Proceedings of the 2013 American Association for Agricultural Education Research Conference

Volume 40

May 23-24, 2013
Columbus, Ohio

Edited by:

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Iowa State University
Ames, Iowa

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Proceedings of the 2013 American Association for Agricultural Education Research Conference

It is my pleasure to present the *Proceedings of the 40th Annual American Association for Agricultural Education Research Conference.* The proceedings are a result of 60 paper presentations that were shared at the AAAE Conference on May 23-24, 2013 in Columbus, Ohio.

The AAAE Protocol Guidelines for Conference Paper Selection, Presentations and Awards established and adopted in 2010 were followed in the selection of the manuscripts. The submission and review process of research papers was conducted using the online FastTrack system. Dr. John Ricketts, AAAE Manuscript Submission and Review Manager, oversaw the submission and review process. There were 138 papers submitted by the February 21st deadline. Manuscripts were peer-reviewed using a double-blind review process. The review process involved 152 reviewers representing 56 universities. Each manuscript was assigned to 3 reviewers. Additional reviewers were assigned as needed, and the review process occurred over 41 days. All papers were ranked based on the overall recommendation from reviewers (Item 56 on the review form). In sum, 60 of the 138 manuscripts were accepted for presentation for an acceptance rate of 43.5%.

Each year, the research conference builds on the work and traditions established by previous conference chairs. I am grateful to them for leading the way in this endeavor. Many hours have been invested in the conference and I want to thank the authors for submitting and revising the manuscripts in a timely manner. I would also like to especially thank the reviewers for their countless hours of reviewing manuscripts. Moreover, special thanks to the discussants, facilitators, and outstanding paper judges for their help with the conference sessions. I would also like to express our gratitude to Dr. Greg Thompson, Dr. Emily Buck and Marilyn K. Trefz, AAAE Executive Director, for providing leadership in planning the conference, and to Dr. John Ricketts for his tremendous assistance in coordinating the review process. Finally, I would like to acknowledge the efforts of my graduate student, Molly Heintz, for her assistance and attention to detail in preparing the proceedings and planning the research sessions.

Respectfully submitted,

Michael S. Retallick
2013 AAAE Research Conference Chair

Previous Conference Chairs/Proceedings Editors

Vol.	Year	Chair(s)/Editor(s)	Institution	Location
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2	1975	Hollie Thomas	Florida State University	Anaheim, CA
3	1976	Glen Shinn	Mississippi State University	Houston, TX
4	1977	William Richardson	Purdue University	Atlantic City, NJ
5	1978	Bennie Byler	Mississippi State University	Dallas, TX
6	1979	Ronald Brown	Mississippi State University	Anaheim, CA
7	1980	L. H. Newcomb	The Ohio State University	New Oreleans, LA
8	1981	Maynard Iverson	North Carolina State University	Atlanta, GA
9	1982	Dale Oliver	Vigrinia Tech University	St. Louis, MO
10	1983	Paul R. Vaughn	New Mexico State University	Anaheim, CA
11	1984	Jimmy Cheek	University of Florida	New Orleans, LA
12	1985	Bob Stewart	University of Missouri	Atlanta, GA
13	1986	Alan A. Kahler	Iowa State University	Dallas, TX
14	1987	Alfred J. Mannebach	University of Connecticut	Las Vegas, NV
15	1988	Edgar P. Yoder	Pennsylvania State University	St. Louis, MO
16	1989	Michael F. Burnett	Louisiana State University	Orlando, FL
17	1990	Robert A. Martin	Iowa State University	Cincinnati, OH
18	1991	Larry R. Arrington	University of Florida	Los Angeles, CA
19	1992	John P. Mundt	University of Idaho	St. Louis, MO
20	1993	Dennis Scanlon Thomas H. Bruening	Pennsylvania State University	Nashville, TN
21	1994	David E. Lawver Robert Terry, Jr.	Texas Tech University Texas A&M University	Dallas, TX
22	1995	Leon G. Schumacher Robert J. Birkenholz	University of Missouri	Denver, CO
23	1996	George W. Wardlow Donald M. Johnson	University of Arkansas	Cincinnati, OH
24	1997	James J. Connors Tim H. Murphy	University of Idaho Texas A&M University	Las Vegas, NV
25	1998	Gary Moore James Flowers	North Carolina State University	New Orleans, LA
26	1999	Ricky Telg Tracy Irani John Ryder	University of Florida	Orlando, FL
27	2000	Greg Miller	Iowa State University	San Diego, CA
28	2001	Joe W. Kotrlik Michael F. Burnett	Louisiana State University	New Orleans, LA
29	2002	Michael K. Swan Marty Frick	Washington State University Montana State University	Las Vegas, NV
30	2003	Jamie Cano Larry E. Miller	The Ohio State University	Orlando, FL

