



2011 National Conference
of the
American Association for Agricultural Education
in Coeur d'Alene, Idaho
May 24-27, 2011

Research Presentation Schedule and Abstracts

Wednesday, May 25, 3:00-4:45 p.m.

Session A – *Evaluating the Value of Public Programs*

Discussant: Gary Briers, Texas A&M University

Facilitator: Michael Martin, University of Missouri

Understanding Evaluation in Extension: An Organizational Approach

Alexa J. Lamm, University of Florida

Glenn D. Israel, University of Florida

Key Trends and the Implications for Extension Work in Ohio State University Extension

Graham R. Cochran, The Ohio State University

Theresa M. Ferrari, The Ohio State University

Claire Yueh-Ti Chen, The Ohio State University

Aligning Extension Education Curriculum at Land Grant Universities with Professional Competencies: A Delphi Study

Michelle Passmore, Montana State University

Shannon Arnold, Montana State University

Carl Igo, Montana State University

Out in the Cold About COOL: An Analysis of U.S. Consumers' Awareness of Mandatory Country-of-Origin Labels for Beef

Katie Allen, Texas Tech University

Courtney Meyers, Texas Tech University

Todd Brashears, Texas Tech University

Scott Burris, Texas Tech University

Session B – *Professional Career Development*

Discussant: Travis Park, Cornell University

Facilitator: Allison Touchstone, University of Idaho

Early Career Faculty: Predictors of Participation in Faculty Development

Lucas D. Maxwell, University of Missouri

Anna L. Ball, University of Missouri

Insights from Six Women on Their Personal Journeys to Becoming Deans of Agriculture: A Qualitative Study

Sarah Kleihauer, University of Tennessee, Knoxville
Carrie Ann Stephens, University of Tennessee, Knoxville

How Six Women Deans of Agriculture Have Obtained and Sustained Their Leadership Role: A Qualitative Study

Sarah Kleihauer, University of Tennessee, Knoxville
Carrie Ann Stephens, University of Tennessee, Knoxville

Mentoring Abilities and Beliefs of Ohio Secondary Agricultural Education Mentor Teachers

Ryan M. Foor, University of Arizona
Jamie Cano, The Ohio State University

Session C – Agricultural Mechanics Professional Development

Discussant: Ed Franklin, University of Arizona
Facilitator: Mike Spiess, California State University, Chico

Technical Curriculum Professional Development Needs of Missouri School-based Agriculture Teachers Based Upon Career Stage

P. Ryan Saucier, Texas State University – San Marcos
Robert Terry, Jr., Oklahoma State University

Essential Agricultural Mechanics Skill Areas for Early-Career Missouri Agricultural Educators: A Delphi Approach

P. Ryan Saucier, Texas State University – San Marcos
Billy R. McKim, Texas A&M University

Agricultural Mechanics Laboratory Safety: Professional Development Needs of Kentucky School-Based Agricultural Educators

P. Ryan Saucier, Texas State University – San Marcos
Stacy K. Vincent, University of Kentucky
Ryan G. Anderson, Iowa State University

A Multi-State Factor-Analytic and Psychometric Meta-Analysis of Agricultural Mechanics Laboratory Management Competencies

Billy R. McKim, Texas A&M University
P. Ryan Saucier, Texas State University – San Marcos

Session D – *Inclusion and Involvement of All Students*

Discussant: Connie Baggett, Pennsylvania State University

Facilitator: Justin Killingsworth, University of Missouri

4-H Volunteers Intent to Support Youth with Disabilities: An Elicitation Study

M. Jo Monroe, Louisiana State University

Curtis R. Friedel, Virginia Tech

State 4-H leader's perceptions of involvement of youth with special needs in the 4-H program

Dr. Kristin S. Stair, New Mexico State University

Dr. Brenda Seevers, New Mexico State University

Austen Moore, New Mexico State University

Perceptions of North Carolina Agriculture Teachers in Working with Students with Special Needs When Implementing Supervised Agricultural Experience and Participation in the FFA Organization

Lendy Johnson, North Carolina State University

Dr. Elizabeth Wilson, North Carolina State University

Dr. Jim Flowers, North Carolina State University

Dr. Barry Croom, North Carolina State University

Factors That Influence or Discourage Secondary School Student's FFA Participation

Kristin Phelps, University of Illinois

Dr. Anna Ball, University of Missouri

William A. Bird, University of Missouri

Session E – *Laboratories, Hands-on Learning, and Student Engagement*

Discussant: Jon Ramsey, Oklahoma State University

Facilitator: John Tummons, University of Missouri

Using the Health Beliefs Model to Comparatively Examine the Welding Safety Beliefs of Postsecondary Agriculture Education Students and their Non-agricultural Education Peers

Shawn M. Anderson, Oregon State University

Jonathan J. Velez, Oregon State University

Ryan G. Anderson, Iowa State University

Integration and Needs of Iowa High School Agricultural Educators Regarding Agricultural Safety and Health Education

Josie Rudolphi, Iowa State University

Michael S. Retallick, Iowa State University

Teachers' Use of Agricultural Laboratories in Secondary Agricultural Education

Catherine W. Shoulders, University of Florida

Brian E. Myers, University of Florida

Student Perceptions of Factors Contributing to Student Content Engagement

Christopher M. Estepp, University of Florida

T. Grady Roberts, University of Florida

Thursday, May 26, 11:00 a.m.-12:30 p.m.

Session A – Problem Solving and Inquiry-based Learning

Discussant: Michael Pate, Utah State University

Facilitator: Gaea Wimmer, Texas Tech University

*Practical Implications for the Experiential Learning Theory in Agricultural Education:
A Conversation with Dr. David A. Kolb*

Marshall A Baker, Oklahoma State University

J. Shane Robinson, Oklahoma State University

Effects of Inquiry-based Agriscience Instruction on Student Scientific Reasoning

Andrew C. Thoron, University of Illinois at Urbana-Champaign

Brian E. Myers, University of Florida

*Effects of Inquiry-based Agriscience Instruction and Subject Matter-based Instruction on
Student Argumentation Skills*

Andrew C. Thoron, University of Illinois at Urbana-Champaign

Brian E. Myers, University of Florida

Identifying how Cognitive Diversity Influences Group Problem Solving Ability

Alexa J. Lamm, University of Florida

Catherine Shoulders, University of Florida

T. Grady Roberts, University of Florida

Tracy Irani, University of Florida

Lori Unruh-Snyder, Purdue University

Joel Brendemuhl, University of Florida

Session B – Professional Preparation

Discussant: Ann De Lay, California Polytechnic State University, San Luis Obispo

Facilitator: Will Bird, University of Missouri

*Agricultural Science Teachers' Self-assessment of Programs, and Relationship to
Implementation of Quality Program Standards*

Roy A. Ulrich, The Ohio State University

M. Susie Whittington, The Ohio State University

Identification of Current Level of Competencies and Needed New Competencies for Extension Agents to Be Successful in the 21st Century

Dona Lakai, Chief Assistant Director, Department of Agriculture Ministry Of Agriculture and Agro-Based Industry, Malaysia
K. S. U. Jayaratne, North Carolina State University
Gary E. Moore, Professor, North Carolina State University
Mark J. Kistler, North Carolina State University

Do we have the right recipe? A Study of Current Teachers' Perceptions on the Needed Ingredients for Adequate Teacher Preparation

Abigail McCulloch, Texas Tech University
Scott Burris, Texas Tech University
Jonathan Ulmer, Texas Tech University

A Non-Traditional Route to Teacher Certification: Testimonies from Four Teacher Aspirants in Agricultural Education

J. Shane Robinson, Oklahoma State University
John J. Blackburn, Oklahoma State University
Marshall A. Baker, Oklahoma State University

Session C – *Evaluating Adult and Natural Resources Education Programs*

Discussant: Shannon Washburn, Kansas State University
Facilitator: Barrett Keene, Cornell University

Elementary Students' Knowledge, Interests, and Connection to Learning in a Summer Zoo Camp

Noah C. Shields, Columbian Park Zoo
Neil A. Knobloch, Purdue University

The Influence of School Culture on Environmental Education Integration: A Case Study of an Urban Private School System

Stephanie L. Shumacher, University of Georgia
Nicholas E. Fuhrman, University of Georgia
Dennis W. Duncan, University of Georgia

A Descriptive Study of the Characteristics of Forestry Education in the Pacific Northwest

Ashley A. Reeves, University of Idaho
Kattlyn J. Wolf, University of Idaho

Teachers' Perceptions of Forestry Education in the Pacific Northwest

Ashley A. Reeves, University of Idaho
Kattlyn J. Wolf, University of Idaho

Session D – *Communication Applications, Social Networking, and New Media*

Discussant: Erica Irlbeck, Texas Tech University

Facilitator: Denise Stewardson, Utah State University

Technology Acceptance Related to Second Life™, Social Networking, Twitter™, and Content Management Systems: Are Agricultural Students Ready, Willing, and Able?

Theresa Pesl Murphrey, Texas A&M University

Tracy A. Rutherford, Texas A&M University

David Doerfert, Texas Tech University

Leslie D. Edgar, University of Arkansas

Information and Communication Technology Tasks Required in Undergraduate Agriculture Courses

Cassandra Cox, University of Arkansas

Leslie Edgar, University of Arkansas

Karisha Munise, University of Arkansas

Don Johnson, University of Arkansas

Social Media in Education: The Relationship Between Past Use and Current Perceptions

Quisto Settle, University of Florida

Ricky Telg, University of Florida

Lauri M. Baker, Kansas State University

Tracy Irani, University of Florida

Emily Rhoades, The Ohio State University

Tracy Rutherford, Texas A&M University

Using Apps as Educational Tools in Agriculture: A Review of Literature

Holli Leggette, Texas A&M University

Shannon Lawrence, Texas A&M University

Ashley Charanza, Texas A&M University

Session E – *Strengthening Academic Learning through Agricultural Education*

Discussant: Greg Thompson, Oregon State University

Facilitator: Boot Chumbley, Texas Tech University

Research Priorities within the Science Roadmap for Agriculture: Revisions 2009

Travis D. Park, Cornell University

Marissa K. Taylor, Cornell University

Determining the Effect of a Science-Enhanced Curriculum Taught in an Animal Science or Horticulture Course on Student Science Achievement: A Causal Comparative Study

J. Chris Haynes, Oklahoma State University

J. Shane Robinson, Oklahoma State University

M. Craig Edwards, Oklahoma State University

James P. Key, Oklahoma State University

A Comparative Multi-Case Study of Agricultural Education Teachers in Reference to the Implementation of Academic Integration

Bart E. Gill, Texas A&M University

Preservice Agricultural Education Teachers' Mathematics Ability

Christopher T. Stripling, University of Florida

T. Grady Roberts, University of Florida

Friday, May 27, 8:00-9:30 a.m.

