4 = Disagree; 5 = Strongly Disagree

Conclusions/Recommendations

Junior beef exhibitors are leaders. Students agreed they possessed leadership before and after beef project experiences, but the increase in leadership was significant in 4 of the 5 areas for Georgia junior beef exhibitors. The areas of significant leadership skill development were Understanding Self, Leadership, Making Decisions, and Communicating. These findings are encouraging, but this study was conducted with a limited convenience sample. Perhaps decision makers, parents, and industry representatives have some cause for encouragement regarding the effectiveness and usefulness of the beef project, but additional, more scientific, representative data must be captured to truly make this claim.

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BLOGGING IN THE CLASSROOM: THREE PEDAGOGICAL APPROACHES TO USING BLOGS FOR REFLECTION

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Innovative Idea Poster Submission

BLOGGING IN THE CLASSROOM: THREE PEDAGOGICAL APPROACHES TO USING BLOGS FOR REFLECTION

Introduction

Reflection has been a long standing tradition in agricultural education, especially as it relates to the use of experiential learning in classrooms (Roberts, 2006). There are many theoretical orientations to experiential learning and each identifies the practice of reflection as an essential learning component in the educational process (Townsend, 2002). Traditional reflection methods have included journaling (paper and electronic document), shared discussion, role play/taking, making metaphors, fish bowling, etc. However, as the student demographic changes and millennials become the prevailing student majority identifying teaching methods which align with their comfort and preferences will be increasingly important. Blogging as means to engage student reflection is an appropriate and relevant tool to add to the teaching "toolbox." Yet, before an instructor can capitalize on this method it is important to establish a basis for what blogging is and the many forms it can take as a classroom pedagogical tool.

Methodology

Blogs are part of a cadre of online tools that have grown in popularity in recent years (Richardson, 2006). Blogs, originally known as Web Logs, are instantly updateable websites that allow the author or authors to publish personal thoughts and comments in the same manner as a personal journal or diary (Blood, 2002). Scholars have commented on the integration of blogs into teaching and learning, developed specific strategies for utilizing blogs in the classroom and have suggested using blogs for the dissemination of information from teacher to learner and from learner to teacher (Gifford, 2009; Gupta & Meglich, 2008; Pittinsky, 2003; Richardson, 2006).

This poster will present three methods for using blogs in the classroom. These methods include instructor blog (teacher to learner), student blog (learner to teacher) and a combination of instructor and student blogs (teacher to learner/learner to teacher). Each of the three methods presents a unique strategy for instructors and learners to analyze and synthesize course concepts and discussions.

Results to date/implications

In an undergraduate leadership course, students participated in a 20-hour service-learning project outside of and in addition to the classroom requirement. Students were assigned to write a series of leadership blogs to reflect upon their service-learning project and integrate concepts learned in the classroom with the experiences at the project site. Students were specifically assigned to use a "what – so what – now what" model in their writing. Students using the what—so what—now what model for a blogging reflection exercise averaged higher grades and more consistently met the objectives of the assignment.

In an undergraduate agricultural communications course the instructor utilized a course blog as a tool to reach students outside of the classroom. The blog provided a means to encourage critical thinking about class topics or objectives, as well as additional academic content that could not be covered in class. Using blogs in this manner allows for more time outside the actual classroom that instructors can stimulate thought and provide extra incentive for searching out and using additional resources.

In a graduate leadership course both instructor and students blogged about personal leadership experiences. This allowed for students to have a model of blogging provided by the instructor, but also provided students with insight into the instructor's thoughts about leadership and her faculty role. Students shared their personal stories and thoughts over the course of the semester and were encouraged to read one another's blogs and post comments which were supportive and reflective. Additionally, a course blog was developed to host thoughts and perspectives related to the course, as well as provide a platform for links to student blogs. It has been found to be an innovative way to have students reflect on their experiences and familiarize them with social media.

Future plans/advice to others

Educators' use of internet tools will enhance teaching and learning with a generation of students who are increasingly using the internet as a primary source of information (Gupta & Meglich, 2008). Educators may find adaptation of pedagogy to meet this shift toward the internet to be a particularly useful and effective method for meeting the learning styles of today's students (Pittinsky, 2003).

Educators may consider integrating blogging technology into the learning experience for students by replacing hand-written or hard copy journals with online blogs. Educators may also find blogging useful as a means for disseminating, reviewing and supplementing course material. Anecdotal and quantitative evidence support the effectiveness of use of blogs in the classroom. Educators should consider which of the three methods described would be most effective and appropriate for their classroom.

Costs/resources needed

No costs are associated with most blogging activities. Many blog hosting websites are free of charge and provide free hosting services for blogs (i.e.—Wordpess, Blogspot, Blogger, Typepad).

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Innovative Poster

Bringing Experience Into the Classroom Through the Use of Blogs

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Bringing Experience Into the Classroom Through the Use of Blogs

Introduction/Need for Innovation or Idea

Dewey (1938) emphasized the need for experience as a basis for true learning. Preservice agricultural education programs promote the acquisition of experience through a variety of ways, including field trips, observations, and field experiences. With an increase in the popularity of blogging in today's society and among educators, the inclusion of blogs provides an additional method of connecting course content to real world experience. A blog is essentially a website that enables an author(s) to publish instantly to the Internet. Blogs include conversations and reflections that are constantly updated and promote reader interaction through questions, links, and comments. They are also relatively user-friendly, requiring about the same amount of technological savvy as sending an email (Richardson, 2009). As noted by Solomon and Schrum (2007), "With this new means of publishing, educators are free to share their ideas about issues and offer examples of what works" (p. 56).

How It Works

Through the use of technology resources such as Twitter, Google Reader and educational websites, finding a variety of educational blogs is effortless. For example, the Scholastic (2009) website maintains a list of "Top 20 Teacher Blogs". Bloggers may also suggest additional blogs for reading. Larry Ferlazzo is a teacher and blogger who has created lists of recommended blogs such as "The Best ESL/EFL Blogs" (2009c) and "The Best Places to Find Good Education Blogs"(2009a). By identifying and consistently reading relevant blogs, course instructors can bookmark blog posts that supplement course topics and utilize posts as references or as part of a course assignment. Instructors may also consider having students read specific blogs throughout the semester.

Results to Date/Implications

Blogs have been used to supplement content and assignments in two courses. In Computer Applications in Agricultural Education, content topics include using Twitter as a Teaching Tool, Wordle, and Google. Students are directed to read applicable blog posts and then have the opportunity to discuss the additional information and ideas acquired from the blogs in class and through discussion board posts. In Teaching Methods for Agricultural Education, students are required to read the blogs of new teachers as an example of teacher reflection and refer to blogs for classroom management ideas. Table 1 provides more specific information on a few of the blogs currently integrated into the courses.

Table 1

Blogs Used to Supplement Classroom Instruction

Course Topic	Blog	Title of Blog Post
Twitter	Teach Paperless (2009)	Best Practices in a Twitter Enhanced High School Classroom
Wordle	The Clever Sheep (Lucier, 2008)	Top 20 Uses for Wordle
Google	A Math Teacher Living in the 21st Century (2009)	True Life: Google Saved My Life
Teacher Reflection	Miss Calcula8 (Miller, 2009)	Week 10
Classroom Management	Larry Ferlazzo (2009b)	What Do You Do When You Have a Few Minutes Left in Class?

Future Plans/ Advice to Others

The inclusion of blogs into the classroom has been an excellent method of providing preservice teachers with the opportunity to gain additional insight and ideas from other teachers and will be continued in the future. Currently, it is a challenge to find blogs that are maintained by agriculture teachers. To help promote the creation of blogs specific to agricultural education, blogging will be promoted as a reflection tool throughout teacher education coursework and student teaching. Also, blogs can be used in induction programs to help novice teachers establish a professional network of other novice and experienced teachers who can provide comments and suggestions.

In an effort to make blog reading a more time efficient process, faculty members should utilize Google Reader and bookmarking sites such as Delicious to help organize blogs and keep current with new blog posts. With the opportunity for students to interact with educators from around the world, faculty members should provide instruction on professional conduct in an online environment. Students may need assistance in learning how to communicate most effectively using language and online etiquette appropriate for the profession. Students may also need to be reminded that blogs are a forum for all opinions and they may not necessarily agree with all that is written in a blog.

Costs/Resources Needed

The only resources needed to begin incorporating blogs into the classroom are a computer, Internet access, and time to search and review blogs. Those with little or no prior blog experience may require extra time as they become familiar with blog sites and begin interacting through reading and commenting on blogs.

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INNOVATIVE

Build Me, See Me, Touch Me, Remember Me: Display Boards for Student Teachers

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Build Me, See Me, Touch Me, Remember Me: Display Boards for Student Teachers

Introduction

Cognitive principles suggest that the inclusion of visual displays in the classroom lecture facilitates learning (Levin, 1976; McCormick, 1994; Seaman, 1998). A small portion of what a person sees actually makes it to working memory and an even smaller portion is processed for storage in long-term memory (Seaman, 1998). Information retention increases as more of the learner's senses are involved (McCormick, 1994).

The use of demonstration boards is effective in teaching agricultural mechanic skills (Bear & Hoerner, 1980). Realia and three-dimensional objects are commonly used to gain student interest when digital displays are unpractical. Display boards or demonstration boards are used for showing examples of products. The educational value of a display board is to show a process.

The purpose of this abstract is to describe the process of student teachers constructing their own display boards for use during their 14-week field experience. The goal of the activity is to provide student teachers with experience in developing and practicing fabrication skills, working cooperatively in small groups, and creating a final product which has utility as an instructional tool.

How it Works/Innovation

Students are shown many uses of display boards in the agricultural mechanics laboratory. The discussion leads from the value of the display board to the "how to construct" a display board. The material used is masonite peg board. Pegboards provide strength and can support the weight of realia (Bullough, 1981). The students are asked to divide a 4 foot by 8 foot sheet of pegboard into smaller equal-sized units. The finished size of the boards depends on the number of students in the class and available materials.

All tools and supplies are set up and arranged in the lab prior to the class. A panel saw is used to cut the pegboard (table saw or circular saw may be substituted). Miter saws are used to cut the furring strips which serve as the frame of the display board. The finished boards will measure 24 inches by 32 inches.

The boards are framed with 1 inch by 2 inch furring strips mitered to 45 degrees on the end. The corners are joined using #0-size hardwood biscuits and wood glue. The frames are fastened to the board from the back with round-head wood screws. Edges of the frame are rounded using a router. Open joints in the corner are filled with wood putty prior to sanding. The boards are finished with stain and varnish. Construction will take a class one full day to reach the finish stage. One of the benefits of this activity is that students gain experience with several power tools such as a panel saw, miter saws, biscuit jointer, cordless drill, router, and palm sander.

The class is divided into three groups. The first group will layout, measure and mark the sheets of pegboard, and cut each sheet into 24 inch by 32 inch pieces using a panel saw. The second and third groups will measure and cut the 1 inch by 2 inch furring strip used for the frames. One

group measures and cuts the 32 inch side pieces and the second group measures and cuts the 24 inch end pieces. Before any construction begins, the students are reminded about personal safety and provided with a demonstration on the use of the power tools by the instructor. While finished boards are drying, the lesson turns to the organization and display of realia. Students will be using their boards during a plumbing instructional unit. Each student is provided with an assortment of fittings and samples of pipe materials used in making a lawn sprinkler. The task is to create a display that is both eye-catching and educational. Students are challenged to create a board that is interactive. A scoring rubric is provided at the beginning of the assignment. Each student performs a self-assessment before submitting the project to the instructor. The rubric serves as an example for the student-teacher from which they can adopt and use during their own teaching experience.

Results to Date/Implications

The peg board is suitable for both large-group and small group instruction. Items may be temporarily attached using "S" hooks or Velcro strips. For more permanent mountings, zip ties or wire is used. The display board is a teaching tool that does not replace the teacher but serves as an extension of the teacher. A well conceived display board will be a valuable resource in a lab to show a process to completing an activity. The display boards are versatile so they may be used for any instructional area. Student teachers are challenged to build additional display boards for their teaching facilities.

Future Plans

The next step is to create display boards which are interactive. An electric board can be constructed by adding a conductor, light, and low-voltage power source (i.e., 6-volt battery). The result is a hands-on matching activity.

Costs/Resources Needed

All supplies can be purchased at a home improvement center. A laboratory with the necessary power tools and work tables is necessary. The cost per student can range from $8 to $12. Course lab fees cover the costs. Table 1 is a list of materials.

Table 1
Tools and materials for constructing display boards for a class of 12 students

Tools	Materials	Costs
Panel Saw	1/8" x 48" x 96" Pegboard (2 sheets)	$9.78/sheet
Miter Saw (2)	1" x 2" x 120" Furring Strips (15 pieces)	$2.24/each
Biscuit Jointer (2)	Wood glue (2 bottles),	$3.99/bottle
Portable Router (2)	#0 Biscuits (1 package)	$3.26/package of 50
Palm Sanders (4)	Quarter-sheet, Medium Grit Sandpaper	$14.97/20-pack
	Assorted Stains (2 quarts)	$7.18/qt.
	Chip brushes	$8.97/ 15-pack
	Wood Putty	$3.88/container
	Zip ties or wire	

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Characteristics of Missouri Agricultural Mechanics Programs: A Generational Review

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CHARACTERISTICS OF [STATE] AGRICULTURAL MECHANICS PROGRAMS: A GENERATIONAL REVIEW

Introduction/Theoretical Framework

Agricultural education laboratories are an essential component of the total secondary agricultural education program (Phipps & Osborne, 1988). According to Sutphin (1984), the use of school and community laboratories, where students employ "learning by doing," is an integral part of agricultural education programs. Johnson, [Author], and Stewart (1990) stated that students learn important psychomotor skills in agricultural mechanics education and that much of the instruction takes place in the school agricultural mechanics laboratory.

Agricultural mechanics courses are the most popular secondary agricultural education classes offered in [state] following the two introductory classes ([State Department of Education], 2008.) With the continuing popularity of these classes, research was conducted to determine the size and scope of agricultural mechanics programs in [state]. Researchers utilized a mailed questionnaire, sent to selected agriculture teachers, to conduct this descriptive study. Results from this study were compared to the 1990 study conducted by Johnson, [Author], and Stewart and the 1989 dissertation work by Johnson to determine trends in [state] agricultural mechanics programs.

Purpose and Objectives

The purpose of this research was to replicate the study conducted in 1990 by Johnson, [Author], and Stewart entitled *An analysis of the agricultural mechanics laboratory management in-service needs of [state] agriculture teachers*, to gain current information regarding [state] agricultural mechanics programs and the agriculture educators who manage them and then compare those characteristics with the characteristics of the 1990 study. The research objects were as follows:

1. Identify selected characteristics of [state] secondary agricultural mechanics programs from the 2006 to 2008 academic school years and compare them with the characteristics of [state] secondary agricultural mechanics programs from the 1987 to 1989 academic school years.

2. Identify the 2008 characteristics of [state] secondary agricultural education teachers who supervise agricultural mechanics laboratories and compare them to the 1989 characteristics of [state] secondary agricultural education teachers who supervised agricultural mechanics laboratories.

Methodology

The population for this study was all secondary agriculture teachers in [state] responsible for managing an agricultural mechanics laboratory in 2007 (n = 424). [State agricultural education supervisory staff] assisted in the identification of the frame. A random sample size of 205 was determined adequate to represent the population (Krejcie & Morgan, 1970).

Utilizing Dillman's (2007) recommendations for collecting data, usable responses were received from 110 [state] secondary agriculture teachers for a 55% response rate. An independent samples *t* test indicated that no significant differences ($p < .05$) existed between the early and late respondents based on their perceptions of the importance of, or their ability to perform, each of the agricultural mechanics laboratory management competencies. Since no significance differences were found between the early and the late respondents, the results of this study could be generalized to the population (Lindner, Murphy & Briers, 2001).

Results

Current [state] agriculture teachers are completing fewer university semester credit hours of agricultural mechanics courses than their 1989 counterparts and teach approximately 30% more students. On average, [state] agriculture teachers studied in 2008 had nearly the same number of years of teaching experience and spent nearly the same number of hours supervising student work in agricultural mechanics laboratories as did teachers 19 years ago. [state] agricultural mechanics laboratories are five years older and have nearly 48 square feet less per student. Compared to two decades ago, current agricultural education programs spend $11.30 less per student on agricultural mechanics consumables.

The average number of agricultural mechanics courses taught by [state] agriculture teachers, in a two year academic period, has nearly remained unchanged (Johnson, 1989). However, the introductory course, Agricultural Science II, has decreased in the number of times that it has been taught by [state] agriculture teachers from an average of 3.39 times in 1989 to an average 2.85 times in 2008.

Conclusions and Recommendations

Agricultural mechanics programs remain a popular choice for secondary agricultural education students in [state]. Today's teachers are teaching more students, in smaller laboratories with less money spent per student on agricultural mechanics

laboratory consumables. In addition, these teachers have less overall experience and less pre-service and graduate instruction in agricultural mechanics.

Agricultural education faculty, state agricultural education supervisors and local school administrators should offer pre-service and in-service educational programs for secondary agriculture teachers who are responsible for managing and instructing students in an agricultural mechanics laboratory. Further research should be conducted to determine the size and scope of agricultural mechanics programs, the need for highly qualified, agriculture mechanics teachers in the U.S. In addition, a nationally recognized list of agricultural mechanics skill competencies for new agricultural education teachers should be developed.

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Components of Teacher Identity as Indicated by Clinical Faculty

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Components of Teacher Identity as Indicated by Clinical Faculty

Introduction/conceptual framework

According to the National Council for Agricultural Education, the national long range goal for agricultural education calls for 10,000 quality agricultural science programs by the year 2015. In addition to this goal for national growth of programs, as the "baby boom" teachers near retirement age, it becomes critical to increase the number of strong teachers prepared to enter and stay in the classroom (Jorissen, 2002). The development of an identity in relation to a specific practice – such as teaching – leads to sustainability in the field (Collay, 2006; Luehmann, 2007).

Identity is an individual's answer to the question, "who are you becoming?" and makes learning an ontological transformation (Hodges, 1998). As the question is phrased as "becoming" and not a point at which one can arrive, identity is a changing view of self and can be viewed as a trajectory (Wenger, 1998). The formation of an identity allows an individual to become a full participant in a community of practice and thereby have access to the resources of the community (Hung, 2008; Luehmann, 2007). Identity includes definition by self and others, the familiar and unfamiliar, where one has been and is going, how each component is incorporated into one identity, and local and global belonging (Sachs, 2001). Clinical faculty members serve as experts in a community of practice that is rooted in the practice of teaching. In their role as experts, clinical faculty shape the pre-service teachers' trajectories within the community thereby affecting the development of an identity as a teacher. As definition by others is a component of identity development, the beliefs the clinical faculty have about qualities of good teachers impacts the professional identity formation of pre-service teachers (Zukas, 2006; Sachs, 2001).

Methodology

Seven clinical faculty, the on-sight cooperating teachers, were interviewed during the pre-service teachers' semester of student teaching. The interviews followed a semi-structured format and were audio-recorded for accuracy. Clinical faculty reviewed the transcripts for a member check. The interview transcripts were coded following a constant comparative analysis process and themes emerged (Boejie, 2002; Cresswell, 2007). Comparisons to the literature and between subjects provided triangulation (Anfara, Brown, &Mangione 2002).

Results

Clinical faculty indicated rapport with students, flexibility, adoption of teacher routines, being a learner, balancing life and work, professionalism, experimentation, and passion, as essential to teacher professional identity (Table 1).

Conclusions & Implications

As experts' perceptions contribute to the development of a professional identity, it is important to know what clinical faculty value in teachers. Through discourse with the pre-service teachers about what it means to be a teacher, clinical faculty affect what the pre-service teacher will value and whether the pre-service teacher will see those qualities in him- or herself (Hallman, 2008, MacLean & White, 2007).Therefore, a teacher preparation program should address rapport with students, flexibility, adoption of teacher routines, being a learner, balancing life and work, professionalism, experimentation, and passion, as essential to teacher professional identity as these are valued by the clinical faculty.

Table 1.
Essential Components of Teacher Identity

Category	Quote
Rapport with students	You need to show the students that it's ok to have some humility and to be goofy in front of them and to laugh and let them know that, you know, we make mistakes too.
	The kids like her, she's an excellent counselor.
	The students knew that she cared about them. And that is half of the mission… If they know that she cares about them, she could stand up here and teach anything and it wouldn't matter, they would take it in.
Flexibility	She adapts very well to change. And that, or course, is very beneficial because of when the schedules change.
	She's very adaptable which is very important, a very good asset, when you're a teacher.
	She needs to be very flexible.
Faculty Routines	I encourage her to speak as if she were a faculty member… So I try to treat her like she's another faculty member.
	I'll send her down, like if we have an IEP meeting or something.
	She's attended a building leadership meeting… She presented in front of them and spoke with other teachers about remediation ideas.
Learner	She was very accepting to any and all advice I was willing to give her at any time.
	She is always trying to make herself more aware of the things that are going on over a longer period of time.
	She's willing to say, 'hey, this isn't working, what do I need to do?'
Experimentation	She tries new things, she tries different things.
	She's tried some new things. And some have worked really well… She's feeling herself out as a teacher.
	She's very conscientious about making sure she tries different things.
Life Balance	Finding balance is an issue for anyone, as far as personal life, work life, and at times that's very overwhelming and I think that everyone experiences that.
	You have to be willing and get beyond that and still conduct all your business at school and somehow separate that.
Passion	She's got a passion. And it's a real passion for students, a real passion for teaching and what she's doing.
	She's willing to put in the long hours that it takes.
	She doesn't give up and I think that's a pretty good sign of a good teacher.
Professionalism	She is the ultimate professional..if she says she's going to do something, it's done.
	She will come and see what needs to be done..she's been very proactive in that.
	She is the ultimate professional.
	She's not a whiner or a complainer… She really does want to do a good job.

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Culturally Competent Secondary Agriculture Teachers:

The Multicultural Awareness-Knowledge-Skill-Attitude Assessment

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Research Poster

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Culturally Competent Secondary Agriculture Teachers: The Multicultural Awareness-Knowledge-Skill-Attitude Assessment

Introduction/Need for Research

The United States continues to become more ethnically diverse each year (Census, 2006), yet students continue to be taught predominately by White teachers (National Center for Educational Statistics, 2001). As schools continue to diversify in student enrollments, so should secondary agricultural programs. While there are no easy solutions for recruiting a large quantity of ethnically and culturally diverse agriculture educators (Talbert, Larke, & Jones, 1999), agricultural teacher educators should prepare current and future teachers to become more competent at teaching to an increasing ethnically and culture diverse student population.

Authority provides evidence that many secondary teachers lack the knowledge, awareness, and skill to relate with students of different cultures (Bennett, 1993; Gibson, 1984; Downey & Pribesh, 2004). This lack of competence and additional research led Wendt (1993) to suggest that secondary agriculture teachers have an "embedded bias" in the classroom among students of different cultures. Propositions identify multicultural social competence, learning how to interact with and understand people who are ethnically and culturally different from themselves, as a major priority for teacher education programs (Gay, 1995).

Based upon teacher perceptions, Bruno and Doscher (1981) found that the higher the percentage of African-American students attending a school, the less attractive the school was, and the higher the number of requests for teacher transfers. In 1998, the National Center for Educational Statistics reported that less than 20% of teachers who reported teaching ethnically diverse students felt prepared to meet the needs of their students. More recently, a study by Vincent, Killingsworth, and Torres (2009) found that the level of concern when teaching culturally different students to be significantly lower among preservice agriculture teachers than preservice teachers in other content areas. It is time the profession investigates, evaluates, and develops culturally competent teachers.

Conceptual/Theoretical Framework

For this particular instrument development idea, the Multidimensional Model for Developing Cultural Competence, MMDCC, (Sue, 2001) was selected. The concept of the MMDCC recognizes the cognitive and constructive stages that reflect the competence level of a secondary agriculture teacher. In addition, the model reflects and explains the important role that cultural competence plays on the ethnic enrollment of an agriculture classroom within a school district representative of diverse learners.

Methodology

To assess the level of cultural competence among secondary agriculture teachers, two primary data collection instruments were used. The first was the Multicultural Awareness-Knowledge-Skills Survey: Teacher Form (MAKSS-T) developed by D'Andrea, Daniels, and Noonan (1994). The researcher made modifications to the MAKSS-T and incorporated an attitude section derived from the Color-Blind Racial Attitudes Scale (CoBRAS) as developed by Neville, Lilly, Duran, Lee, & Browne (2000).

Modifications made to the combined data collection instruments fostered consistency and relevance of items to agricultural education and were rewritten to meet the reading level of the participants. The changes consisted of:

- Modified awareness statements of the MAKSS-T to have consistent anchors
- Developed definitions and examples to the knowledge section
- Provided additional statements to the skills section that reflect an agriculture classroom setting
- Modified skills statements to fit the same anchors
- Amended the CoBRAS into a 5-point Likert scale besides the six point provided
- Provided additional statements in the CoBRAS (attitude section) that pertain to attitudes observed in school settings

Once modifications and the combination of instruments were complete, the instrument was considered the Multicultural Awareness-Knowledge-Skill-Attitude Instrument (MAKSA). A panel of experts (n = 8) reviewed the MAKAS to address face and content validity. The panel of experts, represented various areas of education, including multicultural counseling education. A pilot study was conducted in October of 2009 among school-based agriculture teachers in the state of Kentucky (n = 27).

Results/Findings

The results of the Cronbach's alpha (see Table 1) was .89 for the overall MAKAST teacher score while the Cronbach's alpha level within each component area resulted in a = .81 for Awareness, a = .92 for Knowledge, a = .85 for Skills, and a = .80 for Attitude**.**

Table 1.

Reliability Estimates of the MAKAS Assessment

Instrument Component Areas	Cronbach's Alpha
Awareness	.81
Knowledge	.92
Skill	.85
Overall	.89
Attitude	.80

Conclusions/Implications/Recommendations

The MAKSA includes four constructs: awareness, knowledge, skill, and attitude. The awareness construct measures an individual's sensitivity, value, respect, and familiarity with differences that exist among cultures. The second construct, knowledge, assesses the knowledge and understanding of one's worldviews, group associations, and sociopolitical influences. The skill construct assesses an individual's skills to work with minority groups, individually and institutionally. A high score on the awareness, knowledge and skill section concludes that an individual is working to become culturally competent (D'Andrea et al., 1994). The final construct, attitude, evaluates racial color-blindness. A high racial color-blindness score reflects an individual who assumes society is fair and honest to all cultures or an individual who exhibits signs of racial prejudice (Neville et al., 2000). Thus, reflecting an individual's desire to be culturally competent. It is possible that an individual score high on attitude and the overall cultural competence (sum of awareness, attitude, and skill) because the instrument is self-rated.

The developmental stages of the MAKSA are completed with implications that the instrument can evaluate the cultural competence and attitude level of rural, agriculture teachers. The instrument is limited in the accuracy of evaluating different ethnic secondary agriculture teachers. The questionnaire was tested and developed for schools with an African American population, therefore limitations exists among schools with a diverse ethnic population that extends beyond African American. A factor analysis would serve beneficial in the accuracy level of the constructs. It is recommended that the instrument be utilized at professional development workshops to assess concerns of cultural competence and racial color-blindness attitude in secondary agriculture teachers and preservice agriculture teachers.

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DESCRIBING THE COGNITIVE LEVEL OF DISCOURSE OF A SECONDARY TEACHER DURING AN ANIMAL SCIENCE UNIT OF INSTRUCTION

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DESCRIBING THE COGNITIVE LEVEL OF DISCOURSE OF A SECONDARY TEACHER DURING AN ANIMAL SCIENCE UNIT OF INSTRUCTION

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Introduction/Need for Research

Teaching, like other forms of information transmission, is a communication process. Teachers send verbal messages, which contain information, to the learners who are expected to receive it and integrate it into their existing knowledge (Blum, 2006). Linda Darling-Hammond (2006) defends that deep learning requires sophisticated judgment about what and how students are learning, what gaps still exist, how to connect the material to the students' lives, and also to adapt instruction to meet common goals. Yet, Farr (1987) compiled a review of literature for a military research project, and said, "There is almost unanimous agreement that the single most important determinant of both knowledge and skill retention is the amount or degree of initial learning" (Farr, 1987, p. 5).

Conceptual/Theoretical Framework

Jean Piaget identified four factors, which influence a change in thinking. The four factors included biological maturation, activity, social experiences, and equilibrium (Woolfolk, 2004). Bloom, Engelhart, Furst, Hill, and Krathwohl (1956) established a taxonomy of educational objectives in the cognitive domain. The six levels in the taxonomy include: knowledge, comprehension, application, analysis, synthesis, and evaluation (Bloom et al., 1956).

Within Agricultural Education, Torres and Cano (1995) emphasized the importance of developing higher-order thinking in students. In addition, the researchers advocated that teachers should teach at higher cognitive levels, forcing students to do more than simply restate learned facts (Torres & Cano, 1995). Torres and Cano (1995) also stated that tests and assignments should be written at higher levels of cognition.

The purpose of this study was to determine the cognitive level of discourse in order to improve the use of current cognitive levels of discourse of secondary agricultural teachers. The research is part of a larger study to assess the cognitive level of discourse between students and teachers and its relationship to student retention of knowledge.

Methods

One high school teacher was videotaped while teaching an Agricultural Science I class of 12 freshman students. The teacher taught 18 one-hour lessons that compiled an animal science unit of instruction. The researchers viewed 18 one-hour lessons that were videotaped. The researchers examined the frequency of use of discourse as measured on the Florida Taxonomy of Cognitive Behavior (FTCB).

The class was taught March 27 through April 25 five days a week from 9:17 a.m. to 10:17 a.m. Monday through Friday. The teacher taught a three-week unit about animal

science during this study. The teacher used his own curriculum, unit of instruction, lesson plans, worksheets, quizzes, tests, and other resources. (Beck, 2009)

In using the Florida Taxonomy of Cognitive Behavior (FTCB), the researcher used six-minute observation periods. Each time a cognitive behavior was observed it was categorized by making a check mark in the appropriate box for the given time. If the observed behavior represented more than one category, all categories that were involved were checked. In any given observation period each category was checked only once, even if more than one observation of that cognitive behavior had been observed (Whittington, 1991).

Cognitive level of discourse was calculated using the process employed by Pickford (1988). For each class observation, a calculation was made of the total number of times that cognitive behaviors occurred during each observation period for each of the 55 categories within the seven levels of the Florida Taxonomy of Cognitive Behavior (FTCB) (Whittington, 1991).

Results/Findings

Findings related to teacher in-class discourse include a total cognitive weighted score for teacher discourse ranged from a low of 72.23, which means the total cognitive weighted score for teacher discourse was between the knowledge and translation levels of cognition (lower levels), to a high of 100.10, which means that the teacher discourse was at the application level of cognition (higher level). Almost half (44%) of the total cognitive weighted scores for teacher discourse were at the two lowest levels of cognition, (knowledge and comprehension) which include translation and interpretation on the FTCB. Approximately 54% of the total cognitive weighted scores for teacher discourse were at the four higher levels of cognition (application, analysis, synthesis, and evaluation).

Conclusions

The results of the study indicated that the scores stayed stagnant across the levels of cognition, across the unit. The teacher did not increase higher cognitive levels from day to day. The teacher taught nearly half of the unit at lower cognitive levels and half the unit at higher cognitive levels. The data also shows that there was little change from day to day in the levels of cognition used in class. In other words, the teacher taught 27% of his lesson at the knowledge level on the first day of class, and also taught 27% of his lesson on day 17.

Recommendations and Implications

It is recommended that the researcher will use this data to investigate the impact of Bloom's Taxonomy on student retention levels. Teachers should equally use Bloom's Taxonomy across all levels. Teachers could develop a progression through learning objectives to reach higher levels of Bloom's Taxonomy. Also, higher cognitive levels could be added to the discourse to potentially build across the unit.

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Research

Desired Characteristics of Beginning Agricultural Education Instructors as Perceived by School Administrators

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Desired Characteristics of Beginning Agricultural Education Instructors as Perceived by School Administrators

Introduction/Theoretical Framework

As the pressure for higher academic achievement in high schools increases, so does the demand for highly qualified and effective teachers. All teachers, including career and technical education teachers, are expected to help students meet the academic standards set forth by state departments of education. The call for students to perform well on state mandated tests is made throughout the educational system. However, much of the impact that is made on student learning depends on the teaching that occurs in the classrooms and laboratories of the school (Hattie, 2003). Therefore, the teacher that is facilitating the learning activities must be prepared in such a way to increase the potential for student learning, and ultimately academic achievement. Adequate performance on these tests is crucial for continued funding; therefore, administrators and other school authorities understand the importance of hiring qualified and effective teachers.

Previous research (Darling-Hammond, 2009; Miller, Kahler, & Rheault, 1989; Myers, Dyer, & Washburn, 2005; Roberts & Dyer, 2004), within and outside of agricultural education, has been conducted to identify the characteristics needed by an individual to be effective in teaching. One of the most common studies, outside of agricultural education, known to those in the teaching profession was completed by Rosenshine and Furst (1971). Although this study was conducted nearly 40 years ago, the characteristics of effective teaching identified by Rosenshine and Furst are still valuable today. Business-like approach, variability, opportunity to learn, clarity, and enthusiasm are a few of the characteristics that were identified. While these characteristics are arguably important for all teachers to possess, the current study was conducted to explore specifically the knowledge and skill needed by beginning agricultural education teachers, as perceived by high school administrators. The three component model of agricultural education (National FFA, n.d.) was utilized in examining characteristics of an effective agricultural education teacher.

Methods

The purpose of the current research study was to help pre-service teacher preparation programs gain a better understanding of the desired characteristics of an effective beginning agriculture teacher. The specific objective of the research study was to identify the characteristics, in the areas of classroom/laboratory instruction, FFA, and Supervised Agricultural Experience (SAE), of an effective agricultural education teacher in <state>.

Data was collected through the utilization of a modified version of the Dillman Total Design Survey Method (Dillman, 2000). The first round of the research was conducted by phone interview, and the second round was conducted through a mailed survey instrument. During the phone interview state staff of agricultural education (FFA Association Executive Secretary, state teachers' association, state FFA facilitator, and state Agricultural Education Advisor) in <state> identified characteristics that they perceive to be important to the success of a beginning agriculture teacher. A survey instrument was then developed and a field and pilot study were conducted. Reliability coefficients (alpha) for all three areas of the survey were acceptable and ranged from .79 - .91. Following minor changes to the instrument, based on the field study, the

survey instrument was sent out to high school administrators that have hired a new agriculture teacher in the past year, and high school administrators that have a veteran agriculture teacher who has been teaching in that school for more than 20 years. The administrators were asked to score each characteristic using a Likert-scale of 1 to 4 (one represented *not important*, two represented *slightly important*, three represented *important*, and four represented *very important*). Non-response was controlled by comparing early to late respondents as reported by Miller and Smith (1983). Comparisons indicated no significant difference in early to late respondents.

Results/Findings

A total of 96 surveys were sent and a total of 49 usable instruments were returned for an overall response rate of 51%. Data collected reflects that all of the characteristics identified by the stakeholders in round one of the research were also scored as important by high school administrators. On the 4-point scale the overall average for all characteristics was 3.42. Characteristics were categorized into one of three areas, to reflect the three component model of agricultural education. Categories included classroom and laboratory instruction, FFA, and Supervised Agricultural Experience (SAE). Characteristics related to classroom and laboratory instruction ranked higher than those related to FFA and SAE.

The three characteristics identified as most important in classroom and laboratory instruction included *enthusiasm about students* ($\bar{x}$=3.96), *a fair approach to all students* ($\bar{x}$=3.90), and *the ability to serve as a positive role model for students* ($\bar{x}$=3.90). The three characteristics identified as most important when advising an FFA chapter included *the ability to motivate students* ($\bar{x}$=3.79), *the ability to be genuine with students* ($\bar{x}$=3.72), and *the ability to work well with others* ($\bar{x}$=3.69). The three characteristics identified as most important when supervising SAE projects included *enthusiasm about agricultural education* ($\bar{x}$=3.86), *the ability to keep administration informed* ($\bar{x}$=3.66), and *the ability to evaluate student performance* ($\bar{x}$=3.63).

Conclusions/Implications/Recommendations

High school administrators believed that all 69 characteristics identified by <state> agricultural education stakeholders were important. Based on the results of the study, the administrators perceived that each of the characteristics were important or very important for a beginning agriculture teacher to possess. Thus, agriculture teacher preparation programs must realize that in the three areas of the agricultural education model (National FFA, n.d.) administrators expect beginning teachers to have knowledge and skills in each area. Teacher educators should review the characteristics outlined in the study and compare these to their current preparation practices to determine if the current practices are meeting the expectations of the administrators that hire their graduates. If not, these teacher educators should determine what if anything should be changed in the program.

Classroom/laboratory instruction was deemed most important by high school administrators when looking at the entire agricultural education model. Although the three overall mean scores for the construct areas were *important*, classroom/laboratory instruction was higher overall. This may be in part to the fact that some administrators are not as familiar with FFA and SAE. However, teacher educators should consider the importance of classroom/laboratory instruction characteristics, in the eyes of administrators, as they prepare future agricultural education instructors.

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Developing a Diversified Program: The Madison County 4-H Youth Outreach Project

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Need for Idea

[County] County, [State] has a rich mixture of people from different economic and ethnic backgrounds. According to the latest census, people of color represent over 40% of the county's population (U.S. Census Bureau, 2007). Economically, the median household income is $29,613 per year while 20 % of the county's population lives under the poverty level (U.S. Census Bureau, 2007). While the county's 4-H program is vibrant and growing, children of color and non-traditional youth have typically been underrepresented in many of the county's 4-H initiatives. Although there are many contributing factors that may potentially play a role in the lack of participation by these groups, the [County] County 4-H Youth Outreach Program was implemented to eliminate many of these tangible barriers. With the assistance of community leaders, extension agents, and local businesses, the program is on track to enhance the educational and personal growth opportunities 4-H offers.

How it Works

Prior to the start of the program, potential students are recommended by teachers, community leaders. After recommendations are received, needs assessments were conducted by county extension agents to determine if students qualified for the program. Once identified, information letters describing the purpose of the program were sent to parents for consent. Following the initial agreement from parents and students, a second assessment is conducted to determine what type of livestock would best fit each student's ability. Once students select the species of livestock they wish to show, the county agent serves as a liaison to ensure that proper care and maintenance of the animals is being completed by the students. The goal is for students to raise and show the animal at the [County] County Fair. Funds generated from the sale of animals are placed in a trust fund under the student's name. The funds are governed by a three signature system. Students receive the profit at the completion of high school and the entrance to a trade school, junior college, or university.

Educational Benefits

Students are required to attend monthly 4-H club meetings. Animal care, health, and nutritional needs of livestock are topics discussed. Students are also required to attend livestock showing practices that provides them with the opportunity to learn techniques of exhibiting livestock while gaining knowledge regarding shearing and fitting animals. Students are also required to be present at workshops offered at the county and district levels. The objective is to acquire more knowledge about 4-H and encourage other youth to develop an interest in agricultural education.