Previous Conference Chairs/Proceedings Editors (continued)

Vol.	Year	Chair(s)/Editor(s)	Institution	Location
31	2004	Connie D. Baggett Rama B. Radhakrishna	Pennsylvania State University	St. Louis, MO
32	2005	Eddie A. Moore David Krueger	Michigan State University	San Antonio, TX
33	2006	Kirk Swortzel Jacquelyn Deeds	Mississippi State University	Charlotte, NC
34	2007	Gary E. Briers T. Grady Roberts	Texas A&M University	Minneapolis, MN
35	2008	Edward A. Franklin	University of Arizona	Reno, NV
36	2009	Todd Brashears Steve Fraze	Texas Tech University	Louisville, KY
37	2010	Neil A. Knobloch	Purdue University	Omaha, NE
38	2011	Rebecca G. Lawver Brian K. Warnick	Utah State University	Coeur d'Alene, ID
39	2012	Rebecca G. Lawver Brian K. Warnick	Utah State University	Asheville, NC
40	2013	Michael S. Retallick	Iowa State Unversity	Columbus, OH

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Matt Spindler	Virginia Tech University
Bart Gill	Western Illinois University

Research Presentations

Thursday, May 23, 2:00-3:30 p.m.

Session A – Effective Integration of STEM into Agricultural Education Programs

Discussant: Ed Osborne, University of Florida **Location:** Gallery C
Facilitator: John Tummons, University of Missouri

The Effect of a Serious Digital Game on the Animal Science and Mathematical Competence of Secondary Agricultural Education Students: An Experimental Study

- J. C. Bunch, Louisiana State University
- J. Shane Robinson, Oklahoma State University
- M. Craig Edwards, Oklahoma State University
- Pavlo D. Antonenko, University of Florida

Uncovering Academic Emphasis Through Agricultural Education: Knowledge of Pre-service Teachers in STEM Integration - A Cross-Case Comparison of Three Agricultural Education Pre-service Teacher Education Programs

- J. Chris Haynes, University of Wyoming
- Bart E. Gill, Western Illinois University
- Steven Boot Chumbley, Eastern New Mexico University
- Timothy F. Slater, University of Wyoming

Does Prior Experience in Secondary Agricultural Mechanics Affect Pre-Service Agricultural Education Teachers' Intentions to Enroll in Post-secondary Agricultural Mechanics Coursework?

- Trent Wells, Iowa State University
- Dusty Perry, Iowa State University
- Ryan Anderson, Iowa State University
- Matthew Shultz, Iowa State University
- Thomas H. Paulsen, Iowa State University

Importance and Capability of Teaching Agricultural Mechanics as Perceived by Secondary Agricultural Educators

- Matthew J. Shultz, Iowa State University
- Ryan G. Anderson, Iowa State University
- Thomas H. Paulsen, Iowa State University
- Alyx M. Shultz, Murray State University

Session B – Meaningful Learning through Cognition and Metacognition

Discussant: Susie Whittington, Ohio State University **Location:** Scioto Room
Facilitator: Julie Robinson, Ohio State University

Assessing the Effects of Reflection Type and Cognitive Style on Students' Content Knowledge

- J. Joey Blackburn, Oklahoma State University
- Amanda Kacal, Oklahoma State University
- Ashley S. Whiddon, Oklahoma State University
- J. Shane Robinson, Oklahoma State University

Assessing Students' Creative Thinking Ability in School-Based Agricultural Education Courses

- Kristina Haug, University of Missouri
- Anna Ball, University of Missouri

Getting it to Click: Students Self-Perceived Critical Thinking Style and Perceptions of Critical Thinking Instruction in Face-to-Face and Online Course Delivery

- Nicole LP Stedman, University of Florida
- Brittany Adams, University of Florida

Critical Thinking Dispositions of High School Agriculture Teachers in Tennessee

- Clarissa Lewis, Tennessee State University
- John. C. Ricketts, Tennessee State University

Session C – Effective Technology Integration

Discussant: Greg Miller, Iowa State University **Location:** Kingsmill Room
Facilitator: Laura Lemons, Texas Tech University

Accessibility and Usage of Technology by North Carolina Agriculture Teachers

- Maegen R. Williams, North Carolina State University
- Wendy J. Warner, North Carolina State University
- James L. Flowers, North Carolina State University
- D. Barry Croom, North Carolina State University