Session A – *Student Reflection and Feedback*

Discussant: Neil Knobloch, Purdue University

Facilitator: Jeremy Falk, Ohio State University

A Descriptive Analysis of the Relationships between Student Autonomy, Instructor Verbal and Nonverbal Immediacy, and Classroom, Instructor, and Student Variables

Jonathan J. Velez, Oregon State University

Jamie Cano, The Ohio State University

The Influence of Collaborative Reflection and Think-Aloud Protocols on Pre-Service Teachers' Reflection: A Mixed Methods Approach

Cory M. Epler, Virginia Tech

Tiffany A. Drape, Virginia Tech

Thomas W. Broyles, Virginia Tech

Rick D. Rudd, Virginia Tech

"How'd I do?": Preservice Teachers Reflecting on their Clinical Teaching Experiences

Misty D. Lambert, Oregon State University

Robert M. Torres, University of Arizona

The Relationship of Methods Students' Characteristics to Reflective Ability

Misty D. Lambert, Oregon State University

Robert M. Torres, University of Arizona

Session B – *Leadership Education Programs*

Discussant: John Rickets, Tennessee State University

Facilitator: Christy Witt, Texas Tech University

Predicting Leadership Behaviors: Attitudes, Perceived Behavioral Control, and Subjective Norms among Participants in Agricultural Leadership Development Programs

Dr. Rochelle Strickland, University of Georgia

Dr. Hannah S. Carter, University of Florida

Dr. Alexa Lamm, University of Florida

Importance and Capability of Teaching Leadership as Perceived by Beginning Secondary Agricultural Education Teachers

Jon C. Simonsen, University of Missouri
Robert J. Birkenholz, The Ohio State University

An Exploration of College of Agriculture Ambassador Programs

Shannon Arnold, Montana State University

Predicting Intercultural Sensitivity Using Demographic Variables among College of Agriculture Undergraduate Students

Maria G. Fabregas-Janeiro, UPAEP University & Oklahoma State University
Kathleen D. Kelsey, Oklahoma State University
J. Shane Robinson, Oklahoma State University

Session C – Technology and Learning

Discussant: Emily Rhoades, Ohio State University
Facilitator: Karen Cannon, University of Florida

Teachers' Use of Interactive Whiteboards in the Secondary Agricultural Education Classroom: Measures of Self-efficacy, Outcome Expectations, Interest and Selected Relationships

J.C. Bunch, Oklahoma State University
J. Shane Robinson, Oklahoma State University
M. Craig Edwards, Oklahoma State University

Exploring Secondary Agriscience Teachers' General and Required Use and Knowledge of Computers and Technology Tools for Instruction

Kimberley A. Miller, Texas A&M/Texas Tech University
Theresa Pesl Murphrey, Texas A&M University
Kim E. Dooley, Texas A&M University
Scott Burris, Texas Tech University
Cindy Akers, Texas Tech University

Evaluating the Effectiveness of Traditional Training Methods in Non-Traditional Training Programs for Adult Learners

Caleb D. Dodd, Texas Tech University
Scott Burris, Texas Tech University
Steve Frazee, Texas Tech University
David Doerfert, Texas Tech University
Abigail McCulloch, Texas Tech University

Agricultural Education Teachers' Level of Computer-based Technology Integration and the Relationship to Learning Styles

Reynold D. Gardner, Oregon State University
Chris L. Ward, Oregon State University
Gregory W. Thompson, Oregon State University
Jonathan J. Velez, Oregon State University

Session D –*Recruitment and Retention in Post-Secondary Programs*

Discussant: Wendy Warner, North Carolina State University
Facilitator: Stephen Edwards, Virginia Tech

Recruiting Strategically: Increasing Enrollment in Academic Programs of Agriculture

Lauri M. Baker, Kansas State University
Quisto Settle, University of Florida
Christy Chiarelli, University of Florida
Tracy Irani, University of Florida

An Exploration of Graduate Student Satisfaction with Advising in a Department of Agricultural Education, Leadership, Communications, and Extension

Mark Russell, University of Arkansas
Bart Gill, Texas A&M University
John Rayfield, Texas A&M University

Perceived Factors Influencing High School Agriculture Student Participation in a Statewide Dual Credit Program: An Examination of Program Success and Impact on College Enrollment Decisions

Allison J. L. Touchstone, University of Idaho
Michael J. Johnson, University of Idaho
Lou E. Riesenber, University of Idaho

Ready or Not, Here They Come: A Study of Student Readiness and Retention

Rachel Bobbitt, Texas Tech University
Lori Dudley, Texas Tech University
Cindy Akers, Texas Tech University

Session E – *Job Satisfaction, Stress, and Burnout*

Discussant: Deborah Boone, West Virginia University
Facilitator: Nick Brown, Oklahoma State University

The Effects of a Time Management Seminar on Stress and Job Satisfaction of Beginning Agriscience Teachers in West Texas

Rudy Ritz, Texas Tech University
Scott Burris, Texas Tech University
Todd Brashears, Texas Tech University
Steve Frazee, Texas Tech University

Stress Levels of Agricultural Science Cooperating Teachers and Student Teachers: A Comparative Assessment

Billy R. McKim, Texas A&M University
John S. Rayfield, Texas A&M University
Julie Harlin, Texas A&M University
Andrew Adams, Hempstead High School
Bart E. Gill, Western Illinois University

Resilience: Does it Matter? A Model of Stress, Burnout, and Resilience in the Secondary Agricultural Educator

Erica B. Thieman, University of Missouri
Anna L. Ball, University of Missouri
Tracy J. Kitchel, University of Missouri

Viewing Teacher Job Satisfaction and Burnout through Social Comparisons

Tracy Kitchel, University of Missouri
Amy Smith, South Dakota State University
Anna Ball, University of Missouri
Shane Robinson, Oklahoma State University
Rebecca Lawver, Utah State University
Travis Park, Cornell University
Ashley Schell, University of Kentucky

Understanding Evaluation in Extension: An Organizational Approach

Alexa J. Lamm, University of Florida

Glenn D. Israel, University of Florida

Abstract

The majority of funding for the Cooperative Extension System (CES) comes from local, state, and federal dollars; therefore the primary driver for evaluation is accountability for public funds. Evaluation has always been a part of extension program implementation; however, these efforts have historically been considered a necessary component rather than a priority. The need for the CES to demonstrate programmatic public value is increasing due to county and state budget cuts. The ability to provide credible information depends primarily on the evaluation activities of extension professionals. The purpose of this research was to use an organizational approach to examine how organizational evaluation structures influence evaluation behaviors of extension professionals. A survey was used to collect data from extension professionals in eight state extension systems to examine how their perceptions of specific organizational and individual evaluation factors influenced their engagement in evaluation behaviors. The results show changes at multiple levels within an extension system can be used to predict evaluation behavior. Extension leaders can impact the level at which programs are evaluated by making changes to their own behavior and establishing a social culture within the system supportive of evaluation. In addition, an emphasis on skill training in evaluation for extension professionals is needed.

Key Trends and the Implications for Extension Work in Ohio State University Extension

Graham R. Cochran, The Ohio State University

Theresa M. Ferrari, The Ohio State University

Claire Yueh-Ti Chen, The Ohio State University

Abstract

Research with a diverse array of organizations in the public and private sector has documented a common set of trends affecting organizations and their human capital in the 21st century. Similar trends have been identified as important for Extension organizations and the Cooperative Extension System. It is important to determine if such trends identified over the past 20 years remain current, or if new trends have emerged. Moreover, trends and their implications need to be described in sufficient detail to serve as a basis for action. The purpose of this study was to identify and describe current trends affecting Ohio State University Extension and the implications of those trends for the work of Extension professionals. The study was designed as action research with a series of highly participatory approaches to engage employees in defining, refining, and validating a list of trends and their implications. Mixed methods were used with an emphasis on qualitative approaches. The findings from this study consist of trends and their implications for Extension work. Five trends (changing and complex conditions, increased competition and limited resources, changing complex organizational structures, changing demographics, and technology and life in the e-world) and seven implications are identified and described.

Aligning Extension Education Curriculum at Land Grant Universities with Professional Competencies: A Delphi Study

Michelle Passmore, Montana State University

Shannon Arnold, Montana State University

Carl Igo, Montana State University

Abstract

This descriptive study utilized a Delphi methodology to explore the career preparation of extension education students in the land grant university system through an analysis of current curriculum and its alignment with professional extension work competencies as identified by Harder, Place, and Scheer (2010). Academic professors in conjunction with Extension regional or district department heads were utilized to explore the professional competencies as they related to the preparedness of graduates and new hires, the hiring process, specific job skills, and courses within extension education degree programs. Over 300 courses falling into 24 course categories at the undergraduate level and 18 at the graduate level were identified by extension education professors at LGU's that matched the 19 professional competencies presented. Extension administrators identified 65 different sub categories within the 19 competency areas outlining specific skills needed for successful careers in Extension. The conclusions revealed that cooperation between Extension administrators and extension education professors will result in improved programs so that both will thrive and grow with the changing environment. Recommendations found need for further research in the areas of hiring practices and self reflection by professionals in both groups to analyze their own programs and practices.

Out in the Cold About COOL: An Analysis of U.S. Consumers' Awareness of Mandatory Country-of-Origin Labels for Beef

Katie Allen, Texas Tech University
Courtney Meyers, Texas Tech University
Todd Brashears, Texas Tech University
Scott Burris, Texas Tech University

Abstract

Mandatory country-of-origin labeling (COOL) is a food policy that requires many fresh foods to carry a label noting the country or countries where the product was born, grown, slaughtered, and processed. While many have favored the policy as a new marketing tool, others have criticized the program as confusing, expensive, and difficult to mandate. An online survey of U.S. beef consumers who were also the primary household grocery buyers (N=396) was conducted to examine their knowledge and awareness of COOL and information sources used to make food-purchasing decisions post-implementation of mandatory COOL. Only 10 respondents (2.5%) knew that COOL stood for country-of-origin labeling, and 287 respondents (72.5%) indicated they had never heard of COOL. Despite an apparent lack of knowledge and awareness of the policy, a majority of the participants still supported the idea of mandatory COOL and preferred to have the label on their beef. The results indicated more consumer education is needed about COOL, trade, and food safety issues. Further research is necessary to examine this new policy as it diffuses through a system, and qualitative research could help to understand how to better educate and communicate messages to consumers about COOL.