Results

During the first year, ten youth participated in the program. Because the program is in the beginning phases, the results of knowledge gained and change in attitude are difficult to

determine. However, as the program progresses, students become more familiar with their projects. Students are attending meetings, livestock project clinics, and showmanship practices. Every student has been enthusiastic and eager to learn. The reward is witnessing students working with their families on a livestock project that would not have been possible without this program. At the conclusion of the program, the students will be required to complete a program questionnaire that will assist in evaluating their experience and improving the program.

Future Plans

The program is in the first of two years of operation. As the students progress with their livestock projects, there will be an effort to expand the youth's experiences to other aspects of the 4-H program. More specifically, the students will be recruited for leadership roles at the club level. The program will be evaluated at the conclusion of the second year for success and merit in [County] County. A needs assessment will be administered to determine if the 4-H program is effectively recruiting and maintaining underrepresented youth in the [County] County 4-H Program.

Costs/Resources Needed

The program operates on a $2000 fiscal budget provided through the [State] Agricultural Extension Service. Because many items were donated by outside resources, total operation cost is difficult to determine. A list of items needed and the source of donations is provided.

- Animals: Donations secured by the county extension agent. The donation of the animals is recorded with the local educational foundation. The foundation provides the donor with documentation for federal income tax reduction purposes.
- Feed Cost/Show Supplies: The county extension agent secured monetary donations to cover the cost of feed and show supplies from a local bank.
- Livestock Feed and Showing Supplies: The county extension agent facilitated collaboration with local feed stores to provide feed and supplies to the program, at cost to the store.
- Housing: The county extension agent coordinated with county's school district to utilize the high school agriculture farm to house animals in the program.

A local bank has agreed to fund the program in 2009-2010, however additional funds are always needed as veterinarian bills and unforeseen costs arise.

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Innovative Idea

Developing a Leadership Assessment Instrument for Cooperating Teachers

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Developing a Leadership Assessment Instrument for Cooperating Teachers

Introduction

For years the profession of Agricultural Education has been battling with a shortage of qualified teachers, Camp, Broyles & Skelton (2002). Researchers in the profession of Agricultural Education have often noted the impact of the cooperating teacher on the student teachers decision to enter the teaching profession *(Kitchel & Torres, 2007a).* In recent years, studies have been conducted in an effort to determine the leadership preference of the cooperating teacher and its impact when working with student teachers (Kitchel & Torres, 2007a; Kitchel & Torres, 2007b). There have also been studies to evaluate the effectiveness of the relationship of the cooperating and student teacher (Roberts, 2006; Young & Edwards, 2006).

The *National Research Agenda for Agricultural Education & Communication* (Osborne, n.d.) recognized the need to identify "what teaching, advising, and mentoring strategies most effectively and efficiently yield desired student outcomes with particular groups of students." (p. 7) In order to fill the many open positions each year, university teacher education programs need to effectively train student teachers and place them in cooperating teacher sites where they will build their confidence and hopefully make the decision to enter the teaching field. One way to facilitate this process is to ensure that cooperating teachers and student teachers are compatible in leader and follower style and preference.

Methodology

This descriptive study serves as step one in testing the reliability of a tool used to match student teachers and cooperating teachers. The population sample consisted of 20 purposively selected cooperating teachers who have hosted a student teacher within the past two years. The instrument used to assess the leadership preference of the cooperating teacher was the ELSI-AG (Educational Leadership Style Indicator – Agricultural Science Teacher Version). The ELSI-AG was developed by the research team and is based on Blanchard's Situational Leadership Theory (see Figure 1.).

The ELSI-AG was developed to determine the preferred leadership style of the cooperating teacher. It consists of 20 scenarios that may be encountered while working with a student teacher. Responses to each question are scored in one of four categories and respondents are labeled as a Director, Coach, Supporter or Delegator.

The instrument was reviewed by agricultural education professionals for face and content validity. Reliability was to be determined during the course of the study.
The instrument was delivered and returned online using Zoomerang. Data were analyzed using appropriate statistics within SPSS version 16.

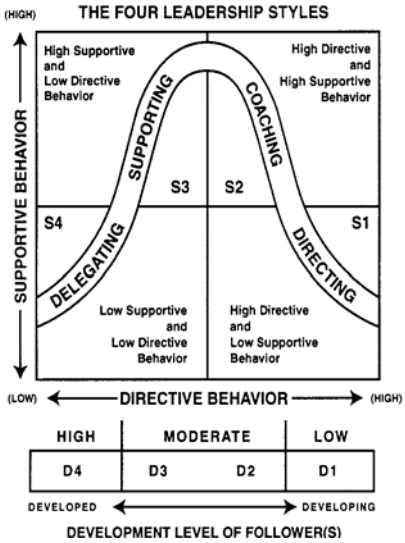

Figure 1. Blanchard's Leadership Styles and Follower Development.

Results to Date

All 20 participants responded by completing the ELSI-AG. It was determined that 5% preferred Directive leadership, 5% preferred the Coaching style, 90% preferred Supporting and none were primarily Delegators. Comments about the instrument itself included issues with question length, clarity and grammar. These have been corrected for the next round of testing.

Implications

Most cooperating teachers naturally fall into the Supporting category while we consider entry-level teachers to be in the D1 (low) category of follower development. Teachers want to support student teachers but results indicate they need direction to begin their experience. Teaching cooperating teachers to use correct situational leadership styles may lead to an an increase in agricultural education students who decide to enter the teaching profession.

Future Plans/Advice to Others

The researchers intend to continue testing and validating the instrument. A workshop is planned for the Fall 2010 semester to help cooperating teachers learn how to use their leadership styles to most effectively work with student teachers. An instrument is being designed to measure the follower development level of the student teacher.

Costs/Resources Needed

The instrument was developed and administered online. Costs were limited to labor and were minimal.

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Development of an Agricultural Mechanics Course for Preservice Teachers

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Development of an Agricultural Mechanics Course for Preservice Teachers

Introduction

Changes within post-secondary agricultural mechanization programs have led to a discontinuation of hands-on skill oriented courses in agricultural mechanics for preservice teachers (Burris, Robinson, and Terry, 2005). This has forced some teacher education programs to assume the task of providing instruction regarding technical content, laboratory management, and instructional methods in agricultural mechanics (Hubert & Leising, 2000; Johnson, Schumacher, & Stewart, 1990). In light of this national trend, _____ University developed and offered a one credit hour workshop on methods for teaching agricultural mechanics in 2002.

The workshop was an interim step towards offering a permanent course to develop preservice teachers' agricultural mechanics competencies through hands-on instruction. The workshop was discontinued in 2003 and 2004. It was later revised and offered again in 2005 and 2006. The revised workshop only provided 16 hours of instruction. This did not reflect the importance of the needed skill sets. Due to a lack of equipment, no available laboratory site, and no available instructor within the department; the instruction for the workshop was done by an agriculture teacher at a local high school. Enrollment was voluntary. Students who chose to enroll in the workshop commuted six miles. This was done twice weekly during a four-week block prior to student teaching.

In 2006 the department entered into a collaborative agreement with the department of animal science, the _____ farm, and _____ University's research and demonstration farms. The agreement was made in order to build a new facility as a step towards developing a more permanent solution to address preservice agriculture teachers' instructional needs and to provide a central location to service the university's research and teaching farms. Land was donated by the _____ farm so that in 2007 a 5,760-square-foot building was constructed. Approximately 2,100-square-feet were dedicated as an agricultural mechanics teaching laboratory. This provided the foundation for an agricultural mechanics methods course to be included in the teacher education program. The development of the course is the focus of this poster.

Purpose

The purpose of this poster is to share our experiences in developing and implementing a course on methods for teaching agricultural mechanics for preservice agriculture teachers.

Procedures

- A graduate student with prior experience in teaching agricultural mechanics was recruited to pursue a doctorate in order to help coordinate instruction, develop curriculum, and to secure equipment and supplies for the course.

- Most of the equipment was donated by local secondary agricultural education programs and the departmental farm. Other pieces of equipment were purchased from retailers at an educational discount.

- An experimental course request placing emphasis on methods and management techniques for agricultural mechanics laboratories was submitted and approved by the department. Topics for the lecture component of the course included safety, management of students, instructional techniques, facility planning, and management of equipment and materials. The laboratory portion of the course focused on mechanical skills development in small engine technology, electricity, and welding as well as practice for teaching those skills.

- The course was approved to be included in the 2009-2011 University Catalog as a three credit hour course with one hour of lecture and six hours of lab per week The departmental curriculum committee included the course as a core agricultural science requirement for agriculture and life science education teacher certification majors.

- The course was taught for the first time in the fall of 2008. Classes met on Mondays from 1:10pm to 3:00pm and Wednesdays 1:10 to 4:00pm.

Results

- Preservice teachers received hands-on instruction that focused on technical content integrated with curriculum design, instructional planning, and laboratory management.

- Thirteen students participated in the fall of 2008, eight participated in spring of 2009, and 13 are enrolled for fall of 2009.

- Students gave high course evaluation ratings. Students supported the course and encouraged the continuation of the course with a similar format.

- Students were provided resources including safety information, skill sheets, and presentation notes via WebCT.

- Students developed an agricultural mechanics teaching portfolio which included lesson plans and laboratory management plans.

Future Plans

We plan to offer the course every semester. More skills will be included as equipment and funding are identified. An additional course will be developed and offered in the future

Resources Needed

A student fee was charged for purchasing consumable materials and supplies. Departmental funds were used to acquire additional equipment not donated by other educational institutions.

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Development of an Instrument to Measure the Agriscience Education Self-Efficacy of Middle School Students

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Development of an Instrument to Measure the Agriscience Education Self-Efficacy of Middle School Students

Introduction

Experts in the field of career development have devoted much attention to investigating the factors that predict career choices in science, technical, engineering, and math-related disciplines (Quimby, Seyala, & Wolfson, 2007). One reason for the increased attention has been the desire to investigate the factors responsible for the underrepresentation of women and minorities in the STEM career fields (Hackett, Betz, Caas, & Rocha-Smith, 1992; Lent et al., 2005 as cited in Quimby, Seyala, & Wolfson, 2005). Similarly, factors influencing the educational and career choices in the agricultural sciences, especially urban minorities, has also been a topic of interest in career and technical education research (see Esters & Bowen, 2004; Esters & Bowen, 2005; Jones & Larke, 2003; Talbert, 1996, 1997; White, Stewart, Linhardt, 1994). One of the weaknesses of these studies however, has been the lack of attention to students at the middle school level.

Theoretical Framework

This study was guided by Social Cognitive Career Theory (SCCT; Lent, Brown, & Hackett, 1994). Social cognitive career theory is anchored in Bandura's (1986) social cognitive theory and focuses on three cognitive-person variables: self-efficacy beliefs, outcome expectations, and personal goals. SCCT has successfully been applied to areas such as science, mathematics, and engineering (e.g., Lent et al., 2001; Lent, Brown, Brenner, Lyons, & Treistman, 2003; Lent, Lopez, Lopez, & Sheu, 2008); however, it is particularly critical to examine other domain areas if the SCCT model is to be applied generally across occupational areas (Smith & Fouad, 1999). Recently, Esters (2006, 2007) applied SCCT to the domain of agriculture through the development of the Agriscience Education Self-Efficacy Scale (AGESES; Esters & Luster, 2004). The AGESES was originally developed for use with high school students; recently however, a version was developed for use with middle school students (see Esters, 2008). Although evidence of reliability was presented in this study, details regarding the development and psychometric properties of the middle school version have not been examined. As such, the purpose of this study was to describe the development of a reliable and valid instrument measuring the agriscience education self-efficacy of middle school students.

Methods

Participants for this study were students enrolled in middle school agriscience education programs (n = 150). Fifty-six percent of participants were male and 44% were female. Participants' age ranged from 12 to 15 (M= 13.5.0, SD = .73). The instrument used to collect data for the study was the AGESES (Esters & Luster, 2004) which was modified for use with middle school students. The instrument is comprised of four sections measuring variables of the SCCT framework: (1) Agriculture Self-Efficacy

(AgSE), (2) Agriculture Outcome Expectations (AgOE), (3) Agriculture Goals/Intentions (AgGI), and (4) Agriculture Interests (AgInt). Development of the AGESES was based upon the guidelines set forth by Bandura (1995), Lent (2006), and Betz (2006) for measures based on social cognitive theory. An EFA using principal-axis factoring with an oblimin rotation was utilized. The number of factors to extract was determined by examining the scree plot, Eigen values greater than 1.0, and conceptual interpretability of the factors using a factor loading cutoff of .40.

Results

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy of the AGESES were above .85 and Bartlett's test of sphericity was significant ($p < .001$) for each of the four sections indicating the suitability of the data for factor analysis (Tabachinik & Fidell, 2001). Examination for the pattern matrices revealed two-factor solutions for AgSE, AgOE, and AgInt; and a one-factor solution for AgGI. The two factor structure of AgSE, AgOE, and AgInt accounted for 65.72, 74.19, and 64.27 of the variance respectively. The one-factor structure for AgGI accounted for 75.72 of the variance. The AgOE factors were labeled Future Ag Outcomes and Personal Expectations. The AgGI factor was labeled Educational and Career Intentions. Because both the AgSE and AgInt factor solutions focused on animals and plants, the two factor solutions were labeled animal and plant efficacy; and animal and plant interests. All of the values of internal consistency reliability for the AgSE, AgOE, AgINt, and AgGI full scales and subscales were $\geq .77$.

Discussion

The purpose of this study was to describe the development of a valid and reliable instrument measuring the agriscience education self-efficacy of middle school students. Overall, findings indicate that the newly developed SCCT-based scales are a valid and reliable measure. Specifically, factor analysis revealed two-factor solutions of AgSE, AgOE, and AgInt; and a one-factor solution for AgGI. In sum, this study provides initial support for the Lent et al. (1994) SCCT model in occupational areas other than science, math, and engineering.

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Research

Effectiveness of Integrating Video Clips into the Secondary Agricultural Education Curriculum

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Effectiveness of Integrating Video Clips into the Secondary Agricultural Education Curriculum

Introduction/Need for Research

Secondary students today are considered members of the Millennial Generation (born in or after 1982). Members of this generation are quite different from previous generations because Millennials have grown up with media and technology and are naturally technology savvy (Kaiser Family Foundation, 2005). In a learning environment, members of this generation appreciate teamwork, experiential activities, structure, entertainment, and technology (Raines, 2002). When educating the Millennial Generation, McGlynn (2005) said more research is necessary to develop new teaching strategies, to adjust current practices, and to investigate how to effectively use technology to improve learning.

Researchers have studied the use of feature films to teach a number of concepts in a college setting. However, showing an entire feature film takes up a great deal of time and may not be realistic to meet course learning objectives. Roskos-Ewoldsen & Roskos-Ewoldsen (2001) found that using shorter video clips in an undergraduate psychology class helped students understand the concepts, made the concepts covered more realistic, and overall, made the course more enjoyable. However, few studies have examined the pedagogical effectiveness of using video clips (Roskos-Ewoldsen & Roskos-Ewoldsen, 2001).

The *National Research Agenda for Agricultural Education & Communication* (Osborne, n.d.) recognized the need to determine what instructional strategies improve student achievement in school-based agricultural education. The purpose of this study was to examine the effect of integrating video clips in the secondary agricultural education curriculum. The following research objectives were used to address this purpose: 1) To determine subjects' attitudes of integrating video clips into the agricultural education curriculum and 2) To determine subjects' satisfaction when video clips were used compared to when they were not.

Theoretical Framework

This study derived its theoretical framework from Bandura's (1986) social cognitive theory that states that learning can occur enactively or vicariously. Enactive learning involves actual doing and learning from one's own experience. Vicarious learning occurs when the learner does not overtly perform the behavior, but observes the behavior through other sources. Common sources for vicarious learning include observing or listening to individuals, symbolic representations (e.g., cartoon characters), printed materials (e.g. books), and electronic sources (e.g. television, videotape). Vicarious sources of information make learning more possible than if someone had to perform all the behaviors individually (Schunk, 2004). The integration of video clips into educational curriculum therefore provides a source for vicarious learning.

Methods and Procedures

This study used a quasi-experiment counterbalanced design in which all subjects receive the experimental treatment at some time during the experiment. This design is used with intact class groups to reduce any differences that exist between the groups (Ary, Jacobs, & Razavieh, 2002). Subjects were high school students enrolled in two sections of the same course, *Animal Science*, during the spring 2009 semester. Subjects were normally enrolled in these two sections and were

not reassigned for this study. One section had seven students and the other section had 12 for a total of 19 subjects.

The treatment consisted of embedding video clips into two animal science units – horse and swine. The video clips were from a variety of television shows (such as *Dirty Jobs* and *Modern Marvels*) and online clips from YouTube and United Streaming. Each of the units was two-weeks in length and was similar in the nature and difficulty of the concepts. Each unit had the following lessons: industry, history, breeds, feeding, management, housing, tack (equipment), diseases and parasites. The horse unit included anatomy, selection, horsemanship and training while the swine unit included lessons on production systems and marketing.

The class section that was randomly assigned to receive the treatment for the first unit (Group 1) served as the control for the second unit (Group 2) and vice versa. The control group was taught the same content using more traditional methods and no additional video clips. Subjects completed a 15-item satisfaction instrument adapted from Brashears (2004) and Alexander (2007) at the end of each unit. Students who were in the class that received the video clip treatment also completed an instrument adapted from Roskos-Ewoldsen and Roskos-Ewoldsen (2001) to provide their opinions regarding the use of video clips. Finally, a series of demographic questions were asked to determine age, gender, year in school, and GPA.

Findings

Data were analyzed using SPSS 17.0 for Windows. Of the 19 subjects, 12 were male (63.2%) and the average age was 16.58 (SD = 1.07). Eleven of the subjects were sophomores (57.9%), 3 were juniors (15.8%), and 5 were seniors (26.3%). The average GPA was 3.17 (SD = .47).

Attitudes toward the use of video clips were measured using an 8-item Likert-type scale (1=strongly disagree, 5=strongly disagree) with post hoc reliability alpha coefficient of .928. The average score for video satisfaction was 4.05 (SD = .83). A dependent t-test found no significant difference in satisfaction when video clips were used (M = 3.95, SD = .77) and when they were not (M = 3.83, SD = .69), $t(18)$ = .926, p value = .367, r = .71).

Conclusions

Students in the study were generally positive regarding the use of video clips in the two agricultural education curriculum units under investigation and agreed that video clips should be used in the future. However, there was not a significant difference in overall satisfaction between when video clips were used and when they were not.

Implications/Recommendations/Impact on Profession

The results of this study indicate that while students enjoyed the use of video clips in the agricultural education classroom, the use of video clips did not significantly impact overall attitudes of satisfaction regarding the class. It is recommended that the units be used again with larger classes to further examine the effect of integrating video clips on student satisfaction and academic achievement. It would also be beneficial to determine the current prevalence of video clips in school-based agricultural education including teacher's reasons for adoption or barriers to integration.

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Innovative Idea

Enhancing Career Development Event Preparation Utilizing Jing™ Audio/Video Recordings

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Enhancing Career Development Event Preparation
Utilizing Jing™ Audio/Video Recordings

Need For Innovation/Idea

Jing™ is a free, downloadable program available from TechSmith (http://techsmith.com) that allows users to capture a picture or video and narrate what is seen on a computer screen. These short recordings can then be shared over the World Wide Web, through social networking sites or links to recordings can be placed in an email. Recordings can also be saved on a computer and viewed at anytime, without an Internet connection. This new technology has the capacity to engage, captivate, and increase the learning of students involved in FFA Career Development Events (CDE).

The current generation of high school students and FFA members are part of Generation NeXT, which includes students born after 1982. Taylor (2008) stated that these students are "digital natives" and "…technology is a part of most NeXter's identity" (p. 9). With this in mind, the use of Jing™, serves to feed this generations desire to use technology as an integral part of their social and educational lives.

Student participation in FFA Career Development Events (CDE) is an important part of the FFA experience. According to the National FFA Manual (2009), preparing for a CDE is preparing for the future (p.53). Whether an FFA member is presenting livestock judging reasons to a single judge or is reciting the FFA Creed to a room of 500 people, all of the National FFA 24 CDE events require public speaking skills and the process of acquiring these skills can be enhanced with Jing™. Instructor/coach and student preparation for participation is an extensive process that requires teams to dedicate a tremendous amount of time both after school and on the weekends preparing for CDE field days and events. The use of Jing™ can increase and enhance how students prepare and practice for CDE events by expediting the learning process and meeting their technological interests and needs. Besides being free, Jing™ is a very easy program to learn – requiring less than 30 minutes for most students to learn.

How It Works

Jing™ has been used over the past year by the author to engage students involved in judging teams, creed recitation, and extemporaneous public speaking. The instructor/coach for each of these activities created a series of narrations using the free Jing™ program. For livestock judging team members, groups of four photos of various types of livestock were placed into one Power Point™ slide and reasons for placement were recorded. To assist FFA Creed speakers, each paragraph of the creed was written out, again using a PowerPoint™ slide. The instructor then narrated each paragraph and created a screen capture recording. Similar methods were used for other judging teams. Links to all recordings were posted on the instructors' website and all judging team members and public speakers were provided instructions on accessing the provided links. Links were available to speakers so that they could listen and read at the same time to facilitate memorization of their presentation or enhance delivery methods and general speaking skills.

Extemporaneous and prepared public speakers utilized the Jing™ program in a reverse manner. Speakers either used the instructors' computer or their own computer at home to record either an extemporaneous presentation or their prepared speech. Extemporaneous speakers recorded their presentation over a screen capture of their topic while prepared speakers recorded over a screen capture of a picture that related to their presentation topic. Instructors and student speakers then listened to the recordings together, pausing at moments in the presentation where changes or improvements could be made. These listening/feedback sessions provided not only opportunities for critique but also the opportunity to commend speakers on exceptionally positive moments in their presentation. Recorded presentations were also used when team members or public speakers met as a group to discuss new links or critique individual recordings as a group.

Results To Date/Implications

Students on judging teams and public speakers were eager to investigate Jing™ recordings provided by the instructor to help jump start their preparation. Speakers and team members have been able to learn their speeches and reason delivery methods more effectively and in less time. As a result, less time is spent on delivery techniques and general public speaking skills during after school practice. After school time, typically set aside for learning the basics of delivery and technique, has now been able to be used for actual live practice. More time can now be dedicated to viewing and critiquing classes of livestock because students have been able to learn tone and power of voice while at home or in the school's computer lab. The implementation of Jing™ for FFA Career Development Event preparation has allowed increased practice time without burdening students and instructors.

Future Plans/Advice To Others

Future plans include using the Jing™ program extensively to provide numerous examples and practice narration recordings. Instructors also have plans to use the Jing™ program to record short subject matter lectures to reinforce information delivered in class. Links to recordings will be posted on a separate page of the instructors' website, which is separate and different from team/contest preparation recordings. Based on instructor experience, when utilizing Jing™, recordings should include simple screen captures that relate to the narration. A localized, student accessible website works best for posting recordings for team member and student use. Instructors involved in teaching at the secondary, college, and university level can use the program in ways that are unique and pertinent to their needs. The first-hand experiences shared reveal that there are immense benefits.

Costs/Resources Needed

Jing™ is a free, downloadable application available on the TechSmith website (http://techsmith.com), however, those seeking more capabilities can spend the minimal cost of upgrading to the Jing™ Plus program. The cost of a computer and a microphone would be additional costs to consider. However, school computer labs should be investigated for potential use to reduce departmental costs. The time requirement to learn to use Jing™ is minimal and time to create recordings varies based on the individual.

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(Innovative Idea)

Enhancing Pre-Service Teaching Advising by Adopting a Skills Inventory

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Enhancing Pre-Service Teaching Advising by Adopting a Skills Inventory

Introduction

The needs of student teachers have been the subject of considerable research in agricultural education (Edwards & Briers, 2001; Johnson, Lindhardt, & Stewart, 1989; Mundt & Connors, 1999; Talbert, Camp, & Heath-Camp, 1994). Fritz & Miller (2003) found student teachers were most concerned about self-adequacy, including subject matter competency. Similarly, Myers, Dyer, and Washburn (2005) suggested most needs and /or issues facing student teachers include classroom instruction. These findings suggest there may need a need to strengthen subject matter competency of pre-service teachers.

The confluence of university courses that lack skills training and the lack of practical agricultural experience of pre-service students have created teacher candidates that lack many of the fundamental skills they are required to teach. Student teachers commonly express they cannot teach a skill because they do not have adequate skills themselves. Additionally, cooperating teachers have indicated student teachers lack necessary skills.

To identify the scope of this problem, a "skills inventory" instrument was developed to assess the skills of the students in a pre-service program. While students come to pre-service programs with a variety of skills, they will undoubtedly gain additional skills while completing courses in the teacher preparation program. A skills inventory assessment may enhance advising of pre-service students and encourage student to seek courses and experiences that will strengthen their skill set before they begin teaching.

How it Works

The instrument was developed from a variety of sources including consultation with practicing secondary teachers, master teachers, post-secondary agricultural educators, and university teacher educators. The breakdown of courses taught at the secondary level was also used to determine the relative importance of each area. Data generated by state FFA officials indicate the greatest percentage of courses offered is in the areas of agriscience (34 %) and agricultural mechanics (29%). Other courses include plant science, including floral and ornamental horticulture (12%), "other" agriculture (10%), animal science (6%), agricultural business management (4%) and forestry/natural resources (1%).

An initial list of over 250 content specific skills was developed and pared to 172 items representing specific skills necessary to teach and supervise agricultural experiences. The selected skills represented the following areas: Agricultural Business/Information Technology; Agricultural Mechanics; Animal Science; Plant Science/Ornamental Horticulture/Floriculture; and Natural Resources. Emphasis was placed in proportion to the courses taught in the state.

A list of agricultural education majors was extracted from the campus data system, which was deemed to be a reliable source. Students were asked to complete an on-line survey instrument which characterized each skill into a scale of No prior knowledge, I have seen it done, I have done it, and I can teach it. An on-line survey instrument was also used to collect data from subject matter faculty to determine the extent of skills introduced in required subject matter competency courses. Faculty were asked the same items with a modified rating scale: I talk about it; I demonstrate it; My students do it. Students are invited by email to complete the online skills

inventory and save their results for advising using the provided print option. Follow ups were made by email and in person by the agricultural faculty to increase the response rate.

Results

The initial survey of 56 students resulted in the completion of 45 instruments (80%). Class level breakdown included: seven freshman, six sophomores, 12 juniors, and 20 seniors. Mean scores were computed for each general area (see Table 1).

Table 1
Mean responses by subject area and class level

	Class Level				
Subject Area	1	2	3	4	All
Agricultural Business/Information Technology	3.0	3.1	3.2	3.3	3.2
Agricultural Mechanics	1.9	2.0	2.6	3.0	2.6
Animal Science	2.8	3.1	3.3	3.3	3.2
Plant Science/Ornamental Horticulture/Floriculture	1.7	2.4	2.8	2.8	2.6
Natural Resources	1.7	2.0	2.0	2.2	2.1
Total	2.2	2.4	2.8	3.0	2.8

Note: Likert Scale (1 = no prior knowledge; 2 = I have seen it; 3 = I have done it; 4 = I can teach it).

It must be noted that these samples are small for statistical analysis and the survey itself does not indicate which courses may have been completed at the time of completing the instrument. Areas of notable weakness were found across class levels in welding, landscape, floral, and natural resources management. Areas of strength for incoming students appear to be in information technology and animal science.

Mandatory advisement is required by the College of Agriculture and the Agricultural Education Department, which provided a venue for individual discussion of the instrument. During advising, the inventory was reviewed and faculty members made recommendations to “fill in the gaps” with directed work and internship courses, other subject matter courses, and summer employment.

Future Plans/Advice to Others

The long term goal of this project is to create a longitudinal study of student skills and to provide students the opportunity to assess their skills as they enter the program, either as freshmen or community college transfers. Students will be asked to complete the assessment as they begin their student teaching experience to evaluate their acquisition of skills while undergraduates. Data should also be used to tailor student teaching assignments to facilitate bridging gaps of necessary skills. Further data should be collected following student teaching to assess gaps in necessary skills prior to completion of student teaching. These data should be used to evaluate course requirements. Ultimately, long term research should provide evidence of increased teacher efficacy through carefully designed curriculum and student teacher placements.

Costs / Resources

The program has no direct cost beyond faculty instrument development and analysis time. The on-line survey is supported by software developed and supported by the College.

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Research

Exploring the Indicators of an Effective Agricultural Educators' Professional Development Event: The DELTA Conference

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Exploring the Indicators of an Effective Agricultural Educators' Professional Development Event: The DELTA Conference

Introduction/Need for Research

Preparing and providing an abundance of fully qualified and highly motivated agricultural educators at all levels is a priority initiative identified in the *National Research Agenda for Agricultural Education and Communication 2007-2010* (Osborne, n.d.). Studies have been conducted to determine the quality of various professional development events and their lasting effect on instructional practices (Fishman, Marx, Best, & Tal, 2003; Weeks, 2000). The purpose of this qualitative study was to explore the DELTA conference for the indicators of effective professional development. The DELTA conference is a professional development event, licensed by the National FFA Organization, conducted by teacher educators and education partners in California and Texas. Participants bring a content lesson with them and spend five days engaged in activities that incorporate theories of brain-based instruction (Caine & Caine, 1991), multiple intelligences (Gardner, 1983), cognitive domain (Bloom, Englehart, Furst, Hill, and Krathwohl, 1956), and modalities of learning (Bandler & Grinder, 1981) into the craft of teaching.

Conceptual Framework

Dunkin and Biddle (1974) proposed a model for teaching and learning that includes four variables: presage (the teacher), context (the student), process (the interaction of the student and teacher), and product (learning that occurs). Looking to affect student behaviors, schools have focused on influencing teacher behaviors through professional development events. The DELTA conference addresses both presage and process. Garet, Porter, Desimone, Birman, and Yoon (2001), drawing heavily on Dewey's (1938) postulate that experience is the key to all learning, found that professional development is of higher quality when sustained over time and involves a significant number of hours of engagement, ultimately leading to a change in teacher behavior. Their findings also revealed professional development that was both content focused and cohesive (connected with other professional development events, aligned with standards and assessments, and fostered professional communications) produced a higher level of changed practice (Garet et al., 2001).

Methodology

Using an emergent qualitative design, the researcher served as the primary data collection instrument (Merriam, 1998). As a participant-observer at the DELTA conference, the researcher documented her thoughts, emotional and physical reactions, observations of fellow participants, and the structure of the conference. Conference documents were collected for increased dependability. Following the conference and transcription of field notes, a member check was conducted to verify the perceptions and observations by fellow conference participants. The researcher coded the materials in an effort to identify patterns in events, personal responses, and participant interviews, always working toward deeper understanding of the emergent constructs.

Results/Findings

The study confirmed the findings of Garet et al. (2001). The researcher, verified by the participants, found the extended engagement to be beneficial to the overall effectiveness of the conference. By focusing on the pedagogical features of a content-based lesson they brought with

them, it became easier for the researcher and the conference participants to integrate the teaching strategies that were the focus of the professional development event.
Unlike traditional workshop settings that last only a few hours, participants were immersed for 75 contact hours as they assumed the roles of student and teacher simultaneously. Physical practice of instructional behaviors and strategy applications allowed the researcher and fellow participants to examine their lessons under a microscope, dissect them, determine what failed to work, then practiced implementing strategies to repair problems. The conference provided an avenue for educators of all ages and experience to provide and receive immediate feedback with regards to implementation.

During the week, participants applied and practiced tested teaching strategies, were coached as techniques were implemented, and were provided immediate feedback to facilitate improvement. This is very different from the past experiences of professional development events where the focus centered completely on instructional content. Those past experiences lasted from one to six hours and left the researcher feeling that the time spent would never effect change in classroom practices.

Conclusions

Seventy-five contact hours, 30 educators, five facilitators, two teacher educators, and an environment that encouraged participants to take risks, provide professional support for peers, and to seek feedback while practicing implementation proved to be a catalyst for change in this researcher's classroom. The indicators of effective professional development exist in the DELTA conference. There were extended engagement hours, the learning was active rather than passive absorption of information, and individual content expertise was utilized by having participants bring a lesson with them. DELTA related cohesively to personal experiences with professional development, aligned with standards and assessments, and fostered professional communication. According to Garet et al. (2001), these indicators lead to enhanced knowledge and skills as educators and will effect change in teaching practices. This change in practice leads to positive impacts on student learning, the ultimate goal of effective professional development (Garet et al., 2001).

Implications/Recommendations/Impact on Profession

The DELTA conference is a premier professional development event for affecting teacher practice. Providers of teacher professional development events should look to the DELTA conference as a model. In order to change teacher practice, it is necessary to increase the duration of engagement, provide educators with a safe environment to practice the learned instructional techniques, and create an environment that fosters professional communication. It is time to move away from the traditional workshop style of delivering professional development. If teachers are going to be required to spend hours of their time in a workshop, it is imperative that the time be well spent by addressing the content they already possess and establishing cohesion with prior and future professional development activities.

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Innovative Poster

Facebook in the Virtual Classroom

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Facebook in the Virtual Classroom

Introduction / Need for innovation or idea

The College of Agriculture and Life Sciences at Virginia Tech offers an online Masters degree in Agriculture and Life Sciences (MALS). The MALS program is designed for adults who would like to pursue a Master's degree while continuing to work full-time or fulfill other personal obligations. The MALS program allows students to work virtually; therefore the student reside around the country. The average age of MALS students is 36 with representation from diverse occupations including teaching, Extension, private industry, and government.

The courses generally use an online course delivery system such as Blackboard or Scholar to deliver educational content. In the summer of 2009, the program development and evaluation course added the use of Facebook, a social networking site, as an element of course delivery. Facebook was used in addition to Blackboard as a means of facilitating required weekly class discussions. The primary motivation for using Facebook was the lack of user-friendly discussion board options on Blackboard.

According to the Pew Internet & American Life Project, 35% of American adult internet users use social networking sites (Lenhart, 2009). In 2005, the percentage was 8%, demonstrating the growth in adult usage of social networking sites (SNS). Facebook accounts for 22% of adult social network users whereas 50% use MySpace, 6% use LinkedIn and another 13% use other sites such as BlackPlanet or Hi5. In addition to increasing numbers of adults using SNS, the frequency of use, as measured by visiting "yesterday", has increased from 2% in 2005 to 19% in 2008 (Lenhart, 2009).

Steps

The primary course management tool was Blackboard. Weekly lectures and assignments were posted on the Blackboard site but required discussion posts (minimum of 2 per week per student) which were conducted via Facebook. Prior to using Facebook, students were asked how they felt about the use of Facebook. No students (n=9) expressed objections to using the social networking site for scholarly discussions. After establishing consensus from students, the instructor took the following steps to introduce Facebook as a class tool:

- The instructor created a Facebook "group" requiring permission to join.
- Students were asked to establish a Facebook account if they did not have one.
- Students then requested to join the group. The instructor had to approve each group member.
- Joining the group did not give students access to other students Facebook pages if they were restricted.
- The initial post was a short biography with photo of each student and faculty member.
- Each week students were required to make one post on the weekly topic and reply at least once to someone else's post.

Implications

A mid-term course evaluation asked students their opinions' about the Facebook discussion board. Six students (67%) responded to the anonymous online evaluation survey. Five of the six respondents (83%) indicated that they liked the use of Facebook for class discussions. Typical responses include: "Again, I enjoy using Facebook as the discussion board. It's very convenient and makes things more personal. I definitely prefer Facebook to Blackboard." The student who did not like using Facebook stated, "I find Facebook to be very distracting and so I'd rather not use it for class discussion."

Future plans

Using Facebook as the discussion board platform for this course was overall, successful. The instructor and the majority of students found the discussion platform to be easier to follow than the Blackboard discussion platform. However there are important considerations before incorporating Facebook or other social networking sites into formal online classes. One important consideration is increased faculty time setting up an additional media for class and walking students through the process. It was assumed that students would have Facebook accounts and this was not, in fact, the case. Several students were new to Facebook but email communications between the student and instructor were sufficient for getting students started.

A second consideration is privacy. The course's Facebook group was established so that access to any posted information was available only with approval from the "administrator", in this case the instructor. Facebook users are able to set levels of access to their accounts. Most students set strict access to their accounts so that other students could not view their pages, only their class posts. Privacy did not become a problem for this relatively small group of graduate students but caution should be used when considering Facebook in other types of courses.

Costs/resources needed

One of the benefits of using Facebook is that there is no additional cost to incorporate Facebook into the online learning environment. Some research (Bugeja, 2006) has suggested that Facebook encourages distraction and multitasking rather than engaging students in the learning process. One student did remark that they found Facebook distracting but it did not seem to be a major issue in an asynchronous online environment. Other research indicates that Facebook can increase a students' sense of community and connection (Mack et al., 2007) which seemed to be the case in this course. The ability to see pictures of the instructor and other students and the biographical postings seemed to help increase class connectivity and community.

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FFA Professional Development Needs of Missouri Agricultural Educators

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Editor's Note: This poster was a regional winner and the published abstract is the abstract submitted to the conference.

FFA Professional Development Needs of [State] Agricultural Educators

Introduction

According to Phipps and Osborne (1988), a total secondary agricultural education program consists of three essential and interdependent components: classroom and laboratory instruction; independent experiential learning, commonly known as Supervised Agricultural Experience (SAE); and participation in the student leadership organization, known as the National FFA Organization. With the continuing growth of agricultural education in [State] and the increased student participation in FFA Career Development Events (CDE) ([State] Department of Education, 2008), research was conducted to determine the professional development needs of [State] agricultural educators pertaining to FFA CDE teams. Researchers utilized a paper questionnaire, administered to [State] teachers at area agricultural education meetings, to conduct this descriptive census.

Theoretical Framework

Over the years, agricultural education programs have evolved from production oriented training to consumption based education focused on semester long curriculum and courses (Washburn & Dyer, 2006). The constant evolution of agricultural education programs and the addition of core subject content skills have required many teachers to seek professional development opportunities to meet the demands of the changing emphasis of their programs (Washburn & Dyer). To accomplish this goal, providers of professional development in-service education should monitor the needs of agriculture teachers over time and provide educational programs based upon their current needs (Birkenholz & Harbstreit, 1987). Garton and Chung (1995) concluded that "the in-service needs of agriculture teachers should be assessed and prioritized on a continual basis" (p. 78). Nine years have elapsed since the last comprehensive study of professional development in-service needs of [State] agricultural educators. In previous studies, researchers found in-service needs in the following areas: developing agribusiness management skills, electricity skills, training FFA contest teams, assisting students with SOEP records, completing reports for local and state administrators, etc. (Birkenholz & Harbstreit, 1987; Garton & Chung, 1996; King & Garton, 2000). Due to the length of time since those studies were conducted and the continual need for research regarding the professional development in-service needs of agricultural educators (Osborne, 2007), an assessment of current professional development needs of agriculture teachers was warranted.