Technology Usage of Tennessee Agriculture Teachers

- Michael D. Coley, Siegel High School
- Wendy J. Warner, North Carolina State University
- Kristin S. Stair, New Mexico State University
- James L. Flowers, North Carolina State University
- D. Barry Croom, North Carolina State University

An Evaluation of Usability of a Virtual Environment for Students Enrolled in a College of Agriculture

- Theresa Pesl Murphrey, Texas A&M University
- Tracy A. Rutherford, Texas A&M University
- David L. Doerfert, Texas Tech University
- Leslie D. Edgar, University of Arkansas
- Don W. Edgar, University of Arkansas

The Effect of a Serious Digital Game on the Knowledge Transfer of Secondary Agricultural Education Students: An Experimental Study

- J. C. Bunch, Louisiana State University
- J. Shane Robinson, Oklahoma State University
- M. Craig Edwards, Oklahoma State University
- Pavlo D. Antonenko, University of Florida

Session D – Educational Advances through 4-H and Extension

Discussant: Mark Kistler, North Carolina State University **Location:** Riviera Room
Facilitator: Ryan Foor, University of Arizona

Extension Youth Educators' Technology Use in Youth Development Programming

- Carli McClure, Louisiana State University
- Brittany Buquoi, Louisiana State University
- Joe W. Kotrlik, Louisiana State University
- Krisanna Machtmes, Louisiana State University
- J. C. Bunch, Louisiana State University

Knowledge, Skills, and Competencies Needed by Students with Training in Agricultural and Environmental Practices as Perceived by Local Leaders: A Delphi Study

- Sarah E. Burleson, University of Florida
- Andrew C. Thoron, University of Florida

Future Scientists Philosophical Beliefs Regarding Extension Education and K-12 Outreach

- Melissa Leiden Welsh, Purdue University
- Neil A. Knobloch, Purdue University

An Evaluation of the 4-H Health Rocks Program: Implications for Program Improvement

- Carlton Self, University of Georgia
- Christian Morgan, University of Georgia
- Nicholas E. Fuhrman, University of Georgia
- Maria Navarro, University of Georgia

Session E – *School-based Local Program Success*

Discussant: Rob Terry, Oklahoma State University **Location:** Fusion
Facilitator: Tyson Sorensen, Oregon State University

Developing Attitudinal Metrics for Induction-Year Agricultural Education Teachers

- John Rayfield, Texas A&M University
- Billy R. McKim, Texas A&M University
- Shannon G. Lawrence, Clemson University
- Kristin Stair, New Mexico State University

Experiences of Novice Agriculture Teachers in New Communities

- G. Curtis Langley, University of Missouri
- Michael J. Martin, University of Missouri
- Tracy Kitchel, University of Missouri

Elementary Teachers Perceptions of Agriculture and their Integration of Agricultural Topics

- Kattlyn J. Wolf, University of Idaho
- Jonathan J. Velez, Oregon State University
- Jodi Johnson-Maynard, Sanford Eigenbrode
- Peter T. White, University of Idaho
- Benjamin G. Swan, Cal Poly San Luis Obispo
- Shannon M. Blickenstaff, University of Idaho

Level of Agricultural Education Advisory Council Implementation in Idaho Secondary Agricultural Education Programs

- Douglas Masser, University of Idaho
- Daniel D. Foster, Pennsylvania State University
- Jeremy M. Falk, University of Idaho

THURSDAY, MAY 23, 4:00 p.m.-5:30 p.m.

Session A –International Perspectives and Global Literacy

Discussant: Rama Radhakrishna, Pennsylvania State University **Location:** Gallery C
Facilitator: Boot Chumbley, Eastern New Mexico University

Louisiana Secondary Agricultural Educators' Perceptions of an International Experience Toward Their Teaching Career

- Shelli Danjean, Louisiana State University
- Carli McClure, Louisiana State University
- J. C. Bunch, Louisiana State University
- Joe W. Kotrlik, Louisiana State University
- Krisanna Machtmes, Louisiana State University

Identifying Emergent Themes for Knowledge, Skills, and Dispositions in Globally Competent Agriculture Education Teacher Candidates

- Laura L. Sankey Rice, Pennsylvania State University
- Daniel D. Foster, Pennsylvania State University
- Melanie J. Miller Foster, Pennsylvania State University
- R. Kirby Barrick, University of Florida

Preparing Agricultural Educators for the World: Describing Global Competency in Agricultural Teacher Candidates