Early Career Faculty: Predictors of Participation in Faculty Development

Lucas D. Maxwell, University of Missouri

Anna L. Ball, University of Missouri

Abstract

The purpose of this study was to describe faculty members' perceptions of and experiences with early career professional development and to examine the relationship between personal and professional characteristics and participation in professional development. The accepting sample consisted of 51 early career faculty members in colleges of agriculture and related sciences at Iowa State University, the University of Missouri, and the University of Nebraska – Lincoln. Respondents participated in 0.92 hours of teaching professional development at the departmental level, 4.49 hours at the college level, and 4.70 hours at the university level. It was determined that 19% of the variance in how actively faculty seek out teaching professional development can be explained by teaching appointment percentage and sex. Further, 6% of the variance in the number of hours of teaching professional development can be explained by teaching appointment percentage. Finally, 19% of the variance in the number of hours of teaching professional development can be explained by research appointment percentage. It was concluded that while early career faculty members seem to recognize the importance of professional development in teaching and value opportunities to improve their skills, they are not actively engaged in seeking out professional opportunities.

**Insights From Six Women On Their Personal Journeys To
Becoming Deans of Agriculture: A Qualitative Study**

Sarah Kleihauer, University of Tennessee, Knoxville
Carrie Ann Stephens, University of Tennessee, Knoxville

Abstract

Understanding one's own personal journey provides for effective learning, growth, and development of self (Madsen, 2010). Reflection on the influences and experiences of successful women leaders is essential to understanding the factors that have enabled them to obtain and sustain leadership positions in nontraditional career fields. The purpose of this qualitative study was to explore the lives of women deans in agriculture in an attempt to conceptualize the leadership styles they have developed as a result of their positions as deans in a predominantly male field, as well as their upbringing and life experiences. Six women deans of agriculture were interviewed and observed in an attempt to recognize the impact their personal journeys have had in developing their leadership styles and sustaining their leadership role. Conclusions were that these women were first born children. In addition, the influence of parental qualities and spousal support has impacted their success as women deans of agriculture. Mentors recognize the deans' gifts and talents and encouraged them to pursue advanced degrees and leadership positions.

How Six Women Deans of Agriculture Have Obtained and Sustained Their Leadership Role: A Qualitative Study

Sarah Kleihauer, University of Tennessee, Knoxville
Carrie Ann Stephens, University of Tennessee, Knoxville

Abstract

There is a disproportionate ratio of men to women in leadership roles in higher education and agriculture. The purpose of this qualitative study was to explore the lives of women deans in agriculture in an attempt to conceptualize the leadership styles they have developed as a result of their positions as deans in a predominantly male field. Six women deans of agriculture were interviewed and observed in an attempt to recognize the impact their personal journeys have had in developing their leadership styles and sustaining their leadership role. Conclusions were: 1) education and work experience were not limiting factors in their achievement of the deanship; 2) spouses of the women deans assumed the child rearing responsibilities which aided them in sustaining their leadership role; 3) women deans' learned to be great strategists and establish their presence within the University despite gender discrimination; and 4) each of the women deans in this study exhibited personality traits such as surgency, conscientiousness, agreeableness, adjustment, and intellectance which are traits considered relevant for leadership effectiveness.

Mentoring Abilities and Beliefs of Ohio Secondary Agricultural Education Mentor Teachers

Ryan M. Foor, University of Arizona
Jamie Cano, The Ohio State University

Abstract

Mentoring and induction programs are popular within the public school system in the United States. Additionally, content-based mentoring programs exist, such as those within agricultural education. A number of studies yielded results that showed a relationship between mentoring/induction participation and teacher retention. The importance of the abilities and beliefs the mentor teacher contributes to the mentoring process cannot be neglected. An understanding of how mentor teachers perceive themselves in their abilities and beliefs is critical in the selection and training of mentor teachers. The purpose of the study was to describe mentor teachers' abilities and beliefs related to the mentor – novice teacher relationship. The design of the study was descriptive in nature. Survey research methods were utilized in the data collection process among cooperating (mentor) teachers for the student teaching experience of an agricultural education teacher preparation program. Data were collected on participants' perceptions of their abilities and beliefs related to the mentoring relationship. Overall, mentor teachers strongly agree with the statements related to their abilities and beliefs. A substantial relationship emerged between the two variables. The items utilized in the instrument can be used to guide the selection and training of mentor teachers, hopefully resulting in positive mentoring relationships.

**Technical Curriculum Professional Development Needs of Missouri School-based
Agriculture Teachers Based Upon Career Stage**

P. Ryan Saucier, Texas State University – San Marcos

Robert Terry, Jr., Oklahoma State University

Abstract

Professional development education for teachers is essential to improving teacher retention, program continuity, and the preparation of fully qualified and highly motivated agricultural educators at all career stages (Osborne, n.d.). This research investigated the self-assessed, professional development needs of school-based agriculture teachers in Missouri, at all of Huberman's (1989) career stages, using the direct assessment method. A census of the population was conducted with data collection administered at area agricultural education teacher meetings and via an electronic questionnaire for those teachers who could not attend those meetings. Results, regardless of teacher career stage, indicated that teachers have the greatest in-service needs in the areas of agricultural mechanics technology, bio-technology, animal science, and leadership development. To improve the technical competence of these teachers, Missouri agricultural educators should receive professional development in-service education in these areas. According to literature (Barrick, Ladewig, & Hedges, 1983; Birkenholz & Harbstreit, 1987; Saucier, Schumacher, Funkenbusch, Terry, & Johnson, 2008; Saucier, Tummons, Terry, & Schumacher, 2010), these professional development in-service education programs should be delivered by Missouri agricultural teacher educators and state agricultural education supervisory staff and offered during technical workshops and summer conferences.

Essential Agricultural Mechanics Skill Areas for Early-Career Missouri Agricultural Educators: A Delphi Approach

P. Ryan Saucier, Texas State University – San Marcos

Billy R. McKim, Texas A&M University

Abstract

According to the National Research Agenda for Agricultural Education and Communication, pre-service agriculture teacher education programs should “prepare and provide an abundance of fully qualified and highly motivated agricultural educators at all levels” (Osborne, n.d., 8). The lack of preparation of entry career agricultural educators is no more apparent than in the curriculum area of agricultural mechanics. Furthermore, Saucier and McKim (2010) stated that all school-based agriculture educators who instruct agricultural mechanics must be technically competent and be able to safely manage the school laboratory for effective student instruction. The model for teacher preparation in agricultural education (Whittington, 2005) served as the conceptual framework. The study sought to determine the essential agricultural mechanics skill areas that Missouri agriculture educators must possess prior to beginning a career in agricultural education. Results of this study identified essential agricultural mechanics skill areas that range from laboratory management to soldering. Teacher educators and state supervisory staff should review these skill areas and plan professional development education for current Missouri agricultural educators who have in-service needs in these skill areas. In conclusion, pre-service programs in Missouri should be evaluated to determine if they are indeed effectively preparing teachers in the curriculum area of agricultural mechanics.

Agricultural Mechanics Laboratory Safety: Professional Development Needs of Kentucky School-Based Agricultural Educators

P. Ryan Saucier, Texas State University – San Marcos

Stacy K. Vincent, University of Kentucky

Ryan G. Anderson, Iowa State University

Abstract

The frequency and severity of accidents that occur in the agricultural mechanics laboratory can be reduced when these facilities are managed by school-based agricultural educators who are competent and knowledgeable in the area of laboratory safety and facility management (McKim, Saucier, & Reynolds, 2010). To ensure that teachers are technically competent and prepared to manage an agricultural mechanics laboratory, teacher educators and state agricultural education supervisory staff must provide comprehensive pre-service education in the area of agricultural mechanics and professional development opportunities that improve teacher retention, program continuity, and ensure a future supply of fully qualified and highly motivated agricultural educators (Osborne, n.d.; Saucier, Terry, & Schumacher, 2009). In this study, data were collected with a web-based questionnaire designed to determine Kentucky agriculture teachers' perceptions of the importance of 14 agricultural mechanics laboratory safety competencies and their self-assessed ability to perform those competencies. The Borich (1980) Needs Assessment Model was used to assess and evaluate the professional development needs of these teachers. Researchers found that subjects were in need of professional development education in the following competencies: correcting hazardous laboratory conditions, properly installing/maintaining safety devices/emergency equipment, and maintaining the agricultural mechanics laboratory in compliance with Occupational Safety and Health Administration (OSHA) standards, etc. To improve their technical competence, these educators should receive professional development in the area of laboratory safety and management through technical workshops, winter and summer conferences, and via webinars (Barrick, Ladewig, & Hedges, 1983; Birkenholz & Harbstreit, 1987; McKim, et al., 2010; Saucier, et al., 2009).

**A Multi-State Factor-Analytic and Psychometric Meta-Analysis of Agricultural Mechanics
Laboratory Management Competencies**

Billy R. McKim, Texas A&M University
P. Ryan Saucier, Texas State University – San Marcos

Abstract

For more than 20 years, the 50 agricultural mechanics laboratory management competencies identified by Johnson and Schumacher in 1989 have served as the basis for numerous needs assessments of secondary agriculture teachers. This study reevaluated Johnson and Schumacher's instrument, as modified by Saucier, Schumacher, Funkenbusch, Terry, and Johnson (2008), to reduce the number of competencies and update the constructs of agricultural mechanics laboratory management competencies through factor-analytic and psychometric analyses. Five-hundred and three in-service secondary agriculture teachers from six states, surveyed between the spring of 2008 and the spring of 2010, served as the population for this study. As a result, the 70 agricultural mechanics laboratory management competencies included in the instrument modified by Saucier et al. (2008) were reduced to 33 competencies, in eight constructs. A further outcome was reflected in the psychometric evaluation of the eight constructs, which resulted in acceptable internal consistency reliabilities that ranged from .82 to .96. Multi-state benchmarks for agricultural mechanics laboratory management abilities of secondary agriculture teachers were also proposed. The results further indicated that the revised constructs were appropriate to assess agricultural mechanics laboratory management competencies across all five teacher career stages.

4-H Volunteers Intent to Support Youth with Disabilities: An Elicitation Study

M. Jo Monroe, Louisiana State University

Curtis R. Friedel, Virginia Tech

Abstract

This initial study served as an elicitation study to elude commonly held beliefs shared by the target population in the three content areas of the Theory of Planned Behavior; behavioral beliefs, normative beliefs, and control beliefs (Ajzen, 1991). The study questions allowed for indirect measurements of attitude, subjective norms and perceived behavioral control. Using the Theory of Planned Behavior, formative research is required to construct a questionnaire suitable for establishing the beliefs and behaviors of the population of interest. To assess beliefs, they must be elicited from a sample demographically similar to the research population. This initial study surveyed 4-H volunteer leaders in Louisiana to uncover factors that influence their support or non-support of youth with intellectual and developmental disabilities in 4-H club activities. 4-H volunteer leaders revealed advantages/disadvantages, referents approving/disapproving, and perceived barriers/supports of supporting youth with intellectual and developmental disabilities in 4-H club activities. Responses will be used to construct a list of modal salient beliefs that will provide the basis for constructing the standard questionnaire to be used in a subsequent study.