Purpose and Research Objectives

The purpose of this study was to identify the professional development education needs of [State] agricultural educators. The following research questions were investigated to accomplish this purpose:

1. What are the personal and professional characteristics (years of teaching experience, agricultural education district, agricultural education area, sex, FFA membership, 4-H

membership, type of teacher certification, major in bachelor's degree, minor in bachelor's degree) of school-based agricultural educators in [State]?

2. What are the professional development education needs of school-based agricultural educators in [State] related to educating [State] FFA Career Development Event (CDE) teams?

Methodology

The population for this study was all school-based agricultural education teachers in [State] (N = 467). Subjects were identified from the 2008-2009 [State] Agricultural Education Directory (2008) and confirmed by the agricultural education professional development staff of the [State Department of Education] [Name], personal communication, September 1, 2008). This study was extracted from a larger research project designed to assess the professional development needs of [State] agricultural educators. The data collection instrument, developed by Garton and Chung (1995), was modified for use with this study. Appropriate methods were used to determine the validity and reliability of the instrument including the use of a panel of experts (n = 9) and a pilot study (n = 20). Usable responses were received from 383 [State] secondary agricultural educators for an 85.68% response rate.

Results

[State] agriculture teachers had slightly more than 10 years of teaching experience. Nearly three-quarters (71.01%) of these teachers were men. The majority of the respondents taught at schools located within the Central agricultural education district and the Area 8 agricultural education area. Most of the respondents were FFA members (88.50%) and 4-H members (58.00%) as a youth. Overwhelmingly, almost 9 out of 10 (88.80%) of the respondents had a traditional agricultural teacher certification. Additionally, 76.50% of the teachers held a bachelor's degree in agricultural education. The respondents indicated that they had some need (Dairy Cattle Evaluation; M = 2.07 to Agricultural Sales; M = 2.49) for professional development education for all of the [State] career development events except for Parliamentary Procedures. For this CDE, [State] agricultural educators indicated that they had much need (M = 2.52) for professional development education.

Conclusions, Implications and Recommendations

The typical school-based agricultural educator in [State] is male with 10 years of teaching experience. He teaches at a school located in the Central agricultural education district and the Area 8 agricultural education area. As a youth, he was a member of the National FFA Organization and 4-H. In addition, he holds a traditional teacher certification in agriculture and a bachelor's degree in agricultural education. The characteristics of the respondents along with factors such as: location, length of time, time of year, cost, graduate school credit, and use of distance education technology (synchronous and asynchronous) should be considered when developing professional development programs for agriculture teachers.

[State] agricultural educators have professional development education needs relevant to the [State] FFA Career Development Events. The continual need for professional development education (Osborne, 2007), the increasing [State] FFA membership ([State] department of education, 2008), and the changing demands of agricultural education programs (Washburn & Dyer, 2006), creates a need for relevant and timely professional development education programs for [State] agricultural educators. These professional development opportunities should be planned and implemented by [State] agricultural teacher educators and state professional development staff and be delivered through summer and winter technical institutes. Future research should be conducted to determine the effectiveness of various types of workshops for diverse agricultural education topics and the effectiveness of pre-service teacher education in [State] for preparing teachers to educate FFA career development event teams.

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Innovative Poster

Food for Thought Curriculum: An Innovative, Collaborative Agricultural Literacy Project

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Food for Thought Curriculum: An Innovative, Collaborative Agricultural Literacy Project

Introduction

American agriculture feeds and clothes the world, yet many consumers are unaware of where their food comes from and the impact of agriculture on their daily lives (National Research Council, 1988). The agricultural literacy movement has devoted considerable effort to increase the visibility of agriculture in schools through enhancement of K-12 curriculum. However, many of the efforts have met resistance due to the increased focus on standardization and state testing. The Food for Thought curriculum was designed to address this concern and is aligned with state educational standards.

A pressing issue in American education is the need for increased reading instruction in schools. The National Institute for Literacy states that there are five components of reading; phonemic awareness, phonics, fluency, vocabulary and comprehension (National Institute for Literacy, 2009). Content area reading strategies can enhance reading instruction and enable students to attain a higher degree of literacy (Park & Osborne, 2006). The aim of the Food for Thought curriculum is to promote content area reading in science, social studies, and agricultural sciences.

Innovation

A need exists for an economical, effective and dynamic curriculum. One that is portable, easy to use, and available to everyone. Recently, the College of Agricultural Sciences along with the Departments of Agricultural Education and Extension and Experiment Station Communications developed an innovative curriculum design and delivery model. The Food for Thought curriculum is intended to be an open, adaptive and collaborative system where teachers in any subject can promote reading, improve agricultural literacy and increase the science, social studies, and language arts skills of all students.

The Food for Thought curriculum is available without cost and is directly linked to individual articles contained in the Oregon's Agricultural Progress magazine. The Oregon Agricultural Progress magazine is disseminated throughout Oregon to over 10,000 subscribers. Through an innovative design, teachers from throughout the state are supplied copies of the publication and then are able to access lesson plans directly linked to each article. The curriculum is a set of 20 individual lessons designed to provide teachers with creative, learner-centered teaching activities to improve fluency, vocabulary, comprehension, and the understanding of agriculture. The lessons are designed to be integrated into existing school-based curriculum and target middle and high school students. The uniqueness of having 20 individual lessons, directly connected to colorful and insightful magazine articles, provides teachers the freedom to integrate relevant and compelling agricultural content into their existing curriculum.

Program Design

The Food for Thought curriculum was designed in conjunction with the Fall 2009 issue of Oregon's Agricultural Progress magazine. Concurrent with the distribution of the magazine, teachers within the state were notified of the available curriculum and sent a link to the Food for Thought curriculum. This initial offering was intended as a pilot project to provide input as to the usability and sustainability of the Food for Thought curriculum. The intent of the creators was to determine future development based on feedback from the initial audiences.

In terms of curricular design, the materials were developed primarily through the dedicated efforts of a student enrolled in agricultural education and a faculty member within the department of Extension and Experiment Station Communications (EESC). Support for both the technical and graphic aspects of the project was provided through a joint collaboration between EESC and Agricultural Education. Collaboration was a critical element in the creation of this curriculum and constitutes a key aspect of program design.

Results

The special issue of Oregon's Agricultural Progress magazine has been distributed to over 10,000 individuals and several thousand additional copies were allocated for distribution to schools. The online lessons and related articles were also promoted through the Agriculture in the Classroom Foundation. The creators of the curriculum are monitoring dissemination of materials through online click-counts and eliciting feedback from target audiences through e-mail, telephone calls and face-to-face contact. The Food for Thought curriculum has received positive feedback from teachers. Formal data will continue to be collected in order to further develop the curriculum for a wider audience.

Future plans

The creators are optimistic regarding the continued use of the Food for Thought curriculum and the integration of agricultural content within area schools. One of the benefits of this project is the open availability of both the curriculum and an electronic version of the Oregon Agricultural Progress magazine. Once the awareness increases, educators external to the state and region will have open access to informative and well-developed agricultural lessons. The continued focus on innovative ways to facilitate open access curriculum and the dissemination of research-based agricultural information provide the keys for continued success of both agricultural education and the land grant system.

Costs

The costs of this project were minimal due to existing infrastructure and active collaboration. The primary expense was the wages of the project development team. The creators estimate that the agricultural education student spent approximately 200 hours with 40 hours of support from the magazine editor. Production of the curriculum in an electronic format eliminated any printing and mailing costs.

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Poster Type: Innovate Idea

Getting Their Feet Wet: Children's Water Festival Presentations as a Field Experience Component

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Getting Their Feet Wet: Children's Water Festival Presentations as a Field Experience Component

Introduction/Need for Innovation

For pre-service teachers, the early field experience holds an important place in teacher education programs. Pre-student teaching field experiences help future teachers better understand the classroom environment, build confidence, and appreciate the various roles teachers play (Arnett & Freeburg, 2008). According to the National Standards for Teacher Education in Agriculture (AAAE, 2001), field experiences should be high quality, well planned, and sequential. Pre-service teachers in the agricultural education department at the University of Wisconsin-River Falls (UWRF) complete 120 hours of early field experience prior to student teaching. Their exposure to middle-school age students is limited because of a lack of middle school courses in the agriculture programs near campus.

Presenting at an area water festival provides an alternative early field experience activity working with middle school students. “A water festival is typically a one-day event organized to educate a large number of students from several schools about water resources” ("Children's Water Festivals", n.d., para.1). The Chisago Children's Water Festival provides hands-on water resources education to nearly 750 fifth-grade students in September each year. In the fall of 2007, the organizers of the Chisago County Water Festival invited students from the UWRF agricultural education department to present at the festival. Participation in service learning activities like this helps students learn both disciplinary knowledge and civic knowledge (Robinson & Torres, 2007). The festival provided an opportunity to build teaching knowledge while supporting the community.

How It Works

Students enrolled in the AGED 201 Program Delivery in Agricultural, Extension, and Leadership Education and TED 440 Techniques in Agriculture courses present at the festival. Students first attend an evening training session provided by the Minnesota Project WET coordinator. Student groups of 2-3 are then assigned to each of the activity stations. Each group then prepares an instructional plan. The festival coordinators provide the basic materials, but the students need to clarify the learning outcomes and develop introductions. For students enrolled in AGED 201 this field experience is their first opportunity to write and present a lesson.

On the day of the festival, each student group presents four to six times to classroom sized groups of fifth-graders. The festival coordinators provide all materials. Unlike many classroom-based field experiences, students teach and reflect on the same lesson numerous times throughout the day. After the day is complete, students submit a reflection paper based on the entire experience. In 2009 the UWRF students also had the opportunity to attend a second on-campus session to complete the Project WET training and receive the full curriculum guide.

Results to Date

Since the partnership began in September 2007, 85 UWRF students have presented at the festival. The number participating has increased steadily each year. The event has been very popular with the UWRF students and several volunteer each year even though they are not enrolled in the affiliated courses. The festival organizers also recognize the value of university student participation. Jerry Spetzman, Water Resource Manager with the Chisago County Department of Environmental Services and Zoning, stated "I believe that the River Falls student participation in the Festival is a major reason the festival is a success" (personal communication, September 10, 2009). In 2009, 41 students completed the full Project WET training and received the Project WET curriculum.

Future Plans/Advice to Others

The department plans to continue involvement with the Chisago Children's Water Festival. It provides a win-win situation for the pre-service teachers and the fifth-grade students. The chance to teach, reflect, revise, and repeat rarely occurs in other early field experience settings. Other agricultural education teacher preparation programs are encouraged to seek out similar activities. The partnership supports pre-service teacher development and community relations.

Costs/Resources Needed

The UWRF agricultural education department has not incurred any financial cost due to this partnership. The festival organizers cover the costs for all materials used during the training and festival presentations. They have also been able to cover the cost of transportation by providing $10 per student to support those who drive to the event. In 2009 the fee for the Project WET curriculum and training was also provided.

While not essential, having the Project WET Coordinator provide training also benefits the pre-service teachers who participate. It exposes students to another facilitation style. Tips for how to approach each activity, what to look out for, and suggestions for involving adult chaperones help students write better instructional plans and deliver high-quality presentations at the festival.

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Research Poster

How are Students Thinking Critically? Measuring the Difference between Seeking Information and Engagement

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How are Students Thinking Critically? Measuring the Difference between Seeking Information and Engagement

Introduction/Need for Research

The ability to think critically has been repeatedly identified as a cognitive style necessary for students in the 21st century (Myers & Dyer, 2006). Critical thinking ability is essential to our students' success because it represents their ability to deal with decisions faced every day (Torres & Cano, 1995). However, this ability is constantly changing as students learn and grow and is therefore extremely difficult to measure. By using critical thinking dispositions, which Irani et al. (2007) have identified as "the gateway through which one allows the mind to engage in critical thinking activity," (p. 2) a deeper, slowly changing preference rather than ability becomes the unit of measurement. These dispositions are measurements agricultural educators can use when assessing students and creating educational curriculum. Improving the success of students enrolled in agricultural and life sciences academic and technical programs is part of the National Research Agenda: Agricultural Education and Communication, 2007-2010 (Osborne, n.d.), therefore a study designed to create an instrument which can be used to improve student learning can yield valuable data providing direction for future practice and research.

Conceptual or Theoretical Framework

Critical thinking has long been recognized as one of the most important cognitive traits influencing an individual's success (Myers & Dyer, 2006; Torres & Cano, 1995). Facione (1990) was the first to attempt to describe dispositions as they pertain to critical thinking by conducting a Delphi study using top researchers in the field. Seven separate dispositions were identified (Facione). While conducting a factor analysis of the California critical thinking disposition inventory, Moore, Rudd, and Penfield (2002) found more factors than previously identified by Facione in 1990. In an attempt to more accurately and parsimoniously measure critical thinking disposition, Irani et al. (2007) used the Delphi study results and a review of literature in the field of critical thinking to create a new instrument, the UF-EMI. The UF-EMI uses three constructs to describe an individual's critical thinking disposition. While the UF-EMI has a sound base in critical thinking literature, instruments with multiple constructs have not been found as useful as those utilizing a continuum (Spector, Van Katwyk, Brannick, & Chen, 1997). The purpose of this study was to develop a reliable critical thinking instrument displaying disposition on a continuum.

Methodology

With permission, the UF-EMI was adapted to create a new critical thinking instrument measuring critical thinking disposition on a continuum between the individual's willingness to engage internally and their interest in seeking out information when thinking critically. Data collected using the original UF-EMI was examined to identify items exhibiting colinearity. As a result, 22 of the original 26 items included on the UF-EMI were used for the new instrument. Eight assessed the level individuals engaged while thinking critically, while the other fourteen examined how much the individual sought out information during the same process. Participants

used a five-point scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*) to indicate their level of agreement with each item. Possible scores can range from 22 – 110.

The low scoring end of the continuum (engager) represents an individual's ability to anticipate situations, look for opportunities to use their reasoning skills, and confidence in their ability to reason, solve problems, and make decisions. The high scoring end of the continuum (seeker) represents their awareness of their own predisposition and biases, the extent to which they are hungry learners open to the opinions of others, looking for new knowledge, and having a desire to know the truth even if it conflicts with their presently held beliefs.

Undergraduate students enrolled in an oral communications course offered by the College of Agriculture to the entire university, were invited to complete an online questionnaire. Of the 205 students enrolled in the course, 196 completed the assessment for a 95% response rate. Scale reliability of the entire instrument was calculated, resulting in a Cronbach's alpha coefficient of .81.

Results/Findings

Of the group of students surveyed, 57.2% were female and 40.8% were male. They were primarily junior (43.4%) and senior (41.5%) undergraduate students. 62.9% were White, 17.0% were Black, 8.2% were Hispanic, 8.2% were Asian, and 3.0% reported their ethnicity as Other. Their ages ranged from 18 to 34 years, with the majority falling between 20 and 22 (76.1%). The inventory results indicated a mean score of 82.9 (SD = 5.8). Scores ranged from 62.5 to 98.3. Participants with scores of 82 or lower (39.6%) were considered engagers and those with an 84 or higher (41.5%) were considered seekers. Those falling between 82 and 84 scored high in both areas of critical thinking and were labeled mediators (19.9%). Differences in scores between gender, ethnicity, and age were tested using independent t tests and ANOVA to find there was no significant variation based on these demographic characteristics.

Conclusions

The newly revised inventory, placing individuals on a continuum, distributed the participants evenly with higher reliability than previously used measurement tools.

Implications/Recommendations/Impact on Profession

Using this new instrument, agricultural educators will be able to enhance their learning experiences. Through a deeper understanding of the differences in individuals, educators can develop opportunities for students to both seek out information, testing their previous thoughts and adjusting appropriately, and engage in activities which push students to develop confidence in problem solving and making decisions. The development of course materials which encourage students to develop critical thinking at a deeper level will not only enhance learning but make them more employable upon completion of their degree. Future recommendations include replication of the study to confirm results, as well as testing the instrument on a broader population since college students are in an environment which encourages critical thinking.

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Innovative Idea

How Pre-service Teachers are Preparing to Serve the Deaf in AGED: Opting for American Sign Language (ASL) as a "Foreign Language" to Meet Teacher Certification Requirements in Oklahoma

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How Pre-service Teachers are Preparing to Serve the Deaf in AGED: Opting for American Sign Language (ASL) as a "Foreign Language" to Meet Teacher Certification Requirements in [state]

Introduction

"In the past decade, various changes have impacted agricultural, career, and technical education" (Elbert & Baggett, 2003, p. 105), for example, an increasing number of special needs students have been mainstreamed into agricultural education classrooms (Gentry & Myers, 2010). Numerous high school students in the United States have disabilities that affect their learning. According to the Americans with Disabilities Act (ADA), a person with a disability is someone who, "1) has a physical or mental impairment that substantially limits that person in one or more major life activities; or 2) has a record of such a physical or mental impairment; or 3) is regarded as having such a physical or mental impairment" (The U.S. Equal Employment Opportunity Commission, 2008, sec. 902.1 [b]). Specifically, one such disability is deafness or hearing loss. In 2006, approximately 80,000 deaf or hard of hearing students in the nation's school systems were receiving services (i.e., special education assistance) (U.S. Department of Education, National Center for Education Statistics, 2009). Educators often may not know about a student's hearing loss; some student's decibel loss is not great enough to require an interpreter, but their hearing is limited or impaired nonetheless.

"Agricultural Education teachers are faced with various challenges due to the mainstreaming of disabled students into regular classrooms. Thus, it is imperative that teachers acquire the skills needed and increase their competency levels to teach special need populations" (Elbert & Baggett, 2003, p. 106). So, because many students in the nations' school systems are deaf or have a significant hearing impairment, American Sign Language (ASL) could be an appropriate alternative to a traditional foreign language for pre-service teachers to learn. By learning the language and "Deaf culture," pre-service teachers, including those pursuing a degree and teacher certification in AGED, may gain a better understanding of the "Deaf World." In the case of [* * *] University, students can use the degree program's five elective hours for this purpose ([* * *] University, 2007, AG-17).

How It works

Pre-service teachers at [* * *] University must complete five credit hours of foreign language as a part of their teacher certification requirements in [state]. Pre-service teachers may enroll in ASL 1 and 3 in the fall and ASL 2 and 4 in the spring. ASL 1 and 2 are also offered as month-long classes in the summer. Students must take the classes consecutively and have a passing grade in the previous class to be eligible for the next. ASL 1 and 2 are both five credit hour classes that focus on basic vocabulary and Deaf culture. ASL 3 is focused on grammatical structure of the language. ASL 4 explores ASL literature and poetry. However, successful completion of ASL 1 meets the "foreign language" requirement and introduces pre-service teachers to Deaf students and their culture. In ASL 1, "Learners will use finger spelling, signing, eye gaze, classifiers, mime, and facial expressions presented in context and through meaningful

and experimental activities" ([* * *] University, 2007, p. 230). ASL 1 also highlights the importance of non-manual signals (i.e., facial expressions and body language).

Results to Date

Since 2006, four AGED pre-service teachers completed ASL 1 successfully. These pre-service teachers have been actively involved in the "Deaf Community" on campus as well as [city]. Pre-service teachers involvement around campus have included many activities such as, signing at athletic events, active members in the ASL club, and attending "silent dinners." One pre-service teacher, now enrolled as a graduate student, is currently training to become a certified interpreter. As part of her on-going training, this student is charged with interpreting for a deaf pre-service student during AGED course laboratories. Two caveats exist that students must consider when choosing ASL as a foreign language: 1) One instructor, thus, only one section, and 2) Honor students are granted priority enrollment, as a result, seat availability is an issue. This is unlike many other foreign languages at [* * *] University that have multiple instructors and sections. Subsequently, AGED pre-service teachers who are interested may not have the opportunity to enroll in ASL.

Future Plans

AGED faculty will continue to make pre-service teachers aware of ASL as a foreign language option during advising sessions. Pre-service teachers who have completed ASL could serve as a change agent regarding the adoption of ASL as a foreign language for other pre-service teachers (Rogers, 2003).

Currently, an AGED major who is profoundly deaf is attending [* * *] University. He aspires to become a secondary agricultural education teacher. His main goal is to graduate from [* * *] University and start an agricultural education program at the [state] school for the Deaf (J. A. Billinger, personal communication, February 25, 2010).

Cost

The cost associated with ASL is the current price of tuition and associated fees. At this time, tuition per credit hour is $131.35 and required fees for the course are $57.00, thus totaling $713.75 for the course.

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Identifying Graduate Students' Areas of Concern

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Identifying Graduate Students' Areas of Concern

Introduction/Need for Research

The transition to graduate school can be very stressful for students, whether they are entering directly from an undergraduate program or from the workforce. Tokuno (2008) said the common belief that graduate students do not need additional support because they have already successfully completed an undergraduate program is incorrect. Providing assistance with the transition to graduate school may help improve the retention of graduate students and help them graduate on time. Ferrer deValero (2001) said an orientation course or seminars should be offered to help explain the intricacies of graduate school including paper writing and publishing, applying for grants, and learning how research is conducted.

The *National Research Agenda in Agricultural Education and Communications* (Osborne, n.d.) addressed the need for additional research to improve the success of students enrolled in agricultural and life sciences programs. The purpose of this study was to identify graduate students common areas of concerns regarding various aspects of their graduate school experience. Once these topics are identified, additional opportunities can be provided to decrease anxiety and improve student performance.

Theoretical Framework

Self-efficacy is "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p.3). This concept is of particular importance to education because people with higher levels of self-efficacy perform better at whatever the task may be. Schunk (2001) said self-efficacy can influence behaviors such as persistence, skill acquisition, effort expenditure, and choice of tasks.

Methodology

The population for this study included all graduate students on assistantship in the Agricultural Education & Communications Department at a southwest university. The researcher-developed survey instrument was distributed during a required orientation session before the Fall 2009 semester. The instrument had 41 questions that addressed a variety of tasks and/ or responsibilities graduate students often encounter during their time in graduate school. The instrument was divided into six sections: 1) Ins and Outs of Grad School, 2) Writing for an Academic Audience, 3) Locating and Reporting Research, 4) Presenting Research, 5) Evaluating Research, and 6) Computer Skills. Questions within each of these sections asked students to rank how confident they were performing certain tasks on a five-point Likert-type scale (*1=not confident at all* to *5=extremely confident*). A panel of experts was used to establish face and content validity of the instrument. Post-hoc analysis using Cronbach's alpha found the reliability of the individual constructs ranged from 0.77 to 0.98. Additional questions were asked to identify where assistance on the topics could be provided. Finally, several demographic questions were asked. Data were analyzed using SPSS 17.0 for Windows™.

Results/Findings

Of the 21 students who completed the instrument, 13 (61.9%) were master's students while the remaining 8 (38.1%) were working on a doctoral degree. Only six students (28.6%) were in their first semester at the university and nine (42.9%) had already completed the introductory research

methods class taught in the department. Table 1 provides the six topics that received the lowest mean confidence scores while the highest mean confidence scores are displayed in Table 2.

Table 1. *Topics that received the lowest mean confidence scores*

Topic	N	Mean	SD
Identify where your research fits in the *National Research Agenda for Agricultural Education and Communication*	21	2.81	1.40
Use SPSS to analyze research data	20	2.90	1.48
Design a research poster	20	3.00	1.34
Effectively present a research paper at a research conference	20	3.05	1.54
Write a research poster narrative	20	3.10	1.29
Explain the procedure for the Institutional Review Board [University]	20	3.10	1.55

Table 2. *Topics that received the highest mean confidence scores*

Topic	N	Mean	SD
Use Microsoft Word to format tables	20	4.35	0.75
Develop a research presentation using Microsoft PowerPoint	20	4.35	0.88
Use Microsoft Word to format your writing (hanging indents, block quotes, etc.)	20	4.35	0.93
Name professional associations you should join as a graduate student	21	4.24	0.94
Use the physical library to find supporting research	21	4.14	1.15
Use electronic databases to find supporting research	21	4.05	1.16

The majority of students (n = 19, 90.5%) said they wanted additional training to address the mentioned topics. The most commonly preferred ways to receive additional training or support was in a specific course, such as a graduate seminar, (n = 13, 61.9%) followed by brown bag sessions (n = 9, 42.9%).

Conclusions

Students in this study indicated a number of areas where additional training or support is needed. The main concerns dealt with presenting research and the ins and outs of graduate school. Students were more confident in their ability to use computer programs such as Microsoft Word and PowerPoint. Students indicated that additional training or support should be provided in brown bag sessions and courses centered on a topic of interest (i.e. poster development and design).

Implications/Recommendations/Impact on Profession

As Tokuno (2008) said, graduate students need additional support to be successful and academic units should develop strategies to address areas of concern. Further research is needed with a larger sample of graduate students in agricultural education and communications to determine if the concerns identified in this study are shared with others. Additional professional development opportunities could then be developed at a local, regional or national level to address these concerns in order to help graduate students succeed in their graduate program.

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Identifying the Preferred Leadership Style of Secondary Agricultural Educators

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Introduction/need for research

The term leadership is widely used throughout society—in formal and informal settings and in nearly every context imaginable. No doubt, people are intrigued by the concept of leadership; yet, for many, it is an ever elusive idea that is hard to define, describe, and develop. Agricultural educators are expected to develop leadership in their students; in fact, both the agricultural education and FFA missions call for leadership development in students. However, before agricultural educators can effectively develop leadership in their students, they must first identify and understand their personal leadership style (Bass & Avolio, 2004). Little is known about the preferred leadership style of secondary agricultural educators, especially at the national level. One study, by Greiman, Addington, Larson, and Olander (2007) showed that Minnesota agricultural educators are "more transformational in their preferred leadership style in contrast to transactional and laissez-faire styles" (p. 100). More research is needed to determine the leadership style of agricultural educators nationwide.

Leadership of agricultural educators is too important a topic to overlook; Hall, Briers, and Rosser (2009) identified a plethora of literature indicating that "the leadership experiences of the teacher have a positive influence on program quality and leadership development of students" (p. 2). Identifying and understanding the leadership style of agricultural educators is a crucial step for enhancing the leadership of teachers and, ultimately, of their students.

Conceptual or theoretical framework

According to Hall, Briers, and Rosser (2009), the profession has not identified or adopted a leadership model for agricultural educators. However, the transformational leadership approach has been studied in numerous contexts ranging from military to church settings and governmental to educational agencies to identify a range of highly effective to ineffective leaders (Bass & Avolio, 2004). In a study of agricultural educators, Greiman et. al (2007) wrote that "the transformational leadership style preferred by teachers might be advantageous when confronted with issues in the school environment" (p. 101). The transformational leadership model was used to conceptualize leadership of agricultural educators in this study. The Full Range Leadership Model by Bass and Avolio (1994; 2004) incorporates nine leadership factors: five transformational factors, three transactional factors, and one laissez-faire factor. *Idealized Influence (attributed), Idealized Influence (behavior), Inspirational Motivation, Intellectual Stimulation,* and *Individualized Consideration* are the transformational factors. The transactional factors are *Management-by-Exception (active), Management-by-Exception (passive),* and *Contingent Reward.* The concept of transformational leadership differs from many leadership models in that leader and follower are inextricably bound to reach performance beyond expectations (Bass & Avolio, 2004).

Methodology

The researchers conducted a pilot study with agricultural education teachers from California, Florida, Georgia, Ohio, and Texas. The frame for the study was created from a National FFA contact list and the agriculture teacher directory for each state. The data collection instrument comprised two parts: the Multifactor Leadership Questionnaire 5X short form (MLQ) (Bass & Avolio, 1995) and a section for demographic information. The instrument was examined for content and face validity by an expert panel; changes were made as suggested. The instrument was put online using SurveyMonkey®. Kiernan, Kiernan, Oyler, and Gilles (2005) found that "a Web survey appears to be as effective as a mail survey in the completion of

quantitative questions that measure knowledge, attitudes, behaviors, and intentions" (p. 250). Participants received an email cover letter and a web link to access the questionnaire. SPSS© was used to analyze data, using descriptive statistics as appropriate.

Results/findings

Of the 50 agricultural educators randomly selected nationally, 31 responded. The preferred leadership style of the agriculture teachers is shown in Table 1.

Table 1. Leadership Styles and Factors of Agricultural Educators, Norms, Means, and SDs

Leadership style and factors	μ(Norm)	σ (Norm)	*M*	*SD*
Transformational			3.30	.40
Idealized Influence (attributed)	2.95	.53	3.24	.46
Idealized Influence (behavior)	2.99	.59	3.22	.62
Inspirational Motivation	3.04	.59	3.41	.55
Intellectual Stimulation	2.96	.52	3.00	.56
Individualized Consideration	3.16	.52	3.60	.40
Transactional			2.00	.38
Contingent Reward	2.99	.53	3.20	.40
Management-by-exception (active)	1.58	.79	1.58	.62
Management-by-exception (passive)	1.07	.62	1.19	.60
Laissez- faire	0.61	.52	0.76	.52

Note. Sale: 0 = not at all, 1= once in a while, 2 = sometimes, 3 = fairly often, 4 = frequently, if not always

Conclusions

Agricultural educators are more transformational in their preferred leadership style in contrast to transactional and laissez-faire styles. In addition, agricultural educators scored higher than the norm on each of the transformational factors and slightly higher than the norm on the transactional and laissez-faire factors. The findings were consistent with the work of Greiman, Addington, Larson, and Olander (2007) in terms of the level at which agricultural educators prefer transformational, transactional, and laissez faire styles of leadership.

Implications/recommendations/ impact on profession

As a result of this study, the preferred leadership style of a small number of agricultural educators across the nation has been identified. Identifying the preferred leadership style of a large number of agriculture teachers across the country would provide data that could be generalizable across the profession. In addition, future studies that would determine the impact of transformational agricultural educators on students would be beneficial. This study as well as Greiman et. al (2007) show that agricultural educators perceive their leadership style to be transformational. Understanding one's leadership style is extremely valuable and a prerequisite to developing leadership in others.

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Implementing the Integration of STEM Curriculum in Agricultural Education: Implications for Pre-service Teacher Education

Innovative Idea Session

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Implementing the Integration of STEM Curriculum in Agricultural Education: Implications for Pre-service Teacher Education

Introduction and Background

A quality education is essential to compete in today's job market, not only when competing for "top tier" jobs but entry-level skill positions as well. So, it is easy to recognize why student success regarding knowledge and skill acquisition is important not only on the local level but also the global stage (National Center for Education Statistics, 2005; Provasnik, Gonzales, & Miller, 2009).

Stone, Alfeld, and Pearson (2007) found that the competence of America's high school students in curricular areas such as science and mathematics was insufficient for many entry-level employment opportunities. Moreover, according to Provasnik et al., U. S. students who took the Trends in International Mathematics and Science Study (TIMSS) assessment from 1995 to 2007 showed no improvement during that period, further reinforcing the need for increased Science, Technology, Engineering, and Math (STEM) curriculum integration. This has become an "escalating imperative" among lawmakers who have expressed concern over poor achievement levels of many students (Robelen, 2010).

The U. S. Bureau of Labor and Statistics has projected that a 22% increase of STEM-related job openings will occur due to growth and retirements in the U. S. by year 2014 (Terrell, 2007). This increase translates into 2.5 million additional workers who will be needed to fill STEM-related jobs. Due to this projected need for workers with highly developed competencies in math and science, teacher educators need to embrace STEM education as it relates to the professional preparation of teachers (Morrison & Bartlett, 2009).

The highly qualified requirement for instructors mandated by No Child Left Behind legislation of 2001 and the importance of improved program effectiveness (Reeves, 2003) highlights a need to integrate more STEM content into secondary agricultural education curriculum (U.S. Congress Act 109, 2006). Additionally, as posited by Washburn and Myers (2010), the importance of agriculture teachers and their science teacher colleagues collaborating is key to increasing student achievement. However, according to Myers and Thompson (2009), a philosophical shift is needed in agricultural education. Teachers need to "buy in" to the concept that core curriculum areas such as math, science, and reading should be integrated into agricultural education transparently and continually. Moreover, teacher preparation programs can serve as "catalysts" toward increasing STEM integration in the AGED curriculum.

How It Works

[***] requires AGED pre-service teachers to take several courses before embarking on their student teaching experience. Two of these courses include Foundations and Philosophies of Teaching Agricultural Education (AGED 3103) and Methods and Skills of Teaching and Management in Agricultural Education (AGED 4103). Students are required to create detailed lesson plans using the [***] lesson plan template. In AGED 3103 labs, students are required to incorporate STEM principles in their assignments. Students create and present a lesson emphasizing STEM curriculum integration, including applications. Activities must be included in lessons that hold potential for increasing student engagement and learning. AGED 4103 labs stress STEM concepts by requiring students to develop four lessons featuring various teaching methods. Pre-service teachers are required to incorporate science, technology, and math

principles in lessons through such methods as inquiry-based teaching and learning, demonstrations, case study, and modified lecture. Lab instructors assess students' lessons and facilitate their improvement, including STEM integration, before the lessons are taught during students' field experiences.

Results to Date

During the 2009-2010 academic year, 27 AGED 4103 and 74 AGED 3103 pre-service teachers received instruction on integrating STEM principles. Accordingly, students integrated science, technology, and math into their lessons. Lesson topics in AGED 3103 ranged from plant nutrient requirements to animal anatomy regarding science, ratios and percentages as well as graphing per math, and use of Interactive White Boards (IWBs) along with data management software addressing use of technology. Pre-service teachers in AGED 4103 created numerous lessons incorporating science, technology, and math. Specific examples included anatomy of various species of livestock, punnett square problems (genotypic and phenotypic characteristics and heritability ratios), perimeter and volume calculations, solving equations, IWB tools and applications, as well as power tools and land surveying instrumentation.

Future Plans and Cost/Resources Needed

AGED faculty at [***] will continue to prepare pre-service teachers in future semesters with an emphasis on STEM integration. They will continue incorporating and modifying assignments to require more use of IWBs and other instructional technologies to enhance student engagement and learning. Integration of science and math will be highlighted along with English, history, and social studies, where appropriate. Input from student teachers through focus group interviews during their capstone seminar debriefing sessions will be gathered. Faculty will examine and discuss student teachers' methods of incorporating STEM. Students' perceived needs regarding effective integration of STEM and possible opportunities for systematic inquiries on STEM integration will be explored by faculty. In addition, it is anticipated that AGED teachers' use of STEM content integration will be studied in the future, through Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis, for example.

Integrating STEM principles into pre-service AGED teacher preparation programs involves no "mandatory" costs. Time is the only "investment" required to create assignments stressing curriculum integration of STEM principles. Pending availability of resources, the average cost of an IWB is $2,100.00 (Bunch, Whisenhunt, Edwards, Robinson, & Ramsey, 2010). An alternative to the IWB can be the purchase of a Wireless Slate (WS) at an average price of $340.00 (Ramsey, Whisenhunt, Bunch, Edwards, & Robinson, in review). Purchasing realia to assist pre-service teachers in completing assignments could be an additional but optional cost.

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Innovative Idea: Poster Submission

Improving Facility Evaluation Skills

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Developing Facility Evaluation Skills (Innovative Idea)

Introduction/need for innovation or idea

Novice secondary agriculture teachers have many responsibilities their first year and are often overwhelmed with tasks and obligations (Mundt, 1991; Mundt & Connors, 1999). Agricultural teacher education is charged with preparing highly qualified and motivated teachers. When a teacher is hired the summer prior to beginning the school year, the entire agriculture department facility must be inspected, cleaned, sorted, and organized for any hope of maintaining order. Highly motivated, passionate teachers are more likely to have well organized and efficient facilities, and therefore, a positive learning environment. Classroom management has been identified as the strongest factor associated with student performance (Wang, Haertel, & Walberg, 1993). It is difficult, if not impossible to successfully manage the learning environment without a high degree of order within your physical space. “An ounce of prevention is worth a pound of cure” was an attitude fostered through the course and assignments.

Without the ability to identify and address issues in the laboratory facilities, the novice teacher will struggle to provide safe and meaningful instruction to their students. These laboratory facilities can include: agriscience, food science, aquaculture, agricultural mechanics (welding, small engines, construction, etc.), horticulture, plant and soil science, animal sciences, and natural resources (Talbert, Vaughn, Croom, & Lee, 2007). Hence, to develop the skill of identifying and addressing facility issues, the following assignment was created.

How it works/methodology/program phases/steps

Within the Facilities Organization and Management course at the University of Idaho, there were six local program visits. In addition to addressing Program Planning topics while on the visit, at the conclusion of the visit, teacher candidates complete an open ended evaluation form that assessed their perceptions of the facility. Teacher candidates were required to complete a detailed facility evaluation report including pictures illustrating areas of concern and an action plan to remediate those areas.

On the evaluation form, teacher candidates were asked to rate their first impressions of: grounds, building, classrooms, laboratories, and attitude of: host teacher, other teacher(s), students, and administrator(s) on a scale of 0 = *not impressed at all* to 10 = *extremely impressed*. The main concept of the evaluation form was to illustrate connections between the teacher candidate’s impressions of facilities with the attitude of those who live and work within those facilities. After each assignment was turned in, a class discussion ensued to address all areas of concern.

The following list guided the evaluation process:

- Spatial & Educational – How well was space used for educational purposes?
- Visual – How well could the instructor keep an eye on all students within the facilities?
- Thermal – How were facilities cooled and heated?
- Sonic – What areas of noise concern you in this facility?
- Aesthetic – How did the facilities please your eyes?
- Audio-Visual – How was the A/V equipment and PA system utilized in facilities?
- Equipment – What condition was all of the equipment in?
- Maintenance & Safety – What evidence was there of a safety consciousness/program and a maintenance schedule?
- Do you see any glaring issues that concern you as an educator?

Results to date/implications

This evaluation form has been utilized for the past six years with teacher candidates. This form develops their ability to identify and address issues when they walk into any agricultural education facility by identifying concerns and creating an action plan to address problems. After the fourth program visit, teacher candidates' ability to identify and address areas of concern was greatly improved.

After completing all evaluations, candidates are more prepared to effectively address any issues they will face when they are fully responsible for their own facilities. When the teacher educator visited graduates who had experienced this evaluation process, a high level of facility management and organization was observed when compared with other novice teachers who had not experienced the evaluation process.

Based on classroom reflections and discussions, students noticed a definite connection between attitude of teacher(s), students, and administrators with the quality and organization of the agricultural education facilities. This finding reminds students that their attitude is very determinant of their performance as an agriculture teacher, including managing facilities.

Future plans/advice to others

This evaluation document has served a significant purpose in providing an opportunity for students to develop their facility evaluation skills. This experience prepares the students for inheriting any facility issues or problems and creating a plan to solve them. This assignment will continue to be an integral part of the Facilities Organization and Management course.

Costs/resources needed

During the student teaching block, the teacher educators and cohort visited 6 local programs on 5 trips, up to 30 miles from the university. Each trip was a maximum of 3 hours with travel. The approximate cost was $60 per trip for a total cost of $300.