- Daniel D. Foster, Pennsylvania State University
- Melanie J. Miller Foster, Pennsylvania State University
- Laura L. Sankey Rice, Pennsylvania State University
- R. Kirby Barrick, University of Florida

Agricultural Students' Attitudes and Opinions: Can Reusable Learning Objects Alter Students' Perceptions of an International Setting

- M'Randa R. Sandlin, Texas A&M University
- Theresa Resl Murphrey, Texas A&M University
- James R. Lindner, Texas A&M University
- Kim E. Dooley, Texas A&M University

Session B – Extension and International Agricultural Education Systems

Discussant: Robert Martin, Iowa State University **Location:** Scioto Room
Facilitator: Justin Sharpless, University of Missouri

Measuring Florida Extension Faculty's Agricultural Paradigmatic Preferences

- Laura Sanagorski, University of Florida IFAS Palm Beach County Extension
- Theresa Pesl Murphrey, Texas A&M University
- Matt Baker, Texas Tech University
- James Lindner, Texas A&M University
- David E. Lawver, Texas Tech University

Information Seeking Habits of Montana County Extension Agents

- Shannon Arnold, Montana State University
- Nikki Bailey, Montana State University
- Alexandra Hill, Montana State University

Louisiana Extension Educators' Perceptions of the Benefit and Relevance of Participating in an International Extension Experience toward Their Career

- Carli McClure, Louisiana State University
- Shelli Danjean, Louisiana State University
- J. C. Bunch, Louisiana State University
- Krisanna Machtmes, Louisiana State University
- Joe W. Kotrlik, Louisiana State University

An Exploration of the Formal Agricultural Education System in Trinidad and Tobago

- Sara D. Hurst, University of Florida
- Nathan W. Conner, University of Florida
- Jessica Blythe, University of Florida
- Angel Futrell, Texas A&M University
- Aaron Giorgi, University of Florida
- Jennifer Jenkins, Texas A&M University
- Eric D. Rubenstein, University of Florida
- Christopher T. Stripling, University of Tennessee
- T. Grady Roberts, University of Florida

Session C – Preparation of Effective School-based Teachers

Discussant: Brian Warnick, Utah State University **Location:** Kingsmill
Facilitator: Adam Marx, University of Missouri

Relationships between Agriculture Teaching Efficacy and Decision to Teach Among Agricultural Education Majors

- Catrina Kennedy, University of Georgia
- John C. Ricketts, Tennessee State University
- Dennis Duncan, Tennessee State University

Developing Professional Standards for Teacher Educators in Agriculture

- Ryan M. Foor, University of Arizona
- Daniel D. Foster, Pennsylvania State University
- Kattlyn J. Wolf, University of Idaho

Flipping an Agricultural Education Teaching Methods Course

- Nathan W. Conner, University of Florida
- Christopher T. Stripling, University of Tennessee
- Jessica Blythe, University of Florida
- T. Grady Roberts, University of Florida
- Nicole L. P. Stedman, University of Florida

Preservice Agricultural Education Teachers' Perceptions of Their Ability to Perform Skills Related to Agricultural Mechanics: A Longitudinal Study

- J. Joey Blackburn, Oklahoma State University
- J. Shane Robinson, Oklahoma State University
- Harry Field, Oklahoma State University

Session D – *Experiential Learning in Secondary Agricultural Education*

Discussant: Mark Balschweid, University of Nebraska-Lincoln **Location:** Riviera
Facilitator: Matthew Shultz, Iowa State University

Classroom Instruction and FFA/SAE Responsibilities Creating the Most Stress for Female Teachers in the Southeast

- Diana L. King, University of Georgia
- K. Jill Rucker, University of Georgia
- Dennis W. Duncan, University of Georgia

Identifying Barriers of Supervised Agricultural Experience Implementation Perceived by Preservice Agricultural Education Teachers: A Longitudinal Study

- Jon W. Ramsey, Oklahoma State University
- J. Joey Blackburn, Oklahoma State University

A Quasi-Experimental Study to Explore the Interaction Between Students' Learning Outcomes and Preferred Learning Style in a Non-Formal FFA Camp Environment

- Nicholas R. Brown, Oklahoma State University
- Robert Terry, Jr., Oklahoma State University
- Kathleen D. Kelsey, Oklahoma State University

An Examination of Student Learning Outcomes and Knowledge Retention at FFA Summer Camp

- Nicholas R. Brown, Oklahoma State University
- Robert Terry, Jr., Oklahoma State University
- Kathleen D. Kelsey, Oklahoma State University

Session E – Skill Development in Secondary Agricultural Education

Discussant: Jim Flowers, North Carolina State University **Location:** Fusion
Facilitator: Preston Byrd, Iowa State University

The FFA Sweetheart: Past, Present and Future(?)