State 4-H leader's perceptions of involvement of youth with special needs in the 4-H program

Dr. Kristin S. Stair, New Mexico State University

Dr. Brenda Seevers, New Mexico State University

Austen Moore, New Mexico State University

Abstract

Some estimates indicate that 13% of school age children have a disability. With such a large number of children being identified as individuals with a special need, it is important that organizations such as 4-H have strategies in place to work effectively with this population. Specifically, it is critical to provide them with the programs they need in order to be successful members of society. As part of a larger series of studies, this research sought to understand how Extension programs across the nation are working with children with special needs. Overall, 86% of respondents were unsure how many children with special needs were being served in their programs. In regards to training, only 44.7% of respondents indicated they provide training for agents and volunteers. While 68% of respondents indicated that there were programs in place for students with special needs, the scope and size of these opportunities varied greatly from state to state. Almost 95% of respondents indicated that modifications/accommodations were in place for children with special needs. Overall, the researchers suggest a more standardized response to identify and support children with special needs. This will help to ensure that effective programming can be developed to meet agents, volunteers and children's needs across all state programs.

Perceptions of North Carolina Agriculture Teachers in Working with Students with Special Needs When Implementing Supervised Agricultural Experience and Participation in the FFA Organization

Lendy Johnson, North Carolina State University
Dr. Elizabeth Wilson, North Carolina State University
Dr. Jim Flowers, North Carolina State University
Dr. Barry Croom, North Carolina State University

Abstract

The purpose of this study was to examine the perceptions that North Carolina agriculture teachers had toward including students with special needs when implementing Supervised Agricultural Experience and participating in FFA activities. The population was all agriculture teachers in North Carolina with 12 month employment. A simple random sample of 172 was selected with a response rate of 45.9%. Participants completed a questionnaire that measured teachers' perceptions and collected demographic information. Data analysis indicated that teachers had positive perceptions toward including students with special needs when implementing SAE. Teachers perceived that FFA participation was beneficial for students with special needs, but there were more limitations for these students than for other students. Correlational research methods were used to determine if a relationship existed between the teachers' perceptions of working with students with special needs with SAE and FFA, and the independent variables of age, years of teaching experience, and the hours of in-service training received regarding students with special needs.

Factors That Influence or Discourage Secondary School Student's FFA Participation

Kristin Phelps, *University of Illinois*

Anna Ball, *University of Missouri*

William A. Bird, *University of Missouri*

Abstract

Modern adolescents are faced with a variety of choices regarding how to spend their free time. As recruitment continues to be a major goal of the National FFA Organization, it is essential to explore the reasons why students make the choice to become or not to become a member. This study was a part of a larger, collective case study of members and non-members in school based agricultural education programs located in ten rural to small town schools across Illinois. The purpose of the study was to explore what influences student's decision to join or not join the National FFA Organization. Students in this collective case study participated in semi-structured focus group interviews, individual interviews, and completed questionnaires. Four themes emerged as reasons to join FFA and three themes emerged as major reasons non-members elected not to participate in the FFA. Implications and recommendations concerning marketing of and recruitment for FFA programs were discussed.

Using the Health Beliefs Model to Comparatively Examine the Welding Safety Beliefs of Postsecondary Agriculture Education Students and their Non-agricultural Education Peers

Shawn M. Anderson, Oregon State University

Jonathan J. Velez, Oregon State University

Ryan G. Anderson, Iowa State University

Abstract

The purpose of this descriptive correlational research was to investigate postsecondary agriculture students' perceptions regarding the safe use of agricultural mechanics equipment. Students enrolled in a university metals and welding course were surveyed using an adapted instrument to assess constructs of the Health Beliefs Model, self-efficacy for learning, and self-efficacy for safety. The respondents (N = 117) were separated according to major with 18.8 % (n = 22) representing agricultural education preservice teachers. Findings showed that agricultural education students felt more susceptible to safety accidents and had a lower self-efficacy for learning and self-efficacy for safety. Correlations were found between four constructs: perceived susceptibility, perceived barriers, self-efficacy for safety and self-efficacy for learning. This study revealed that students perceive safety instruction as vital in a metals and welding course. Positive correlations between perceived susceptibility and self-efficacy for safety revealed that the more students know about the potential risks associated with the metals laboratory, the more confident they feel with performing the safety habits. Results identified several key opportunities to improve the safety of both students and instructors. The safety training of agricultural education preservice teachers is vital to the safe and effective operation of agricultural mechanics laboratories.

Integration and Needs of Iowa High School Agricultural Educators Regarding Agricultural Safety and Health Education

Josie Rudolphi, Iowa State University
Michael S. Retallick, Iowa State University

Abstract

Agricultural injuries and deaths among young people have been on the decline due in part to increased educational efforts (Rivara, 1997). However, one weakness of agricultural safety and health education is the dispersed workforce and the difficulty of gathering groups/people for education (Murphy, 2003). One possible educational outlet for agricultural safety and health is secondary agricultural classrooms (Florio & Strafford, 1969). This research study investigated the practices and attitudes of Iowa high school agricultural educators toward agricultural safety and health education. Data were collected using an internet questionnaire designed to determine a) Iowa agricultural educators' current educational practices in agricultural safety and health and b) educators' attitudes towards agricultural safety and health education. The study found that Iowa high school agricultural educators believed 22 of 24 safety areas were important areas to teach students. Major limitations to agricultural safety and health education included lack of available time and resources. Teachers also identified the need for training or professional development for agricultural safety and health education materials.

Teachers' Use of Agricultural Laboratories in Secondary Agricultural Education

Catherine W. Shoulders, University of Florida

Brian E. Myers, University of Florida

Abstract

Trends in the agriculture industry require students to have the ability to solve problems associated with scientific content. Agricultural laboratories are considered a main component of secondary agricultural education, and are well suited to provide students with opportunities to develop problem-solving skills through experiential learning. This study serves to examine the current availability and use of agricultural laboratories in secondary agricultural education, as well as their relationship to teacher perceptions regarding student learning, preparation requirements, and barriers to using their use. Findings indicate that while many facilities are available and frequently used during instruction, teacher perceptions of student learning, preparation requirements, and barriers vary by facility.

Student Perceptions of Factors Contributing to Student Content Engagement

Christopher M. Estep, University of Florida

T. Grady Roberts, University of Florida

Abstract

Students in colleges of agriculture will face a dynamically changing workplace. In order to learn the skills needed to succeed in such an environment, students must be cognitively engaged in the college classroom. Engagement with instructional content is a precursor to learning, and teachers in colleges of agriculture must shift towards using more learner-centered, engaging instructional methods. The purpose of this qualitative study was to explore collegiate students' perspectives of specific teacher behaviors contributing to cognitive engagement. A focus group methodology was applied using the Student Content Engagement (SCE) framework to guide the interviews. The SCE framework consists of four constructs which must be in place for cognitive engagement to occur: subject matter knowledge level; occasion for processing; physiological readiness; and motivation. Results of the study showed a multitude of teacher variables contributed to student content engagement and many of the findings were consistent with prior research about effective teaching. However, teacher immediacy was discovered as a consistent theme throughout all of the constructs. The researchers concluded that teacher immediacy could be a new construct of the SCE framework.

Practical Implications for the Experiential Learning Theory in Agricultural Education:

A Conversation with Dr. David A. Kolb

Marshall A Baker, Oklahoma State University

J. Shane Robinson, Oklahoma State University

Abstract

Experiential learning has been a foundational tenant of agricultural education since its inception. However, the theory of experiential education has received limited attention in the permanent agricultural education literature base. As such, this philosophical manuscript examined Kolb's experiential learning process further, and considered the implications for experiential learning theory (ELT) in secondary agricultural education. Specifically, the researchers outlined Kolb's ELT and conducted a telephone interview with Dr. David A. Kolb. Analysis of the interview indicated that experiential learning is a critical component of a comprehensive agricultural education model (i.e., three-circle model). It was explained that experiential learning builds meta-cognitive skills and can be goal-oriented and assessed. However, agricultural educators must be present and purposeful when providing experiences for students. Additionally, they must ask reflection questions (i.e., "What happened?" "Now what?" "So what?") during each phase of ELT throughout the comprehensive agricultural education model. Based on these conclusions, an enriched model of agricultural education was proposed to include the role of experiential learning more intentionally.

Effects of Inquiry-based Agriscience Instruction on Student Scientific Reasoning

Andrew C. Thoron, University of Illinois at Urbana-Champaign

Brian E. Myers, University of Florida

Abstract

The purpose of this study was to determine the effect of inquiry-based agriscience instruction on student scientific reasoning. Scientific reasoning is defined as the use of the scientific method, inductive, and deductive reasoning to develop and test hypothesis. Developing scientific reasoning skills can provide learners with a connection to the scientific process by creating knowledge through evidence-based or authentic investigations. Higher reasoning scores indicate the learners' ability to change a nonscientific belief based on factual evidence. This quasi-experimental study investigated the effect of two teaching methods (inquiry-based instruction and the subject matter approach) on agriscience student scientific reasoning. Fifteen agriscience education classes contained within seven secondary schools across the United States participated in the study. Utilizing univariate analysis of covariance, there was a statistically significant difference between groups based on scientific reasoning. Those students taught through inquiry-based instruction were reported as having higher scientific reasoning than students taught through the subject matter approach.

Effects of Inquiry-based Agriscience Instruction and Subject Matter-based Instruction on Student Argumentation Skills

Andrew C. Thoron, University of Illinois at Urbana-Champaign

Brian E. Myers, University of Florida

Abstract

The purpose of this study was to determine the effect of inquiry-based agriscience instruction on student argumentation skills. Argumentation is defined as the student's ability to establish a claim, provide a rationale for steps taken, provide and justify data, recognize alternate conclusions, and provide evidence why the conclusion is correct or the best solution. Developing argumentation skills can aid in developing the next generation of scientists, and help individuals who are not scientists, distinguish evidence from bias. This quasi-experimental study investigated the effect of two teaching methods on student argumentation skills. Inquiry-based instruction was compared to the subject matter approach in 15 agriscience education classes in seven secondary schools across the United States. Univariate analysis of covariance, detected a statistically significant difference between groups on argumentation skills. Those students taught through inquiry-based instruction had higher argumentation skill than students taught through the subject matter approach.