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Research

Improving Undergraduate Curriculum: What do our Alumni Think?

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Improving Undergraduate Curriculum: What do our Alumni Think?

Introduction

As with other media professions, agricultural communications is a swiftly changing field. As the nature of the profession changes, so must the academic programs designed to educate students. When considering what should be updated about a university's agricultural communications curriculum, alumni who are currently pursuing careers in the field may have some of the best insights. Thus, this study utilized a focus group composed of agricultural communications alumni from the agricultural education and communications department of a southern university in order to obtain relevant data.

The purpose of this study was to collect data about the agricultural communications program at a southern university and use this data to improve further curriculum. The research was guided by the following questions:

1. What was the overall satisfaction level of agricultural communications alumni with their education?
2. Which courses were most helpful to the alumni in their current jobs?
3. What, if any, additional courses would have been helpful to their current jobs?
4. Were there any general concerns about the degree program?

Conceptual Framework

Agricultural communications programs should frequently review and update their curriculum in order to ensure that their programs are providing the best possible education and career preparation for their students (Akers, 2000). Previous research (Sprecker & Rudd, 1998; Sitton, Cartmell, & Sargent, 2005; Telg & Irani, 2005; Doerfert & Miller, 2006; Corner & Cole, 2008a; Corner & Cole, 2008b; Irlbeck & Akers, 2009) suggested that recent college graduates needed to improve in several areas such as writing, critical thinking, work place etiquette, time management, photography, and Web design. While this information is useful, it was conducted on a nationwide level, and individual facets of these findings may not apply to each individual university. Thus, a focus group of alumni from the specified department was determined to have the most validity when considering their particular case.

Methodology

This qualitative research study utilized focus group methodology with a moderator to collect data. Five focus group members were chosen from alumni of the department. The chosen alumni keep in contact with the departmental faculty and also have jobs in agricultural communications.

Questions developed by the researchers were selected in order to cover most aspects of the program, including asking whether the focus group members found certain aspects of their education helpful or unhelpful in their careers. This was expanded upon with questions about specific classes and suggestions on classes or topics that could be added, and questions about internships. Finally questions were asked that covered what trends and career knowledge should be taught, with a final question to bring the discussion to a close—"what do you know now that you wished you knew then?"

Findings

All of the participants were female and graduated with their bachelor's degree after 2006. All have jobs in agricultural communications. Four of the participants had master's degrees.

The focus group subjects were fairly unified on many topics that were discussed during the actual focus group. Using an analysis aided by NVivo software, each subject's comments were coded and analyzed. Individual mentions of particular topics were counted among all the comments given by the members of the focus group. The most important topic to the subjects was career preparation and the focus of course curriculum, followed by the necessity of design-oriented classes, learning to use various kinds of technology and software, and concerns over the attitudes displayed by new graduates or interns. Other topics were discussed and were important to the attendees, but did not receive as many overall mentions. Some of these other important topics were internships, media campaign classes, the importance of portfolios, and the importance of writing.

The findings indicated that the subjects were pleased with the level of advisement received and were, overall, somewhat pleased with how their education had prepared them for their careers. However, they expressed concern over how their educational experiences had not gone into depth on some areas that would have been helpful in their careers (and, in most cases, the subjects ended up independently studying those areas after graduation). In addition, they expressed concern over the attitudes of those entering the workforce, indicating future curriculum should provide information to prepare students for the daily tasks.

Conclusions

The information gathered from the study suggests that, although the alumni felt that some aspects of their education had been very successful, such as the knowledge of design programs and theories, they felt that their educational experiences had been lacking in practical knowledge that they could have used in their future careers. In addition, the alumni suggested a heavier emphasis on internships to help prepare future students for careers and the opportunity to build a portfolio and have that portfolio critiqued before graduating.

Recommendations

The recommendations from this study suggest that more courses that allow for career preparation and fundamental knowledge should be implemented, or existing courses should have their curriculum modified in order to provide more usable information to the students enrolled in them.

For future research, a follow-up study is recommended with another set of alumni to see if the situation has changed from the one described by the focus group subjects. As the job market changes, it is important to study how well the program is adapting to produce graduates who are marketable.

While this study provides useful suggestions to agricultural communications programs, this study used a very narrow sample from a particular university, it is suggested other universities conduct their own studies with alumni.

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Innovative Idea

INCORPORATING COLLEGE SUCCESS TACTICS INTO A DUAL CREDIT COURSE CURRICULUM: COACHING STUDENTS ON HOW TO ENTER COLLEGE EFFICIENTLY AND EFFECTIVELY FROM THE FIRST DAY

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INCORPORATING COLLEGE SUCCESS TECHNIQUES INTO A DUAL CREDIT COURSE CURRICULUM: COACHING STUDENTS ON HOW TO ENTER COLLEGE EFFICIENTLY AND EFFECTIVELY FROM THE FIRST DAY

Introduction

Need for Innovation or Idea

Many students are "blind sided" as they leave high school and enter post secondary education. They are unaware of the responsibility and good study habits required in the college setting. Many of these students lose scholarships in the first year due to the required GPA for the particular scholarship. These students could have possibly increased their chances of maintaining these much needed scholarships if they had known what to expect in college. Dual credit and dual enrollment classes can help to alleviate this lack of preparedness for these students.

Research has shown that students who are actively involved in any planned area of interest during high school have a greater chance of success in both post-secondary education and when they reach the workforce, enabling them to have a better chance at high-skill, high wage, and / or high-demand occupations.

With this in mind, the primary focus of this project is to incorporate various college success tactics and activities into the existing curriculum and allow for any eligible student who is enrolled in Greenhouse Management in the Agricultural Education classroom in the specified school system to gain three hours of college credits while still in high school in agricultural education. These students were enrolled in ABAS 1101, Introduction to Ornamental Horticulture Science, in the School of Agribusiness and Agriscience at Middle Tennessee State University (MTSU) while simultaneously earning high school credit in Greenhouse Management at the secondary level. This post-secondary course is required in all areas of Agriculture (or can be substituted) at the post-secondary level at MTSU.

Middle Tennessee State University, in partnership with thirteen secondary schools won a Perkins IV Reserve Fund Grant to aid in course development, teacher training and oversight of coursework for dual credit. MTSU is the first four year institution in Tennessee to provide a dual credit offering with a Career and Technical Education course. These schools worked in cooperation with MTSU to develop the necessary competencies to allow for dual credit. We suggest that incorporating college success techniques into the existing dual credit curriculum will improve college retention rates and performance.

Method

Our Model

In addition to the course curriculum, college success techniques and concepts were introduced to the participating students by the dual credit coordinator. The coordinator visited each of the thirteen schools a minimum of four times. During the visits these concepts were introduced by a hands-on computer activity entitled *What Will I do After High School?,* developed by the dual credit coordinator and a video entitled *Cracking College: The Seven Savvy Secrets of College Students.* Students, through the leadership of the Agricultural Education teacher at the secondary level and the dual-credit coordinator at the post-secondary level, were exposed to the vital strategies and techniques listed below in the results section.

Our goal was to integrate a "coaching" segment into the proposed curriculum to benefit the future success of the student at the post-secondary level. Learning commitment and teaching students' college responsibility of post-secondary studies early in their development should allow students the much needed assistance to transition and succeed as post-secondary students.

Results

Participation

There were thirteen grant schools and twelve non-grant school participants. Within these schools, 448 students participated and were exposed to the course, the dual credit coordinator and the following college success techniques of:

- Choosing the best courses.
- To Study Smarter, Not Harder
- Excelling in large classes
- The art of exam preparation
- "Kenetic energy" study techniques
- The ultimate place to study.
- Easier homeworks
- How to schedule more free time
- Ace your finals!
- Getting outstanding letters of recommendation
-"College Friendly" time management
- Succeeding with less stress
- The easy secret to turning B papers into A papers.
- Finding school sponsored exam repositories.
- How to choose the best professor and course
-Balancing your social life with great academics
- Finding out what is going to be on the exam.

Implications

Students will be better prepared for college classes because of the integration of techniques to improve college success into the dual credit curriculum. More students should transition to a post secondary program and post secondary scholarship and graduation rates may increase at the post secondary level. Students, who might not have considered post secondary before, will get a sense of "I can too". Stronger alliances will be built between university and high school faculty.

Future Plans

Current

MTSU is currently offering a second dual credit course, Agribusiness Finance/ABAS 1201. The dual credit course coordinator visits and will continue to visit each participating school to introduce these college success techniques. We plan to conduct a research study on the effectiveness of these suggested college success techniques in the near future.

Advice

This is a great opportunity for not only the university but most importantly the student. The key to the success of this is to be sure all stakeholders are involved at all times. This would include: university faculty, high school teachers, principals and school counselors. We found that when everyone is involved the courses run smoothly.

Resources

The initial grant provided each school with the necessary resources to offer the course. However, most schools have these resources in place. MTSU provides the dual credit course coordinator and is available to visit each school upon request.

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***Innovations in Agri-Life Sciences*: A Journal for Secondary Academic Excellence**

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Innovations in Agri-Life Sciences: A Journal for Secondary Academic Excellence

Introduction/Need for Innovation

There is a growing concern that the United States workforce will be unable to compete in the global market in the near future (Friedman, 2007). This concern is enhanced when examining the global issues associated with the life sciences (Duncan, 2009). In order to address this concern, the Institute of Medicine, the National Academy of Engineering, and the National Academy of Science called for an increase in science, technology, engineering and math (STEM) in primary and secondary education (Chen, 2009). This new focus provided a catalyst for career and technical education to integrate STEM concepts across the curriculum as was evident with the passing reauthorization of the Carl D. Perkins Act of 2006. Under this reauthorization, federal funds are allocated based on the integration of core content into career and technical education (Hyslop, 2008).

Over the past decade the agricultural education has provided a contextual basis for the application of STEM concepts (Balschweid, 2002; Park & Osborne, 2006; Washburn & Myers, 2010). For example, in 1998, the National FFA Organization implemented the FFA Agriscience Fair career development event (FFA, 2010). Another example is the integration of agri-life sciences courses available for advanced placement in one Midwestern state (Cummins, 2008). Finally, the recent development of the Curriculum for Agricultural Science Education (CASE) provided a nationwide educational model which infuses STEM concepts into its' lessons (National Council for Agricultural Education, 2010).

While there are several aspects of agricultural education which assist students in gaining a deeper understanding of STEM concepts, there is not a venue for students to further their scholarship by publishing their findings. Nor is there a structure which allows students in agricultural education to compare and discuss results from their studies with those done by students in the biological and physical sciences. Therefore, it was the purpose of this project to develop an online peer reviewed secondary academic journal which focuses on the agri-life sciences.

Methodology

Innovations in Agri-Life Sciences (*IALS*) is an academic journal developed for high school students who are interested in exploring the agricultural and life sciences through inquiry and experimentation. Students advance science and technology by examining contemporary societal and environmental issues. The purpose of *IALS* is to provide an online academic source which captures student innovation and originality. Additionally, it provides a platform for students to present their findings and discuss their findings with peers both in agricultural education and the biological and physical sciences.

A unique aspect of the journal is that it is both grass roots and student centered. Guest editors consist of practicing teachers and undergraduate students majoring in agricultural education

and agricultural communications. These editors rotate on a biannual basis as the journal is only published twice a year. Editors receive student submission and remove identifiable information for blind review. Similar to a professional academic journal, students are required to outline experimentation process including; an abstract, introduction, literature review, definition of the problem and hypotheses, experiment methods and procedures, and results, conclusions, and discussion regarding the experiment.

Manuscripts are then sent to a panel of peer reviewers selected by grade. Reviewers are provided with a scoring rubric which outlines the goals and expectations of the journal. Reviewer scores and edits are then sent back to the editor who makes the final decision to accept with no revisions, revise and resubmit, or do not accept at this time.

Results and Implications

Since unveiling of this journal in July 2009, much interest has developed for this project. We have recently received our initial submissions, and are in the process of reviewing and preparing those for publication. The intention of these submissions is to serve as a resource for agriculture and science students and teachers alike. This will assist in developing ideas for new experiments and avoiding the potential for identical studies.

To help educate interested parties with this idea, presentations have been made on the national level. In October, 2009, information was made available to students and teachers at the National FFA Convention. Following that event, detailed workshops were presented at the 2009 Association for Career and Technical Education conference. This workshop's focus guided teachers through submission process, and adapting their student's project to shape the journal guidelines.

Future Plans/Costs

The intention of this journal is to assist agriculture and science teachers in integrating STEM concepts into their curriculum, raising the academic standard. Goals for the next year include recruitment of projects by students in core science and math classes, inevitably raising the academic standard for agricultural teachers. Additionally, there are plans to promote this resource and establish recognition of student excellence in the FFA periodical FFA New Horizons. Lastly, *IALS* plans to hire an undergraduate student worker to assist in the daily operation of the journal.

This project was initially funded as part of a USDA SPECA grant. While funds supported the initial journal's initial development, *IALS* hopes to become self sustainable within the multi disciplinary department of Community and Leadership Development at the University of Kentucky by maintaining its grassroots design by instituting guest editor roles within the undergraduate curriculum.

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Integrating Teaching With Technology

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Integrating Teaching with Technology

Introduction/Need for Innovation

As new technology is being used in the daily lives of college students, campuses must discover new approaches to keep up with the demands of its learners. George (2000) stated, "Technology can play a vital role in helping students meet higher standards and perform at increased levels by promoting alternative, innovative approaches to teaching and learning" (p. 57). Many instructors are adapting instructional delivery to ensure course content fits students' learning styles. Alston and Warren (2007) specifically stated the importance of using more web-enhanced instruction and technology assignments in agricultural education courses to better prepare future agricultural leaders. A new multimedia resource, the Burns Technology Center Studio 1080 (BTC Studio) at <University> allows students to use technologies to build digital exhibits via a collaborative web-based system. This system helps students to develop communication and technology skills by using specialized software to create touch-screen exhibits featuring video, images, text, slide shows and animations (<state> University, 2009). This resource has been integrated into an agricultural communications course to educate students on how to apply communication skills into a digital storytelling and educational context.

How it Works/Program Phases

The goal of the agricultural communications course was to utilize multimedia technologies to develop an educational capstone project. Students created an online content module using an integration of technologies and presented it using the interactive, touch-screen system. This multimedia collaborative research project was 50% of the course grade. The final exhibit had to effectively educate the audience in a chosen topic area of agriculture.

Throughout the semester, students were required to complete a variety of assignments that developed communication skills and also directly related to their final project. Assignments were focused on developing educational materials, communications skills, and technical competencies to be integrated into the exhibit. Project assignments included: (1) Write a detailed proposal of your research project, (2) Create a storyboard for a multimedia exhibit, (3) Conduct an informative interview with professionals/experts on your research topic, (4) Create a photo portfolio for use in the exhibit, (5) Shoot and edit videos to create an inclusive two-minute video to be used in the exhibit, (5) Develop a comprehensive 24-screen educational, research-based exhibit using the web-based BTC Studio software, and (6) Present your BTC Studio exhibit to the class and public.

Each student group created a 24-screen digital exhibit based on primary and secondary research conducted during the semester. The module also had to include at least two of the following components: a map, graphics, music/audio clip, an interactive quiz, or a slideshow of pictures. Course content focused on developing students' basic competencies in the areas of public relations, technical writing, research skills, video production, photography, storyboarding, scriptwriting, and graphic design. Assignments encouraged students to utilize various communication methods and techniques to build the exhibit.

Results/Implications

The goal of the course was not only to engage students in learning a variety of technical skills, but also to provide them with the opportunity to use rich media technologies to showcase capstone projects. Development of a research-based agricultural exhibit required students to conduct research, design educational content, utilize multimedia software, integrate technologies, and build digital exhibits. Use of this integrated teaching approach inspired students to apply agricultural communication skills, including written, oral, digital media, and research, in a new way. The capstone project was graded on the professional quality of each media asset produced, as well as on the overall presentation and how well the module communicated and publicized the agricultural information. Peers, the instructor, and BTC Studio directors evaluated the final module. As a result, students learned how to integrate technologies to showcase communications work. Students also gained networking contacts in the agricultural field and a better understanding of careers in agricultural communications from the research conducted.

Students in two agricultural communications courses have created ten exhibits for the BTC Studio. Example topics include, "Beef Production-Pasture to Plate", "Noxious Weeds of <state>", "A Course about Horses", "An Overview of Extension", and "The History of Agriculture in <state>". A post-evaluation questionnaire revealed positive feedback. Students reported that they learned to work with new software programs such as Photoshop, iMovie, iPhoto, Google Picasa, PowerPoint, a scrapbook program, Microsoft Paint, Microsoft Works, Windows Movie Maker, and Audacity. Specific communication and technology skills learned included photo editing, interviewing, video production, audio recording, design principles, graphics creation, summarizing and organizing information, storyboarding, file conversions, and creative ways to communicate information.

Future Plans/Advice to Others

The agricultural communication class intends to continue this project with the BTC Studio. Other courses and universities alike should strive to incorporate unique and innovative multimedia technologies in order to meet student needs. The U.S. Department of Education (2009) reported an increasing amount of evidence related to the beneficial opportunities of using technology to improve education. Educators can easily integrate photography, videography, audio recording into standard writing assignments, giving students a more technologically creative approach to course work. Instruction can be done formal or non-formal educational settings, which can reach out to community members and be used as a communication link between schools and communities. A common software program, such as PowerPoint, could become interactive by adding a video clip with audio from Windows Movie Maker, challenging students to integrate technologies in a new way and create modern presentations.

Costs/Resources

The Agricultural Education program was privileged to have innovative multimedia system like the BTC Studio to utilize as part of a course. General access to computers and digital equipment with the right software can add a multimedia component to any course. The equipment used in the course was digital cameras, video cameras, and audio recorders provided by the students or through the department.

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Jamaica: Dawn of a New Beginning

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Jamaica: Dawn of a New Beginning

Introduction

Agricultural Education undergraduates must be prepared to live and work in a multicultural, global society. Talbert and Edwin (2008) recommended that these students experience gender, ethnic, socio-economic status, and rural/urban diversity in their field placements. However, they found that one-third of the responding agricultural education programs placed students at schools with little to no ethnic diversity. In addition, using U.S. Census Bureau data, less than five percent of U.S. college students study abroad in any particular year (U.S. Census Bureau, 2004).

In 2004, the Agricultural Education program at a Midwestern university proposed a short-term study abroad for its teacher education students. The country of Jamaica was chosen as it had a secondary agricultural education system, a college of agriculture, and was substantially different in ethnicity and socioeconomic status from the Midwestern state.

How it Works

An internal university grant supported the two instructors to travel summer 2004 to Jamaica to make in-country arrangements for the initial study abroad experience in summer 2005. From this exploratory trip it was decided that the Jamaican College of Agriculture, Science, and Education (CASE) would be the "home base" for the study abroad. It was also decided that the experience would be three weeks in length. This length was chosen for both pedagogical and financial reasons. It also seemed to be the length of most other summer study abroad programs at the Midwestern university.

At this Midwestern university for study abroad experiences, students pay program fees instead of tuition. This allows study abroad programs to be self-funding and self-sustaining. A budget is developed based on a targeted number of participants and expected expenses.

It was decided that the experience would begin immediately after the conclusion of spring semester exams. This allowed students to complete the three week experience and still have June and July to work at internships or take on-campus summer classes. This schedule also allowed the instructors to be on-campus during the state's FFA Convention, the university's summer incoming student registration, and the state's agriculture teachers association summer conference.

Students took two teacher education courses, *Introduction to Teaching* and *Multiculturalism in Education*, worth 6 semester credit hours during the Jamaican study abroad. The schedule was: Monday/Wednesday/Friday classroom days, Tuesday/Thursday tropical agriculture tours or high school observations, and Saturday/Sunday recreational and cultural activities. Classroom days cover essentially the same content as that covered during the academic year, on-campus offerings of the courses. Course assignments are the same as the on-campus offerings with minor adjustments for technology and course length.

Results to Date/Implications

Summer 2009 was the fifth group of students to participate in the Jamaica study abroad. Group sizes have been 12, 11, 12, 13, and 11 for a total of 59 participants. This has been approximately 50% of the freshman class (the target audience) in agricultural education at this Midwestern university. The program has been successful in being self-funding and sustainable.

In the course evaluation, students have responded that the program provides them experiences they could not obtain in the United States. They reported they now know what it feels like to be an ethnic minority. They also reported they have a greater appreciate for the wealth in the United States and have ideas on how to use inclusive teaching for students of all backgrounds.

Future Plans/Advice to Others

The first year the experience was 22 days inclusive of the two travel days to/from Jamaica. This was too long both financially and pedagogically. Therefore, the next four trips were 17 or 18 days in length. With a more efficient itinerary, this has proven to be an appropriate number of days.

Jamaica is a country in which transportation outside of chartered services may not be safe and parts of the country, Kingston in particular, are not safe for student to explore on their own. Because of this, all trips and activities including recreational/cultural were as a group. This had the unexpected consequences of bonding the students as a group and encouraging less-adventuresome students to try new experiences.

The instructors initially believed that cost would be a prohibitive factor. We have found that as long as the experience is comparably priced to other study abroad courses at the university that students see the cost as reasonable. However, we did hear anecdotally that several students who were considering participating in summer 2009 did not because of the difficult economic times.

Costs/Resources Needed

Each university will have a slightly different structure for study abroad. At this Midwestern university, the Jamaica study abroad costs each student participating approximately $4,000 using a budget with 12 participants. This covered: airfare; university fees; travel insurance; in-country travel; in-country food; in-country lodging; entrance fees to cultural/recreational activities; instructor travel expenses, salaries and benefits; and CASE room and equipment rental. Because these expenses were a part of the program fee, the financial aid office treated the fee the same as tuition. Therefore, students could use grants, loans, and scholarships to pay the program fee. Additional expenses that students had to pay for out-of-pocket included: passport, travel to the U.S. airport, souvenirs, and miscellaneous expenses.

From an instructor perspective much of the planning and program arrangements took place during the preceding academic year. This required time resources and organizational skills.

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Leadership and Decision-making Life Skill Development in 4-H Shooting Sports Participants

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Research Poster

Theoretical Framework

Through experiential learning and interacting with adult leaders, 4-H clubs emphasize both personal and group leadership development. Adolescence is a time when experiential learning and adult contact is crucial to adolescent development (Wessel & Wessel, 1982). The Experiential Learning Model allows youth to learn several life skills through various experiences (Enfield, 2001). Specifically in the processing step, youth should relate the experience to a targeted life skill (Hendricks, 1998). Development of these life skills though experiential learning is the cornerstone of 4-H Youth Development programming (Boyd, Herring, & Briers, 1992). Life skills development was built into 4-H projects, activities and events to help youth become contributing, productive, self-directed members of society.

Skills needed by youth are identified in the Targeting Life Skills Model (Figure 2). The Targeting Life Skills Model defines leadership qualities as someone who has a vision, motivation to lead, inspires others to action, communicates effectively, works well with people and groups, involves others in meaningful ways by delegating responsibility and sharing leadership, can plan, organize and assess goals, accepts differences in people and in their opinions, has personal values and traits of good character, generates resources like time, money and other people (Hendricks, 1998).

Decision-making is a complex process people use in their daily lives to answer questions, choose activities to complete, and even choosing a vocation (Adkins, 1995). Hendricks (1998) classified decision-making as part of one of the 4 Hs: Head. Thinking is the ability to form ideas and make decision by choosing among several alternatives. The decision-making process is to specify goals and constraints, generate alternatives, consider risks and appraise alternatives, and choose an alternative to implement (Hendricks, 1998).

Purpose and Research Questions

The purpose of this descriptive research is to determine whether 4-H youth participating in [State] 4-H shooting sports learn leadership and decision making skills.

1. What leadership skills do the [State] 4-H Shooting Sports state invitational qualifiers perceive they have gained by their involvement in the [State] 4-H Shooting Sports Program?
2. What decision-making skills do the [State] 4-H Shooting Sports state invitational qualifiers perceive they have gained through their involvement in the [State] 4-H Shooting Sports Program?
3. What proportion of variance in [State] 4-H Shooting Sports state invitational qualifiers leadership and decision making skills can be attributed to each selected characteristic: age, ethnic background, gender, number of years in 4-H, number of years in 4-H shooting sports, and number of hours practiced per week?

Methodology

The population asked to participate in the research was the elite participates that qualified to compete in the state invitational pistol, archery, and shotgun contests. The actual number of participants in the [State] 4-H Shooting Sports was the total sampling population of 209

participants. The amount of acceptable surveys returned was 179, which calculates to a return rate of 85.6%.

The research design of this survey research project is descriptive. It uses a cross-sectional design approach to gather self leadership and decision-making life skills perceptions of elite 4-H Shooting Sports participants from the [State] 4-H State Shooting Sports Invitational competitions.

Findings

The overall average of youth surveyed indicated an above average perception of their gain in leadership and decision-making life skills through participation in 4-H Shooting Sports. Female were found to score higher on both scales as compared to males, but males were the majority of the population sampled.

In an average of all the independent variables, the average participant in [State] Shooting Sports Program is a Caucasian male 16 years old, has been participating in 4-H Youth Development Organization for five years, has been participating in [State] 4-H Shooting Sports for four years, and practices four to six hours per week to prepare for competitions.

Conclusions

1. Youth participants in [State] 4-H Shooting Sports perceived themselves to have more than a moderate gain in Leadership Life Skill Development Scores. More than often they utilize decision-making life skills through the program, as well
2. Overall leadership life skills and overall decision-making life skills development were highly correlated. Both leadership and decision-making development are part of the complete life skills needed for youth to be a successful adult.
3. Age in the [State] 4-H Shooting Sports participants was highly correlated related to both leadership and decision making skills As the participant grew older, the participant gained leadership life skills.
4. Gender found a difference in male life skill development versus females'. Females rated themselves to have higher leadership and decision-making life skills development than males.

Recommendations

1. Conduct a similar study with youth participating in other 4-H Youth Development project areas.
2. Repeat this study with juniors and seniors within the 4-H SSP at the district competition level to determine how leadership and decision-making life skills changes with maturity.
3. Repeat this study in subsequent years to determine gains in leadership or decision-making life skills over time.
4. A study of 4-H SSP alumni who are now in adults would provide more insight to long-term benefits from participation in the 4-H SSP.

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Innovative Idea

Making Learning Meaningful for the Millennials: Podcasting with a Purpose in Agricultural Education

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Making Learning Meaningful for the Millennials: Podcasting with a Purpose in Agricultural Education

Introduction and Background

Change is inevitable. Not only in our personal lives do we experience change, but our Nation and local communities are constantly undergoing revision for the common good. Requiring stronger accountability in our Nations' schools was initiated with the No Child Left Behind (NCLB) legislation of 2001. NCLB increased qualification requirements for teachers as well as criteria for measuring program effectiveness (Reeves, 2003). On the eve of his election President-elect Barack Obama challenged the Nation when he stated that, "Today we begin in earnest the work of making sure that the world we leave our children is just a little bit better than the one we inhabit today" (Phillips, 2008).

As we face the challenges that come with a new generation of learners, we must reconsider pedagogy and identify practices and tools that are relevant for today's millennial generation (McAlister, 2009). Technological advances foreign to previous generations of learners are commonplace among today's "computer savvy" generation. An increased use of social networking sites (2009) such as Facebook and Twitter coupled with the millennials' ready acceptance of MP3 technology found in Apple's IPOD is evidence of this generation's preference for electronic communications. Consistent and intensive use of this technology has essentially "hardwired" the millennial's brains differently as a result of this technology (Taylor, 2006). So, it is important that teachers embrace technologies used commonly by millennial students to educate them more effectively (Williams, 2008).

In a study by Murphy and Terry Jr. (1998), it was concluded that electronic technologies would improve the way we teach agricultural education, allowing for increased communication between students as well as students and teachers. Additionally, it was concluded by Murphrey, Miller, and Roberts (2009b) that, technologies popularized by millennials, such as the IPOD, are capable of increasing student learning. Understanding that "teachers often teach as they are taught" (Murphrey, Miller, & Roberts, 2009a, p. 98), it is essential that pre-service teachers of agricultural education be exposed to these new technologies as instructional tools to add to their "teaching toolbox."

How It Works

In the course AGED 4113, Laboratory Instruction in Agricultural Education, pre-service teachers were introduced to the concept of audio podcasting, using free audacity software and iPod/MP3 technologies. The introduction of this technology was to encourage pre-service teachers to incorporate these technologies in lessons, as well as their preparation of students for Career Development Events (CDE) and other FFA activities. Students were provided a detailed demonstration and training, which included general usage of the iPod/MP3 and the free audacity software. Thereafter, student teachers were charged with developing an audio podcast of the FFA Creed for CDE preparation to use during their field-based student teaching experience. The

student teachers were also encouraged to continue to develop other podcasts during their 12-week student teaching experience.

Results to Date

To date, 27 pre-service teachers received instruction on the podcasting technologies, found Internet examples of audio podcasts and created their own audio podcast of the FFA Creed for use in CDE preparation during student teaching. The reactions of pre-service teachers regarding the podcasting were positive. Pre-service teachers also identified several areas of benefit regarding podcasting technology. These areas included

- Lessons for use by the instructor
- Lessons for instructional use during an instructor's absence
- Preparation of CDE teams
- Preparing students for public speaking events
- Local SAE tours to expose students to a variety of SAEs

Future Plans and Cost/Resources Needed

AGED faculty at [***] will continue to prepare pre-service teachers for the remainder of the Spring 2010 student teaching semester. AGED faculty will also incorporate the use of video podcasting into the already existing audio podcasting activities to enhance pre-service teachers' understanding and use of podcasting generally. In the future, a focus group interview will be conducted during the student teachers' capstone seminar debriefing session. This will enable faculty to examine and discuss student teachers' use of podcasting as a learning tool with their secondary students. The focus group interview will inform faculty about students' perceived needs regarding their effective uses of podcasting and what may be opportunities for systematic inquiry on podcasting as an instructional tool. In addition, it is anticipated that cooperating teachers' use of podcasting will be studied in the future, together with the impact of student teachers on cooperators' adoption and use of this innovative instructional delivery method, i.e., student teacher as "change agent" (Rogers, 2003).

Item	**Cost Range**	**Average Cost**
iPod or MP3	$59-$300	$179.50
PC or Mac	$750-$2,500	$1,625
Audacity Software	Free	Free
Total	**$809-$2,800**	**$1,804.50**

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MENTORING "QUICK-STARTER" GRADUATE STUDENTS

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MENTORING "QUICK-STARTER" GRADUATE STUDENTS

Introduction/Need for Innovation

The agricultural education discipline utilizes mentoring relationships in teacher preparation programs (Peiter, Terry, & Cartmell, 2005), extension education (Phillips & Bradshaw, 1999; Rogers, 1997; Zimmer & Smith, 1992), and in faculty development programs at the university level (Eastman & Williams, 1993). Mentors are those individuals knowledgeable in their field, established in an organization, and who serve to support the personal and professional development of a protégé (Lamm & Harder, 2009; Mincemoyer & Thomson, 1998). Kram (1985) determined that mentoring relationships serve two distinct functions, career development support and psychosocial support.

Williams (1997) suggested that new agricultural education graduate students work diligently to identify mentors and seek their input. For graduate students, one of the most important mentoring relationships is between student and advisor. While these relationships vary widely, many include both career development and psychosocial support. Typically the advisor-graduate student pairing is similar to an apprenticeship, where the student is socialized into the profession by the advisor (Bieber & Worley, 2006). However, Allen, McManus and Russell (1999) found that career development and psychosocial mentoring provided by graduate student peers helped students cope with stress and successfully adjust to their new roles.

Diffley (2007) acknowledged that being new to the academic environment can be intimidating and recommended students build networks of peers. Joining a graduate student support group offers psychological support, as well as a chance to obtain valuable feedback from more senior students (Peters, 1992). Peters declared that new graduate students should look to their peers as the greatest source of support because the doctoral program experience can be isolating without it.

Due to the importance of peer relationships among graduate students, a mentoring program was created in an agricultural education and communication department at STATE. The program was developed in and continues to be managed by the departmental graduate student organization. However, at the inception of the program, no written plan existed to help guide the mentor/protégé relationship. As a result, generations of graduate student mentors have spent varying amounts of time, had varying levels of success, and uneven levels of commitment to the program. The resulting relationships have therefore been inconsistent, and unfortunately sometimes unfulfilling.

How it Works/Steps

In early summer 2009, the departmental graduate student association president paired incoming graduate students with mentors. Assignments were based on the following criteria: 1) area of study of (communication, extension, leadership, or teacher preparation), 2) degree program (doctorate or masters), 3) previous professional experience of mentor and mentee, and 4) age.

The association president then arranged a brainstorming session with the mentors where they were asked to reflect about the support they received as new departmental graduate students. Thoughts and advice were offered on how to build strong mentor/protégé relationships based on the previous experiences of the participants, both as former mentors and protégés. At

the conclusion session, consensus was reached on items believed to be essential in shaping positive mentoring relationships. Subsequently, a mentoring handbook providing a set of guidelines to help mould graduate student mentor/protégé relationships was created and distributed to the mentors. The handbook outlines elements such as recommended introductory email information, meeting frequency, discussion topics, and other potential discussion topics.

To assess the success of the brainstorming session and mentoring handbook, those graduate students assigned as mentors were asked to complete an on-line survey containing seven open-ended questions regarding their perceptions of how the session and handbook enhanced their mentoring experience.

Results to Date/Implications

Mentors reported the brainstorming session assisted them in feeling more connected to the other graduate students within the department, strengthened their ability to see different perspectives in regards to entering graduate school, and assisted in further defining their role as a mentor. The handbook itself had mixed reviews. Several mentors said they used their notes from the meeting more than the handbook, and one reported not looking at it at all. Of those that did refer to the handbook, they felt it held them accountable and assisted them in continuing their mentor relationship long term. Maintaining open and honest discussions about the role of mentoring within the department, building consensus among those involved on what the mentoring process should entail, and keeping an open mind when working with new graduate students were the results of the brainstorming session and assisted in making the mentoring program even more successful.

Future Plans/Advice to Others

The departmental mentoring program was enhanced by the process of creating the mentoring handbook. Mentors commented that the brainstorming session offered a great deal of support and guidance for their relationships with protégés. Because of this, the graduate student association plans to schedule an annual meeting where mentors can discuss strategies for making mentoring relationships successful and adding ideas to the handbook.

Antidotal evidence suggests that the process of discussing mentoring relationships has a positive impact. The mentoring handbook serves as the guiding document for the annual process of brainstorming and incorporating new ideas, and is a resource for mentors year-round. Other agricultural education departments may benefit from implementing similar mentoring programs. In doing so, these departments should encourage graduate student organizations to create similar handbooks tailored to meet the specific needs of new students in their respective departments. The collaborative process of development achieves buy-in from mentors, while the annual brainstorming meeting provides limited but necessary structure, allowing (newly) former protégés and mentors alike to contribute to the program. Hopefully, former protégés then choose to serve as mentors themselves in future years due to their successful mentoring relationships.

Costs/Resources Needed

Currently, the mentoring program operates at no direct cost to the mentors, protégés or department. The primary resource needed to maintain the program is time. While graduate students often do not have a wealth of this resource, time devoted to this relationship is beneficial to both mentor and protégé.

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Poster Type (Research)

Northwest's Supply & Demand for 2009-2010: Who is filling the Ag Teaching Positions?

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Northwest's Supply & Demand for 2009-2010: Who is filling the Ag Teaching Positions?

Introduction

Within agricultural education, our country has faced a "very real teacher shortage since the 1960s" (Team AgEd, 2006, p. 24). Considering the documented teacher shortage and closing of agriculture programs, the National Council for Agricultural Education's "Long Range Strategic Goal" proposed the 10 by 15 initiative to have 10,000 quality agricultural education programs by 2015 (Team AgEd, p. 18, 2006) to motivate agricultural teacher education programs to rethink recruitment and retention. Currently there are approximately 8000 secondary agricultural education programs in our country (Team AgEd, 2006). With only 53% of the newly qualified agriculture teachers at the national level projected to enter the field in 2007, "This [teacher shortage trend] has the potential to reach epidemic proportions…" (Kantrovich, 2007, p. 37). The teacher shortage will only become more significant over the coming years.

Theoretical framework

With programs closing because of the teacher shortage, the question was asked, "what can we do to increase the number of graduates who seek teaching careers?" (Team AgEd, 2006, p. 24). To address this important question, "We need to research these questions at all levels (state, regional, and national) in order to find viable solutions" (Team AgEd, 2006, p. 24). Roberts, Harlin, and Ricketts (2006) identified three solutions: (1) increase the number of agricultural education graduates, (2) increase the percent of agricultural education graduates who choose to enter teaching, or (3) find alternative sources to supply agriculture teachers. Due to the lack of accurate empirical evidence, it is unknown which of the options the seven Northwest agricultural teacher education programs should focus their attention on. The three solution model (Roberts, Harlin, & Ricketts, 2006) served as the theoretical framework for this study.

While a national teacher shortage is quite evident in the literature, data does not clearly provide the Northwest a precise outlook on the number of graduates from each Land-Grant Institution and whether they enter the teaching profession, nor does the data identify the number of secondary agricultural education positions in each Northwest state (Idaho, Montana, Nevada, Oregon, Utah, Washington, & Wyoming). The purpose of this study was to capture accurate data as part of a multiyear tracking effort (Swan, 2009) that will provide insight as to where future emphasis should be placed for maximum benefit for the Northwest.

Methodology

Supply and demand data including graduates, open positions throughout each state, and what teacher classifications actually filled those positions were captured through contact with the seven Northwest Land – Grant University agricultural teacher education faculty coordinating the student teaching experience and the state program managers overseeing agricultural education.

Results/Findings

The Northwest Land-Grant Institution's agricultural teacher education programs produced 32 graduates for the 2008-2009 school year and there were 65 full time positions available in the Northwest area for the 2009-2010 school year, possibly filling 49% of those positions. Twenty two of the 32 (69%) 2008-2009 graduates taught secondary agriculture during the 2009-2010 school year (Table 1). Of the 65 positions open in the Northwest, 2 went unfilled (Table 2).

Table 1. *2008 - 2009 Northwest Land-Grant University's agricultural education teaching graduates and secondary positions within their respective state*.