- Jillian Casey, North Carolina State University
- Dr. Gary Moore, North Carolina State University

Promising Practices of Dairy, Horse, and Livestock Evaluation Career Development Event Coaches: A Mixed-Methods Study

- Melissa A. Voigt, Purdue University
- B. Allen Talbert, Purdue University
- Steve McKinley, Purdue University
- Colleen M. Brady, Purdue University

Identifying STEM Concepts Associated with Junior Livestock Projects

- Kate Wooten, King's Bridge Middle School
- John Rayfield, Texas A&M University
- Lori Moore, Texas A&M University

A Secondary Agricultural Education Student Picture of Student Apathy

- Ann M. De Lay, California Polytechnic State University, San Luis Obispo
- Benjamin G. Swan, California Polytechnic State University, San Luis Obispo

FRIDAY, MAY 24, 8:30-10:00 a.m.

Session A – Leadership and History of Agricultural Education

Discussant: David Jones, North Carolina State University **Location:** Gallery C
Facilitator: Michael Martin, University of Missouri

Profiling the Youth Leader: Personality and Emotional Intelligence Trends and Their Relationship to Leadership Skills

- L. J. McElravy, University of Nebraska-Lincoln
- Lindsay J. Hastings, University of Nebraska-Lincoln

Factors Influencing Agricultural Leadership Students' Behavioral Intentions: Examining the Potential Use of Mobile Technology in Courses

- Robert Strong, Texas A&M University
- Travis L. Irby, Texas A&M University
- Larry M. Dooley, Texas A&M University

The Effect of Undergraduate Extracurricular Involvement and Leadership Activities on Community Values

- Elizabeth A. Foreman, Iowa State University
- Michael S. Retallick, Iowa State University

A History of Professional Associations for Teacher Educators in Agriculture: 1929 to Present

- James J. Connors, University of Idaho

Session B – Impact of Agriscience Education and Science Fairs

Discussant: Amy Smith, University of Minnesota **Location:** Scioto
Facilitator: Doug Masser, University of Idaho

Trends in Agriscience Fair Participants' Perceptions of Science and Agriculture

- Jessica M. Blythe, University of Florida
- Catherine A. DiBenedetto, University of Florida
- Brian E. Myers, University of Florida

Agriscience Fair Participants' Perceptions of Science and Agriculture

- Jessica M. Blythe, University of Florida
- Brian E. Myers, University of Florida

The Effect of Vee Maps and Laboratory Reports on High- and Low-Order Content – Knowledge Achievement in Agriscience Education

- Andrew C. Thoron, University of Florida
- Eric D. Rubenstein, University of Florida

Correlation of Secondary Agricultural Education Students' Science Achievement to Number of Agricultural Education Courses Passed

- Sara Clark, Auburn University
- Brian Parr, Auburn University
- Jason Peak, University of Georgia
- Frank Flanders, University of Georgia

Session C – Teacher Resiliency and Retention

Discussant: John Ewing, Pennsylvania State University **Location:** Kingsmill
Facilitator: Trent Wells, Iowa State University

Perceived Levels of Teacher Self-Efficacy among Secondary Arizona Agricultural Education Teachers

- Kevin N. Hartfield, Queen Creek High School, Arizona
- Ryan M. Foor, University of Arizona

The Thornless Rose: A Phenomenological Look at Decisions Career Teachers Make to Remain in the Profession

- Mindi S. Clark, Oklahoma State University
- Kathleen D. Kelsey, Oklahoma State University
- Nicholas R. Brown, Oklahoma State University

Using Coping Strategies to Manage Stress in Agriculture Teachers

- Dr. Rebecca G. Lawver, Utah State University
- Kasee L. Smith, Utah State University

The Status of Science Integration into Agricultural Education According to State Supervisors: Twenty-Five Years after the "Green Book"

- Gregory W. Thompson, Oregon State University
- Joy M. Marshall, North Carolina State University
- Brian E. Myers, University of Florida
- Brian K. Warnick, Utah State University
- Elizabeth Wilson, North Carolina State University

Session D – The Effects of Agricultural Communications

Discussant: Matt Spindler, SUNY Oswego **Location:** Riviera
Facilitator: Jonathan Velez, Oregon State University