Identifying how Cognitive Diversity Influences Group Problem Solving Ability

Alexa J. Lamm, University of Florida
Catherine Shoulders, University of Florida
T. Grady Roberts, University of Florida
Tracy Irani, University of Florida
Lori Unruh-Snyder, Purdue University
Joel Brendemuhl, University of Florida

Abstract

Collaborative group problem solving allows students to wrestle with different interpretations and solutions brought forth by group members, enhancing both critical thinking and problem solving skills. Since problem solving in groups is a common practice in agricultural education, instructors are often put in the position of organizing student groups and facilitating group learning. Research has shown that the factors according to which teachers arrange groups hold great influence over the success experienced by a group. The purpose of this study was to examine how arranging groups by problem solving style influenced group problem solving processes. Groups made up of members with heterogeneous or homogenous problem solving styles were given a problem to solve as a class project. Focus groups were conducted with each group at the conclusion of the project to gain an understanding of how each group progressed through the problem solving process. Differences were found in how homogenous versus heterogeneous groups progressed through the problem solving process. With a greater understanding of how problem solving style influences group dynamics, agricultural educators can be more proactive when assigning student work groups, thereby enhancing students' abilities to work interdependently when creating successful solutions.

**Agricultural Science Teachers' Self-assessment of Programs,
and Relationship to Implementation of Quality Program Standards**

Roy A. Ulrich, The Ohio State University
M. Susie Whittington, The Ohio State University

Abstract

A descriptive study was conducted utilizing a mail survey to investigate the factors that influenced whether or not agriculture teachers in a Midwestern state implemented Quality Program Standards (QPS). The study was designed to describe relationships between teacher characteristics, program characteristics, adoption rate, and program quality. Through logistic regression analysis, it was determined that the variables of awareness, interest, support, funding, and time were valuable in predicting implementation of QPS. The variables that did not load into the model were years of teaching experience, type of program, age of teacher, gender, educational degree level, salary, and program size. Program quality was determined by teachers' self-assessed evaluation utilizing the QPS instrument. Relationships existed between program quality and years of teaching experience, teaching salary, educational degree level, number of students enrolled, and number of extended days in the teacher's contract. Finally, it was determined that there was a positive low relationship between program quality and rate of adoption of QPS.

**Identification of Current Level of Competencies and Needed New Competencies for
Extension Agents to Be Successful in the 21st Century**

Dona Lakai, Chief Assistant Director, Department of Agriculture

Ministry Of Agriculture and Agro-Based Industry, Malaysia

K. S. U. Jayaratne, North Carolina State University

Gary E. Moore, Professor, North Carolina State University

Mark J. Kistler, North Carolina State University

Abstract

In this era of globalization, competency is an issue of concern to any field of professionals and their clients. Competency is an integrated set of skills, knowledge, and attitudes that allow one to effectively carry out the activities of a given work to the standards expected in the employment. The purpose of this descriptive survey study was to determine the current level of North Carolina Extension agents' competencies and the new competencies they need to develop to be successful in Cooperative Extension. The findings of the study indicate that the current level of competency for Extension agents in North Carolina varies from moderate to high in all 42 items listed in the survey. Multiple regression analysis confirmed that Extension agents' years of Extension experience and age were major determinants of their overall Extension competency level. Extension agents' competency levels did not vary with gender, level of education, whether they were affiliated with any professional association, job position and the area of job responsibility. The research revealed that emotional intelligence, interpersonal skills, flexibility for adapting to changing environments and ability to manage resources were the most significant new competencies for Extension agents to be successful in current context.

Do we have the right recipe? A Study of Current Teachers' Perceptions on the Needed Ingredients for Adequate Teacher Preparation

Abigail McCulloch, Texas Tech University

Scott Burris, Texas Tech University

Jonathan Ulmer, Texas Tech University

Abstract

There is a need for agriculture, food, and natural resources teachers to be adequately prepared for their future careers. Determining the needs of current teachers is an important task in creating better university agricultural science teacher preparation programs. Preparing fully qualified and highly motivated agricultural educators is one of the goals of the National Research Agenda for Agricultural Education and Communications (Osborne, n.d.). In a survey of agricultural science teachers there were 20 topics that the majority of teachers perceived as very important for inclusion in university agricultural education programs. Over 70% of teachers identified FFA, classroom management, leadership, and general animal science as highly important topic areas. When asked what practice best prepared current teachers in each content level, the most common responses were teaching experience and teacher preparation education. Programs should be evaluated to ensure that they continue to provide the best possible education in those areas for which current teachers identified teacher preparation education as the best preparation practice. University level educators should examine the areas where teaching experience best prepared current teachers to determine if instruction in those areas could be improved to adequately address those areas during teacher preparation programs.

**A Non-Traditional Route to Teacher Certification:
Testimonies from Four Teacher Aspirants in Agricultural Education**

J. Shane Robinson, Oklahoma State University

John J. Blackburn, Oklahoma State University

Marshall A. Baker, Oklahoma State University

Abstract

The purpose of this qualitative, descriptive study was to assess the factors that led non-traditional students (i.e., those who did not participate in secondary agricultural education programs) to the agricultural education teaching major per the PE fit theory. The study consisted of four students who and were at varying stages of their academic preparation. Findings of the study indicated that these participants were motivated to pursue an agricultural education teaching degree because of their passion for agriculture and youth and affinity for people and the job. Parents and friends were the biggest influences on these individuals' decisions. Their greatest perceived strengths were their content knowledge, leadership skills, and ability to persevere, and their greatest perceived limitation was their lack of experience in a secondary agricultural education program. Because these findings are more "subjective" and "personal" (P) in nature, future research should seek to investigate more objective measures of what is demanded from these teachers in the workforce (i.e., environment – E). Specifically, officials hiring teachers should be queried to determine which phases of human capital are most important. Finally, these students should be tracked and assessed further on their PE fit so that adjustments can be made if needed.

**Elementary Students' Knowledge, Interests, and Connection to
Learning in a Summer Zoo Camp**

Noah C. Shields, Columbian Park Zoo

Neil A. Knobloch, Purdue University

Abstract

Active learning in an informal education context such as zoos can increase student knowledge and interest in the academic content. This study is important because many students are not pursuing careers in science because of a lack of knowledge and interest in the scientific endeavor. The purpose of this exploratory study was to describe the relationships between active learning, students' prior interest and experiences, and the youth outcomes of science knowledge and interest at the end of a week-long zoo camp experience. This study took place over five weeks of a summer camp program at a small zoo in a small Midwest town including 96 participants from ages eight to eleven. Students completed a pre- and post-test. Researchers found that students were similarly knowledgeable in general science before and after the summer zoo camp and half were interested in learning science in school and pursuing a career in science in the future. Further, students' interest in learning environmental science beyond the camp setting was related to their connection to the zoo-camp experience. Results suggest that zoo education programs may serve as important educational resources for local communities by helping students build science interest.

The Influence of School Culture on Environmental Education Integration: A Case Study of an Urban Private School System

Stephanie L. Shumacher, University of Georgia

Nicholas E. Fuhrman, University of Georgia

Dennis W. Duncan, University of Georgia

Abstract

As a discipline, environmental education (EE) has been criticized for lacking empirical evidence on the behavioral outcomes of its programs. While the behavioral outcomes of EE activities are often associated with the youth learner, teachers are one target audience of EE training programs who have received increasing attention with regards to behavior change. Previous research has identified numerous barriers to teaching EE in the classroom. Barriers include a lack of natural spaces to conduct EE activities, little administrative support, limited time, and lack of teacher comfort and confidence with science. The purpose of this qualitative study was to understand how Trinity School's culture has influenced EE integration and could potentially inform EE and agricultural education integration at other schools. A number of domains emerged from the data regarding characteristics of the school which have influenced EE integration, including: administration, freedom in curriculum and exploration, and collaboration among teachers. A series of domains emerged regarding barriers to teaching EE, including: comfort, lack of time, lack of interest among teachers, politics, and dangers and safety concerns. Community-based Social Marketing Theory is used as a basis for making recommendations to improve the ease with which EE is integrated into the classroom curriculum.

A Descriptive Study of the Characteristics of Forestry Education in the Pacific Northwest

Ashley A. Reeves, University of Idaho

Kattlyn J. Wolf, University of Idaho

Abstract

The purpose of this study was to assess the current status of forestry education in high school CTE programs in the Pacific Northwest (PNW). The PNW contains approximately 77.5 million acres of forestland (National Association of State Foresters, 2008). Most current forestry workers have no college education. This fact, combined with a projected 53,000 job openings in the forestry industry create a career path for CTE graduates. However, little information is available about the high schools and teachers offering forestry education. A researcher created instrument was utilized to discover characteristics of teachers and programs offering forestry education. Ninety nine teachers reported teaching forestry content in their courses; these courses included Natural Resources courses, Forestry courses, Environmental Science courses and Agricultural Science courses. The majority of teachers reported teaching forestry for more than 10 years, with the most frequently taught topics being Fire Ecology and Resource Management. Teachers also reported that their forestry curriculum developed leadership and communication skills. Based on the findings of this study, the researchers recommend the results of the study be provided to forest industry professionals and school administration to facilitate the continued success of forestry education in the PNW.

Teachers Perceptions of Forestry Education in the Pacific Northwest

Ashley A. Reeves, University of Idaho

Kattlyn J. Wolf, University of Idaho

Abstract

The purpose of this study was to assess teachers' perceptions of forestry education in high school Career and Technical Education (CTE) programs in the Pacific Northwest (PNW). One hundred and thirty six teachers responded to the researcher created survey instrument. The majority of teachers reported teaching forestry content for less than 10 years. Overall, teachers perceived that their curriculum does not necessarily prepare their students for careers in the forest industry. When asked about the status of the forestry industry, most teachers reported forestry jobs as decreasing or remaining constant. Teachers also reported that few of their students utilize their forestry education after graduation. Reasons teachers cited for students not using their forestry education included weak forestry industries in their local areas as well as needing more classroom time to dedicate to forestry curriculum. Teachers indicated that their communities and schools place little or very little value on forestry education. The teachers, however, report valuing forestry education more than either the school or the community. These findings prompted the researchers to recommend a follow-up study tracking graduates of forestry programs and further addressing the value of forestry education.

**Technology Acceptance Related to Second Life™, Social Networking,
Twitter™, and Content Management Systems:
Are Agricultural Students Ready, Willing, and Able?**

Theresa Pesl Murphrey, Texas A&M University

Tracy A. Rutherford, Texas A&M University

David Doerfert, Texas Tech University

Leslie D. Edgar, University of Arkansas

Abstract

Technology has the potential to improve education but only if it is applied with purpose and consideration of the audience. Understanding technology's role in education goes beyond the comparison of tools; there is a need to better understand student acceptance of technology so that appropriate educational scaffolding and support can be provided. The absence of technology acceptance can become a barrier to the adoption and successful implementation and use of new technologies. Described in the study is agricultural students' acceptance and readiness to use Second Life™, social networking, Twitter™, and content management systems as educational tools. The theoretical framework was based on technology acceptance, specifically the Unified Theory of Acceptance and Use of Technology (Venkatesh, Morris, Davis, & Davis, 2003). A total of 716 completed surveys were analyzed. Findings revealed that students perceive each of the technologies studied (Second Life, social networking, Twitter, and content management systems) as unique entities that vary in regard to acceptance. Students overwhelmingly accept content management systems as a useful educational technology while Second Life, Twitter, and social networks (while familiar) are not as accepted.