Northwest Land-Grant Institutions	2008-2009 AgEd Teaching Graduates		2009-2010 Secondary Ag Ed	
	f	Teaching Secondary Ag	Positions Available	Programs gained or lost
University of Idaho	7	4	5	0
Montana State University	4	3	14	+5
University of Nevada - Reno	0	0	3	0
Oregon State University	4	3	5	0
Utah State University	6	4	11	+4
Washington State University	7	6	15	+1
University of Wyoming	4	2	12	+2
TOTALS	**32**	**22**	**65**	**+12**

Table 2. *2009 – 2010 Northwest agricultural education secondary teaching positions. Where are these individuals entering the positions from within each state?*

Northwest States	Movers from		New Teachers from		Returning with experience	Alternatively Certified	**TOTAL Positions Filled**
	within State	outside State	within State	outside State			
Idaho	0	1	2	1	0	1	5
Montana	1	3	2	1	4	3	14
Nevada	0	0	3	0	0	0	3
Oregon	1	0	3	0	1	0	5
Utah	5	0	4	0	0	2	11
Washington	7	0	6	1	0	0	14
Wyoming	5	0	2	4	0	0	11
TOTALS	**19**	**4**	**22**	**7**	**5**	**6**	**63**

Conclusions

The graduates potentially could have filled only one half of the available openings. Another third of the positions were filled with movers and a tenth of the positions were filled with alternatively certified teachers. Without those being alternatively certified and returning with experience, there would have potentially been up to 27 positions not filled in the Northwest.

Implications/Recommendations/Impact on Profession

According to the three solution model (Roberts, Harlin, & Ricketts, 2006), option #1 and #3 are the best solutions. Option #1 refers to more students graduating, inferring that more students need to be pumped into the pipeline from high schools, community colleges, and from other majors within Colleges of Agriculture. Option #2 is not viable, because despite only 10 graduates not teaching secondary agriculture; they would not come close to filling all of the open positions. Option #3 is also viable because they address the alternatively certified teachers entering the profession to filling positions in agricultural education programs. Addressing each solution quickly and efficiently should produce impact on new teachers entering teaching.

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Perceptions of Instructional Methods in Biofuel Education of Secondary Students

Research Poster Narrative Proposal

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Perceptions of Instructional Methods in Biofuel Education of Secondary Students

Introduction

In recent years there has been a concern of diminishing petroleum reserves and future energy supplies (Akbas & Ozgur, 2008; Vasudevan & Biggs, 2008). Biodiesel is an efficient, renewable, biodegradable and 100 percent natural energy alternative to petroleum fuels (Akbas & Ozgur, 2008; Vasudevan & Briggs, 2008). Adequate curriculum should be developed and presented to students in order to impact their learning. According to the National Research Agenda (2007), there is a need to "systematically identify and develop instructional systems to meet industry needs" (p. 19).

Theoretical Framework

Lecture is the most common method of passing on information to students (Kindsvatter, Wilen, & Ishler, 1992; Waldron & Moore, 1991). Lecture method instruction allows for large concepts and ideas to be communicated to the student in a relatively short period of time. "Demonstrations have served as one of the most effective education tools ever developed" (Seevers, Graham, Gamon, & Conklin, 1997, p. 145). A demonstration allows students to see how something works or is used, operated, or performs (Kindsvatter et al., 1992; Phipps et al., 2008). Tinkering self-efficacy is a person's experience, competence, and comfort with manual activities (Baker & Krause, 2007).

Methodology

The purpose of this study, which was part of a larger study, was to determine if the [state] Secondary Biodiesel Education Program ([state] SBEP) over alternative fuels had an effect towards student interest. This study evaluated students' interest in the two methods used to present the ([state] SBEP), lecture and demonstration. Additionally, this study also sought to find if knowledge acquisition was correlated to students' tinkering self efficacy. This study sought to address the following hypotheses:

Ho_1: There will be no significant difference in student interest of presentation method after completion of the [state] Secondary Biodiesel Education Program.
Ho_2: There will be no significant correlation in students tinkering self efficacy and posttest knowledge scores.
Ho_3: There will be no significant correlation between students tinkering self efficacy and method used through biofuel education.

The instrument developed for this study was constructed from an intense literature review and measures the main construct found in the curriculum of the ([state] SBEP) over alternative fuels. The instruments development was also guided and reviewed by a committee of experts for face and content validity. The instrument was made up of two sections, a pretest and a posttest.

Findings, Conclusions, and Recommendations

By class, pretest knowledge scores ranged from 4.15 to 6.20 on the 18 item test. Mean scores for the pretest 18 question knowledge section were 5.12, 4.15, 4.55, 5.60, 5.75, 6.11, 5.62, and 6.20 respectively. The theoretically derived means for all class was 4.5. The

percentage of pretest scores did not differ from the theoretically derived mean of guessing, χ^2 (7, N = 91) = 2.24, p > .94.

Null hypothesis one was tested using *t*-test analyses. There was a significant difference between student interest in method of presentation, t= -7.18, p < .05 (.0002). Based on these findings, null hypothesis one was rejected. Null hypothesis two showed a strong positive correlation of .73 between posttest scores and student tinkering self efficacy. The t value (t = 8.29, p < .0001) was significant at the .05 level and had an r^2 value of .53. Null hypothesis two was rejected. Null hypothesis three displayed a significant positive moderate correlation (Davis, 1971) between the two methods of instruction. Analysis of the upper and lower quartile of participants with respect to tinkering self efficacy and method of instruction revealed t (41) = -2.58 and p = .01. Null hypothesis three was rejected.

Through analysis conducted in this study, it is apparent that correct knowledge held by participants about biofuel is negligible. Data indicated knowledge held is low thus demonstrating the need for education about biofuel (Acker, 2008). It was found that students (N = 91) who held a positive tinkering self-efficacy score was positively correlated to post-test scores (r = .73) through the ([state] SBEP). Based on the high value of the Pearson Correlation Coefficient (r = .73), teachers should consider this finding when teaching based on factors noted in this study.

Findings of this study revealed that students tinkering self efficacy positively affected their perceptions towards method of instruction. Students with high tinkering self efficacy preferred the use of a demonstration method in the context of this study. Recommendations based on the findings of this study include using the demonstration methods when presenting material when deemed appropriate to gain student interest. This recommendation is further refined to include areas of study when classroom participants are heavily weighted towards male percentages based on their tinkering self-efficacy preferences.

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Research

Perceptions of Pre-service Agricultural Education Students Enrolled in a Model Integrated Course toward their Pre-service Experience and the Use of Integrated Curriculum

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Perceptions of Pre-service Agricultural Education Students Enrolled in a Model Integrated Course toward their Pre-service Experience and the Use of Integrated Curriculum

Introduction

Several studies conducted over the past few decades have highlighted the need for an emphasis on science and mathematics in education (National Academy Press, 1988; National Commission on Excellence in Education, 1983). As a result, the idea of integrating curriculum across disciplines quickly became an educational trend at all levels. Still, little research has been conducted at the postsecondary level to determine if teaching science in the context of agriculture is effective for undergraduates in agricultural education degree programs. Since approximately 32% of students drop out of college between their freshman and sophomore year, the integration of science and agricultural concepts may be most beneficial for those students taking 100 and 200 level courses. Integrated agricultural and science courses could provide these students with the opportunity to feel more engaged to their selected field of study earlier in their post secondary program.

In addition, pre-service agricultural education students may learn to value and carry out effective integration strategies in their pre-service field experiences by having been exposed to integration strategies in a pre-service model course that emphasizes the integration of multiple disciplines. Balschweid and Thompson (2000) suggest that pre-service programs should “foster opportunities for interdisciplinary teaching and learning that will create linkages for future endeavors" (p. 43). However many students find this difficult to do because they have never been exposed to effective integration practices. Wilson, Kirby and Flowers (2001) reported that pre-service teachers are more likely to integrate curriculum than in-service teachers and the best way to effect change in the profession is through coursework at the post-secondary level.

Theoretical Framework

The theoretical framework for this study lies in constructivism. Learning as constructivism suggests that cognitive abilities are acquired through social interaction and in an authentic context (Wiseman, Knight, & Cooner, 2005). This theory supports the need for *modeling* integration in pre-service teacher education programs as opposed to simply teaching pre-service teachers how to integrate curriculum in a traditional manner. In this course, the integration of technologies and the science behind them were carried out in course content delivery methods, activities and assessments. Technologies used in the agricultural industry served as the context for the course as well as the interrelated effects these technologies had on the different fields in agriculture. For example: an animal may be genetically modified to require less of a nutrient; however, the animal’s waste may be altered in such as way that it is harmful for the environment and plant growth.

Methodology

A three hour, undergraduate, on-line course entitled “AEE 495 - Agricultural Biotechnology in Today’s Society” that addressed trends and issues in biotechnology was

offered during the spring and fall semester of 2009. The course was integrated to include the current applications of animal science, plant biology, and environmental biotechnology and was cross listed in the respective departments to encourage enrollment from the agriculture teacher education program.

Instructive materials were delivered using the learning management system Moodle which allowed for mass delivery through a collaborative effort from three faculty members in the aforementioned disciplines. Two voluntary surveys were administered to agricultural education students enrolled in the course prior to and at the end of the course using an on line surveying tool. The first questionnaire was a standardized university adopted sophomore satisfaction survey. Surveys were collected in a pre/post fashion to detect any changes as a result of taking the course. Student surveys were anonymous, but were asked for a unique moniker which was used to match pre and post surveys. Only those that could be definitively matched by the identifiers were included in the study. A second questionnaire, given only as a post survey, gathered the perceptions of the pre-service teachers in regard to how likely they were to integrate curriculum in their future agriculture programs. The objectives of the study were to:

1) Determine whether an integrated course would impact a student's propensity to remain in their degree program.
2) Ascertain if the course was an effective model for integrating curriculum for future teachers.

Results

The course was offered during the spring and fall semesters of 2009 with enrollments of 24 and 18 students respectively. Results from the sophomore satisfaction survey (n=25) revealed that students had a 4.2% higher satisfaction of their degree program after the course than they did beforehand. This increase was statistically significant (p=.006). The integration perceptions survey (n=16) highlighted that future agriculture teachers had positive perceptions towards integration, and were more likely to integrate curriculum as a result of the course. Respondents had a mean perception of 3.55 (4-point likert scale) on all integration items, including a mean perception of 3.43 on the item "As a result of this course, I am more confident in my ability to integrate science content into my agriculture curriculum".

Conclusions/Recommendations

Students who participated in an integrated agricultural biotechnology course at NC State University exited with greater satisfaction of their university degree program and a greater value of integrated curriculum. Agriculture teacher education programs should seek collaboration opportunities with other faculty in order to develop courses that take advantage of the strengths of multiple viewpoints and expertise. Additionally, these programs should better analyze the benefit of integrated curriculum and the effect it has on a student's propensity to remain in a degree program. In order to instill good integration practices into their future teachers, teacher education programs should offer coursework that models effective integration and collaborative techniques.

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Poster - Research

Perspectives on the Future of Rural Education in Nebraska

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Perspectives on the Future of Rural Education in Nebraska

Introduction

The landscape across rural Nebraska continues to operate from a consistent strategy of change. Many rural communities are faced with the issue of whether or not they can continue to support their local public school system. Thoughts of consolidation, re-structuring of school districts, low teacher pay and teacher shortages, and communities sharing resources with the hopes of surviving the current wave of cutbacks in state funding without raising local taxes has many citizens in rural areas operating in a mode of crisis.

Conceptual Framework

Public schools in rural communities are being forced in record numbers to either close their doors or consolidate with other, nearby districts in favor of larger, more economically efficient schools. “In 1930, there were more than 130,000 school districts [in the United States]. By 1950, the number had shrunk to 83,718; by 1980 to 15,625; by 1990 it was 15,500” (Ornstein, 1992, p. 322). This, coupled with the fact that the population of the United States has continued to increase, has created a situation in which fewer schools serve more students. Nevertheless, what is the driving force behind this effort to establish fewer, but larger schools?

However, the problem concerning the retention of young people extends beyond the traditional family farm. In rural communities, graduating students who see no future locally leave town, and a snowball effect begins. “These young people are no longer there to start families, to send their children to school, to buy toothpaste from the local druggist, or to buy houses from the local realtor. A “brain drain” leaves fewer high-quality workers to attract high-quality jobs. Fewer high-quality jobs mean even fewer opportunities for the next generation of students, who will find themselves forced by economic necessity to leave the community” (Christie, 2001, p. 425).

This study drew off the work of Bourdieu’s social theory and contextualized the concept of a “rural school” as a cultural field involving the resources such as economic, social, political, and academic factors (Bourdieu, 1991). Bourdieu (1991) acknowledges past traditions within various environments including linkages and relationships related to family interactions, social interactions, and educational experiences with a view of how these factors may play out in future interactions on how communities either thrive, maintain, or destruct.

Methodology

The specific objectives of the study were to:

1. Identify the beliefs rural citizens possess concerning an “ideal” outlook of rural public education in [State].
2. Identify the beliefs rural citizens possess concerning a “realistic” outlook of rural public education in [State].
3. Compare the “ideal” and “realistic” mean scores on the beliefs’ citizens possess concerning rural public education in Nebraska.

The population for this study consisted of all community members from a targeted rural [State] school district (N=200) consisting of two separate communities. This school district was selected to serve as a case study representative of other school districts and communities facing similar issues relating to community vitality and educational needs. Participants were surveyed through a Delphi approach (Borg & Gall, 1988; Rojewski, 1990) during fall of 2002/spring of 2003 with a total sample of 34 community citizens completing all three rounds of the Delphi procedure for consensus building (Sackman, 1975).

Results/Findings

Participants were asked to rank various responses related to the role the school plays in determining the sustainability of their community. Items were listed on a dual scale related to the responses as being "Ideal" and/or "Realistic" using the same Likkert scale (1=highly disagree, 2=disagree, 3=somewhat disagree, 4=somewhat agree, 5=agree, and 6=highly agree). The greatest discrepancies (greater than a 1.5 mean difference) between "Ideal" and "Realistic" occurred on 13 identified items. The top five differences between realistic and idealistic occurred on the following statements: 1) The state will devise a more equitable tax base than the current property tax system to shift the tax burden to those with the greatest buying power (realistic 2.78; idealistic 4.79), 2) Nebraska Senators realize the importance of rural communities to our state's economy and it will be reflected in state aid disbursements (realistic 2.31; idealistic 4.26), 3) Small schools will be closed (realistic 4.71; idealistic 2.76), 4) Student will have to travel farther to have access to a school (realistic 5.08; idealistic 3.21), and 5) Educational programs will be sacrificed in order to keep the school doors open (realistic 4.75; idealistic 2.94).

Conclusions

The critical thirteen responses demonstrating significant differences relating to the perceived Ideal and Realistic future identify key areas for improvement in rural communities in the near future. Decisions made in these areas could have the most profound effects on not only the future of public education in rural Nebraska, but also the general health of rural communities, and in turn could influence Nebraska's entire Agricultural-based economy. As the gap between what is realistic and what is idealistic grows, hope is diminished and a sense of helplessness invades the rural community, which affects a community quality of life.

Implications/Impact on the Profession

The implications to the agricultural education profession are devastating. In a time when we are trying to grow agricultural education programs to achieve of goal of 10,000 quality agricultural education programs by 2015, Nebraska is trying to keep open the doors of its rural schools where the vast majority of agricultural education program exist. The community members within this study have let their voice be heard. If state leaders in Nebraska are unable to listen to our rural citizens and change various economic factors related to state expenditures to secondary education, then we will be unable to contribute to the goal of 10 x 15 and ultimately the agriculture, food, and natural resource system will be unable to attract our agricultural education students into their professional fields.

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Innovative Idea

Produce Your Own: A Community Gardening Program

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Produce Your Own: A Community Gardening Program

Introduction/Need for Innovation

Interest in at-home vegetable gardening continues to grow at a rapid pace. The National Garden Association conducted a survey in 2008 with results showing that "43 million U.S. households planned to grow their own fruits, vegetables, berries, and herbs in 2009—that is up 19% from 36 million households in 2008" (National Gardening Association, 2009, p.4). Families concerned with healthier eating, along with the economic downturn, have been compelled to replace lawns with vegetable gardens. While some people have a natural green thumb, others need direction and education in order to reap the fruits of their labor.

<deleted> Outdoor Science School (-OSS) was originally founded in 1994 as a summer camp for youth. The goal was to create fun, hands-on, nature-based educational experiences. After 14 years, -OSS has grown into a year- round program offered in both local schools and outside of school settings. While youth remain the primary focus, -OSS has found the growing need to teach adults. Based on an informal needs assessment, gardening was identified as a top priority for adult programming.

Many County Extension offices offer an adult Master Gardener Program which includes advanced gardening training, short courses, newsletters, and conferences. The program focuses on building participants' gardening knowledge and skills to contribute to community growth and development (Schrock, Meyer, Ascher, & Snyder, 2000). However, with the comprehensive training provided in this program comes a large time commitment of 17-22 weeknight sessions (Young, 2007). Therefore, the "Produce Your Own" program was created to introduce adult participants to gardening in a similar manner, but with shorter, less demanding sessions.

How it Works

Gardening is a time-honored tradition that can be difficult to master in a place where winter is the dominant season. Produce Your Own was created to give a foundational introduction into the challenges of vegetable gardening in southwest <deleted state>. Scheduled in accordance with the growing season, this educational program consisted of a series of four interactive sessions focused on plot design, crop selection, garden maintenance, harvesting and preserving. Each workshop included guest speakers considered experts in their field and hands-on learning activities. Classes were held in the summer of 2009, approximately one month apart on four Saturdays from 9:00 am -12:00 pm. Specific program objectives were that participants will: (1) learn to plant and grow the ten "best" vegetable crops suited for the region (2) prepare a garden plot with seeds or seedlings from the local nursery, (3) demonstrate correct maintenance procedures for a home garden (4) increase consumption of locally or home grown produce over the next year, and (5) increase knowledge and skills in harvesting, cooking, and preserving vegetables.

The program consisted of three workshops and a farm tour. Workshops were developed to provide experiential learning opportunities that allowed participants and instructors to interact, discuss, and demonstrate gardening procedures. A brief description of each workshop and its activities are as follows: The *Planning and Planting Your Garden* session introduced the course, explained how to prepare a garden bed, included a lecture by a Plant Science Professor about seed selection and planting dates, and concluded with participants planting vegetable seeds and creating a plot design map; the *Natural Weed and Pest Control* session included a discussion by

the Master Gardener State Program Coordinator and the owner of a local gardening store focused on USDA labeling regulations, integrated pest management techniques, organic and natural weed control, and the basics of composting; and the *Harvesting and Preserving Your Crops* workshop incorporated a demonstration with a local Chef, handouts with how to preserve or cook vegetables grown in <state>, and concluded with a hands-on cooking class made with participants' garden vegetables. The culminating *Local Farm Tour* brought concepts full circle as participants visited with local growers about production scale farming, garden design, greenhouse management, U-pick operations, cooperative farm business practices, and marketing and distribution techniques. Participants were also able to sample vegetables and take transplants home for their personal gardens.

Discussions were used at the beginning of each session to assess the knowledge and interest of participants. Participants were asked what they would like to learn from the sessions and what they already knew about gardening. At the end of each session, informal evaluations were conducted to measure learning and prepare content for future workshops.

Results to Date/Implications

A total of twenty-eight adults participated in program; however, a decrease in participation was seen after each workshop. There can be many explanations for this drop in participation, but the dates and times of the classes was the most common finding. Because <deleted state> has a short summer and growing season, participants indicated that they were less willing to participate in weekend programs. Informal evaluations also revealed that the majority of participants felt the registration cost was a fair price and would recommend the class to others.

Future Plans/Advice to Others

This program can be adapted in many ways for adults, seniors, youth, and other audiences interested in home gardening. As revealed, the dates and times when a program is offered can have a large impact on the participation. Offering the program during weeknights might help to increase participation for working adult audiences. In addition, because the sessions were spread throughout the summer months, many participants forgot about them, even though reminder emails were sent. Only one press release was used to promote the program. More frequent advertising would have likely increased participation in later sessions. Additionally, one-time panel discussions on a specific gardening topic could be designed to reach a broader, more diverse audience. Twiss (2003) concluded that the benefits of gardening "enhance nutrition and physical activity and promote the role of public heath in improving quality of life." (p. 1435). Expanding the program's audience and location to senior living homes, coffee shops, group homes, after-school programs, and community gardening sites could greatly increase the number of people introduced to the benefits of home gardening.

Cost/Resources

Cost was set at $10 per class or $30 if participants pre-paid for all four sessions. All materials for the hands-on portions of the class were donated by local businesses. Materials and resources used included soil, seeds, 4-packs, demonstration tools, handouts, and vegetables. In addition, every class had a raffle for a gardening related prize which were all donated by local businesses. Prizes included vegetable transplants, gardening tools, gloves, seeds, and a composter as a grand prize.

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Innovative

Professional Development through Winter Technical Institutes: Agricultural Electrification

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Introduction

According to Phipps and Osborne (1988), a total secondary agricultural education program consists of three essential and interdependent components. Specifically, these components are: classroom and laboratory instruction; independent experiential learning, commonly known as Supervised Agricultural Experience (SAE); and participation in the student leadership organization, typically the National FFA Organization.

In the field of agricultural mechanics, laboratories are essential educational tools for student development. Johnson and [Author] (1989) stated that much of the instruction of the agricultural mechanics curriculum takes place in a laboratory setting. As such, a great deal of instructional time is spent in the agricultural mechanics laboratory. Phipps and Osborne (1988) estimated that in many courses, the time allocated for instruction in agricultural mechanics comprises 25% to 40% of the total instructional time. Shinn (1987) reported that the amount of time devoted to laboratory instruction may comprise one-third to two-thirds of the total instructional time in many agricultural programs. Furthermore, no one will dispute the fact that the use of a laboratory setting, where students can learn by doing, is a basic tenant of agricultural education programs (Sutphin, 1984).

In the curriculum area of agricultural mechanics, the basic objective for teachers is to foster the development of students' abilities to perform the mechanical tasks needed in agriculture (Phipps & Osborne, 1988). Johnson, [Author], and Stewart (1990) stated that students learn important psychomotor skills in agricultural mechanics education and that much of the instruction takes place in the school's agricultural mechanics laboratory. In order for teachers to effectively instruct agricultural mechanics curriculum to students, it is essential for them to be able to safely demonstrate these agricultural mechanics skills. Birkenholz and Harbstreit (1987) found that electricity skills were the third highest rated professional development need of [State] agricultural educators. Furthermore, in a 2008 study of [State] agricultural educators, electricity was one of the agricultural mechanics curriculum areas that teachers reported as having professional development education needs in ([Authors], 2009). With the continuing emergence of this agricultural mechanics area as a topic for professional development education by [State] teachers, agricultural education institutions and the professional development staff of the [State] [Department of education] should provide agricultural mechanics educators with professional development education opportunities to learn agricultural electrification skills and curriculum development techniques ([Authors], 2008; [Authors], 2009).

Methodology

As a result of a statewide agricultural education professional development study ([Authors], 2009), the Agricultural Electrification Winter Technical Institute was designed and implemented by the professional development staff of the [State Department of Education] to provide [State] agricultural teachers professional development education in the area of agricultural electrification. During this winter technical institute approximately 20 teachers received professional development education. Among the objectives of the winter technical institute were construction and wiring of a comprehensive electrical wiring board. Additionally, participants were required to learn electrical theory, electrical safety, and

electrical circuit planning and installation. This activity and others provided the participants with the opportunity to learn, demonstrate, and ultimately develop agricultural electrification curriculum to further educate secondary, agricultural education students. At the conclusion of this winter technical institute, teachers received a comprehensive electrical wiring board and a wire size display board.

Results to Date

At the conclusion of the agricultural electrification winter technical institute, participants were asked about the benefits they received from the course. Specific comments from the participants included:

- "It was about the right amount of lecture and discussion…"
- "This was very helpful. It will benefit me in our Agricultural Structures class."
- "Good instructions and good hands-on activities…"
- "The most beneficial part of the session were all the hands-on activities."

Future Plans

The Winter Technical Institutes will continue to be an integral part of the professional development plan for [State] agricultural education. The timing of these winter technical institutes will be designed to meet the specific needs of [State] agricultural educators: after the conclusion of the National FFA Convention, before the end of the fall semester, and before the beginning of the preparation of career development event teams. The content for future winter technical institutes will be prioritized based on empirical professional development research concerning [State] agricultural educators and the availability of facilities and content experts.

Costs/ Resources Needed

The costs for these winter technical institutes vary depending upon the content provided. For the agricultural electrification winter technical institute, the administration costs and supplies were $84 per person. To adequately instruct this institute, the instructors required a laboratory with work tables, a variety of electrical hand tools, safety glasses, and a computer with projector. Handouts and consumable supplies such as electrical wire, wire nuts, etc. were needed as well.

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Research

PROFESSIONAL EDUCATORS' UNDERSTANDING OF AGRICULTURAL AWARENESS AND LITERACY IN A MID-WESTERN STATE

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PROFESSIONAL EDUCATORS' UNDERSTANDING OF AGRICULTURAL AWARENESS AND LITERACY IN A MID-WESTERN STATE

Introduction/Conceptual Framework

The agriculture industry has been very important for the United States and has "…fed, clothed, and provided building materials for millions of Americans…" (p.63) and people of other countries (Harris & Birkenholz, 1996). America's food and fiber systems determine the general welfare of its public (Leising, Pense, and Portillo, 2003). The American food and fiber system is "one of the greatest success stories known to man" (Pope 1990, p.57), and for the success story to continue it is essential that we have an agriculturally literate society (Law, 1990). According to the National Research Council (1988) much of the American general public is unaware of where and how the food they eat is produced, and about the significance of agriculture to the nation's economy, human and environmental health (California Department of Education 2005). A majority of Americans lack knowledge about agriculture (Blackburn, 1999). This lack of knowledge about agriculture presents a challenge to agricultural education (California Department of Education). In order to educate people about agriculture, it is important to determine what is the professional educators' understanding of the terms agricultural awareness and literacy. Their perceptions of what constitutes agricultural awareness and literacy could affect the educational programs they conduct. In this context, this study is significant.

Research focusing on agricultural awareness and literacy served as the framework for this study. According to Knobloch (1997) agricultural awareness may be defined as "experiencing or exploring agriculture as it relates to the subject matter being studied or context of life being lived; the ability to identify the connections of agriculture to areas of study or life" (p.12). Park (2008) stated that knowing the factual information about agriculture is awareness. Wright, Stewart, & Birkenholz (1994, p.55) stated that "The knowledge and perception of agriculture …" is referred to as agricultural literacy. According to Deeds (1991) agricultural literacy means having knowledge and competency in agriculture. The National Research Council (1988) stated that an agriculturally literate person will have "…practical knowledge needed to care for their outdoor environments, which includes lawns, gardens, recreational areas, and parks" (p.9). Frick, Kahler, and Miller (1991) defined agricultural literacy as "… possessing knowledge and understanding of our food and fiber system. An individual possessing such knowledge would be able to synthesize, analyze, and communicate basic information about agriculture" (p.52). According to Park agricultural literacy is something more and deeper than awareness.

Purpose and Objectives

The purpose of this study was to determine the professional educators' understanding of the terms agricultural awareness and agricultural literacy in a Mid-Western state. The specific objectives of the study were to: (1) develop common themes from the understandings of the educators regarding agricultural awareness and literacy, (2) identify the practices the educators were using to promote agricultural awareness and literacy, and (3) develop definitions for agricultural awareness and literacy based on the data generated.

Methods

A mixed methods design was followed. The population consisted of agricultural teachers, adult educators, and leaders in the agriculture industry in this Mid-Western State. It was decided that a sample size of 10-20 (5-10 agriculture teachers and 5-10 commodity board and extension professionals) would be appropriate for the study based on the scope and duration of the project. This research was conducted as a summer internship project. Twenty randomly selected participants were contacted via emails and telephone, and 13 agreed to participate in this study. The participants were personally interviewed and each interview lasted approximately 25-30 minutes. The interview schedule consisted of 14 questions: 11 open-ended and three close-ended. The questions were developed by a team of experts that included faculty, staff, and graduate assistants familiar with the subject.

Results

Field notes were duly developed after every interview. Codes were developed from the field notes, and later themes evolved. Member checks were done to account for any biases. The common theme that emerged was that the terms ‘agricultural awareness’ and ‘agricultural literacy’ are different but the definitions of the terms differed among the respondents. The common understanding was that agricultural awareness is a shallow understanding of the concepts, whereas agricultural literacy was a deeper understanding of the concepts. Some of the activities listed by the respondents under the agricultural awareness and literacy categories were: Food for America program, petting zoo, Farm Safety Day, Grow Cabbage program, Mid-Western State Fair, Pork Information Gateway program, websites, and use of mass media, State 4-H conference, FFA activities, and SAE activities. Some activities were listed under both categories. The respondents said their educational strategies would differ based on the need. Based on the data collected from this study, we define agricultural awareness as the basic interest and attraction to a topic in agriculture, whereas agricultural literacy is a higher form of education that engages the learner in comprehending principles and concepts related to topics of agriculture.

Conclusions, Recommendations and Implications

First, there was not a consensus of views as to the definition of the terms agricultural awareness and literacy. Secondly, all the educators except one felt that agricultural awareness and literacy are two different concepts. Third, different activities can be used to impart agricultural awareness and literacy to people at various levels of learning. But, in some cases the educators were using the same activities for both the agricultural awareness and literacy programs. Based on the findings and conclusions, it is recommended that the definitions developed for agricultural awareness and literacy be used to arrive at consensus definitions for the terms, and made available to the agricultural educators in this state. It is also recommended that these definitions be included in the course curricula at the elementary and middle school levels. The course curricula in elementary and secondary schools should be developed based on these definitions in such ways that the concepts impart interest in agriculture at the elementary level and knowledge and expertise at secondary school and post-secondary levels, respectively. Also, teaching strategies could be designed effectively if there is a consensus understanding of the terms. Also, it is recommended that this study be replicated in other states with larger sample sizes, and findings from those studies be used to strengthen the definitions developed from this study. The findings from this study could have implications to non-formal settings like Extension, also.

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Innovative Idea

Recruiting by Doing: Utilizing existing undergraduate student organizations to facilitate secondary student recruitment in agricultural teacher education

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Recruiting by Doing: Utilizing existing undergraduate student organizations to facilitate secondary student recruitment in agricultural teacher education.

Introduction/need for innovation or idea

Faced with an ongoing shortage of secondary agricultural educators (Kantrovich, 2007), the National Association of Agricultural Education (NAAE) initiated a campaign for National Teach Ag! Day (NAAE, n.d.). National Teach Ag Day is a component of the National Teach Ag Campaign, an initiative of the National Council for Agricultural Education. The essences of National Teach Ag! Day is to have a day devoted to celebrating the importance of what you do every day and to encourage students to follow your lead and consider a career in agricultural education. As part of the campaign, key stakeholders (secondary educators, postsecondary educators and pre-service teacher education programs) were asked to promote agricultural education and the opportunities available in teaching agriculture.

The Partnership for 21st Century Skills issued a report evidencing a gap in writing skills needed and writing skills obtained by high school graduates. Nearly three-quarters (72 percent) of incoming high school graduates are viewed as deficient in basic English writing skills, including grammar and spelling. In addition, in the same report employers reported 81% of their high school graduate hires were deficient in written communications (Partnership for 21st Century Skills, 2006). Dewey (1938) and Kolb (1984) believed that the students learn by thinking about what they experience.

To help develop experiential education opportunities, develop written communication skills, and identify potential future post-secondary students of agricultural education, the <university> chapter of Alpha Tau Alpha coordinated <state> agricultural education partners in conducting an incentive laden essay contest. *Alpha Tau Alpha* is the national professional honorary agricultural education organization for those who have chosen a major in agricultural education or extension education (Alpha Tau Alpha, n.d.). The stated purpose of Alpha Tau Alpha is "*to promote the highest standards of agricultural education and a more intimate acquaintance and closer relationship with individuals who have chosen a major in agricultural education or extension education*" (Alpha Tau Alpha, n.d.).

A natural opportunity seemed to exist for an honorary organization focused on academic excellence to facilitate an opportunity for current secondary agricultural students to "teach for a day". In cooperation with the <state> FFA Association, the Eta Chapter of Alpha Tau Alpha at <university> set out to answer the call of finding our future agricultural education teachers. They did this through the innovative idea of sponsoring a program where current secondary agricultural education students are able to teach a full class session to their peers. To be eligible for awards, the students were then required to complete an essay that answered the question of ***"Why Teach Ag? What I learned as an ag teacher for a day!"***.

How it works/methodology/program phases/steps

The student leadership team of <university> Alpha Tau Alpha determined that they would like to conduct an event in celebration of the inaugural Teach Ag! Day. After determining that an essay contest would best fit both the desires of recruiting students and the capacity of the organization to conduct an event, strategic partners were contacted to establish a participation incentive structure.

The <university> Alpha Tau Alpha encouraged <state> agricultural education teachers to identify a student to instruct their class for a day. The student was responsible, with their teacher's help, for preparing the lesson and delivering the instruction to any agricultural education class. Students were asked to submit an entry form, a reflective essay, an action photo of the student teaching, a photo of the student with their agricultural teachers, and finally a photo release form with necessary signatures. The reflective essay was limited to 500 words maximum. Students were given the prompt: Why Teach Ag? What I learned as an ag teacher for a day!

The student leaders created the following timeline for this new program: January 15th – Announce Opportunity; February – Students complete instruction in their high school (Note: Teachers were encouraged to consider February 25th, National Teach Ag Day, as a possibility); March 15th – Application Materials due to <university name>; June 16th announcement of winners (Note: this date was in concurrence with <state> FFA association summer conference).

Evaluation criterion was loosely based on the National Alpha Tau Alpha Essay contest for postsecondary agricultural education majors. To rank the essay, a scoring system was designed with 70% of the score based on content and organization of the essay and 30% of the score based on overall appearance (format, grammar, spelling, and/or typographical errors). Essays submitted will be reviewed by a panel with all identifying information removed to maintain anonymity in evaluation.

The incentive structure offered was as follows: 1st place - $100 gift card to National FFA; Registration for 2011 <state> FFA event, Teach Ag! T-Shirt, Teach Ag! Lanyard; 2nd place - $75 gift card to National FFA; Registration for 2011 <state> FFA event, Teach Ag! T-Shirt, Teach Ag! Lanyard; 3rd place- $50 gift card to National FFA; Teach Ag! T-Shirt, Teach Ag! Lanyard; 4th place -$25 gift card to National FFA, Teach Ag! T-Shirt, Teach Ag! Lanyard; Participation – Teach Ag! Lanyard

Results to date/implications

The solicitation for involvement has been sent to all 265 <state> agricultural educators in the 183 <state> agricultural education programs. Funding and support has been secured from the <state> FFA Association and the NAAE Teach Ag! Campaign Committee. Informal surveying has indicated a minimum of 30 students planning on making application by the March 15th deadline.

Future plans/advice to others

Names of students who participate will be added to a departmental recruitment database. Future evaluation will be conducted to determine correlation between participating in this activity and enrolling as an agricultural education major at <university>. Possibility exists of expanding this activity to include submission of video of teaching for evaluation and completion of a practicum skills portion performed during the June FFA event as part of a new career development event.

Costs/resources needed

While cost to other institutions will vary depending on the reward/incentive structure, costs to <university> for this inaugural effort were minimal. The <state> FFA association provided registrations for FFA activities included and the National Teach Ag! Grant covered costs of the FFA gift cards and the Teach Ag! T-shirts. Estimated final out of pocket costs to the student organization were less than $50.

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Innovative Idea

Recruiting Future Agricultural Education Students into the Teaching Profession: The Development of an AGED CDE

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Recruiting Future Agricultural Education Students into the Teaching Profession: The Development of an AGED CDE

Introduction/Need for Innovation

In recent years with retiring personnel and a lack of new prospects, agricultural education has faced a shortage of teachers (Kantrovich, 2007). Therefore, a need exists to recruit additional pre-service agricultural education students into the teaching profession to fill the vacancies.

One means for recruiting additional students into the agricultural education major is through the development of a career development event (CDE) for secondary agricultural education (AGED) students. Bandura (1986) discussed the influences and decisions made early in life begin to affect the choices an individual makes toward their future career. As such, the development of an AGED CDE would enable students to discover and explore the prospects of a teaching career.

On its most foundational level, the basis of a CDE is to help motivate, encourage and grow students into successful young individuals while offering insight to possible career fields in agriculture. CDEs should:

- Include problem solving and critical thinking;
- Promote an appreciation for diversity by reducing barriers to participation;
- Promote new directions and focus on future needs of members and society;
- Include cooperative activities, where appropriate;
- Encourage broad participation among members and recognize excellence within levels of experience;
- Recognize individual and team achievement, develop general leadership and recognize levels of ability;
- Provide local recognition for superior performance at the state and national level.

(National FFA Career Development Events Handbook, 2006)

Currently, the National FFA Organization sponsors 24 CDEs. However, none of these relate directly to agricultural education. So, where do secondary students learn about the agricultural education teaching option at the secondary level? With the growing need to fill the void produced by retiring agricultural education teachers, it is the time to explore new avenues related to student recruitment into the field of agricultural education. An AGED CDE could aid in that effort.

How it Works

A set of seven fundamental guidelines has been developed for the AGED CDE contest.

1. Contestants will create a lesson plan and teach a lesson on the assigned core subject area assigned at the release date of the topic (one month prior to the contest.). Lesson plans must be submitted to the superintendent one week prior to the competition.
2. Lesson topic shall be assigned from one of the following core subject areas: Food Products and Processing Systems, Plant and Soil Sciences, Animal Systems, Power, Structures and Technology, Natural Resources and Environmental Science, Agricultural Communications, and Agribusiness and Management.

3. Contestants will be provided with human interaction (i.e., a "class" of students will be provided at the contest in which competing students will teach).
4. The lesson will be a maximum of 15 minutes in length. A maximum of 5 minutes for questions and answers will be allotted.

Results to Date

A series of scoring rubrics has been designed for the three facets for the AGED CDE. Specifically, the CDE will be scored on three criteria: 1) Lesson Plan – overall structure and clarity, resources listed, punctuation, spelling, and grammar, activities planned, completeness of plan, and general appearance and layout (*100 points*); 2) Delivery of Lesson – structure and clarity of presenter, presenter's oratory, effectiveness of teaching method used, and portrayal of effective teaching characteristics (*120 points*); 3) Questions – Students' overall ability to answer questions related to core subject area, method used, and the teaching process (*30 points*); 4) Exam – Students will be tested in the area of teaching (*100 points*). Contestants will be ranked according to all four rubrics from high to low to determine a winner. Specifically, nine contestants have submitted lesson plans for the AGED CDE competition. Topics range from ear notching and scrapies to administering immunizations and learning about animal science careers.

Future Plans

The inaugural AGED CDE competition will be held November 2, 2009 at [State] land-grant campus. The Livestock Industry has been selected as the topical area for which students will plan and compete. Upon completion of the event, suggestions for improvement will be considered. Then, the event will be shared with the National FFA Organization with the hope of adding a national qualifying event in the future. Competing students will be sent letters of appreciation from departmental faculty to include valuable information about the agricultural education major and career (i.e., starting salary, plan of study, state agriculture teacher supply and demand, etc.) in an attempt to recruit students into the major.

Resources Needed

Three graduate students and one faculty member will serve as judges for the AGED CDE. Current [State] AGED majors (~5 per room) will serve as "students" for contestants to interact with if needed. Two rooms will be reserved for competition. Students will be split in half and randomly assigned to a room. Efforts have been made to establish inter-rator reliability among all judges. Further, an LCD projector and laptop computer will be supplied by the superintendent. Finally, plaques for first, second, and third place individuals will be awarded to the winners of the contest.