Aesthetic Qualities of Websites and Their Effects on Public Perceptions of Agricultural Issues and Organizations

- Chase Hundley, University of Arkansas
- Morgan Large, University of Arkansas
- Jefferson D. Miller, University of Arkansas

Exploring U.S. Agricultural Commodity Organization's Use of Blogs as a Communications Tool

- Madeline Moore, Texas Tech University
- Courtney Meyers, Texas Tech University
- Erica Irlbeck, Texas Tech University
- Scott Burris, Texas Tech University

A Little Learning is Dangerous: The Influence of Agricultural Literacy and Experience on Young People's Perceptions of Agricultural Imagery

- Annie R. Specht, Texas A&M University
- Billy R. McKim, Texas A&M University
- Tracy Rutherford, Texas A&M University

Students' Reflections of Service-Learning in Agricultural Communications

- Marie Hefley, Texas Tech University
- Courtney Meyers, Texas Tech University
- Erica Irlbeck, Texas Tech University
- Cindy Akers, Texas Tech University

Session E – Enhancing the Higher Education Experience

Discussant: Travis Park, Cornell University **Location:** Fusion
Facilitator: Dustin Perry, Iowa State University

First Generation College Students: Motivations and Support Systems

- Erica Irlbeck, Texas Tech University
- Shylo Adams, Cleburne High School
- Cindy Akers, Texas Tech University
- Scott Burris, Texas Tech University
- Stephanie Jones, Texas Tech University

Examining the Impact of Class Size, Enrollment Capacity and Room Capacity on Student Ratings of Instruction

- Kristin A. Kovar, University of Missouri
- Anna L. Ball, University of Missouri
- Michael Monson, University of Missouri

Teacher Clarity and Student Achievement in Undergraduate Courses Taught in the College of Agricultural and Life Sciences

- R. Kirby Barrick, University of Florida
- Christopher M. Estepp, University of Florida

Faculty Voices: Experiences Teaching Introductory Life Science Courses in Colleges of Agriculture

- Mark Balschweid, University of Nebraska-Lincoln
- Neil A. Knobloch, Purdue University
- Bryan J. Hains, University of Kentucky

The Effect of a Serious Digital Game on the Animal Science and Mathematical Competence of Secondary Agricultural Education Students: An Experimental Study

J. C. Bunch, Louisiana State University
J. Shane Robinson, Oklahoma State University
M. Craig Edwards, Oklahoma state University
Pavlo D. Antonenko, University of Florida

The purpose of this study was to compare the effectiveness of the lecture and discussion teaching methods and digital game-based learning on student achievement in agriculture and mathematics regarding a unit on swine diseases in animal science courses offered through secondary agricultural education programs in Oklahoma. Three research questions guided the study, which utilized a quasi-experimental, between-groups design. No statistically significant differences ($p < .05$) were found between the counterfactual group and the treatment group regarding animal science competency and mathematics achievement. As such, the researcher failed to reject the respective null hypotheses aligned with the study's research questions. However, this study demonstrated that teachers using a serious digital game in the context of animal science did not diminish their students' achievement. As a result, it can be recommended that teachers should consider incorporating this teaching method into their existing pedagogical practices without fear of decreasing student achievement. Another implication for practice is the importance of providing prolonged and sustained professional development opportunities for in-service teachers to learn how to use a digital game-based delivery method effectively to increase student achievement in agriculture and mathematics.

Uncovering Academic Emphasis Through Agricultural Education: Knowledge of Pre-service Teachers in STEM Integration - A Cross-Case Comparison of Three Agricultural Education Pre-service Teacher Education Programs

J. Chris Haynes, University of Wyoming
Bart E. Gill, Western Illinois University
Steven Boot Chumbley, Eastern New Mexico University
Timothy F. Slater, University of Wyoming

The purpose of this qualitative, cross-case comparison was to explore agricultural education pre-service teachers' perceptions in regards to integrating science, technology, engineering and mathematics (STEM) into an agricultural education curriculum. This study included three teacher certification programs in agricultural education in the United States. It was revealed those pre-service teachers queried held perceptions similar regarding the integration of STEM related concepts into an agricultural education curriculum. (a) Participants felt agriculture was a natural integration and emphasis vehicle for a range of academic subjects. (b) Participants felt it was important to emphasize the core subject matter inherent to agriculture, but care must be taken to not fundamentally alter the purpose of the agricultural education program. (c) A consensus was reached lessons should be "hands-on" and relate the material to real world applications. It was recommended prior knowledge was important for successful integration of core content into an agriculture curriculum. Examination of how many credit hours of mathematics, science, and English pre-service agricultural education teachers are required to take to be effective at integration of core material should occur. Further, collaboration between university faculty of agricultural education and other departments outlining ways to achieve successful integration of academic content was needed.