**Information and Communication Technology Tasks Required in
Undergraduate Agriculture Courses**

Casandra Cox, University of Arkansas
Leslie Edgar, University of Arkansas
Karisha Munise, University of Arkansas
Don Johnson, University of Arkansas

Abstract

The purpose of this study was to assess required information and communication technology (ICT) tasks in selected undergraduate agriculture courses in a land-grant university. Selected faculty members (n = 63) in a college of agriculture were surveyed to determine the ICT tasks they required students to complete in identified courses during the fall 2009 semester. A mean of 8.46 (SD = 6.20) in unique ICT tasks was required per course. The six tasks required in more than one-half of all courses were: receive e-mail (80.7%), send e-mail (73.7%), search the Internet (64.9%), send e-mail attachments (57.9%), use Blackboard® (54.4%), and type a lab or project report (52.6%). Of 40 specific tasks, 19 were required in fewer than 10% of all courses. The least frequently required tasks included: program a database (0%), create an Excel® pivot table (1.8%), create a spreadsheet macro (1.8%), use file transfer software (1.8%), and create a webpage (3.5%). There were significant ($p < .05$), positive correlations between faculty members' self-perceived computer competency and the number of spreadsheet tasks required as well as between course level and the number of word processing, spreadsheet, computer graphics, miscellaneous, and total ICT tasks. A majority of faculty members planned to maintain their current level of required ICT use.

Social Media in Education: The Relationship Between Past Use and Current Perceptions

Quisto Settle, University of Florida

Ricky Telg, University of Florida

Lauri M. Baker, Kansas State University

Tracy Irani, University of Florida

Emily Rhoades, The Ohio State University

Tracy Rutherford, Texas A&M University

Abstract

The purpose of this study was to assess the relationship between prior use of social media in education and perception of social media in education and future careers. College agriculture students and instructors were surveyed to address the objectives. The descriptive measures showed that instructors had more positive perceptions of social media than students, though neither group was in favor of social media in education in general. Prior use of social media was positively correlated with more positive perceptions of social media, with the relationship being stronger for instructors than students. The results indicate prior use could be a prerequisite for improving perceptions of social media in education. It is recommended instructors be aware of the discrepant views of social media in education that students hold when introducing social media into classes to help navigate potential conflicts as effectively as possible. Instructors should also be aware that the relationship between prior use and perceptions of social media is not as strong between different social media types. Further research is needed to better understand the direction of the relationship between prior use and perceptions. Experimental or quasi-experimental designs could address this area of research.

Using Apps as Educational Tools in Agriculture: A Review of Literature

Holli Leggette, Texas A&M University
Shannon Lawrence, Texas A&M University
Ashley Charanza, Texas A&M University

Abstract

Because the world is a technologically driven place, perhaps educators should look at the opportunities technology could bring to the classroom. Apple® has made advancements in technology with its revolutionary iPhone®, which shares content like never before (Murphrey, Miller, & Roberts, 2009a). Software programs, known as apps, can be downloaded from an app store to mobile electronic devices such as an iPhone, iPod touch®, and iPad® and offer users a variety of games, business and education tools, and social networking sites (Apple, 2009). Educators have realized that today's students have seen the world as a digitally enhanced environment (Rosen, 2007) and that mobile technology could be used as a valuable educational tool (Murphrey et al., 2009a) because of its popularity and simplicity of use (Fernández-Morales & Mayorga-Toledano, 2009). This study focused on reviewing, critiquing, and evaluating current literature associated with mobile technology and apps as an educational tool in agriculture. The authors concluded educators of agriculture should engage students by using mobile technology in the classroom and enhance the hands-on learning environment. Recommendations are made for further research on educational apps targeted to the college generation and educators' perceptions of the usefulness of apps as a teaching tool.

Research Priorities within the Science Roadmap for Agriculture: Revisions 2009

Travis D. Park, Cornell University
Marissa K. Taylor, Cornell University

Abstract

The Experiment Station Committee on Organization and Policy (ESCOP) was formed to assist land-grant universities to tackle the important research questions currently facing the agricultural industry. The ESCOP “Science Roadmap for Agriculture” is updated every five years to provide direction for agricultural research over the next decade. Each research priority is specific enough that direction is given, yet broad enough each researcher may find their own interests within the topic. In 2009, this roadmap was once again updated. A total of 457 individuals were nominated from land-grant universities, and 240 completed the fourth survey. Using the Delphi process, information was gathered as to which research priorities should be on the forefront of current research. Through this, 56 new research priorities were created, while a total of 64 received a positive consensus over 60%. The research priorities receiving the highest consensus were related to the management of natural resources and renewable energies. Many of the highest rated priorities also mentioned the improvement of sustainable agricultural practices. Further, the 2009 research priorities had more social science implications than in years past. With this information, funding and instruction can be provided to the areas that are deemed most necessary for immediate action.

Determining the Effect of a Science-Enhanced Curriculum Taught in an Animal Science or Horticulture Course on Student Science Achievement: A Causal Comparative Study

J. Chris Haynes, Oklahoma State University
J. Shane Robinson, Oklahoma State University
M. Craig Edwards, Oklahoma State University
James P. Key, Oklahoma State University

Abstract

The National Commission on Excellence in Education identified that according to the general public, serious problems in our educational system persist. The academic skills of today's teenagers are diminishing and is a cause for concern. One of the academic areas in need of improvement is science. The purpose of this causal comparative study was to determine the effect that a science-enhanced, curriculum would have on students' science achievement. The population for this study to use the curriculum consisted of students selected by Agricultural Education Division staff whose secondary agricultural education instructors held a science credential in Oklahoma. Additionally, 10 equally credentialed instructors formed a purposeful comparison group and were selected according to specific variables (e.g., similarity of students' SES status) for equivalency purposes. The findings of this study revealed that a statistically significant difference in student science achievement did not exist as a result of the treatment. However, small practical differences were detected between the groups, as student performance in the treatment group were more than two and one-half points greater than the means of students' performance scores in the comparison group. Recommendations point to the need for replication of the study over one school year.

A Comparative Multi-Case Study of Agricultural Education Teachers in Reference to the Implementation of Academic Integration

Bart E. Gill, Texas A&M University

Abstract

Core subject integration is highly supported by many educational constituents, but there are still numerous barriers that hinder the implementation of core subject integration in the classroom. Current research has addressed the perceptions that agricultural educators have towards core subject integration, but little research has been done to address the barriers that are identified in the perception studies and determine what agricultural educators need to overcome those barriers. The purpose of this study was to identify the path followed by agricultural educators, who are successful in integrating core subject concepts in their classroom, to become successful in the area of core subject integration. A comparative embedded multiple-case study research design was employed. Six case studies were conducted to comprise the overall multiple-case study design. Each case study consisted of two separate semi-structured interviews: 1) the teacher and 2) former students. In addition to the semi-structured interviews, a content analysis of lesson plans was conducted, classroom operating budgets were examined, and observations of teaching facilities took place. Overall the participants in the study all followed similar paths to become successful in academic integration. Changes in professional development activities and pre-service teacher curriculum are needed for more teachers to integrate at a higher level. Additionally, teachers must be self-motivated and be willing to admit when they lack knowledge in the core subject areas.

Preservice Agricultural Education Teachers' Mathematics Ability

Christopher T. Stripling, University of Florida

T. Grady Roberts, University of Florida

Abstract

The purpose of this study was to examine the mathematics ability of the nation's preservice agricultural education teachers. The accessible population was a random sample of 90 preservice teachers representing eight teacher education programs. Results indicated that the preservice teachers were not proficient in solving agricultural mathematics problems. Results also revealed that agricultural teacher education programs require basic and intermediate mathematics as their minimum mathematics requirements. Furthermore, results revealed that preservice teachers that completed an advanced mathematics course in high school and/or college obtained higher mathematics ability scores. However, only a small percentage completed an advanced mathematics course. In addition, preservice teachers that received an A in their highest completed college mathematics course also obtained higher mathematics ability scores. Moreover, 39% of the variance in mathematics ability was explained by completion of an advanced mathematics course in college, completion of a basic mathematics course as highest level of mathematics in high school, a grade of an A in highest level of mathematics completed in college, and being a preservice teacher at University 1, 7, and 8. Based on the data collected in this study, the nation's teacher education programs may need to further evaluate their mathematics coursework requirements.

A Descriptive Analysis of the Relationships between Student Autonomy, Instructor Verbal and Nonverbal Immediacy, and Classroom, Instructor, and Student Variables

Jonathan J. Velez, Oregon State University

Jamie Cano, The Ohio State University

Abstract

This study sought to descriptively explore verbal immediacy, nonverbal immediacy and student autonomy in relation to classroom, instructor, and student variables. Respondents (N = 208) assessed the verbal and nonverbal immediacy of their instructors and their autonomy in a particular course. Regarding classroom variables, students enrolled in elective courses rated their instructors as higher in verbal immediacy, nonverbal immediacy, and autonomy-supportive behaviors. Verbal immediacy was rated highest for class sizes of 0-29 and decreased as class sizes increased. The verbal immediacy effect size difference between class sizes of 0-29 and 150 or more was strong at $d = 1.46$. In terms of instructor variables, instructors increased in verbal, nonverbal, and autonomy-supportive behaviors through the age categories, peaking at 50-59 years of age. Female instructors scored higher in three categories than their male counterparts. The student variables indicated that perceptions of verbal immediacy and autonomy-supportive behaviors increased with student age; while nonverbal immediacy remained consistent. Relationships between verbal immediacy, nonverbal immediacy, and autonomy were positive, moderate to very high relationships ($r = .54, .60, \text{ and } .82$). Rationale for the differences were analyzed in light of both theoretical and practical application and recommendations for future research are provided.