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Innovative Poster

Social Media and Small Businesses – Creating Marketing Strategies in the Digital Age

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Social Media and Small Businesses – Creating Marketing Strategies in the Digital Age

Introduction/Need

Marketing expert David Meerman Scott (2007) began his new book, *The New Rules of Marketing and PR*, with this sentiment: "There are many people who still apply the old rules of advertising and media relations to the new medium of the Web (sometimes referred to as Web 2.0), and fail miserably as a result" (p. xxiv). It's easy to observe the changes in media and see how underutilized new technology appears to be at times, but because the changes are so new, few businesses and individuals seem to know exactly how to adapt and take advantage of marketing opportunities created by Web 2.0.

Social media has been defined as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and that allow the creation and exchange of user-generated content" (Kaplan & Haenlein, 2010, 62). Amidst the considerable debate in academic literature about the definition of Web 2.0, it has been defined as a "second generation" of web-based services that transforms web sites from static information to a participatory functionality, allowing for social networking in a casual fashion by end-users, and/or enabling improvements in technologies through the Web (Huang & Behara, 2007). Examples of Web 2.0 tools include Facebook, MySpace, LinkedIn, Twitter, Flikr, Blogs, Wikis, YouTube, web widgets, podcasts, newsfeeds, and virtual worlds. Numerous potential applications exist for such tools including research and development, marketing, sales, customer support, and operations management (Bernoff & Li, 2008).

This potential bodes especially well for small businesses in rural communities, which may have limited resources for marketing and limited markets constrained by geography. Rural areas, especially those that are economically dependent upon agriculture, mining, and manufacturing are losing jobs due to technological improvements in production and management (Goetz, 2005). In essence, rural areas are falling behind as a result of technology. Their ability to "catch up" may depend on the ability and willingness of small business owners in rural areas to adopt new technologies. This "second generation" of World Wide Web tools, which can bolster marketing and sales efforts of businesses regardless of geographic location, offer an opportunity for small businesses in rural communities to improve technologically and economically. The small, rural businesses that can adapt quickly and take advantage of Web 2.0 technology may find new opportunities for success that could have impacts on the local economies in which they exist.

Global social media use increased as much as 82% in 2009, and users spent an average of 5 ½ hours a month on social networking sites such as Facebook & Twitter (The Nielson Company, 2009). A recent survey by Frost and Sullivan (2009) found that while 80 percent of respondents personally used Web 2.0 technologies and 54 percent used them for professional purposes, only 40 percent of organizations formally used social networking and Web 2.0 tools. Few of those taking advantage of such technologies did so for customer relations, advertising, marketing, or business communications. Businesses with less than 100 employees or more than 1,000 employees use Web 2.0 tools less often than medium-sized enterprises. These findings, along with the obvious economic decline in some rural areas, suggest a need for educational research, programs, and products to assist entrepreneurs and small businesses in tapping into these valuable resources.

New versus Old Marketing Communications – How it Works

Faculty at [University] and the [state] Cooperative Extension Service have developed curriculum that introduces Web 2.0 tools to small business owners in rural communities. The program was based on four phases: a) Research, b) Curriculum Development, c) Pilot Program, and d) Training. As part of the training sessions small business owners were introduced to a comparison of new versus old marketing communication strategies. Some of those comparisons included: a) One-way vs. two-way or multi-way communications; b) Advertising as interruption vs. informational ads as the main attraction; c) General audiences vs. highly specified "niche" audiences; and d) Reliance on journalists vs. reliance on online content and bloggers.

Having a Web site isn't enough -- Sites must contain information that audiences seek and must be extremely "findable" (search engine optimization is a must). Additionally, sites must be interactive and should contain useful information that satisfies needs (i.e. blogs, RSS feeds, educational podcasts, special promotions, online shopping or ordering). In terms of social media use, businesses must understand why people use social media (to feel [and be] connected to others. Furthermore, successful social media efforts cater to this need first and integrate marketing efforts second. (Example: Coffee house tweets to customers about what bands are playing this week so customers remain "in the loop"). Finally, customers demand to be entertained while being informed. A small business should strive to be viralous (i.e. viral YouTube videos, viral blog posts, viral emails).

Results to Date/Implications

Social Media content (blogs, RSS feeds, wikis, Flikr, YouTube, Twitter, LinkedIn, Facebook) was delivered through five workshops, which included seminars and hands-on demonstrations. This poster will highlight content delivered, social media adaptation by small business owners, and strategies for small business owners to improve marketing efforts through social media use. This project has provided an opportunity for small business owners to improve marketing strategies through effective implementation of social media. Insight from this project has the potential to impact Extension, education, and communication strategies and education in multiple states.

Future Plans/Advice to Others

Future plans will focus on determining if participants integrated their newly acquired Web 2.0 skills in meaningful ways into their marketing efforts. Also, Extension educators in [state] and nationwide will be trained to facilitate similar workshops using the curriculum developed as a result of this project. An online course will also be available. Materials will be available through a variety of media, including eXtension and several Extension-related Web sites. This type of relationship can be implemented with any industry interested in furthering their use of technology, while providing industry with information, experiences, and skills that are valuable to the promotion, marketing and longevity of their businesses.

Costs and Resources Needed

This nine-month project had a budget of slightly less than $25,000; nearly half supported labor for curriculum planning and development, and travel and supplies for the training seminars. Two Extension faculty and two university faculty were involved in this project and assisted in the curriculum development phase, pilot delivery, and evaluation.

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(Innovative Idea poster)

SPARK: Lighting up student learning in knowledge translation and transfer

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SPARK: Lighting up student learning in knowledge translation and transfer

Introduction/need for innovation

A growing need to inform individuals about agricultural practices and issues has prompted an increased focus on developing agricultural communications and extension skills (Agriculture and Agri-Food Canada, 2007). The agriculture and food sector's connection to new knowledge is deeply rooted in what has traditionally been known as extension, and more lately, in an emerging discipline called knowledge translation and transfer. This is the process of converting scientific and technological advances into marketable goods or services (Agri-Food Tech Transfer eNetwork, 2010). The *National Research Agenda in Agricultural Education and Communications* (Osborne, n.d.) emphasized the need for agricultural communicators to effectively disseminate information that leads to informed decision making. Knowledge translation and transfer emphasizes the synthesis, exchange, and application of knowledge with the dissemination of research results as the final activity (Ontario Ministry of Agriculture, Food and Rural Affairs, 2009).

Now, it is possible to be involved in knowledge translation and transfer as an undergraduate. At the University of Guelph, Canada's leading agricultural university with approximately $120 million in annual agricultural research funding, students have been engaged in knowledge translation and transfer of that research for 20 years. The focus of their efforts is a student research-writing, experiential-learning program called Students Promoting Awareness of Research Knowledge (SPARK). The program was catalyzed by the university's desire to increase its external communications about agri-food research. The university hired a professional journalist to initiate the agri-food research communications process; the journalist then started SPARK at the request of students at the campus newspaper who yearned for a science-writing experience.

How it works

SPARK is a non-academic program in which participants are paid to write stories about University of Guelph research. SPARK aims to make participants more employable by helping them acquire superior skills in journalistic writing, editing, photography, social communication, and videography (University of Guelph, 2010). Students work in a 600-square-foot newsroom-like setting centrally located on campus, in the university's Office of Research. The newsroom set up mimics a realistic newsroom, with the SPARK coordinator serving as editor at the center of the room (or "rim"), flanked by nine reporting stations. Program funding to support students' time is generated through service projects, such as writing stories mainly about University of Guelph research for commodity publications. Other projects include shooting research videos and recording radio briefs for commercial and non-profit websites, television program and radio stations, and producing externally oriented publications for various university departments.

Students in all disciplines with an aptitude for communication are invited to participate in SPARK. Recruitment occurs by word of mouth from current and former SPARK participants, referrals from staff, students and faculty, and by invitation to students enrolled in two undergraduate agricultural communications classes. Prospective participants are interviewed and required to complete a writing exercise, which consists of rewriting a poorly written news release from an external source.

Successful applicants receive a contract for an agreed upon number of hours per week, ranging from five- to 20 hours, depending on their availability and SPARK's requirements. Participants receive a 10-page handbook with advice on matters such as researching a story, interviewing, organizing a story, journalistic style and editing. The SPARK coordinator and the research communications unit director (and other specialists where needed) offer periodic workshops for writing and journalistic skills, such as choosing an angle, writing objectively, transition, interviewing techniques and video editing. When participants are acclimated to the writing process, they are given approximately 10 hours (from assignment to final draft approval from the researcher) to complete a 500-word story.

Results to date/implications

Approximately 200 students have participated in SPARK since its inception. In the past 20 years, SPARK writers have generated miles of print news stories and weeks' worth of audio and video news stories. In 2009 alone, SPARK writers wrote 97 stories and produced 24 videos. Stories are published widely, particularly off campus, in trade publications, newspapers and magazines. They also appear in university corporate or institutional publications with an external focus, particularly the University of Guelph *Research* magazine. Many former SPARK writers now work in agri-food communications capacities as writers, editors and administrators.

In December 2009, two two-hour focus groups were held on the University of Guelph campus with former SPARK participants and stakeholders (media, administrators, employers etc.) to gather data for a model for SPARK. This model has now been created as the focus of a doctoral dissertation. It graphically underlines the intrinsic need for five elements in a knowledge translation and transfer environment involving students: support from faculty, support from administration, support from the agri-food sector, a ready supply of students, and mentors to guide them.

Future plans/advice to others

Students' participation in knowledge translation and transfer can enhance information dissemination to stakeholders and improve knowledge uptake. SPARK provides students with new learning opportunities and enhances their employment potential. It can also help consumers better understand agri-food processes and research, through clear communication in broadly understood terms. The value of experiential learning in agricultural education has long been recognized as an important part of the educational process. This model offers a template for others who are interested in a SPARK program, which may help alleviate pressure on extension offices that are unable to replace retired employees or hire new full-time workers.

Costs/resources needed

Students are paid a wage comparable to other part-time workers in Ontario ($11-$14 per hour). They require a place to work, preferably in the Office of Research so they are close to research administrators. They should be equipped with hardware and software used by modern communicators: a high definition video camera ($750), a quality digital 35 mm camera ($500) and an Apple Macintosh computer and software for video editing ($2,500).

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Student Interest Survey in an Interdisciplinary Undergraduate Minor in Leadership Studies

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Student Interest Survey in an Interdisciplinary Undergraduate Minor in Leadership Studies

Introduction

Development of leadership skills and abilities among students has been cited as a primary goal for many institutions of higher education (Cress, Astin, Zimmerman, & Burkhardt, 2001). Although, colleges and universities have begun to devote resources to promote and enhance leadership development, most of the resources have been directed toward a select few students. Leadership development programs often consist of workshops or weekend retreats that engage students in developmental activities and may include elements of self-reflection. Although individual leadership skills may be improved through such experiences, providing instruction to students about foundational leadership theories and principles is a critical feature that distinguishes between leadership development and leadership education. The American College Personnel Association suggests that the goal of leadership education involves improvement in student (a) cognitive knowledge of leadership theories, (b) leadership skills such as conflict resolution and interpersonal communication, and (c) clarification of personal values.

> *These outcome goals are consistent with the American College Personnel Association (ACPA) Student Learning Imperative which includes the assumption that learning, personal development, and student development are inextricably intertwined and inseparable and that the hallmarks of a college-educated person include cognitive skills, practical competence and the ability to apply knowledge , and understanding and appreciation for human differences, and a coherent sense of self within a societal context.* (ACPA, 1994)

Leadership is a complex concept that encompasses a range of topics from individual self-assessment of personal qualities and traits to issues of ethics in exerting leadership in groups and organizations. Leadership is an on-going, developmental process, and leadership education programs in higher education have emerged to educate and motivate students to begin the life-long process of developing their leadership skills with the goal of continuous self-improvement (Eich, 2008). The Ohio State University recently considered a proposal to establish an interdisciplinary, undergraduate minor in Leadership Studies for students with a genuine desire to improve their leadership knowledge and skills through education, experience, and reflection. Cress, et al. (2001) acknowledged that there is *". . . a strong indication that leadership potential exists within every student and that colleges and universities can develop this potential through leadership programs and activities.*" (p. 23).

Theoretical Foundation & Conceptual Framework -- This research is based upon Kolb's (1981) experiential learning model which suggests that new learning can be initiated in one of two ways; by doing something (concrete experience) or by thinking about something (abstract conceptualization). Kolb's model suggests that learners then process information either by reflecting on the experientially-derived information (reflective observation) or by applying the cognitively-derived information (active experimentation). Leadership education may employ either or both paradigms by planning learning activities based on concrete experiences of students and/or introducing abstract principles or concepts for reflection, to be followed by experiential applications. Komives, Lucas,

and McMahon (2007, p. 5-6) emphasized the importance of the interpersonal dimension of leadership based on three basic principles: knowing yourself, how change occurs, and why others may view things differently; being ethical, principled, open, caring, and inclusive; and doing acts that reflect socially responsible behavior, participating in a community, and acting consistently and congruently on commitments and passions.

Methods – The population of interest in this study included undergraduate students at Ohio State University who had an expressed interest in leadership. Students were identified from a variety of campus sources that offered leadership programs for undergraduate students. A frame of 996 students was compiled which comprised a census of the undergraduate student population at Ohio State with a known interest in leadership. A data collection instrument was developed, based on the course topics and learning outcomes included in a proposed interdisciplinary, undergraduate minor in leadership. Respondents were asked to report their level of interest in enrolling in a leadership course that addressed each of the proposed course topics and learning outcomes. Respondents were also asked to provide information related to their potential interest in a leadership minor. Demographic items were also included to assist in the interpretation of the results.

Results/Findings – Responses were collected from 278 students which resulted in an overall response rate of 28%. These results should not be generalized beyond those who responded to the survey. Even so, over half of the students reported an interest in 13 of the 16 leadership topics. Leadership topics of greatest interest focused on areas of personal leadership including self-management, assessing personal strengths, group problem solving, developing a personal leadership philosophy, and team building through service learning. Three leadership topics of least interest to the respondents were theoretical in nature. Overall, three-fourths (*n = 170)* of the respondents reported an interest in an undergraduate leadership minor with the greatest number of students from career fields in the health sciences, business, and education. Previous leadership experiences in high school primarily focused on student organizations and athletics; whereas student organizations were the primary venue for gaining leadership experience in college. Over 80% of the respondents reported a cumulative GPA above 3.0, with 57% of the respondents above the 3.30 GPA level.

Conclusions – A majority of the undergraduate students responding to this survey indicated at least some interest in pursuing a minor in leadership. It appeared that academically talented students expressed a strong interest in pursuing a leadership minor. Students from a broad range of career fields expressed an interest in pursuing a minor in leadership. There was also wide variability in the range of leadership experiences that the respondents had engaged in during high school and college.

Implications/Recommendations

Based on results of this survey, undergraduate students at Ohio State are interested in an undergraduate minor in leadership. Therefore, these results were used in the rationale and justification for proposing an undergraduate, interdisciplinary minor in Leadership Studies at The Ohio State University. The proposal is currently under review by the Office of Academic Affairs at Ohio State may be approved as early as March 2010.

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Innovative Idea: Poster Submission

Student Teaching Capstone Expedition

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Student Teaching Capstone Expedition (Innovative Idea)

Introduction/need for innovation or idea

At the conclusion of their field-experience, student-teachers returned to campus for finals week at the University of Idaho. During the week, the faculty and the student-teachers met to debrief and reflect on their classroom experience and to prepare for graduation. While the finals week meetings were productive, they tended to be monotonous and mundane.

In order to improve the student-teachers' attitudes and enthusiasm for their final week of their undergraduate work, the teacher educators undertook a total redesign of the finals week sessions. The teacher educators replaced the classroom reflection sessions with a three-day "Capstone Expedition" to allow for more authentic reflection and discussion of their experience, visit different secondary agriculture programs and production agriculture businesses, and discuss their future careers as high school agriculture teachers.

How it works/methodology/program phases/steps

The goals of the student teaching capstone journey were to:

- Utilize driving time to discuss, debrief, and reflect on their recently completed student teaching experience.
- Visit quality secondary agriculture programs in different settings (rural, urban, and suburban), with different curricular focus areas (horticulture, natural resources, fruit production, etc.) and varying student demographics (urban, non-agriculture, ethnic).
- Address program challenges for recently hired teacher candidates.

This idea grew out of the cohort approach utilized by the teacher education program. "… contemporary research suggests that learning about teaching develops through participation in a community of learners where content is encountered in contexts in which it can be applied" (Darling-Hammond & Bransford, p.405). Eight programs in a neighboring state were identified by "seasoned" teachers within the state. Each program was contacted several weeks in advance and all allowed our group to tour, probe, and observe instruction. All eight programs were new to the student teachers and teacher educators. The programs greatly varied in community and school size, agricultural emphasis, and program focus.

A list of questions guided legs of the trip and were summarized and shared between the vehicles as we unloaded at the next destination.

- Instructional planning; in terms of flexibility, how was your performance affected, and did you meet the goals and objectives of your lessons/units?
- Discipline; did the students find your buttons? How did your clarity, consistency, and involvement of parents affect your discipline issues?
- What strategies worked for you to reduce disruptions and increase the FLOW of your time with your students?

- What strategies worked best for you in increasing motivation and engagement?
- What strategies worked best for you in developing rapport with students and building strong relationships with them?
- What strategies worked best for you in developing rapport with colleagues and community to build support and strong relationships?
- What were the highlights of your student teaching experience?
- Now that you've seen outstanding programs and have your student teaching experience behind you, what are the keys to building a total program?
- How do we develop a high quality program?
- How do we balance responsibilities of life and running the total program?

Assisting those student teachers who had already signed contracts identify facility and program issues that need to be addressed were priority areas for the expedition. After each visit the program's facilities and total program were discussed and the newly hired teachers' programs were considered for applying these new ideas.

Results to date/implications

After completing our inaugural capstone expedition, the teacher educators agree that it was a success, meeting their goals. The teacher candidates were appreciative of the opportunity to see another state's diverse agriculture production and for seeing such a diverse group of high quality programs. The teacher educators were encouraged to continue to stretch the future cohort's ideas of what agricultural education is and can be. The expedition provided an excellent opportunity to encounter new ideas and for the cohort to apply their learning to their new programs.

Future plans/advice to others

The teacher educators plan to rotate between neighboring states. Several of the teacher candidates were still in the job interview process during the expedition. Next year we will address the job interviewing and offering process before we load up and begin the journey.

A few teacher candidates expressed concern that they were never going to teach in the "other" state and didn't see the bigger picture of how running a highly successful program can be done other ways than what they were accustomed to. A recommendation would be to encourage the student teachers to plan the trip. This would increase participant ownership, keep engagement at a higher level, and hopefully reduce workload on teacher educators.

Costs/resources needed

The department covered the cost for vehicle rental, gas, and hotel rooms totaling roughly $700. In addition, two faculty members time were allotted for the three-day trip across neighboring Washington.

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Research poster

Students' new media use as a basis for advancing agricultural communications curricula

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Students' new media use as a basis for advancing agricultural communications curricula

Introduction

Electronic media have become a primary mode of interpersonal and mass communication during the past decade (Kerawalla, Minocha, Kirkup, & Conole, 2008; Lipsman, 2007; Pfeil, Arjan, & Zaphiris, 2009; Smith, Salaway, & Caruso, 2009), with businesses in multiple industries responding to these trends by increasing their reliance on new media as marketing and public relations tools (Li & Bernoff, 2008). To better prepare students as business professionals and to meet students' expectations for learning as digital natives, instructors have begun incorporating new media and other technologies into curricula (Baird & Fisher, 2005-2006; Kerawalla et al., 2007; Pfeil et al., 2009; Smith et al., 2009). The purpose of this study was to describe students' use of selected new media as a foundation for advancing agricultural communications curricula to better prepare students for evolving social and workplace demands. Objectives of this study were to 1) describe students' use of Facebook, including levels of activity, network members, and use for college courses; 2) describe students' use of LinkedIn, including levels of activity and network members; 3) describe students' use of Twitter, including levels of activity and network members; 4) describe students' use of blogs, including amount of time spent blogging and reading other blogs; and 5) describe students' preferences for use of selected new media in an agricultural communications course.

Conceptual Framework

Trends in the adoption of new media reflect the basic human need to connect with other humans (Li & Bernoff, 2008), as well as the human desire for social capital, or resources created by the connections within social networks that are beneficial to members of the networks (Ellison, Steinfield, & Lampe, 2007). Reasons often identified for using new media include maintaining friendships; making new friends; yielding to social pressures; paying it forward; and following creative, altruistic, inquisitive, and social impulses (Kerawalla et al., 2008; Li & Bernoff, 2008; Pfeil et al., 2009; Smith et al., 2009). The social technographics profile (STP) explains the steadily increasing use of new media (Foregger, 2008; Fox, Zickuhr, & Smith, 2009; Pfeil et al., 2009; Smith, 2009; Smith et al., 2009) to meet these needs by grouping new media users based on their activities (Li & Bernoff, 2008) in a structure similar to Rogers' (2003) theory of adoption. Rogers (2003) placed adopters of technology into the categories of innovator, early adopter, early majority, late majority, and laggards. In comparison, new media users are placed into one of six STP groups: creators, critics, collectors, joiners, spectators, and inactives (Li & Bernoff, 2008). Creators produce electronic media, while critics comment on content. Collectors save electronic media created by others. Joiners maintain a profile on at least one new media site and may visit multiple social networking sites. Spectators watch, read, or listen to electronic media without producing their own content or providing feedback on content produced by others. Inactives do not participate in new media use (Li & Bernoff, 2008).

Methodology

Students' use of selected new media, including Facebook, LinkedIn, Twitter, and blogs, was examined using survey methodology. The target population included 60 students enrolled in an upper-level agricultural communications service course at a land-grant university. The paper-based questionnaire was developed through a review of course curricula and literature describing new media use. A panel of experts established face and content validity of the instrument. A

post-hoc reliability analysis performed on scaled items included in the questionnaire produced a Cronbach's alpha of 0.90. Fifty-five students completed the survey, which was administered during a 15-minute portion of the first course lecture after the university drop-add deadline had passed. Descriptive data were used to interpret and describe students' responses.

Findings

The majority (86.7%) of respondents were classified as juniors or seniors, with majors in animal science (34.5%), agricultural education (29.1%), agribusiness (20%), agricultural economics (5.5%), natural resource ecology and management (5.5%), agricultural leadership (3.6%), and food science (1.8%). The majority (85%) of respondents reported having a Facebook account. However, all respondents indicated they did not have accounts with LinkedIn, and nearly all respondents reported they did not have Twitter accounts (92.7%) or blogs (96.4%). Respondents reported the highest levels of activity on Facebook for viewing friends' photos, followed by viewing friends' profile updates, sending messages and/or writing on friends' walls, uploading photos, updating profile information, and reading friends' notes. Respondents' Facebook networks did not include broadcast media outlets (97.9%), print media outlets (91.5%), other news services (89.4%), university news services (74.5%), professional contacts (66.0%), and professional organizations (55.3%). Facebook was rated low as a communication tool for courses. In addition, respondents' indicated low levels of preference for the use of blogs and Twitter as assignments.

Conclusions

The use of selected new media, particularly Facebook, by the respondents is consistent with other studies of college students (Li & Bernoff, 2008; Fox et al., 2009; Pfeil et al., 2008; Smith et al., 2009), although the majority of respondents' participation in at least one type of new media does conflict with reports that about one-quarter of college-age students are inactives (Li & Bernoff, 2008). Respondents' reported levels of activity on Facebook support Li and Bernoff's (2008) description of college-age new media participants as being primarily spectators, as respondents reported the highest levels of activity for viewing friends' content. Respondents' Facebook activities also could classify them as critics and creators, with spectators and critics more strongly represented than creators. The low value placed on the use of Facebook, blogging, and Twitter in coursework does agree with other studies that reported college students prefer face-to-face contact and moderate amounts of technology incorporation into curricula (Boyd, 2006; Kerawalla et al., 2008; Smith et al., 2009).

Recommendations and Implications

This study demonstrated that college students enrolled in the selected agricultural communications course are frequent users of certain types of new media but may not be familiar with or comfortable with using other types of new media. Incorporation of new media into curricula should be planned with attention to students' experiences and preferences in combination with the use of new media in various professions. Assignments involving new media should include detailed background and instructions for using the selected media, as well as examples demonstrating the use of new media in careers related to students' education. Meeting these needs will be vital to strengthening students' preparation to face constantly evolving technology throughout their careers and contribute successfully to the development of social capital on personal and professional levels.

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Research

Students' Perceived Value of the Contribution of Instructional Methods Towards Understanding Risk & Crisis Communication

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Students' Perceived Value of the Contribution of Instructional Methods Towards Understanding Risk & Crisis Communication

Introduction/Need for Research

"An issue facing teachers of agriculture in higher education is providing quality instruction that meets the learning needs of students" (Garton, Spain, Lamberson, & Spiers, 1999, p. 11). To address this issue, educators choose instructional methods to meet the need of learners. However, many teachers struggle with choosing the most effective methods for knowledge acquisition. Rollins and Scalon (1991) discussed that "the educational community has devoted considerable effort to assessing the effectiveness of various instructional methods and teaching strategies. Research on teaching effectiveness has been *inconclusive in identifying a singular method of instruction* [emphasis added] that works well with all individuals" (p.48).

This challenge might be explained by the findings of Rosenshine and Furst (1971) who identified eleven teacher behaviors associated with student achievement. "Of the eleven teacher behaviors, five were identified that provided the greatest opportunity to influence student achievement" (Garton, Miller, & Torres, 1992, p. 10). As we seek to identify effective instructional methods, one teacher behavior that stands out is the use of a variety of methods and techniques.

The purpose of this study was to examine students' perceived value of instructional methods in contribution towards their understanding of and confidence in risk and crisis communication. The following research objectives were used to address this purpose: 1) determine students' perceived benefits and influence of different instructional methods used and 2) determine students' perceived degree of confidence for completing tasks associated with risk and crisis communication. This purpose aligns with the *National Research Agenda for Agricultural Education and Communication* (Osborne, n.d.) that has research priority areas for Agricultural Education in University and Postsecondary Settings which include "improving the success of students enrolled in agricultural and life sciences academic and technical programs" and "assessing the effectiveness of educational programs in agricultural and life sciences."

Framework

The conceptual framework for this study is hinged on classroom teaching model developed by Mitzel (1960) and is expanded by the theoretical works of Dunkin and Biddle (1974). The model contains four classes of variables: presage, context, process, and product. When considering classroom interaction, the behaviors and strategies of the teacher lead to observable changes in the student behavior (process) and in turn, immediate student growth and long-term student effects (product). This study revolves around these process and product variables as it focuses on the instructional methods of the teacher (process) and the understanding and confidence of students at the end of the course (product).

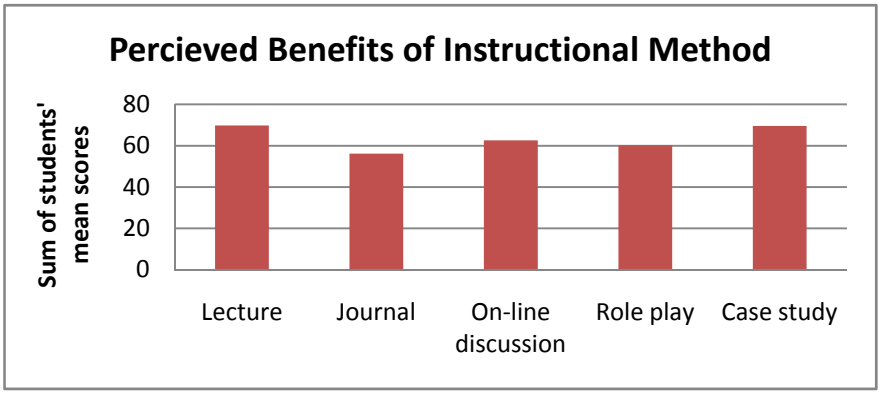
Methodology

The population for this quantitative study was graduate students enrolled in *Risk & Crisis Communications in Agriculture and Natural Resources* at [university] during the fall 2009 semester (N=17). During the course, Students were taught using a variety of instructional

methods, including: lecture/discussion, weekly journal entries, online case study discussions, in-class role play, and team-developed case studies. The study utilized a 76-item end-of-term questionnaire to examine the students' perceived value of instructional methods in contribution towards their understanding of and confidence in risk and crisis communication. Items were measured using Likert type scales and degree of confidence scale. Reliability estimates for these scales produce Cronbach alpha scores ranging from .869-.987.

Results/Findings

Students' perceived benefits of each instructional method were averaged and summed to determine which instructional method students thought was the most beneficial. The two instructional methods that students found to be most beneficial were: team-developed case studies (Σ= 69.77) and lecture/discussion (Σ= 69.52). Students were also asked to mark which instructional method they perceived as having the greatest influence on their abilities. The results are as follows: 64.7% of students perceived lecture/discussion as having the greatest influence on their ability to understand and discuss crisis management and risk communication and 41.2% of students perceived team-developed case studies as having the greatest influence on their ability to increase their critical thinking skills as they relate to course content. Finally, students were also asked to determine which instructional methods had the greatest influence on your self-confidence as a future crisis communicator and 47.1% perceived team-developed case studies as having the greatest influence. Students were also asked to rate their degree of confidence in completing a variety of risk and crisis communication-related tasks. The mean score of the students' confidence to complete those items was 7.39 out of 10.



Conclusions/Implications/Recommendations

This study found students' perceived lecture/discussion and team-developed case studies as the most beneficial instructional methods used. These methods were also perceived as having the greatest influence on students' abilities to understand and discuss crisis management and risk communication, as well as, increase their critical thinking skills as related to course content. Although the largest number of students (47.1%) perceived the team-developed case study as having the greatest influence on their self-confidence, all five methods were identified by some students as having the greatest influence on their self-confidence as a future crisis communicator. The results of this study showed that students did not identify one singular instructional method as being most beneficial and influential, but found a combination of instructional methods influenced their self-confidence. Further study is encouraged to better understand the connection between instructional methods and students' degree of confidence. Additional studies should consider looking directly at students' perception of the benefits and influence of specific combinations of instructional methods.

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Research

Students' Self-Perceived Critical Thinking Skills in an Agricultural Ethics Course

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Students' Self-Perceived Critical Thinking Skills in an Agricultural Ethics Course

Introduction

Today's agricultural students are future decision makers who must tackle complex issues that affect human and environmental communities. It is increasingly recognized that a properly trained student will graduate with professional capacities reaching beyond technical expertise (Jordan et al., 2008). Many universities, academics, and researchers state that a key learning outcome of higher education is students' ability to think critically about and across subjects studied (Tsui, 2002) and transfer those abilities to job requirements (Pithers, 2000). Therefore, a key component of students' education must be the development of critical thinking skills.

Despite the need for critical thinking, researchers have often found low levels of critical thinking in students, regardless of assessment methods (Zascavage et al., 2007). Rudd, Baker, and Hoover (2000) found deficits in the critical thinking of agricultural students. Though critical thinking is often a stated educational goal, encouragement and development of critical thinking in university classrooms is rare (Browne & Freeman, 2000). Additionally, employers increasingly expect universities to better prepare students to think critically (AACU, 2007; NACE, 2008). Overall, the conclusion is that the university system does not consistently produce critical thinkers (Paul, 2005; Burbach et al., 2004).

Theoretical Framework

John Dewey is often credited with making distinctions in levels of thinking (Geersten, 2003). In the early 1980's, "the critical thinking movement gained momentum with research and theories from psychology, philosophy, and education" (Fasko, Jr., 2003, p. 6). Paul (2005) defines critical thinking as the "art of thinking about thinking in an intellectually disciplined manner" (p. 28).

One of the most prominent definitions of critical thinking identifies specific thinking abilities rather than taking a generalist perspective. Facione (1990) headed a consortium of experts representing a variety of academic disciplines who reached consensus on the definition of critical thinking (Delphi method). Their definition of critical thinking states "We understand critical thinking to be purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based (p. 2)". The Delphi model includes six critical thinking skills and seven dispositions. The six core critical thinking skills are analysis, inference, interpretation, explanation, self-regulation, and evaluation.

In this project, we asked the following research questions;

1. Do students' perceived critical thinking skills change over the course of a semester?
2. How do students' pre-semester critical thinking skills compare to students' post-semester evaluation of their pre-semester critical thinking skills?

Methodology

We developed a self-evaluation of critical thinking skills specific to the course Ethics in Agriculture & Natural Resources. The evaluation contained 30 questions; 5 questions for each of the six Delphi critical thinking skills. Students rated themselves on a Likert-scale from 1 to 5, with the highest possible score of 150. Students took the self-evaluation three times. At the beginning of the semester students assessed their critical thinking skills. At the end of the semester students took the evaluation twice. First, students answered the questions as they saw their skills after the 16 week course. Immediately after completing the end-of-semester assessment, they were asked to re-evaluate their critical thinking skills at the beginning of the semester.

Demographics: A total of 39 students participated in the study. Twenty females and 19 males took the assessment. There were 15 seniors, 20 juniors, 3 sophomores, and one did not state their year in school. At both the beginning of the semester and the end, students' stated average grade point was 3.27.

T-tests were used to compare the mean response between 1) the beginning of the semester assessment and the end of the semester assessment, 2) the beginning of the semester assessment and the end-rating of the beginning of the semester assessment, and 3) the end-rating of the beginning of the semester assessment and the end of the semester assessment.

Results & Implications

Students' pre-semester responses were normally distributed between 90 and 120. At the end of the semester, students' responses were normally distributed and ranged from 80 to 120. Interestingly, at the end of the semester when students re-evaluated their beginning of the semester critical thinking skills the results were normally distributed and ranged from 50 to 100.

Students' pre-semester assessment was statistically different from their end of semester assessment (p=0.006). The pre-semester mean was 98.9 while the end of semester assessment mean was 94.2. This could indicate that students' critical thinking went down over the course of the semester, though more realistically, students over-rated their critical thinking skills at the beginning of the semester. Students' pre-semester assessment was statistically different from their end of semester rating of their pre-semester critical thinking skills (p=0.00). When students evaluated their pre-semester critical thinking skills at the end of the semester, the mean fell from 98.9 to 70.6 (p=0.00). When looking at the difference in students' critical thinking skills between their end rating of their pre-semester skills to their end skills, the mean rose from 70.6 to 94.0. This is an increase of 24 points.

These preliminary results elicit many interesting research questions. If students over-rate their critical thinking skills at the beginning of the semester, what is a more appropriate measurement? If the goal is to demonstrate an improvement in critical thinking, a more objective assessment tool will need to be developed for specific courses and subject areas. Does student self-assessment (and especially over-estimation) of critical thinking skills impact the learning process?

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Research Poster

THE EDUCATIONAL PROCESSES: RELATIVE IMPORTANCE TO EXTENSION EDUCATORS

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The Educational Processes: Relative importance to Extension Educators

Introduction

The Cooperative Extension Service (CES) uses various educational processes to meet the needs of people and improve lives (Seevers et al., 2007). Morse et al. (2006) stated that the needs of people have changed over the years with changing socio-economic and environmental conditions. In today's changing environment, it has become a challenge for the CES to succeed and communicate those successes to the public (Stone & Bieber, 1997). According to Cooper and Graham (2001), success of the CES largely depends on the professional skills and competencies of extension educators. Therefore, extension educators must develop educational process professional competencies to meet the changing needs of the clientele (Seevers et al., 2007). This study included four educational process professional competency areas identified as most important for the extension educators in the North Central Region of the United States by the NCR-158 Committee on Adult Education in Agriculture (Martin, 1991). These competency areas are: needs assessment and program development, learning systems, delivery systems and evaluation systems. According to the literature, there is lack of a comprehensive assessment of these four competency areas in the North Central Region. The purpose of this study was to determine the relative importance of 42 selected professional competencies as perceived by extension educators in the North Central Region and to identify when these competencies should be learned. These 42 professional competencies were grouped under the four educational processes professional competency areas mentioned above.

Theoretical Framework

The theoretical framework for this study is based on the theory of perception coming from research by Ferguson and Bargh (2004). They stated that social knowledge that is automatically activated in memory during the natural course of perception shapes and guides people's impressions, judgments, feelings, intentions, and behaviors.

Methods

The population for this study consisted of all extension educators working in the 12 states of the North Central Region from which 811 samples were selected randomly. The questionnaire was emailed to all participants using Survey-Monkey®. The response rate was 55%. A panel of experts reviewed the instrument for face, content, and construct validity and a pilot-study was conducted to establish the reliability of the instrument. The Cronbach's coefficient (α) of the instruments was .90. Respondent's perceptions were measured on a five point Likert- type scale ranging from 1- very low importance to 5- very high importance. The best time to learn the competencies was indicated by three different categories: graduate program, on-the-job and in-service program. Descriptive and inferential statics were used to compute the data using SPSS (17.0).

Findings

This study revealed that the extension educators perceived 81% of the professional competencies as highly important and the remaining competencies as moderately important. Respondents preferred to learn 41% of these competencies on-the-job, 33% in a graduate program and 26% of the competencies in an in-service program. Beyond the educational process professional competencies included in this study, some extension educators suggested their need to learn additional competencies such as people skills and organizational management. The findings from the study provided the basis to design a professional development model (Figure 1).

Conclusions, Recommendations, and Implications,

The findings of this study indicate a need for a professional development program based on the four educational process areas: needs assessment and program development, learning systems, delivery systems and evaluation systems. It is recommended that the professional development programs should be offered at one of the three levels of delivery – graduate programs, on-the-job and in-service workshops. The findings of this study have global implications for developing policies and guidelines for designing effective professional development programs related to the educational processes in extension. The best time to learn various competencies indicated by the extension educators in this study has important educational significance for designing professional development courses (1) in graduate programs at universities and colleges, (2) in in-service training programs of the extension service, as well as (3) for designing experiential learning techniques to assist extension educators to acquire these competencies while on-the-job. The findings also have implications for developing the educational process competencies of agriculture educators working both in K-12 and land-grant colleges mainly for: (1) identifying the learning needs of students in rapidly changing agricultural market situations, (2) planning learning programs and developing curricula that fit the changing needs of the marketplace , (3) delivering agricultural knowledge and information to meet the learning needs of students that can prepare them for the world of work, and (4) evaluating the impact of the teaching learning processes to determine whether the learning objectives were met as planned.