Does Prior Experience in Secondary Agricultural Mechanics Affect Pre-service Agricultural Education Teachers' Intentions to Enroll in Post-secondary Agricultural Mechanics Coursework?

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Dustin Perry, Graduate Student
Ryan Anderson, Assistant Professor
Matthew Shultz, Graduate Student
Thomas H. Paulsen, Assistant Professor
Iowa State University

Agricultural mechanics coursework has historically been considered an important and necessary construct of the secondary agricultural education curriculum (Burris, Robinson, & Terry, 2005). With expectations of offering secondary agricultural mechanics coursework apparent, it is vital that agricultural education teachers be prepared to address these curriculum needs. Recent evidence (Burris, McLaughlin, McCulloch, Brashears, & Fraze, 2010) indicated that many agricultural education teachers (particularly early-career teachers) felt less comfortable teaching agricultural mechanics than other agricultural content areas. Hubert and Leising (2000) indicated, on average, potential agriculture education teachers are only required to enroll in two (2) three-credit hour courses to meet certification requirements. The purpose of this study was to describe potential relationships between the quantity of agricultural mechanics training and skills received at the secondary and at the post-secondary levels. Correlations were calculated to determine the magnitude of these relationships. Statistically significant, positive correlations were found in each of the skill areas. The researchers recommend that agricultural mechanics coursework be increased and enhanced at teacher preparation institutions. Also, the modernization of secondary and post-secondary agricultural mechanics facilities and curricula to reflect increases in available technologies should be considered as a method to enhance students' interests in the content area.

Importance and Capability of Teaching Agricultural Mechanics as Perceived by Secondary Agricultural Educators

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Agricultural mechanics instruction is a long-standing and significant part of secondary agricultural education. Similar to the broader agricultural industry, agricultural mechanics instruction is in a constant state of dynamic change. Educators must be proactive to ensure agricultural mechanics curriculum retains its relevance within this changing environment and that educators are prepared to facilitate that change. The agricultural mechanics in-service needs of secondary agricultural educators in Iowa were examined. Researchers used descriptive measures and mean weighted discrepancy scores to determine teacher perceptions of content importance, teaching competence, and in-service training needs. The areas of highest perceived importance were welding safety, construction and shop safety, and shielded metal arc welding. Agricultural mechanics instructors rated themselves least prepared to teach computer aided design, profile leveling, and hot metal work. As shown by mean weighted discrepancy scores, areas of highest additional training need were global positioning systems, electrical safety, and computer aided design.

Assessing the Effects of Reflection Type and Cognitive Style on Students' Content Knowledge

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Amanda Kacal, Oklahoma State University
Ashley S. Whiddon, Oklahoma State University
J. Shane Robinson, Oklahoma State University

The purpose of this exploratory, experimental study was to determine the effects that the type of reflection-in-action and students' cognitive style had on content knowledge of pre-service agriculture teachers (N = 57) at Oklahoma State University. Students' cognitive style was assessed using Kirton's Adaptation-Innovation Inventory (KAI). Students were classified as either more adaptive *or* more innovative. *Students were assigned randomly to either a verbal or written reflection-in-action group in the completely randomized 2x2 design. A Lab Aids® classroom kit, based on the principles of biofuels, served as the content for the treatment. The findings of this study indicated that cognitive style and type of reflection-in-action did not affect students' knowledge scores in an agriscience laboratory positively or negatively. As such, teachers can utilize either type of reflection-in-action without detriment to student learning. As this study was exploratory in nature, it is recommended that it be replicated with a larger sample size to increase generalizability. Additional research should focus on pairing students of similar and opposite cognitive styles to determine how problem-solving ability and test performance is affected.*

This work has been supported, partially, by the NSF EPSCoR award EPS 0814361.

Assessing Students' Creative Thinking Ability
In School-Based Agricultural Education Courses

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The purpose of this study was to explore the creative thinking ability in two Introduction to Agriculture, Food and Natural Resources courses taught within a rural, Midwestern high school. Sixty-seven high school students were tested for levels of fluency (number of ideas) and frequency (originality of ideas) using the Torrance Test for Creativity: Figural version and a Course Concept Assessment. The Course Concept Assessment pre-tested and post-tested students for their knowledge of relevant agricultural science concepts within a specific unit of Curriculum for Agricultural Science Education Introduction to AFNR curriculum. Students scored higher than their norm-referenced peers for fluency and frequency in the TTCT. There was a strong, positive correlation (r=.75) between students with high levels of creativity and change in fluency and frequency scores on the Course Concept Assessment. Researchers recommend further investigation of creative constructs in additional CASE: Introduction to AFNR courses and other curriculum courses in school-based agricultural education programs.