The Influence of Collaborative Reflection and Think-Aloud Protocols on Pre-Service Teachers' Reflection: A Mixed Methods Approach

Cory M. Epler, Virginia Tech
Tiffany A. Drape, Virginia Tech
Thomas W. Broyles, Virginia Tech
Rick D. Rudd, Virginia Tech

Abstract

The purpose of this mixed methods study was to determine if there are differences in pre-service teachers' depth of reflection when using a written self-reflection form, a written self-reflection form and a think-aloud protocol, and collaborative reflection. Twenty-eight pre-service teachers were randomly assigned to fourteen teaching teams. The teams taught a lesson that was videotaped and completed a written self-reflection form while viewing their lesson. The participants were randomly assigned to a control group or experimental group. The control group reflected individually using a written self-reflection form. Experimental Group #1 reflected collaboratively using a written self-reflection form, and Experimental Group #2 reflected individually using a think-aloud process while completing the written self-reflection form. The reflection forms were analyzed for depth of reflection, and a one-way ANOVA revealed significant differences in depth of reflection between the three groups. Participants also engaged in focus group interviews to describe their experiences. Two significant themes emerged: reflection on the teaching experience and reflection on the process used. The researchers recommend that reflection should be used to help pre-service teachers learn from experience. In addition, the use of collaborative reflection and reflection using think-aloud protocols should be considered to promote deeper reflection and understanding.

“How’d I do?”: Preservice Teachers Reflecting on their Clinical Teaching Experiences

Misty D. Lambert, Oregon State University

Robert M. Torres, University of Arizona

Abstract

This descriptive study sought to determine the reflective level being practiced by students enrolled in a University’s methods of teaching course. The students taught a mini-lesson, attended feedback conference with their instructor, and then responded to three written questions designed to elicit a reflective response. Basic demographic characteristics were also collected. About one quarter of the responses were at a technical level and simply involved a basic description of what happened. The remaining students were reflecting, but none were able to reflect at a dialogic or critical level.

The Relationship of Methods Students' Characteristics to Reflective Ability

Misty D. Lambert, Oregon State University

Robert M. Torres, University of Arizona

Abstract

This study sought to describe the influence of student characteristics on their ability to respond reflectively to written questions following a teaching experience in their agricultural education methods course. Data is reported for the characteristics of the methods students. Reflective levels are also reported. Students are not able to be dialogic or critically reflective. Females and younger students tended to be more reflective. No relationship was found between students' reflective levels and either cumulative GPA or program emphasis.

Predicting Leadership Behaviors: Attitudes, Perceived Behavioral Control, and Subjective Norms among Participants in Agricultural Leadership Development Programs

Dr. Rochelle Strickland, University of Georgia

Dr. Hannah S. Carter, University of Florida

Dr. Alexa Lamm, University of Florida

Abstract

The purpose of the study was to determine outcomes of agricultural leadership development programs and to predict the adoption of leadership behaviors of participants in agricultural leadership development programs. The study utilized the theory of planned behavior (Ajzen, 1991) and selected demographic characteristics to understand what influences alumni of agricultural leadership development programs to engage in certain leadership behaviors. A national study of agricultural leadership development programs has not been conducted in more than 20 years (Howell, Weir, & Cook, 1982). A quantitative web-based survey was utilized and measured the dependent variables of policy development, leadership roles, and life-long learning. The independent variables were attitude, perceived behavioral control, and subjective norms (Ajzen, 1991), and demographic characteristics. Alumni reported participating frequently in policy development and more frequently in leadership roles and life-long learning opportunities. Multiple linear regression demonstrated alumni were more likely to engage in the policy development process, take on leadership roles, and engage in life-long learning opportunities if they had a positive attitude about the behavior, felt they had the proper knowledge and skills needed to be effective, and felt influential others would positively support their involvement in the behavior.

Importance and Capability of Teaching Leadership as Perceived by Beginning Secondary Agricultural Education Teachers

Jon C. Simonsen, University of Missouri
Robert J. Birkenholz, The Ohio State University

Abstract

The teaching of leadership has an extensive tradition in secondary agricultural education programs. Thus, it is essential for agricultural education teacher preparation programs to better understand the teaching of leadership. This descriptive research explored the importance of teaching leadership in secondary agricultural education programs and the self-perceived capability of beginning secondary agriculture teachers in Illinois, Indiana, Kentucky, Missouri, and Ohio to teach leadership. Based on the data collected, it was determined that a majority of beginning agricultural education teacher respondents completed leadership coursework while in college. Furthermore, respondents reported that leadership topics were important to teach in secondary agricultural education programs and respondents perceived they were capable of teaching leadership topics. Through mean weighted discrepancy scores it was determined that the topic of Managing time may need additional focus within preparation or continued professional development programs. Agricultural education teacher preparation programs are encouraged to consider leadership coursework in program requirements and to identify core leadership topics that should be taught in all secondary agricultural education programs. As the teaching of leadership continues to evolve, care should be taken to ensure that leadership development and leadership education efforts are harmonious.

An Exploration of College of Agriculture Ambassador Programs
Shannon Arnold, Montana State University

Abstract

Through this qualitative grounded theory study, researchers sought to explore the structure and organization of ambassador programs with the question: What are the common components of College of Agriculture ambassador programs? The population consisted of all four-year public universities with an identifiable College of Agriculture ambassador program. The sample was derived from the attendance roster of the 2008 National Agricultural Ambassador Conference. A total of 31 ambassador programs and 74 participants were included in the final sample. The advisor and one current student ambassador were interviewed from each program. Conventional content analysis was the primary data analysis method (Charmaz, 2003). The study revealed the common components of an ambassador program as leadership development, promotional activities, relationship building, student benefits, and presentations. Leadership skills, academic knowledge, and self-confidence were gained by participation in the many events offered through the program. A structured retreat and continuous training were important leadership development components. Being a knowledgeable expert about the college was a major responsibility as ambassadors attended public events and gave recruitment presentations. There were many incentives reported that made involvement worthwhile, including networking with key people. It is hoped that ambassador programs can utilize results to improve functions and overall student leadership.

Predicting Intercultural Sensitivity Using Demographic Variables among College of Agriculture Undergraduate Students

Maria G. Fabregas-Janeiro, UPAEP University & Oklahoma State University

Kathleen D. Kelsey, Oklahoma State University

J. Shane Robinson, Oklahoma State University

Abstract

Employers seek intercultural sensitivity professionals who can successfully navigate a variety of cultures to promote business. To facilitate the development of intercultural sensitive citizens, institutions of higher education offer students a variety of intercultural opportunities with the assumption that by experiencing another culture, participants will become intercultural sensitive. These assumptions are rarely tested empirically. The purpose of the study was to determine if participants' level of intercultural sensitivity differed in terms of type of international experience selected (study abroad or I-Course), and selected demographic and background variables. Findings indicated that 98% of the students were operating in Bennett's Ethnocentric stage of development according to the model of intercultural sensitivity. There were no statistically significant differences ($p < .05$) among the groups for students' intercultural experience selected, age, college classification, place of birth, and experience traveling abroad. In conclusion, previous experiences in college had no effect on developing intercultural sensitivity. It is recommended that universities implement a multi-pronged approach to developing intercultural sensitivity among undergraduates including experiences that fully address cultural competency in addition to travel. Future research should focus on identifying variables that predict changes in intercultural sensitivity so that programs can better achieve their goal of developing global citizens.

Teachers' Use of Interactive Whiteboards in the Secondary Agricultural Education Classroom: Measures of Self-efficacy, Outcome Expectations, Interest and Selected Relationships

J.C. Bunch, Oklahoma State University
J. Shane Robinson, Oklahoma State University
M. Craig Edwards, Oklahoma State University

Abstract

The purpose of this descriptive-correlational study was to examine the level of self-efficacy of Oklahoma secondary agricultural education teachers regarding their use of the interactive whiteboard (IWB) in classroom teaching. The study also sought to determine if relationships existed between teachers' IWB self-efficacy scores, outcome expectation scores, interest scores, and selected personal and professional characteristics. The findings of this study revealed that as age and years of teaching experience increased, levels of self-efficacy and outcome expectations decreased. Therefore, younger and less experienced teachers were more efficacious and had higher expectations regarding the use of IWBs. Further, this study showed that teachers who perceived they used IWBs more frequently demonstrated higher levels of self-efficacy and outcome expectation. Recommendations and implications point to the creation of professional development opportunities for "digital immigrant" teachers to learn how to use IWBs more effectively and engage students better. In addition, future research should examine how "digital native" teachers are using IWBs as well as other interactive technologies they may be using in their classrooms.

Exploring Secondary Agriscience Teachers' General and Required Use and Knowledge of Computers and Technology Tools for Instruction

Kimberley A. Miller, Texas A&M/Texas Tech University

Theresa Pesl Murphrey, Texas A&M University

Kim E. Dooley, Texas A&M University

Scott Burris, Texas Tech University

Cindy Akers, Texas Tech University

Abstract

Ever advancing improvements to technology are creating a need for teachers to maintain a strong grasp of computers and how they can be effectively utilized for instruction. This study sought to determine how secondary agriscience instructors utilize computer technology for student assignment preparation and integration into daily, weekly, monthly and yearly instructional activities. This study also sought to determine specific training needs of secondary agriscience teachers related to overall use of computer technology for instruction and course delivery. Data were collected using an online questionnaire provided via email to all agriscience teachers in the Southern Region of California. A total of 80 teachers completed the survey. Findings revealed that agriscience teachers consider themselves intermediate in their level of computer use and a majority of them have completed at least one computer course. Agriscience teachers are utilizing computer technology for administrative tasks such as class handouts, quizzes and tests. However, they are requiring their students to utilize computers minimally for both in class and homework assignment completion and do not regularly require web-based assignments or in class activities utilizing web-based technology to enhance student learning.

**Evaluating the Effectiveness of Traditional Training Methods in
Non-Traditional Training Programs for Adult Learners**

Caleb D. Dodd, Texas Tech University
Scott Burris, Ph.D., Texas Tech University
Steve Frazee, Ph.D., Texas Tech University
David Doerfert, Ph.D., Texas Tech University
Abigail McCulloch, M.S., Texas Tech University

Abstract

The incorporation of hot and cold food bars into grocery stores in an effort to capture a portion of the home meal replacement industry is presenting new challenges for retail food establishments. To ensure retail success and customer safety, employees need to be educated in food safety practices. Traditional methods of training are not meeting the needs of the retail food industry. Although many food safety training programs exist, few meet the educational needs of hot and cold food bar employees. In an effort to determine the effectiveness of traditional training methods for employees, a quasi-experimental study was performed. Data was collected from three separate chains within the retail food industry from six geographical locations. The pre-post assessment study utilized an interventional training and included collecting questionnaires from 300 employees. Findings of the study described characteristics of employees within each chain individually and collectively. Food safety knowledge was assessed by comparing pre-training and post-training assessments for managerial and non-managerial employees. The most important finding for this study was determining the change in essential food safety knowledge of employees after traditional food safety training was conducted for managerial employees within the treatment stores and comparing that change to the change that occurred in the control groups.