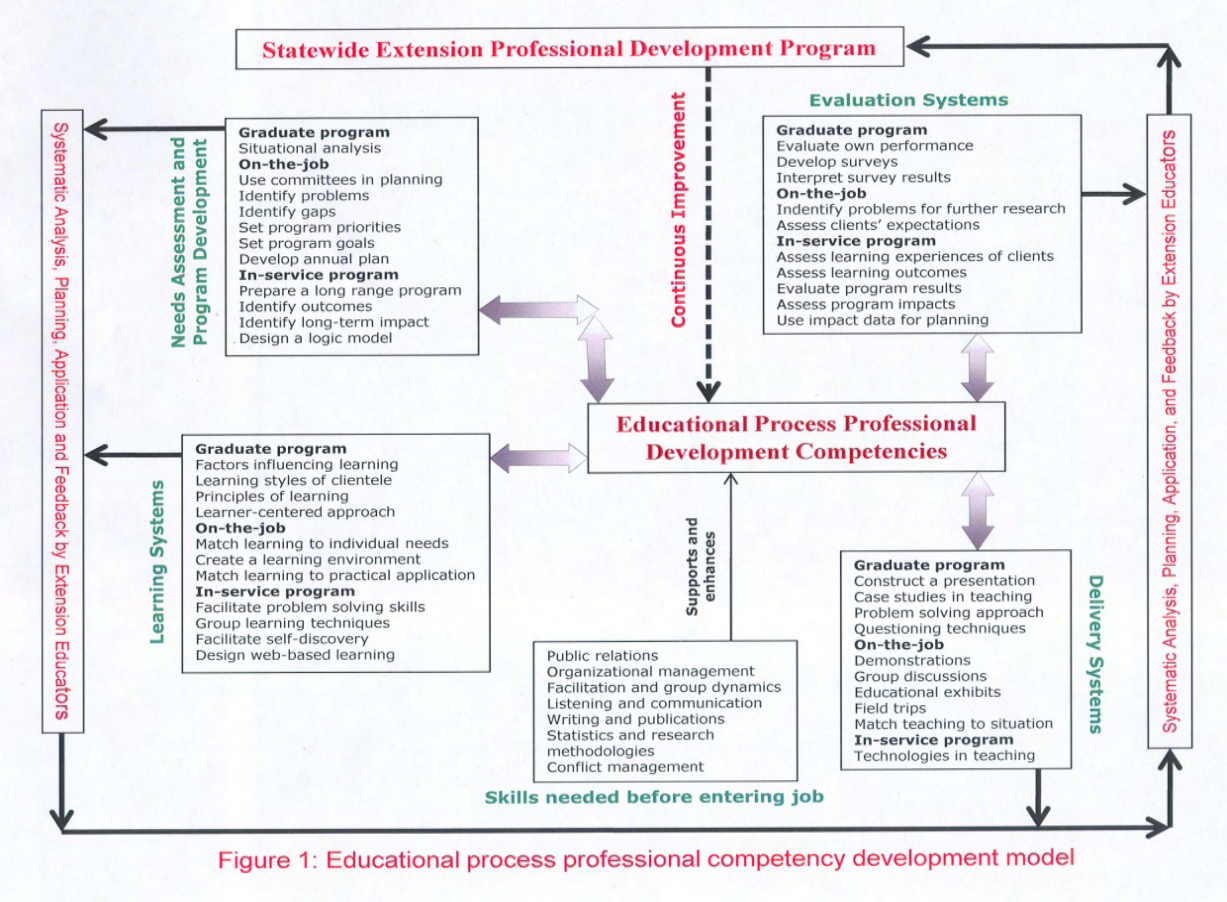

Figure 1: Educational process professional competency development model

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THE LEADERSHIP SPOT: A MULTI-INSTITUTIONAL, ONLINE APPROACH TO LEADERSHIP EDUCATION

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THE LEADERSHIP SPOT: A MULTI-INSTITUTIONAL, ONLINE APPROACH TO LEADERSHIP EDUCATION

Introduction/need for innovation or idea

Leadership is a process that involves interaction between two or more parties. Given the importance interpersonal interaction to leadership, social learning theories inform pedagogical approaches for leadership educators. Bandura (1977) established social cognitive theory which acknowledged the importance of meaningful learning experiences by emphasizing the dynamic interplay between the learner and the learning environment. Bandura also noted that observing peer models in the learning process provides rich learning experience for learners. Similarly, Vygotsky (1978) proposed that learning occurs first at a social level between learners and is subsequently recreated internally based upon the learner's pervious experiences. A key component of social learning models is that learning is situated in a socially–rich environment.

New media provide opportunities for leadership educators to utilize computer software and hardware to enhance learning environments. The use of internet tools will enhance teaching and learning with a generation of students who are increasingly using the internet as a primary source of information (Gupta & Meglick, 2008). Proserpio and Gioia (2007) labeled today's student "V-Gen" or the virtual generation. Up to 80% of 18-24 year olds have access to the internet and regularly use the internet for networking, relationship building, accessing news and research (Gupta & Meglich, 2008).

Internet resources continue to grow in both number and variation. Many classrooms in higher education use online classroom portals such as Blackboard® or WebCT®. Blogs, wikis and podcasts have grown in popularity in recent years (Richardson, 2006). Internet resources provided educators with the opportunity to construct an online social learning environment for students. While this online environment is often composed of students in one class at one institution, the focus of this poster is on an innovative approach which created an online learning environment of students from similar classrooms across two institutions. This learning environment is based upon Bandura's (1997) recommendation that peer models can provide a unique and power learning experience for students.

How it works/methodology/program phases/steps

Students were enrolled in an interpersonal leadership skills course at either the University of Florida or the University of Nebraska-Lincoln. Students were required to create and maintain a profile at The Leadership Spot website: http://leadershipspot.ning.com/. The Leadership Spot website utilizes social networking technology similar to Facebook to connect leadership students from both participating institutions. A total of four classes and approximately 90 students are utilizing The Leadership Spot online network. To date, the main use of the website has been through blogging, discussion forums, class updates, and queries to students at other institutions. These opportunities create a more open learning environment because students can view posted blogs, discussion forums, as well as each student's personalized leadership page from each institution and each class. This unique and dynamic online learning environment provides students with an opportunity to interact with students in similar courses at other institutions and other classrooms at the same institution.

In addition to the online learning environment, The Leadership Spot provides students with an opportunity to learn the technique of professional blogging. Students in each class are required to complete a number of leadership blogs throughout the course using the "What?", "So What?", "Now What?" model for leadership blogging (Gifford, 2009). Students are challenged to be creative and include photos, video and other design elements to enhance the visibility and allure of their individual blog. Students also have the ability to comment on other student postings and provide feedback and insight to students in similar courses despite the physical distance between institutions. The course instructor serves as the classroom group administrator and is able to monitor all activity.

This collaborative learning approach is unique from other classrooms introducing online interactions because it encourages students to interact and network on a national level. Students also have access to other professors and experts in the field of leadership development. The Leadership Spot offers students leadership resources, forum discussions and current leadership events. Anyone is welcome to join the Leadership Spot, but its intentional purpose is to assist leadership students in connecting with one another, sharing resources and ideas, and learning from information and experiences shared by peers.

Results to date/implications

Many assignments in the course are completed and posted on the Leadership Spot website. Students have taken advantage of the opportunity to be creative and have uploaded photos, video and current issues to their profiles as they relate to leadership development. Over 90 students are actively participating in the website. Approximately 50 individual blogs have been posted, 12 discussion forum threads have been utilized and countless one-on-one interactions have occurred. Students from each institution have responded positively to the online experience and have fully engaged in creatively and professionally utilizing the website. Ultimately, students are able to reflect on leadership experiences and apply course material in an online, social networking format with which many are very familiar.

Future plans/advice to others

Leadership education faculty are encouraged to consider using The Leadership Spot with their courses and participate in building an international online social network devoted to leadership education. Instructors can utilize The Leadership Spot to offer students networking opportunities and leadership resources as well as tools for blogging, discussion forums, polls, one-on-one interactions, and many others. The current faculty are maintaining an instructors group on the website to share ideas and best practices, provide tips to others and maintain a record trials and errors. The Leadership Spot will continue to be built into the objectives and pedagogy for those instructors currently using the website.

Costs/resources needed

There is no cost associated with use of the Leadership Spot website. However, faculty and students will need some time to devote to learning the intricacies and tools on the website and to maintain individual online profiles. Faculty may want to schedule an in-class "how to" session to familiarize students with the website.

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Research Poster

The Relationships between Instructional Efficacy and Motivational Orientations for Florida Master Gardeners

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The Relationships between Instructional Efficacy and Motivational Orientations for [State] Master Gardeners

Introduction/need for research

Master Gardeners are Cooperative Extension volunteers who deliver horticultural information from the land-grant institution to citizens across the state. Researchers should attempt to develop an understanding of what motivates adults to participate in Extension programs (Boyd, 2004). The Corporation of Community Service (2006) indicated one-third of volunteers terminate involvement within three years of service. Swackhamer and Kiernan (2005) recommended Extension utilize trained Master Gardeners in as many volunteer opportunities as possible for several years in order to get a good return on their investment. Flagler (1992) suggested researchers assist practitioners better utilize MG'ers in local programs by identifying adult motives to participate.

Theoretical Framework

The theoretical framework of this study was based on Bandura's (1993) self-efficacy theory and Houle's (1961) Typology. Bandura (1993) said self-efficacy was the degree to which an individual feels able to influence performance over an endeavor. High self-efficacy individuals are success-oriented and recover quickly from disappointments. Adults with low efficacy have less confidence in skills, and coupled with poor achievements discontinue service. Self-efficacy is correlated with motivation (Bandura).

Houle (1961) outlined three separate classifications known as goal-oriented, activity-oriented and learning-oriented to describe adults' motivations to participate in continued learning. Goal-oriented adults participate in an educational program due to the realization of their need for education or because they have identified a personal interest they want to comprehend to a higher degree. An activity-oriented adult chooses an educational program based upon the amount of social experiences with other adults. Adults who are learning-oriented perceive continued learning as a duty and believe pursuing education will better them.

The combination of self-efficacy theory (1993) and Houle's (1961) Typology relate to perceived self-efficacy and the pursuit of adult education. Both theories are used to explain why adults participate in the [State] Master Gardener program. The inclusion of instructional efficacy was important to understand as Master Gardeners serve as volunteer educators.

Methodology

The purpose of the study was to comprehend the effects of instructional efficacy and motivational orientations on [State] MG tenure. The study's objective was to describe any existing relationships between instructional efficacy and the motivational orientations of (a) Competence related Curiosity, (b) Community Service, (c) Interpersonal Relations, (d) Escape from Routine, (e) External Influence, and (f) Professional Advancement.

Quantitative research was selected as the research paradigm for this study. The study population was [State] Master Gardeners (N = 3,822) and researchers utilized stratified random sampling to select the population. A sample size of 613 was needed (Bartlett, Kotrlik, & Higgins, 2001). The researchers utilized the methods outlined by Dillman, Smyth, and Christian (2009) to increase

response rate from participants when instituting a mail questionnaire. Six hundred thirteen participants were surveyed, and 530 participants returned their completed surveys to the researchers for an 86.79% response rate.

The questionnaire included seven questions regarding teaching efficacy from the Teacher Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001), 41 statements from Mergener's (1979) Education Participation Scale and 10 questions about participant demographics. Mergener's Education Participation Scale was based on Houle's (1961) Typology. The constructs within Mergener's Education Participation Scale were Competence related Curiosity, Interpersonal Relations, Community Service, Escape from Routine, Professional Advancement, and External Influence.

Findings

The study's objective was to describe any existing relationships between instructional efficacy and motivational orientations. According to Davis (1971) a correlation of +.10 to +.29 suggests a low positive association, and a correlation of +.01 to +.09 implies a negligible positive association. A significant low positive association existed between Community Service and Instructional Efficacy, r (525) = .25, $p < .05$.Competence related Curiosity and Instructional Efficacy exhibited a significant low positive relationship, r (525) = .23, $p < .05$. Interpersonal Relations and Instructional Efficacy exhibited a significant negligible positive association, r (525) = .09, $p < .05$. No other significant associations existed.

Conclusions

Instructional efficacy was correlated with each of Houle's (1961) motivational orientations (learning, goal, and activity). Respondents' instructional efficacy was correlated with Competence related Curiosity, Community Service, and Interpersonal Relations motivational orientations.

Implications/Recommendations

The correlation of motivational orientations and instructional efficacy adds to the Houle's (1961) Typology and Bandura's (1993) self-efficacy theory and better helps explain participant MG tenure by illustrating diverse facets effecting participation. Houle said adults participate in education for a variety of reasons. Bandura said individuals' self-efficacy affects the implementation of objectives and critical thinking. [State] MG coordinators should include more opportunities for participants to learn, serve the community, and develop social relationships due to those attributes positively affecting instructional efficacy. Learning-oriented participants possessed instructional efficacy and desired to share horticultural knowledge with fellow citizens. Goal and activity-oriented motivations were related with instructional efficacy too. Goal-oriented adults desired to teach the community horticultural information, and activity-oriented adults wanted to share horticultural knowledge in order to develop social relationships. Researchers should study instructional efficacy's relationship to motivational orientations in order to develop an understanding of adult tenure in MG. This study underscores the importance of providing training and preparation in instructional strategies for current and future [State] Master Gardeners due to diverse participant motivation. MG coordinators can focus program promotional material, and lessons to train and best prepare adults to be volunteer educators in order to meet the needs of these valuable resources and program clientele.

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RESEARCH

THE ROLE OF ANIMATION TOWARDS COGNITIVE ACHIEVEMENT

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THE ROLE OF ANIMATION TOWARDS COGNITIVE ACHIEVEMENT

Introduction

The National Research Council (1988) called for instructors to seek out and share technology-enhanced instructional material for agriculture to enhance student achievement. Learners of today are foundationally different from those who came before them in their methods of processing information and reasoning through issues (Prensky, 2001). Through the technologies available, teachers can transform the classroom from a "teacher-centered" to a "learner-centered environment" in an effort to adapt to students' needs (Simonson & Thompson, 1997). "As agricultural education enters the twenty-first century, it must change with emerging trends in society and the agricultural industry," (Talbert, Vaughn, & Croom, 2005, p. 61). Technology can aid in the hands-on experiences that agricultural education students gain traditionally while helping to reinforce student knowledge.

Theoretical Framework

Constructivism is defined as the act of learners creating an understanding through an experience (Fosnot, 1996). Dewey (1938) stressed his view that "sound educational experience involves, above all, continuity and interaction between the learner and what is learned" (p. 10). The Dual Coding Theory (DCT) was introduced by Allan Paivio (1971) as an approach to cognitive thinking, using both language (verbal) and imagery (nonverbal).Many students can be seen as lost in the classroom "of lectures, and technology may provide one possible key for revitalizing the lecture" (Gilroy, 1998, p. 5). Animations help in the visualization of abstract concepts through concrete representations and events (Wouters, Pass, & van Merriënboer, 2008; McGregor, 2002; Su, 2008). Edgar (2006) expressed the challenge of teaching abstract concepts of agricultural mechanization all-inclusively using only pictures, diagrams, chalk boards, and verbal explanations. Technological forms of instruction, like animation, may offer students an increased understanding of mechanical powers and science principles in agriculture (Dooley, Stuessy, Magill, & Vasudevan, 2000; McGregor, 2002).

Methodology

The purpose of this study was to determine if there was a significant difference ($p \leq .05$) in the cognitive achievement of students at the post secondary level when technology-enhanced instruction was incorporated. Based upon the research question, the following hypotheses were formulated to guide this study:

- Ho_1: There will be no significant difference in cognitive achievement between students taught by technology-enhanced instruction compared with traditional lecture in the principles of operation of four-stroke cycle small gasoline engines.
- Ho_2: There will be no significant difference in cognitive achievement between students taught by technology-enhanced instruction compared with traditional lecture in the principles of carburetion of four-stroke cycle small gasoline engines.

A quasi-experimental, counterbalanced design (#11) with internal replication from Campbell and Stanley (1963) was chosen for this study. Post-secondary students were purposively selected by their enrollment ($N = 21$) in the course of *Small Gas Engines and Turf Equipment* from *[University]*. Two separate lessons on theories of small gasoline engines were selected. Of the intact class ($N = 21$), one group ($n = 10$) was randomly chosen to serve as the

control for the first lesson with the other serving as the treatment group (n = 11). The groups were switched for the second lesson, having each group serve as both a control (n = 11) and treatment (n = 10) through the counterbalance design.

Students were given a pretest two weeks prior to implementation of the treatment to measure knowledge. The pretest consisted of twenty general knowledge questions covering small gasoline engine operational theory; ten from both operation and carburetion. Immediately following each treatment, a posttest was administered. Data were organized and analyzed for each research hypotheses using SAS® 9.0 for Windows™ statistical package. Descriptive statistics were used to analyze the extraneous variable data. Inferential statistics were used to analyze data for testing differences using independent *t*-tests.

Conclusions, Implications & Recommendations

Participants in this study were predominantly male (76%), students seeking a degree towards agricultural education (74%) and classified at [university] as junior (63%) status. When administered knowledge pretest regarding small gas engine theory of operation, all participants averaged 67% out of a total 100%. Furthermore, a knowledge pretest was given prior to the lesson on principles of carburetion and students' scores resulted in a class average of 52% out of 100%. The researchers presuppose that although prior knowledge is held by participants, further knowledge should be acquired to meet specific class requirements.

Addressing hypotheses guiding this study resulted in implementation of traditional lecture for the control group participants and incorporating animations in the treatment group to determine the effects towards cognitive achievement. Analysis of data in comparing the two groups during the principles of operation of four-stroke cycle small gasoline engines revealed no significant differences between these groups $t(19) = 1.56$, $p = .14$. Therefore, the null hypothesis was held tenable and not rejected. Analysis of data when comparing the counterbalanced groups taught principles of carburetion of four-stroke cycle gasoline engines also revealed no significant ($p = .47$) differences between groups $t(19) = -.74$.

This research agrees with previous research (McGregor, 2002) indicating no significant differences seen between groups when incorporating animations in lessons dealing with theories and principles of small gas engine operation on the post secondary level. It should be further noted that treatment and control groups both increased in knowledge acquisition directly proportional from pretest to posttest measures indicating knowledge gained were not resulted to treatments $t(18) = .24$; $t(18) = -.16$. Because learners in today's classrooms are more technologically adept, enhancing classroom knowledge delivery via animations may not increase knowledge but it is assumed by the researchers that animations can hold interest which may not result in further knowledge acquisition. The findings of this study confirm previous research (McGregor, 2002) and should quell debate over its use in post-secondary institutions. Further study should investigate the perceptions held by students regarding interest. The researchers also recommend further research into how animation effects the retrieval of animation (Pavio, 1971) relating to students preference of learning. A final recommendation is to replicate this study in secondary settings to determine its relevance towards students with negligible previous experience in theories of small gas engine operation (Edgar, 2006).

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Research

Tips from the Trenches: Teaching Advice for Beginning Academics

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Tips from the Trenches: Teaching Advice for Beginning Academics

Introduction/Need for Research

While many professions require on-the-job training or orientation, academic life assumes new faculty members have the skills, knowledge, and ability for on-the-job success when they arrive (Lucas & Murry, 2007). However, the transition from graduate students to new faculty members can reveal issues about their new employment situations and roles as educational professionals (Bowen & Schuster, 1986). Pressure to obtain grants, to develop a research agenda, and to advise undergraduate and graduate students might discourage new faculty interest in teaching (Cooper, 1980). The National Research Agenda for Agricultural Education and Communications recognizes the need for enhancing the effectiveness of agricultural and life sciences faculty as a research priority area (Osborne, n.d.). Since achieving success as a faculty member can be a challenge, universities are developing interventions (e.g. sabbatical programs, development activities, workshops, orientations) that contribute to faculty success and retention. This research contributes to the scholarship of teaching and learning knowledge base and provides teaching advice that can assist both graduate students and new faculty members as they develop their academic careers.

Theoretical Framework

The study was theoretically framed around andragogy, which is concerned with helping adults learn (Cross, 1981). More specifically, Knowles (1978) provides five assumptions of adult learners that could apply to college faculty who work on developing their instructional skills: self-concept, experience, readiness to learn, time perspective, and orientation to learning. As individuals mature, their self-concept changes from dependency to self-directedness because they gain experience and their readiness to learn is more focused on developmental tasks for their social roles. Adult learners are motivated to learn in order to address problems.

Methodology

A qualitative research design was used for this study. Researchers purposively selected six tenured faculty members of a southwest university's Teaching Academy to participate in semi-structured face-to-face interviews. The six Teaching Academy members were recognized by their colleagues for demonstrating excellence in teaching. Each participant represented a different academic department at the university. The purpose of the study was to gather advice from these tenured faculty members that would benefit graduate students and new, or junior, faculty. The interviewer engaged participants with probing questions to explore emerging themes during interviews. The interviews were digitally recorded to ensure dependability (Guba & Lincoln, 1989). Recordings were transcribed and analyzed for emerging themes, similarities, and dissimilarities. Data were analyzed using Glaser's constant comparative method (1978) to analyze responses between participants. This method allows researchers to identify patterns or relationships within the data. Participants' responses were used to draw conclusions and recommendations.

Findings

Eleven best lessons emerged from the interviews with tenured Teaching Academy participants:

1. Seek out a mentor among the seasoned faculty in your department to learn as much as possible.
2. Determine who are among the best professors in your discipline and observe their classroom instruction.
3. Plan and rehearse lesson plans, so you are confident in your instructional approach.
4. Try multiple teaching strategies to learn what fits your style and personality the best.
5. Present information in multiple ways by using different learning modalities (audio, visual, kinesthetic) to help students understand the material.
6. Follow good instructional design (set objectives, determine teaching material, design classroom activity, and complete evaluation of learning outcomes).
7. Have students complete mid-term evaluations as a formative assessment of the professor's teaching.
8. Make student learning meaningful by connecting new information to an existing knowledge base.
9. Provide active learning opportunities in small and large lectures through in-class activities (e.g. think-pair-share, case studies, class discussion, clicker questions, simulations).
10. Develop rubrics as a tool for grading assignments.
11. Grade assignments or exams question by question to maintain consistency in point values.

Conclusions

Participants found value in working with a mentor and observing good professors within their disciplines to help them develop their teaching skills. Graduate students and new faculty were encouraged to try multiple teaching strategies to learn what instructional approaches fit their personality and style. Using multiple teaching strategies for reaching the different learning modalities can help students learn. One way to incorporate different teaching strategies is through the use of small group and class discussions, clickers, or case studies. Additionally, confidence in their ability to teach emerged as these participants spent time planning and rehearsing their lessons plans. Mid-term evaluations by students would further help professors or graduate students assess their teaching.

Implications/Recommendations

Graduate students and new faculty could be viewed as independent, adult learners who are motivated to apply new teaching strategies that benefit their roles as professors. The list of lessons learned from tenured faculty provide suggestions for graduate students and faculty as they search for ways to improve their teaching skills. Departments should provide opportunities for graduate students and new faculty to learn about, implement, and evaluate teaching strategies in their own classrooms. Studies could determine whether these suggestions would lead to greater competence, greater confidence, and less faculty turnover.

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Research

To Teach Or Not To Teach: What Factors Impact Preservice Students' Decision to Teach?

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To Teach Or Not To Teach: What Impacts New Teachers' Decision to Teach?

Faced with an ongoing shortage of secondary agricultural educators, states such as *Western State* continually struggle to find qualified teachers to fill available teaching positions (Kantrovich, 2007). Given our nation's current financial downturn, one might think the need for teachers would be met since budget cuts have decreased or eliminated funding for new hires in many school districts. With this reduction in hiring, it would seem there should be more newly qualified teachers than available positions. However in *Western State*, 65 agriculture teaching positions were available for fall 2009 and only 44 new agriculture teachers were credentialed. Of those 44 new teachers, nearly 30% did not find or did not pursue an agriculture teaching position. This finding is consistent with a national trend that reported an even higher percentage, with over 50% of newly qualified teachers not entering the agriculture teaching profession (Kantrovich, 2007). In 1995, Brown concluded there were ample numbers of agricultural education graduates, so the teacher supply problem resulted from insufficient recruitment of those qualified new teachers into the profession. Hillison, Camp, and Burke (1987) reported some graduates naturally decide to seek employment outside of teaching and the flexibility of the agricultural education major permits and prepares graduates to pursue a broad range of agriculture careers. With *Western State's* current fiscal struggles, agriculture industry jobs are difficult to acquire as opposed to the abundant opportunities in agricultural education. This phenomenon served as the impetus for an examination of factors that may contribute to new teachers' decisions to pursue a career in agricultural education.

The purpose of this study was to compare new teachers who secured employment to those who had not, specifically to determine if notable differences existed in self-perceived levels of agriculture teacher efficacy, intentions and aspirations to teach, teaching expectations, career barriers, and career support.

Methodology

This descriptive census study focused on all newly credentialed agriculture teachers in *Western State* over the 2008-09 academic year, which according to the *Western State* Department of Education consisted of 44 individuals (L. McCabe, personal communication, January 6, 2010). The target population was comprised of new teachers who attended the *Western State* Agricultural Teachers Association's annual conference and new teacher meeting. In June 2009, 86% (n = 37) of new teachers were in attendance. The 37 new teachers were asked to complete a questionnaire consisting of 115 items. This instrument was pilot tested on 396 agriculture teachers in 2007. Reliability was established through post-hoc analysis of Cronbach's Alpha. Coefficients of the construct scales ranged from .88 to .96. The instrument measured four constructs using 5-point Likert items. These constructs examined intentions and aspirations to teach agriculture, expectations about a career in agricultural education, perceived likelihood and difficulty overcoming career barriers, and perceived level of support from family, friends, and teachers. The other four constructs assessed overall agricultural teacher efficacy. These constructs used 9-point Likert items measuring self-efficacy levels related to classroom/lab instruction, FFA leadership/supervision, SAE supervision, and program management. Analyses of the eight construct scales used grand mean scores to compare the two groups, those that were teaching (n = 24) and those that were not (n = 13). Demographic data were analyzed using

frequencies (Gall, Borg, & Gall, 1996). The state's agriculture teacher directory was used to determine which new teachers had found employment for fall 2009.

Results

Completed questionnaires were received from 37 of the 44 new teachers for a response rate of 86%. Of the 24 respondents who were teaching agriculture, their average age was 23, 75% (n = 18) were female, 80% (n = 19) were Caucasian, 91% (n = 21) had over a 3.0 g.p.a, and all 24 reported that they intended to pursue a career teaching agriculture. Of the 13 who were not teaching agriculture, their average age was 27, 54% (n = 7) were female, 77% (n = 7) were Caucasian, 92% (n = 12) had over a 3.0 g.p.a., and all but one respondent indicated that they intended to pursue a career teaching agriculture.

When the two groups of respondents were compared, findings showed those who were teaching reported notably higher mean efficacy scores related to their classroom/lab teaching (M = 118.0 vs. M = 109.2), FFA leadership/supervision (M = 101.2 vs. M = 95.3), and on the overall agriculture teacher efficacy scale (M = 324.8 vs. M = 309.0). However, when examining the two groups on the remaining efficacy constructs, the researchers found that no practical differences existed related to program management (M = 43.5 vs. M = 43.0) and SAE supervision (M = 62.0 vs. M = 61.5). The same is true of the remaining constructs of agriculture teaching expectations (M = 54.9 vs. M = 54.7), likelihood of career barriers (M = 24.8 vs. M = 25.0), difficulty of overcoming career barriers (M = 24.8 vs. M = 22.0), and level of support (M = 3.6 vs. M = 3.4). Given the possibility that several new teachers were limited by specific career barriers such as inability to relocate or due to personal relationships, the researchers also compared both groups on each of the individual career barriers. In doing so, no notable differences were found in any of the barriers examined.

Conclusions

This study sought to compare those new agriculture teachers who found employment to those who had not on various constructs. Based on the findings, it can be concluded that those new teachers who were employed reported having slightly higher overall agriculture teacher efficacy and in the specific areas of classroom/lab instruction and FFA leadership/supervision. Although it would not be appropriate to conclude their greater sense of efficacy contributed to success in acquiring a teaching job, it does stimulate interest in further examination of this phenomenon given the ongoing need to fill agriculture teaching positions. Is it more challenging for students with lower efficacy levels to find employment? What steps could be taken to help these students increase their efficacy related to classroom/lab instruction and FFA and what implications, if any, would it have on their ability to find or pursue a teaching position.

Recent studies (Kelsey, 2006) have examined the impact of career barriers, more specifically, those finding some new teachers were "place bound". This inability to relocate did in some cases prevent teachers from finding employment. This study found no such issue was prevalent. Consequently, additional research is needed to examine the differences in the efficacy levels of new teachers to determine if these differences have an impact on new teachers' decisions to enter the profession.

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Innovative Idea

Training the Teachers: An Agricultural Communications Career Development Event Training Workshop

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Training the Teachers: An Agricultural Communications Career Development Event Training Workshop

Introduction

When preparing for the FFA Agricultural Communications Career Development Event (CDE), many agri-science teachers find themselves overwhelmed. The contest involves Associated Press style, grammar, news editing, and five different practicum areas: broadcasting, graphic design, news writing, public relations writing, and Web design. Many teachers are not familiar with the topics; therefore, an educational program for the agricultural communications CDE for agri-science teachers was deemed necessary by the CDE's organizers.

The faculty at a southern university's department of agricultural education and communications administers this state's ag communications CDE each year. Officials noticed consistent errors from the students and common questions from the teachers. To help teachers feel more comfortable coaching the CDE team and to show them helpful resources, the faculty and the CDE superintendent deemed it necessary and appropriate to develop a workshop to be presented at the state agri-science teachers' annual conference.

Program Phases

The program was designed using Boone's Conceptual Programming Model (Boone, Safrit, & Jones, 2002). An initial examination of the target audience was conducted in early July 2009 and consisted of a survey of the agri-science teachers who consistently participated in the CDE (n = 23) to determine how to structure the workshop. The participants were asked to rate their comfort level of teaching each of the quizzes and practicum areas on a Likert-type scale of one (very uncomfortable) to four (very comfortable). The Web design practicum was the least comfortable area to teach while the broadcast practicum was the most comfortable.

When designing the 90-minute workshop, more time was dedicated to the Web design practicum. Each element of the contest received its own sub-section of the workshop and contained active learning techniques such as think-pair-share, question and answer, show and tell, and demonstrations. The teachers also received access to an ag communications CDE wiki that contained information for the contest and helpful handouts. The wiki also allows the teachers to share information that they find helpful with each other (Quittner, 2006).

Following the workshop, an evaluation was conducted and yielded a response of 21 participants out of 50 attendees. The evaluation was a one page, hard copy survey questionnaire. The questions on the evaluation instrument came directly from the initial needs assessment questionnaire.

Results to Date

The purpose for the evaluation was to see if the teachers gained a greater understanding of the rules and requirements of the ag communications CDE. The results from the needs assessment were compared to the results of the program evaluation to determine if comfort in coaching an ag communications CDE improved following the workshop.

Following the workshop, the data indicated the participants were most comfortable coaching the communications quiz, but they were still uncomfortable coaching the Web design practicum. However, when compared to the initial needs assessment questionnaire, the workshop brought improvement in confidence level of coaching all elements of the contest as indicated in Figure 1.

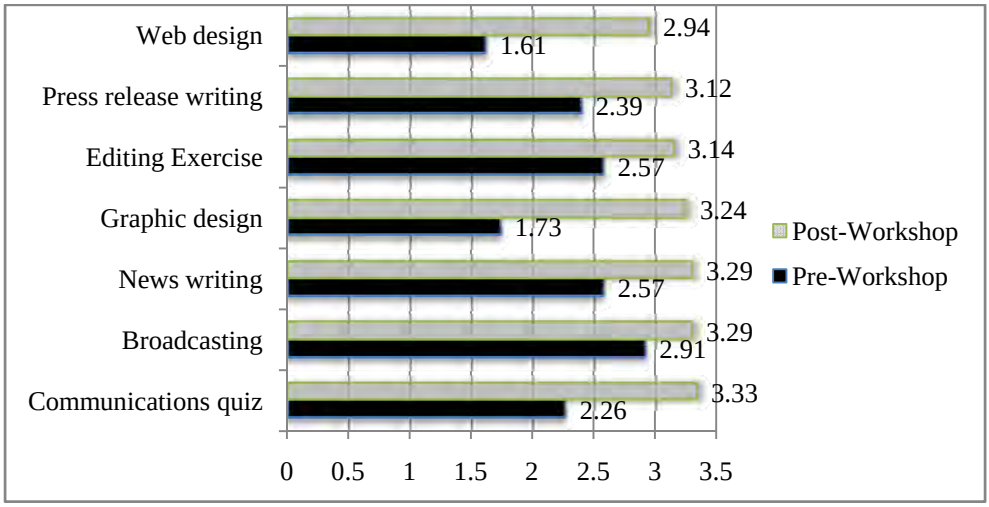

Figure 1. Mean Comfort Level by Topic

The broadcasting practicum saw the largest improvement in confidence with an 88% change, followed by the news writing practicum, which improved by 78%. Other positive changes were as follows: public relations practicum, 76%; communications quiz, 68%; Web design practicum, 54%; graphic design, 53%; and editing exercise, 27%. Based upon the pre-program needs assessment and post-program evaluation, the program did make a difference in the confidence of agri-science teachers who coach or plan to coach an ag communications CDE team.

Future Plans and Advice to Others

The CDE wiki is still available to teachers at http://ffaagcommunicationscde.wikispaces.com/ and is updated monthly to assist teachers. In addition to the wiki, the faculty will continue presenting ag communications CDE workshops each summer at the state agri-science teachers conference. The faculty will present this workshop to the department's student teachers each semester. Other departments that administer their state's ag communications CDE are encouraged to do a similar program. All information, including the lecture slides used during the workshop, is posted on the wiki and everyone is welcome to use it. Although it is early, the CDE's organizers have already noticed a decrease in questions from teachers about the contest.

Costs/Resources Needed

The costs for this workshop were faculty members' time and handouts. Resources needed to conduct a similar workshop include a laptop, projector, and handouts. Other resources may be added as faculty members see fit.

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Innovative Poster Proposal

Transforming Education in Agriculture for a Changing World

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Transforming Education in Agriculture for a Changing World

Introduction

Colleges of agriculture and related sciences are in the midst of a national movement that is designed to improve teaching and learning in the agricultural sciences, preparing graduates for future careers and additional study as they prepare to become part of the global society. Representatives from academics and industry have met to discuss various aspects of what needs to be done to effect change. Since much of the proposed changes center on curriculum and instruction in agriculture, and since agricultural teacher education is well-equipped to provide leadership, this poster addresses the needs and proposes ways in which agricultural education can partner with others in the agricultural sciences in curriculum and teaching endeavors. For the past several years, the Academic Programs Section of the Board on Agriculture Assembly of the Association of Public and Land-grant Universities (APLU) has been involved in a series of events to address the question, "What should programs in agricultural sciences in the public universities in the United States be like in the future in order to prepare graduates for the world of work in the twenty-first century?" That theme is evident throughout the various reports of the Kellogg Commission (1997). This poster will summarize findings from previous writing, meetings, discussions and workshops and review some forces of change and factors of resistance in terms of program changes, and then propose ways that agricultural teacher education can provide leadership in effecting change.

Program Phases To-Date

From various sources in the literature, most notably the work of Kunkel and others in 1996 and 2001, five forces of change that affect the curriculum have been identified. Those are resources, demographics, science, mission, and industry. A second area of influence is factors of resistance. These include mission, resources, philosophy and leadership. An examination each of these will lead to a better understanding of what external and internal forces might be considered to effect change in teaching and learning through curriculum reform. The Academic Summit held in 2006 addressed six important topics for consideration, namely how people learn, student learning, culture and curriculum, practical experience, articulation, and globalization. The various conferences and presentations culminated in a publication of The National Academies titled *Transforming Agricultural Education for a Changing World* (2009). Of the nine steps for achieving change, three should be of particular interest to agricultural teacher education. They are curriculum development, student development, and teaching enhancement.

Implications for Agricultural Teacher Education

Agricultural teacher education has an important role to play as colleges of agriculture and related sciences address these important issues. Agricultural teacher education must be *partners with* rather than *in service to* the various disciplinary units within the colleges. Just as plant pathologists and entomologists partner with horticulturalists in striving to solve the issues of the fruit industry, teacher education must identify its rightful place in enhancing teaching and the curriculum. The following are suggested ways for that to occur.

Future Plans and Opportunities for Agricultural Education

Curriculum development

A course is included in the curriculum generally for one of two reasons – it has always been taught, or someone identified a new topic and developed a course. Much less frequently, faculty first identify what it is that graduates need to know and be able to do and then design the curriculum that meets those needs. Teacher educators are experts in helping address the National Academies focus on curricular change.

Teaching enhancement

The one source of variance in student achievement that can be manipulated by the instructor is teacher behavior. The landmark work of Rosenshine and Furst (1971) provides evidence of selected teacher behaviors that are related to an improvement in student performance. Again, teacher educators are experts in this field and can conduct research and in-service education to address the needs.

Student development

Several agricultural teacher educator programs include instruction and other scholarly pursuits in the area of leadership education and leader development. Agricultural education programs should step to the forefront in conducting development activities, research and in-service education for students within the colleges to help prepare new leadership for the agricultural industry.

Resources Needed

The amount of resources needed could be negligible, depending on the expertise and availability of faculty. In the best-case scenario, the agricultural teacher education program could be subsidized by the college and/or other departments for providing leadership and programming in the focus areas enumerated by the national study.

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Innovative Idea

Transforming leaders through international experiential learning: A synergistic collaboration between nonprofit organizations and academia

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Transforming leaders through international experiential learning: A synergistic collaboration between nonprofit organizations and academia

Introduction

The increasing trend of globalization has amplified interest in international education. A survey conducted for the Association of American Colleges and Universities reports more than 60% of employers polled believed recent graduates lacked the skills to succeed in the global economy (Fischer, 2007). The Committee for Economic Development (2006) also makes the plea to enhance our current educational system through the strengthening of foreign language skills and international awareness of students. Industry is clearly sending higher education a message concerning the need for international education and rightly so, institutions need to address this issue. This program aims to move beyond a traditional educational approach engaging students in a synergistic collaboration allowing students to learn from leaders in the development and professional sectors of the industry. Through experiential learning, students expand their needs and expectations of learning to a higher level while increasing their confidence and motivation for careers in the global economy.

Program Framework

As a result of this interest in global education, a collaboration of organizations developed an educational experience and international program based upon experiential learning and leadership for college students. The International Collegiate Agricultural Leadership (ICAL) program has been a successful model providing the opportunity for collegiate students from various academic disciplines to gain a valuable life experience transforming their views of agricultural development, leadership, and cultural awareness.

As the concept for the program was developed, staff from both the National Grains Council and the National FFA Organization came together to determine the educational objectives for the program. The two-week intensive experience begins with cultural training and orientation where students are briefed on economic trends, trade issues and policies, and cultural components of the countries visited.

This program is validated and disseminated through the educational frameworks of Bloom's Taxonomy (1956) and Kolb's Experiential Learning Model (1984).

With Bloom's (1956) categories for the cognitive domain, the program objectives address:

- Knowledge: Identify information about the cultural, economic, and development of the respective countries through training and prepared resources.
- Comprehension: Understand complexities of the economies in respective countries through site visits to various sectors of the agricultural and food industry.
- Application: Apply knowledge and demonstrate learning by conducting a SWOT analysis of each country.
- Analysis: Identify current trade and cultural issues of each country; Discover careers in international development and marketing.
- Synthesis: Create a presentation explaining findings from SWOT analysis presented at end of visit to host country stakeholders.

- Evaluation: Describe experience and relate to educational interest through reflective journaling and presentations to local, state, and regional agricultural groups.

Kolb (1984) also provides a framework for the experiential learning component of this international program. The four stages of the experiential learning cycle are demonstrated through:

- Concrete Experience: Student actively participates in the experience through travel to a foreign country, visits to various industry sectors and cultural offerings.
- Reflective Observation: Student reflects through journaling and the development of a presentation summarizing his or her experience abroad.
- Abstract Conceptualization: Student conceptualizes through the SWOT analysis and presentations.
- Active Experimentation: Student applies new learnings to academic discipline and leadership situations.

Results to date

This powerful program takes students through a wide range of educational and cultural encounters resulting in a transforming experience. ICAL has been in place since 2006 traveling to the countries of China, Egypt, Morocco, Spain, and Vietnam. The management of this program relies upon the consultation of industry professionals and knowledge of emerging world markets for agriculture. As a result, the location and focus of the program from year to year is in line with recent trends, technology, and issues facing agriculture on a global scale. Consequently, students share their experience and transfer information and knowledge to others through education and their chosen careers.

Only the top 12 applicants are selected for the program each year. This allows the focus to be on tailored educational development and individual growth for each student. While a selective program, it has given 48 students the opportunity to engage in agricultural education on a global scale.

Future plans and resources needed

While onsite contacts in the countries and sponsor support are necessary, equally important are the partnerships fostered with academia across the nation. These connections aid in the recruitment of students for this selective program. Therefore, continual support is needed from professionals in academia by recognizing and encouraging students to take part in this program. By doing so, such discussions will foster global dialogue in the collegiate agricultural classroom.

An additional goal of this program is to engage past participants, sponsors, and the continual network of career and educational opportunities for students interested in global opportunities. Linking students with industry will further individual career goals while fostering further reflection and evaluation of the program. Many businesses and organizations will continue to depend on students' abilities to cooperate and interact with other cultures and communities around the world (Committee for Economic Development, 2006).

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Understanding the Intended Outcomes and Impacts of Agricultural Leadership Development Programs

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Introduction

The W. K. Kellogg Foundation developed Agricultural-Based Leadership Programs in the 1960s “to increase the participant’s understanding of political, social and economic systems to develop social skills, to be effective spokespeople for their industry or community, to expand individual networks, and to develop future political, civic and organizational leaders” (Howell, Weir, & Cook, 1982). Since then, there have been approximately 40 other programs developed in the United States, Canada and Australia based on the Kellogg Model.

Despite the fact that there are over 40 programs today, few in-depth evaluations have been conducted to determine the impacts these programs have. Therefore, program effectiveness becomes more difficult to determine when the outcomes of these programs are still unknown. Program evaluations have been conducted for many programs on various levels, most of which only measure short and medium-term outcomes (Carter & Rudd, 2000; Kelsey & Wall, 2003; Whent & Leising, 1992). Further evaluation is needed for the programs to better understand the outcomes, including short, medium and long term. Additionally, an evaluation of agricultural-based leadership programs on a national scale has not been conducted in over 20 years, which was based on four of the original Kellogg Model programs in Pennsylvania, California, Michigan and Montana (Howell, Weir, & Cook, 1982). Before understanding what the outcomes of the programs are, it is important to understand what the expected outcomes are as communicated by the leadership program directors.

Theoretical Framework

The Theory of Planned Behavior was used in this study, specifically focusing on identifying the salient beliefs of the directors. According to the Theory of Planned Behavior, one’s behavior is a function of certain salient beliefs to that behavior (Ajzen, 1991). Behavior is guided by three kinds of salient beliefs: behavioral beliefs, normative beliefs and control beliefs. Behavioral beliefs are the beliefs about expected outcomes produced from a targeted behavior. Normative beliefs are the beliefs about normative expectations of important individuals or groups in regards to a targeted behavior. Control beliefs are the beliefs concerned with the potential factors that may facilitate or impede the performance of the targeted behavior (Ajzen, 1991). The behavioral beliefs are assumed to produce a favorable or unfavorable attitude toward the behavior. Normative beliefs result in subjective norm or perceived social pressure; and control beliefs determine perceived behavioral control. The three variables, attitude toward the behavior, subjective norms and perceived behavioral control, predict the behavioral intention of an individual (Ajzen, 1991).

Methodology

This study used one focus group with 24 participants comprised of directors of agricultural and rural leadership development programs internationally with a wide range of experiences within the programs. The moderator used a guide to question the participants about what the outcomes and impacts of the agricultural leadership programs are. The focus group was transcribed and analyzed using Krueger and Casey’s (2000) rapid analysis approach.

Results

Three major themes emerged from the directors concerning their beliefs on what the outcomes and impacts are of agricultural leadership programs: 1) improved social skills, 2) development of networks and 3) increased understanding and acceptance.

The participants reported stated many characteristics and examples of improved social skills such as increased communication skills both verbally and written, better negotiation skills, and "enhanced communication proficiencies." The participants also stated a creation and use of networks as an outcome of agricultural leadership programs. "We're creating networks of leaders that can work together with each other and draw upon each other," stated one participant.

The participants continually identified understanding and acceptance of the issues and varying opinions as an outcome. This understanding and acceptance is in regards to agricultural and political issues as well as cultures, economics, and leadership. The participants provided examples of this understanding and acceptance as "being politically astute and understanding the importance of compromise" and as an "enhanced awareness of diversity issues." Other outcomes identified included increased confidence and more empowered leaders.

Conclusions

The outcomes as identified by the participants are consistent with many of the outcomes identified in previous research (Carter & Rudd, 2000; Kelsey & Wall, 2003; Whent & Leising, 1992). Many of these outcomes are short and medium term outcomes rather than long-term outcomes and impacts. Improved social skills, development of networks and an increased understanding and acceptance were the primary outcomes identified or "salient beliefs" of the focus group participants that potentially lead to the intended behavioral changes of leadership program participants.

Recommendations

Understanding what the intended outcomes and impacts of agricultural leadership programs are will help to evaluate these outcomes through the program alumni. Additional research with the directors of agricultural leadership programs should be conducted to identify more long-term outcomes and impacts. A majority of the outcomes identified were directly related to the alumni of the programs. An evaluation of how alumni are using the skills, networks and knowledge gained is important to be able to communicate to outside sponsors of leadership programs to continue to gain funding and the resources needed for these leadership programs.

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Using Concept Maps to Better Understand the Discipline of Agricultural Education

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POSTER PRESENTATION:
Innovative Idea

Using Concept Maps to Better Understand the Discipline of Agricultural Education

Introduction

A keystone of any agricultural education degree program is a foundation of agricultural education course where the discipline, including its history, philosophical premises, and knowledge bases, is introduced. One of the challenges of teaching such a course is gauging student's understanding of the discipline at the start of the course and measuring the extent to which that understanding has evolved throughout the course. Concept mapping was introduced into the course as a means to effectively incorporate the transfer of learning and metacognition while allowing students to realize their advancement along the novice to expert continuum (National Research Council, 2000).

Concept maps provide a means of visually representing the cognitive structure and interconnectedness of a discipline (Martin, 1994; Novak, 1991). Among the many advantages, Weideman and Kritzinger (2003) suggested that concept maps are helpful to challenge students' ways of thinking, discover themes, explain conceptual relationships, and meet course outcomes. This constructivist approach to learning helps articulate an individual's understanding and structure of knowledge (Daley, 2002).

How It Works

As the instructor of this graduate level, online-based foundations of agricultural education course, I set the stage for the utilization of the core adult learning principles espoused by Knowles, Horton, and Swanson (2005), via a written statement in syllabus that was entitled "Philosophical Approach to the Course." The statement as written in the syllabus follows:

> As the instructor of this graduate level course, I will take a social constructivist approach where I will serve as the facilitator of learning and the students will be responsible for their learning. Although this is a historical and philosophical based course where we study the body of knowledge that proceeds us, the value of the course is in the ability of the learner to make meaning of this knowledge and use it as a context for understanding current policy, developing and understanding one's own and others' philosophical stance, and understanding agricultural education's role in society. The result of this approach and the course is the continued development of the student towards becoming an educated person who understands the foundation of his/her discipline, his/her role within the profession, and the means by which his/her research focus fits within agricultural education. This approach will also allow students to tailor the course to meet their individual educational needs as learners.

The initial assignment was a Preliminary Concept Paper and Map of Agricultural Education. This assignment consists of 1) an introductory concept paper, which provided a definition of agricultural education and its role in society, and 2) a preliminary concept map that visually depicted agricultural education. The final exam for the course was a philosophical essay and concept map of agricultural education. This assignment asked students to develop a comprehensive personal philosophy of agricultural education. They were expected to use what was learned in class to justify their personal philosophical approach to agricultural education and

design a comprehensive concept map which articulates the breadth and complexity of agricultural education.

When the assignments were given, students were provided an assignment sheet and a recording explaining the assignment, which were both posted within the WebCt course environment. The assignment sheet explained the expectations of the assignment, offered guiding questions, provided details for assignment submission, and outlined the evaluation criteria for the assignment.

Results/Implications

This approach positively impacted student learning. Often times students' initial concept map focused on one or two settings, usually those in which they are involved, and not the broader context of agricultural education espoused by Williams (1991) or the National Research Agenda (Osborne, 2007). However, by the end of the course, students were more reflective and were better able to articulate a broader understanding of the agricultural education discipline. As a result of this project, students were able to articulate the linkages and interrelationships of the discipline in a meaningful and personalized manner.

Students were required to internalize their understanding of the agricultural education discipline and then articulate that understanding using higher order skills like critical thinking, problem solving, and reasoning through metacognition. Students were able to build upon their existing knowledge within a context that was familiar to them and in a manner in which they were able to transfer their understanding of the discipline to future course work and real world experiences.

Future Plans/Advice to others

Concept mapping is an effective way for students to better grasp their understanding of a complex and abstract entity like the discipline of agricultural education. This is only one example of how concept mapping might be effectively utilized within agricultural education. Agricultural educators are encouraged to consider utilizing this teaching strategy at the undergraduate and graduate levels where appropriate. This strategy would also be appropriate for use in secondary agricultural education programs and should be shared with preservice teachers.

Those who plan to utilize concept mapping in their courses should be cognizant of the required teaching approach and the technological issues associated with the assignment. A constructivist approach in which the educator facilitates learning and allows students to create their own meaning and understanding is essential. This approach requires learning for understanding, using pre-existing knowledge, and active learning as suggested by the National Research Council (2000). An issue, however, is that students can become consumed by the technological constraints (e.g., availability of appropriate software, technical skills required to develop the map, ability to imbed and/or upload such documents into WebCt). Educators should encourage students to focus on the content of the map and not spend the majority of their time dealing with technological issues. Sharing examples of ways in which to develop and submit the concept maps seemed to alleviate undue stress and improve the content of the maps. Concept maps were submitted using commercial software, freeware, Microsoft Word, PowerPoint, and even photographs of maps that were sketched on poster board.

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Using Farm Tours to Enhance the Graduate Student Experience

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Using Farm Tours to Enhance the Graduate Student Experience

Introduction

Graduate student research in agricultural education and communication commonly focuses on areas such as farmer interest, enterprise diversity, sustainability, management of operations, and educational strategies for commodity groups and organizations. The 1990 farm bill calls for Cooperative Extension and educators to be trained in sustainability and related agricultural issues (Frances & Cater, 2001). Frances and Cater (2001) found that regional projects have been funded to enhance the capabilities of specialists and educators to deliver appropriate programs and provide accurate advice to state and local organizations and producers. Graduate students are in circumstances similar to extension agents. They are recognized as information providers, and stakeholder groups expect useful advice and relevant recommendations from graduate student research. For this reason, graduate students in agricultural education and communication need to be well-grounded in state and local agricultural issues.

Traditionally, land grant universities attract out-of-state and international graduate students to their programs. This level of diversity provides enriched thinking and problem-solving for issues concerning state and local agriculture. However, there is often a contextualization disconnect that must first be overcome before the graduate student can begin providing sound advice based on their research regarding topics unique to the state. Because of this need, an annual farm tour was developed by the graduate student association within the department. The farm tours supply students with authentic experiences in areas of agriculture that are unique to the state or region. Students then have the contextualization of local agriculture that is uniquely different from their prior experiences and increases student conceptual understanding (Myers & Jones, 2004).

How It Works

The farm tours are designed to provide an appreciation of the agricultural and natural resources industry within the state for graduate students. This state has a largely diversified agricultural industry due to the distinct geographical regions. Furthermore, this department has a developed a strong relationship with many industry representatives through its direct connection with the state's agricultural and natural resources leadership development program for adults. Each year, one to two graduate students have taken on the leadership role of organizing the farm tour. The students contact graduates of the agricultural leadership program within different sectors of the agriculture industry to set up on-site visits. The agricultural commodities are selected based on the discussions and needs of the current graduate students within the department. Other criteria are based on leading commodities within the state, crop seasonality, and the location in relation to the university. These on-site visits typically involve a brief discussion about the commodity or organization and a tour of the facilities or fields. The farm tours are typically held on Saturdays and involve a full day of programming.

Costs

Travel is the costly part of the farm tours. By only spending one full day, no hotel costs are incurred. The individuals within industry have been generous and donated meals. In addition, the department has paid for approximately half the cost of fuel. Attendees spend about $25–30 for the entire farm tour trip. The costs of the farm tour are considerably low given the

travel involved and the knowledge gained by the graduate students.

Results to Date

The farm tours began in 2007. To date, three tours have been conducted in three different regions of the state, offering students an in-depth look into ten different agricultural commodities. In 2007, the group visited a cow-calf operation with extensive marketing plans, a large, innovative dairy operation, and a small horse farm in the north-central region. The following year, attendees toured one of the largest strawberry and blueberry marketing organizations in the country, a large tree nursery, and a cow-calf operation in the central region of the state. This year, the students traveled to the south-central region to tour the citrus, ornamental horticulture, hydroponic strawberry, and alligator sectors. An average of 10–15 graduate students attended the annual tour each year with out-of-state students making up a majority of the attendees.

The graduate students were asked for their feedback on the farm tours and provided informal qualitative responses. The dominant theme of the responses revealed benefits to students' graduate educational experience. They were able to network with people in the industry and develop a contextualization of the breadth of agricultural commodities and production practices. Students with an agricultural background from their home state or country enjoyed comparing and contrasting their previous knowledge to the new experiences. Other statements included:

"As an agricultural educator, I enjoy finding practical examples of agricultural practices that I can relate to my future students."

"When you think of [this state], you see [big cities, tourist hot spots,] and beaches, but that is not all of it ─not even a majority of the land use. Most of the activities we did on the farm tour, I would have never got to experience on my own living [here]."

"This was the first agriculture tour I ever took in the U.S. [It was] was an eye opener in that it gave me a perspective of the industry in action, the issues, and the processes. It helps people whose focus may not necessarily be on agriculture, but rather on other areas such as natural resources, bring the two together and make sense of the perspectives and challenges for each."

Advice to Others

Graduate students relocating far from home or those less familiar with agriculture found these state tours beneficial to their graduate student experience, teaching, and ultimately, their careers. Those native to the state were also able to learn about other sectors in the industry they were not familiar with and echoed similar benefits. In short, other land grant institutions should consider organizing tours of the state's agriculture to enhance the graduate students' learning experience and instill an appreciation and understanding of the diversity in companies, production, and commodities.

Future Plans

The blue print to carry out the farm tour at this land grant has been set forth in its graduate student organization. In 2010, the group plans to tour operations in the southern part of the state where unique crops are grown and contentious urban/rural issues arise over natural resources. Continuing the farm tours will provide the opportunity for graduate students to incorporate these new experiences in agriculture into their education, teaching, and career plans.

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Innovative Idea

Using Interactive Whiteboards in the Agricultural Education Classroom: How Student Teachers are Using this Technology—Potential Implications for Teacher Educators

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Using Interactive Whiteboards in the Agricultural Education Classroom: How Student Teachers are Using this Technology—Potential Implications for Teacher Educators

Introduction and Background

"Interactive whiteboards (IWBs) are becoming increasingly popular in educational environments" (Haldane, 2007, p. 257). IWBs are large, touch sensitive screens linked to a classroom computer, which allow teachers to access still and moving images with sound and provide a multi-modal portal to address the needs of whole classes, groups, and individual learners (Lewin, Somekh, & Steadman, 2008). IWBs promote pupil interest, more sustained concentration, and more effective learning when teachers know how to use the technology to support a variety of learning styles (Glover & Miller, 2001a, b, c, 2002, 2003 as cited in Glover, Miller, Averis, & Door, 2007). Thus, educators need to design lessons that connect students and the instructor to provide opportunities for learning through multi-media (Nelson & Thompson, 2005). Because teachers often teach as they were taught (Nelson & Thompson), it is imperative that use of IWBs in teaching methods courses for pre-service AGED students is facilitated. Kotrlik, Redmann, and Douglas (2003) stated, "Even though numerous studies have been conducted about how agriscience teachers use technology, no research has been conducted to determine how these teachers are integrating technology in the teaching/learning process" (p. 82). Although most agriscience teachers actively explore and adopt technology for regular use in instruction, there is limited active experimentation and advanced integration of technology in instruction (Kotrlik et al.). Because little research has been done describing how U.S. teachers are using IWBs generally, or in the AGED classroom specifically, more should be understood about AGED teachers' use of IWBs, including pre-service AGED teachers.

How It Works

In their teaching methods course, pre-service teachers were introduced to the concept of IWBs, specifically, SMART™ technologies (i.e., SMART Technologies, 2009). The introduction of this technology was to encourage their using it in lesson preparation and in the high school AGED classroom during student teaching. An IWB distributor provided a comprehensive demonstration to the students, which included general usage, applications, hardware, and related software (i.e., SMART™ Notebook SE bracelets). Thereafter, student teachers created lessons incorporating their use of these technologies. Opportunities were then provided to student teachers to present lessons and receive feedback about their lesson presentations, including use of the IWB to enhance instruction. Following the four-week, on-campus courses, student teachers entered their 12-week student teaching experience with SMART™ Notebook SE bracelets. The bracelets allow mobility for instructors and students alike to access the Notebook SE software from any computer to construct and deliver lessons. Student teachers are required to complete weekly reports to document their use of the IWBs, including use of the software bracelets. Data from their reports are being collected to assess how they are using IWBs.

Results to Date

Nine of the 11 student teachers have access to an IWB, and seven of the nine are using the technology. From data collected, student teachers reported using IWBs to teach lessons on Animal Science, Plant Science, Agricultural Power & Technology, Introduction to Agriscience, 8th Grade Agricultural Explorations, Natural Resources, and Horticulture. Additionally, the student teachers reported using the IWB to deliver content using PowerPoint®, playing games

such as Jeopardy and baseball to review lesson content, and interactively identifying livestock anatomy and breeds of livestock. Student teachers are also journaling, i.e., writing narrative comments, about their experiences with the IWBs.

Future Plans and Cost/Resources Needed

AGED faculty will continue to collect data for the remainder of the fall 2009 student teaching semester, and discuss student teachers' use of the IWB when conducting observations at the student teaching centers. At conclusion of student teaching, the students will participate in a focus group interview during their capstone seminar debriefing. During the interview, their use of IWBs, in lesson preparation and teaching, will be probed more deeply to better inform faculty about future preparation needs to ensure effective use of IWBs, and what may be opportunities for more systematic inquiry. It is also anticipated that cooperating teachers' use of IWBs will be studied in the future, including the impact of student teachers on cooperators' adoption and use of this innovative instructional tool.

Item	**Cost Range**	**Average Cost**
Interactive Whiteboard	$1,200 - $3,000	$2,100
LCD Projector	$750 - $3,000	$1,875
PC or MAC Computer	$750 - $4,000	$2,375
Software (i.e., SMART™ SE Notebook Bracelets)	$49 - $55	$52
TOTAL	**$2,749 - $10,055**	**$6,402**

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Research Poster

Using Mathematics Enrichment Activities in Preparation for the Agricultural Mechanics CDE

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Using Mathematics Enrichment Activities in Preparation for the Agricultural Mechanics CDE

Introduction/Need for Research

Agricultural education programs provide a model for the integration of mathematics, science and engineering concepts in a real-world context. An emphasis on contextualized curriculum has been shown to improve various aspects of student learning by enhancing the connection between subject matter content and real life (National Research Council, 1996). Secondary agricultural mechanics instruction is designed to develop an understanding of the applications of mathematics, reinforce mathematics through situated learning, and provide instruction in employability and entrepreneurial skills through such a context (Shinn, 1998). Johnson (1991) previously demonstrated the efficacy of linking agricultural mechanics instruction to real-world mathematics contexts.

Conceptual/Theoretical Framework

The theoretical framework for this study is grounded by the seminal works of John Dewey, Jean Lave, and Etienne Wenger. Dewey (1916) posited that instruction is most effective when integrated into a workplace setting. Dewey viewed a dual-track system as undemocratic, educationally limiting, and not meeting the needs of society.

Lave and Wenger (1991) forwarded the significance of situated learning, or 'learning by doing;' a concept that has great significance for agricultural education. Effective instruction is situated in a setting that has meaning to the learner. How we learn and how we apply what we learn is as important as what we learn (Lave & Wenger).

Career development events provide a competitive opportunity for the application of principles of science, technology and mathematics (STEM) to everyday situations. Curriculum leaders emphasize the importance of incorporating real-world applications in teaching secondary mathematics and science (National Council for Teachers of Mathematics, 1989). The State Agricultural Mechanics CDE is a contextual learning situation anchored in an authentic workplace scenario.

The purpose of this study was to investigate the effect of enrichment activities in contextual settings on the performance of selected groups of students. The objective was to compare CDE Contest outcomes; the Written Examination, Team Individual Skill scores, and Team Activity scores between teams exposed to mathematics enrichment activities and those that were not.

Methodology

The study employed a causal-comparative quasi-experimental design (Gall, Gall & Borg, 2003). Subjects were selectively exposed to a treatment, but were neither randomly selected nor randomly assigned to the treatment group. Data sources used to provide information for this study included; results from subjects' participation in the State Agricultural Mechanics CDE; Scores information for the three separate data components. These Written Exam Scores, Individual Skill Scores, and Team Activity Scores were obtained from Judgingcard.com.

The target audience was composed of students enrolled in power, structural and technical systems courses in secondary schools in Texas. The competitive selection process for the Agricultural Mechanics CDE was used to select the sample, preventing the random assignment

of subjects to treatment groups. Schools competing in the 2007 State CDE were given the opportunity to participate in the enrichment activity sessions. Students who received enrichment activities in contextual mathematics served as the experimental treatment group. Students in 16 schools not provided enrichment activities served as the control group. Twenty-nine schools and 109 students competed in the 2008 Agricultural Mechanics CDE. Thirteen schools who participated in enrichment sessions qualified to compete in the 2008 State Agricultural Mechanics CDE.

Institutional Review Board requirements were met. During the treatment sessions, participants and teachers were given student and parental permission release forms, and asked to bring the signed forms to the State Agricultural Mechanics CDE. Completed forms were collected during the examination component of the CDE.

Results/Findings

The findings suggest that enrichment activities do improve individual and team performance on the Agricultural Mechanics Career Development Event. The difference in Written Examination scores between cooperators and non-cooperators by team was 36.96 (12.32 X 3). The difference in the average Total CDE Score between cooperators and non-cooperators by Team was found to be 52.25. The Written Examination score accounted for 71% (36.96 / 52.25) of the variability in Total CDE score by Team. Cooperation status had a large effect on 2008 Written Examination Score. Cooperating teams scored 12.32 points higher than non-cooperating teams; a score increase generally adequate to change the outcome of most career development events.

Cooperation status had a large effect on 2008 Team Total CDE Score. The mean total numeric score of cooperating teams was 420.38, 52 points above the mean of non-cooperating teams. The mathematics enrichment improved the total numeric scores of cooperating teams by an average of 52.25 points per team, or 17 points per individual. Cooperation status had a large effect on 2008 Team CDE Rank. Participating in the contextual mathematics enrichment improved their team rankings by an average of 8 places.

Implications/Recommendations/Impact on Profession

This study should be replicated in other states, at a national level, and in various other career development events that include contextual mathematics competencies. Contextual problems appropriate for multiple disciplines can be developed and tested. Involving other CTSOs could prove beneficial (Zirkle & Connors, 2003).

Consideration should be given to replication of this study with a greater focus on diversity. A related study found that contextual mathematics problems incorporated into AFNR classroom instruction did increase student achievement for some ethnic groups (Jasek, 2005). Efforts should be made to identify states where greater ethnic and gender diversity is represented in the participants of the agricultural mechanics CDE.

Consideration should be given to increasing the availability of contextual mathematics in-service workshops for agricultural science teachers.

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Innovative Idea

Using Q-methodology to Measure Student Teacher Perceptions while Interning: Implications for Formative Assessment

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Using Q-methodology to Measure Student Teacher Perceptions while Interning: Implications for Formative Assessment

Introduction/Need for the Idea

Traditionally, when a university supervisor makes a sight visit to evaluate a student teacher, it consists of a formal observation and assessment. Providing feedback to student teachers during the course of the internship is important because it "is one of the more instructionally powerful and least understood features in instructional design" (Cohen, 1985, p. 33). Perhaps one of the least understood methods of providing effective feedback is formative assessment. "Formative assessment is that process of appraising, judging, or evaluating students' work or performance and using this to shape and improve their competence" (Tunstall & Gipps, 1996, p. 389). Shute (2008) defined formative feedback as "information communicated to the learner that is intended to modify his or her thinking or behavior for the purpose of improving learning" (p. 154).

A possible method for delivering effective formative feedback is through Q-methodology. Q-methodology is a research method used to systematically study human subjectivity to better understand a person's viewpoint or beliefs on a chosen topic (Brown, 1993; McKeown & Thomas, 1988). It differs from R-methodology in that R describes a population of people while Q describes the views of those people (van Exel & de Graaf, 2005). Being able to capture the views of student teachers can allow for an additional dimension of evaluation and communication between the student teacher and the university supervisor.

How It Works/Methodology

When implementing the Q-method to capture student perceptions, students are asked to perform a Q-sort. The end product of a Q-sort is the student's rank ordering of a list of statements about a certain phenomenon (i.e., teaching ability). The students rank order the statements in response to the prompt, "How do you feel about the courses you instruct?" Each statement is individually written on a card. To begin the rank order process (sorting), students read each statement and placed the card into the Q-sort Form Board. The board is a distribution chart with nine columns, ranging from a value of -4 to +4 (Figure 1). The top two statements in which students perceive to be most like them are placed in the +4 column while the bottom two statements most unlike them are placed in the -4 column. The process is repeated working toward the middle column (0), which represents neutral statements.

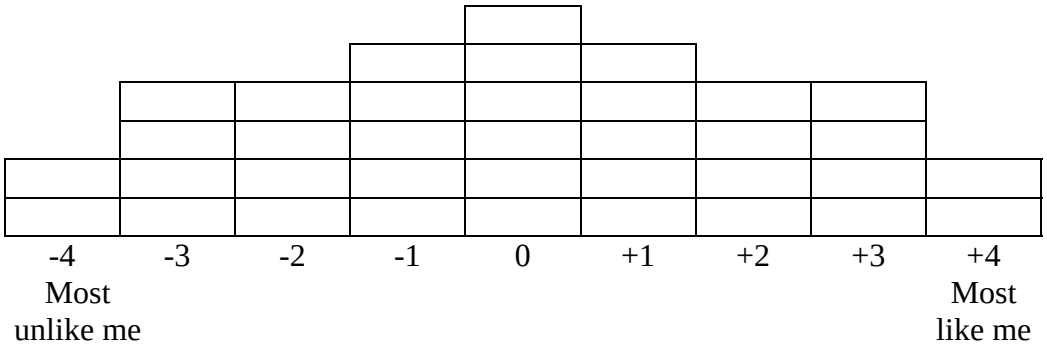

Figure 1. Q-sort Form Board

Each of the student teachers' Q-sorts are then factor analyzed using PQ Method software to develop a correlation matrix. Specifically, each individual Q-sort is correlated with all other Q-sorts to determine levels of agreement or disagreement on their ability to perform teacher tasks. Each factor is determined by evaluating the eigenvalues for each statement. A varimax rotation with a .45 significance level is then used to determine specifically which student teachers highly correlated with each other and which did not.

Results to Date

The Q-sort Foam Board was designed and implemented with spring 2008 student teachers to acquire summative feedback during weeks 8-12. Specifically, a three factor solution was extracted from the student teachers' Q-sorts. Each factor was interpreted by the researcher to illuminate the viewpoints of student teachers' self-efficacy of their classroom and laboratory teaching ability. The results were categorized into three themes: *Emerging Teacher*, the *Self Assured*, and the *Humble High Achiever*. However, assessing these students formatively, prior to student teacher observations, could add benefit to student teacher visits by university supervisors.

Implications

"The central purpose of formative assessment is to contribute to student learning through the provision of information about performance" (Yorke, 2003). Using the Q-sort Foam Board will allow teacher educators to have a better understanding of student teacher needs prior to visiting the cooperating center. As such, opportunities exist for providing more structured and focused feedback to student teachers on areas in which they believe they are most inadequate and limited.

Costs/Resources Needed

The Q-method costs little to implement. The statements which student teachers rank may be printed onto cardstock ($0.25 per sheet) or uploaded to the internet for online delivery (~$30.00 per month via SurveyMonkey). The Q-sort Foam Board consists of printing the distribution chart onto paper and gluing the paper to a piece of poster foam board ($1.00 per sheet). The Q-sort Foam Board may be used repetitively as each student teacher's sort may be recorded onto a separate sheet of paper. The PQ Method software, used to analyze data, is available for free download. Additional free software, (i.e., FlashQ), may be a means for performing Q-sorts online, eliminating any above costs.

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Utilizing Virtual Field Trips in Preservice Teacher Education

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Innovative Ideas Poster
Utilizing Virtual Field Trips in Preservice Teacher Education

Introduction

Teacher preparation programs frequently employ clinical experiences and school visits as methods of effectively preparing preservice teachers. Interviews of both college students and inservice teachers have found "clinical experiences to be the most strongly approved portions of teacher education programs" (Zeichner, 1980). Additionally, some of the reform directing the future of agricultural education teacher preparation relates to the time devoted to field-based experiences (Connors, 2001). For these reasons, many teacher preparation programs require early field experiences throughout their preservice teachers' academic programs (Zeichner, 1980). In Connors and Mundt's study performed in 2001, the majority of agriculture teacher preparation programs were reported to require some form of early field experience before student teaching. Because middle and high school agriculture programs differ greatly by school, the benefits of multiple field experiences for preservice teachers are numerous. However, barriers including preparation and planning time (Lacina, 2004), funding, scheduling conflicts, and distance limit the number of agriculture program visits teacher educators can offer their students. A possible method to allow more observation of various agriculture programs while overcoming these barriers lies in virtual field trips, which provide access to places normally considered difficult or impossible for classrooms to visit (Lacina, 2004). Through the creation and utilization of virtual field trips in teacher preparation programs, preservice teachers can gain access to various schools and agriculture departments in their teacher education classes, while teacher educators save time and resources.

Steps

This innovative idea is currently being implemented in a southern state's land grant institution's agricultural education Early Experience Block, which contains 24 preservice teachers in their junior year of college. Each preservice teacher is required to create a virtual field trip of the school/agriculture department in which they are currently completing thirty field experience hours. They were provided step-by-step instructions to create a virtual field trip using mapwing.com, a free virtual field trip creation site. Through this site, preservice teachers create maps of schools and agriculture departments, display multi-direction views from various points, showcase specific areas of interest, and guide visitors through the tour as if they were actually walking in the building. Each photograph is accompanied by comments that serve as the tour guide's explanation of what the tourist is viewing.

Once all virtual tours are completed, preservice teachers direct their classmates through their field experience schools using the virtual field trip in a presentation. Student opinions regarding the creation of a virtual field trip and perceptions of the efficacy of using these field trips as a method of gaining access to multiple agriculture departments has been assessed. This assessment, along with the views of agriculture education professionals gathered through the presentation of this Innovative Ideas poster, serves to gauge the efficacy of the use of virtual field trips in this setting, as well as provide ideas for improvement for future years.

Results and Implications to Date

Initial observation of student reaction to the assignment was encouraging. Preservice teachers expressed great interest in both creating virtual tours and taking on the role of "tourist" for their classmates' tours. Further, they had few initial questions regarding methods for creating the virtual tours. The implications for the utilization of virtual field trips to enhance student understanding of various agriculture departments are vast. The agricultural education programs that students experience increase greatly in number, and can become more diverse due to the elimination of geographical and time barriers. Preservice teachers gain a larger appreciation for different aspects of all types of agriculture departments in both middle and high schools, perhaps even across state lines. These students can then utilize their education and these virtual field trips to gather a greater variety of tools and ideas to later utilize in their own classrooms. Students also gain a deeper understanding of the various components of their own field experience site by creating the virtual tour for others.

Advice to Others

Agricultural education professors at universities nationwide are encouraged to utilize virtual tours, through either a similar assignment or alternative methods, to allow increased opportunities for their preservice teachers. These opportunities will eliminate geographical, resource, and time barriers so students can observe a greater variety of middle and high school agriculture departments, as well as experience more FFA events and SAE visits. In order to maximize the benefits of virtual field trips in the classroom, it is recommended that teachers take several virtual field trips prior to planning an assignment involving them, so they are familiar with the navigation and process of virtual tour design (Lacina, 2004). Through discussion and collaboration with others who are interested in further developing the use of virtual tours in the teacher preparation program, the benefits and methods of this innovative idea can gain greater clarification and merit.

Resources Needed

There are several free websites that allow users to create virtual tours; the one utilized in this project is www.mapwing.com. In order to create the virtual field trip, individuals must have a digital camera or camera phone capable of downloading photographs onto a computer, and access to the internet. The most costly aspect of this project is the trip required to obtain photographs of the field trip site. However, the cost incurred by one person's travel to a school is nominal compared to that of an entire pre-service teacher class. Further, this cost can be eliminated through collaboration with individuals closer to sites of interest.

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Virtual Student Teacher Meeting:
Implementing "Face-to-Face" Reflection at a Distance

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Innovative Idea Poster Proposal

Virtual Student Teacher Meeting: Implementing "Face-to-Face" Reflection at a Distance

Introduction

Student teaching is a critical time in the pre-service development of future agricultural education teachers. Student teaching is critical to the development of teachers (Alger & Kopcha, 2009; Kasperbauer & Roberts, 2007). Supervision of student teachers is critical to their future success and the involvement by the university supervisor is important (Stephens & Waters, 2009). Electronic dialogue can assist in developing critical reflections as well as providing ongoing support throughout the student teaching experience (Whipp, 2003). In a study reviewing student teacher concerns, Fritz and Miller posit, "[c]ommunicating through an Internet-based communication tool might also provide timely feedback to the student teacher" (2003). Since cooperating teachers are located in various agricultural education departments across this Midwestern state. "…[T]oo often university faculty are challenged with great distances that separate them from the teacher candidates…" (Burrack, 2008, p. 2).

The purpose of this innovative idea poster is to share how an Agricultural Education department at a Midwestern university utilized an internet-based supervisory tool to enhance the supervision of student teachers. During the 2009-2010 academic year, fall and spring semester student teachers from a Midwestern university participated in virtual "face-to-face" student teacher/supervisor meetings to reflect on their experiences and ask questions of other student teachers as well as their university supervisors.

The technology used to facilitate these meetings was Wimba, a virtual classroom environment that includes audio, video, application sharing and the capabilities to archive content in MP3 and MP4 formats. It is integrated through web course tools (WebCT) now owned by Blackboard. WebCT is an environment that provides an online course management system for the development of Web, Web-enhanced, and Web-assisted courses (CELT, 2009, p. 2)

Procedures

- The teacher education coordinator designed a WebCT course and enrolled the Fall semester 2009 student teachers.
- A Wimba classroom was embedded within the WebCT course and tested with Information Technology support staff prior to the student teacher meeting.
- An agenda was uploaded to the Wimba classroom and the student teachers were sent an email message with directions on how to access it.
- The student teachers logged into the Wimba classroom and retrieved the agenda to prepare for the one-hour virtual "face-to-to face" meeting.
- Questions for which the student teachers were asked to prepare included the following:
    1. What has been your biggest surprise in transitioning from the college environment (as a student) to the student teaching environment (as a teacher)?
    2. What has been your greatest challenge thus far in your student teaching experience? How did you handle it?
    3. Share a success story from your student teaching experience of which you are most proud?

4. List three “A-ha” moments that you have had. In other words, be ready to discuss three things that were introduced to you in your teacher certification training program that didn’t really make sense until you experienced them as a student teacher.
5. If you could give advice to the Spring semester 2010 student teachers, what would you tell them?

- A pilot virtual student teacher meeting was held with two student teachers at two locations—each located over 175 miles from university. The Midwestern university attendees included the teacher education coordinator, university supervisors and the teacher education faculty.
- A formal discussion was held utilizing the previously disseminated questions as a guide.
- The two student teachers provided the teacher education coordinator with a written reflection regarding the quality of the meeting and the effectiveness of the technology.
- The meeting was archived in an MP4 format for ease of access and used to review the main points of discussion.

Results

Students who participated in the virtual “face-to-face” to reflection sessions felt that the experience met several needs: 1) it validated their worth during the student teaching experience; 2) it allowed them the opportunity to share challenges as well as successes; and 3) it gave them confidence in their preparation as a future teacher.

Selected student comments were as follows:

“I thoroughly enjoyed our meeting on Wednesday. To be honest I was not looking forward to it because of the busy time schedule. After we did our meeting I was very happy we did and I got a lot out of our time together. It was fun to hear about [the other student’s] experiences as well.”

“I think the meeting was a good thing because it showed that we were valued even though we weren’t on campus. It showed that the department still cared about our education this semester too, which is GREAT! I learned from the meeting that we are really lucky to have some many people caring about our teaching futures. I felt that this meeting made me more confident to share the same feelings about discipline and preparation for becoming a teacher.”

Future Plans

Student teachers will participate in a Wimba training session prior to student teaching and will be used for two student teaching meetings during the fourteen week session in addition to two traditional face-to-face meetings on campus. We will set up virtual breakout rooms for the students to meet and discuss student teaching issues on a bi-weekly basis. Wimba will also be used for one virtual supervision session during the student teaching experience.

Resources Needed

WebCt and Wimba are provided by the Midwestern University to all departments for use at this time. Faculty members will need to purchase a web camera and microphone to participate in meeting from his/her desktop. The cost will approach $50 per person.

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