**Agricultural Education Teachers' Level of Computer-based Technology Integration
and the Relationship to Learning Styles**

Reynold D. Gardner, Oregon State University

Chris L. Ward, Oregon State University

Gregory W. Thompson, Oregon State University

Jonathan J. Velez, Oregon State University

Abstract

The purpose of this descriptive quantitative research study was to examine the relationship between Oregon's secondary agricultural education teachers' level of computer-based technology integration and learning style preferences. The research instruments consisted of the Kotrlik/Redmann Technology Integration Scale (KRTIS), and the Learning Types Measure (LTM). Results indicated agricultural education teachers were most active in the higher levels of computer-based technology integration into their instructional practices. A majority (67.8%) of the teachers perceived their phase of integration as that of adoption – using computer-based technology regularly. The teachers were least active in advanced integration – innovative use of computer-based technology. The examination of learning styles revealed two-thirds (67.8%) of the teachers identified type 3, common sense learning, as their preferred learning type. The fewest number of teachers (8.4%) identified with type 4 – dynamic learning preferences. No significant relationships were found in the examination of the teachers' level of computer-based technology integration and the teachers' preferred learning style. Correlational analysis of the level of computer-based technology integration and selected demographic variables yielded several small correlations, yet failed to produce a significant relationship. Recommendations were made for further research and an increased focus on computer-based technology integration in the secondary agricultural education classroom.

Recruiting Strategically: Increasing Enrollment in Academic Programs of Agriculture

Lauri M. Baker, Kansas State University

Quisto Settle, University of Florida

Christy Chiarelli, University of Florida

Tracy Irani, University of Florida

Abstract

Agriculture continues to struggle to find enough qualified students to advance the industry. Thus, recruiting practice improvement is imperative. This study assessed the efficacy of message strategies, message channels, recruiting materials, and messages for recruiting students into an academic program with low enrollment. Focus groups were conducted with agriculture students outside the department of interest to address the objectives of 1) identify the most effective message strategies and message channels to reach and attract potential students 2) conduct testing of strategically developed recruitment materials and messages. Results indicated job stability and positive contextual messages would be effective for recruiting. Participants preferred messages delivered in person, targeted online advertisements, and campus publications. Additionally, findings showed participants wanted full color materials with pictures; messages with statistics on the industry; online videos between 1-2 minutes, with videos on a Web site based on user interest; and testimonials from a range of individuals in the industry. Participants were mixed on the perceived effectiveness of Facebook advertisements. The results of this study indicate an increased need to target recruitment efforts through a strategic communication process. This research has implications for recruiting the millennial generation using both gain and non-loss framed messages.

An Exploration of Graduate Student Satisfaction with Advising in a Department of Agricultural Education, Leadership, Communications, and Extension

Mark Russell, University of Arkansas

Bart Gill, Texas A & M

John Rayfield, Texas A & M

Abstract

Graduate students depend on their advisors to assist them in accomplishing their career goals and ambitions. According to the mentoring-empowered model, as proposed by Selke and Wong (1993), the roles that an advisor plays are: teacher, encourager, role model, counselor, and sponsor-socializer. The purpose of this study was to determine the satisfaction of graduate students in a department of agricultural education, leadership, communications, and extension with their advisors in terms of communication, trust, openness, acceptance, and growth as illustrated in Selke and Wong (1993). The following research objectives were derived from the mentoring constructs found in the mentoring-empowered model (Selke & Wong, 1993). Overall agricultural education graduate students (N = 274) are satisfied with their advisor. Agricultural education graduate advisors are knowledgeable in the areas of: 1) research; 2) university and departmental policies and procedures; 3) funding opportunities; and 4) available coursework. Agricultural education advisors are student-oriented and care about their advisees' well-being, both academically and personally.

**Perceived Factors Influencing High School Agriculture Student
Participation in a Statewide Dual Credit Program: An Examination of
Program Success and Impact on College Enrollment Decisions**

Allison J. L. Touchstone, University of Idaho

Michael J. Johnson, University of Idaho

Lou E. Riesenberg, University of Idaho

Abstract

Continued increases in higher education enrollment have been evident nationwide since 1940. Universities have struggled with higher student numbers while they worked with secondary institutions to provide a seamless student transition into higher education. In order to accommodate both levels of education, the College of Agricultural and Life Sciences partnered with the state agriculture teachers' association and state division of professional technical education to design and implement a dual credit program based on nationally identified quality programs using constructivist leadership principles. In 2008-2009, 156 students from 33 high schools earned 307 college credits. This quantitative study examined perception of program success and impact on college enrollment decisions and provided insights on individuals influencing program enrollment decisions, change in educational aspirations after program participation, and academic curriculum enrollment. Findings included: agriculture instructors had the greatest impact on enrollment decisions, a significant number of participants increased rank preference of the providing institution for higher education, and the majority of students enrolled to get a head start on college credits. Recommendations for future research included: financial impact studies regarding dual credit programs and higher education enrollment and longitudinal study of the existing program to supplement university instruction and recruitment into specific programs.

Ready or Not, Here They Come: A Study of Student Readiness and Retention

Rachel Bobbitt, Texas Tech University

Lori Dudley, Texas Tech University

Cindy Akers, Texas Tech University

Abstract

College readiness can be defined as the level of preparation a student needs in order to enroll and succeed without remediation (Conley, 2010). The study examined student retention and academic success of students in a [college of agriculture] using the Student Readiness Inventory (SRI). The SRI measures psychosocial factors that are associated with academic success and retention, and reports these factors as 10 scales and 2 indices. There was little difference between the mean ACT scores of retained and not-retained students, and supports the conclusion that ACT alone is not a single predictor of retention. Effect sizes were calculated to assess the magnitude of the differences between the two groups on the SRI scale scores. The effect size for Commitment to College was large, while a medium effect was found for Academic Discipline, Steadiness and General Determination. In this study, there was little difference between the success indices of retained and not-retained students. This may be due to the already high level of retention (93.5%) of participants of this study. The SRI should continue to be utilized to aid future development of retention and academic success programs, and may help advisors and student services centers assist their students more specifically.

**The Effects of a Time Management Seminar on Stress
and Job Satisfaction of Beginning Agriscience Teachers in West Texas**

Rudy Ritz, Texas Tech University
Scott Burris, Texas Tech University
Todd Brashears, Texas Tech University
Steve Frazee, Texas Tech University

Abstract

The purpose of this study was to determine the effects of a time management seminar on stress and job satisfaction of beginning agriscience teachers. The target population for this study consisted of agriscience teachers in the first or second year of tenure. All twenty-three (N = 23) beginning teachers from a selected region of the state participated in the study. There was a 100% response among the teachers. Eleven participated in the time management seminar (n = 11) and 12 participated in the control group (n = 12). The study employed a quasi-experimental, static-group comparison design. The treatment, a comprehensive time management seminar, included: planning and scheduling, goal setting, and work and family balance. A post-test, including instrumentation for stress and job satisfaction, was administered to both groups. Independent samples t-tests revealed there were not any statistically significant differences between groups on stress levels or job satisfaction levels. However, sub-scale constructs from each instrument resulted in medium to large effect sizes in several sub-scale factors. Stress differences included work-related stress, time management, and professional investment. Job satisfaction differences included pay, recognition and advancement. Overall, the beginning teachers had slight to moderate stress. Additionally, the teachers had slightly above neutral levels of job satisfaction.

Stress Levels of Agricultural Science Cooperating Teachers and Student Teachers: A Comparative Assessment

Billy R. McKim, Texas A&M University
John S. Rayfield, Texas A&M University
Julie Harlin, Texas A&M University
Andrew Adams, Hempstead High School
Bart E. Gill, Western Illinois University

Abstract

The purpose of this study was to compare the job stress levels of Texas agricultural science cooperating teachers and Texas agricultural science student teachers, across a semester. The research objectives included: describing secondary agricultural science cooperating teachers and student teachers perceptions of stressors, by time of semester (beginning, middle, and end), describing perceptions of frequency of stressors, by time of semester (early semester, mid semester, late semester) among secondary agricultural science cooperating teachers and student teachers, and determining if differences exist between agricultural science student teachers' and cooperating teachers' based on perceptions of job stress and time of semester (early semester, mid semester, late semester). Job stress severity declined among student teachers as the semester progressed and increased in cooperating teachers at the midpoint of the semester, but then declined toward the end of the semester. Job stress frequency increased in student teachers throughout the semester and declined in cooperating teachers at mid-semester with a slight increase at the end of the semester. Job pressure index scores showed similar trends with an increase throughout the student teaching semester.

Resilience: Does it Matter?

A Model of Stress, Burnout, and Resilience in the Secondary Agricultural Educator

Erica B. Thieman, University of Missouri

Anna L. Ball, University of Missouri

Tracy J. Kitchel, University of Missouri

Abstract

The goal for this research synthesis was to introduce the concept of resilience to agricultural education and determine if further research is warranted on resilience and positive psychology as they relate to the agricultural educator. The current environment of public schools coupled with the ever-burgeoning responsibilities placed upon the shoulders of educators makes resilience an increasingly vital characteristic to the classroom teacher. Teachers who are resilient are able to persevere through adversity and overcome stress to find success. The study of resilience has a theoretical base in positive psychology (Snyder & Lopez, 2009). Effective coping behaviors used to manage daily stress are essential to teacher retention and job satisfaction for teachers (Carmona, Buunk, Peiro, Rodriguez, & Bravo, 2006). Based on this synthesis of research, a conceptual model visualizing the relationship between teacher resilience and agricultural educator stress and burnout was developed as well as a list of recommendations for further research.

Viewing Teacher Job Satisfaction and Burnout through Social Comparisons

Tracy Kitchel, University of Missouri
Amy Smith, South Dakota State University
Anna Ball, University of Missouri
Shane Robinson, Oklahoma State University
Rebecca Lawver, Utah State University
Travis Park, Cornell University
Ashley Schell, University of Kentucky

Abstract

Understanding job satisfaction, stress, and burnout within agricultural education has the potential to impact the profession's future. Personal characteristics, such as whether a teacher moved from or stayed in their current position, are independent variables of choice when investigating job satisfaction and burnout. Studying these factors through the theoretical lens of social comparison takes a cultural approach by investigating how agriculture teachers interact with and compare themselves to others. The impact of social comparison on one's self is likely to affect emotions (Smith, 2000). That emotional development may be linked to dimensions of job satisfaction and burnout. The purpose of this study was to determine if relationships existed between social comparison and job satisfaction and/or burnout among secondary agriculture teachers representing six states. Findings indicated that teachers were relatively satisfied with their jobs and tend to engage most frequently in upward assimilative (UA) comparisons, leading to inspiration emotional outcomes. According to the Maslach Burnout Inventory for Educators (MBI-E), responding teachers experience low levels of burnout related to personal accomplishment (PA) and depersonalization (DE), but moderate levels related to emotional exhaustion (EE). Seven moderate relationships were found between dimensions of social comparison and either burnout and/or job satisfaction.