Getting it to Click: Students Self-Perceived Critical Thinking Style and Perceptions of Critical Thinking Instruction in Face-to-Face and Online Course Delivery

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Brittany Adams, University of Florida

In higher education today there is a high demand for online education, but what is the price paid for making that transition? The purpose of this study was to examine the foundational differences between critical thinking instruction face-to-face and online. Students enrolled in a face-to-face course and students enrolled in an online course were asked to evaluate their self-perceived critical thinking style to compare changes in development between the two modes. Additionally, students were asked to evaluate the extent to which they perceived the instructor to emphasize critical thinking as part of the course instruction. The study, which took place from fall 2011 (face-to-face) to summer 2012 (online), showed that students in an online environment showed greater gains in "seeking" behaviors than their face-to-face peers. However, both groups showed that there was a high level of support for the course instruction emphasizing critical thinking.

Critical Thinking Dispositions of High School Agriculture Teachers in Tennessee

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John C. Ricketts, Tennessee State University

Critical thinking is an essential component for leaders in the field of agriculture. Although critical thinking has been widely studied among students, little research has evaluated the critical thinking dispositions of teachers. The purpose of this quantitative research study was to create a critical thinking disposition profile of high school agriculture teachers in Tennessee using the University of Florida (UF) Engagement, Cognitive Maturity, and Innovativeness (EMI) assessment. Also, demographic variables were examined to determine if relationships exist among age, gender, level of education, years of teaching experience, route to certification, and the scores on the EMI. Results revealed the majority of teachers had moderate critical thinking dispositions. There were no significant differences between the selected variables and critical thinking dispositions of the sample. Implications and conclusions for agricultural education were discussed, not the least of which is a call for high school agriculture teachers to teach critical thinking by enculturation.

Accessibility and Usage of Technology by North Carolina Agriculture Teachers

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Wendy J. Warner, North Carolina State University
James L. Flowers, North Carolina State University
D. Barry Croom, North Carolina State University

This study examined the integration of technology into the instructional process in North Carolina agricultural education classrooms. The study used survey research methodology to collect information on the availability of instructional technology and the frequency of instructional technology use by North Carolina agriculture teachers. The study found most teachers had access to digital projectors and digital cameras. Agriculture teachers also had convenient access to a teacher desktop computer and teacher laptop computer. The most commonly used software included Internet browsers and software for managing student records. Use of technology by agriculture students was less frequent and commonly consisted of Internet searching and use of reference materials on CD-ROMs. It is recommended the findings of this research study be used to inform future professional development offerings. Also, there should be additional investigation of appropriate learner-centered approaches to technology integration and continued research on the availability and utilization of educational technology in agriculture classrooms over time.

Technology Usage of Tennessee Agriculture Teachers

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James L. Flowers, North Carolina State University
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This study examined the accessibility and use of instructional technologies by agriculture teachers in Tennessee. Data were collected using a survey instrument to investigate teachers' adoption of technology, sources of acquired technology skills, accessibility and use of technological equipment, and barriers to technology integration. The study found Tennessee agriculture teachers have been slow to adopt technologies for classroom use. Many of the teachers had limited access to the various technologies. Over half of the teachers did not have access to new educational technologies such as a Smartboard, student response clickers, iPads, iPods, or smartphones. Additionally, there was limited access to most social networks, several web tools, a commercial learning management system, and social bookmarking sites. Cost, time, and availability of technology were recognized as barriers to technology integration. It is recommended further research be conducted on a larger scale to examine technology integration in agriculture classrooms. As well, classroom observations and interviews with teachers and administrators can provide a more in-depth understanding of current technology usage in agricultural education.

An Evaluation of Usability of a Virtual Environment for Students Enrolled in a College of Agriculture

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David L. Doerfert, Texas Tech University
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Applications of educational technology are continuing to expand with multi-user virtual environments (e.g., Second Life™) being the latest technology. Understanding a virtual environment's usability can enhance educational planning and effective use. Usability includes the interaction quality between an individual and the item being assessed. The purpose was to assess the usability of "AgriCulture Island" in Second Life™ to identify possible issues and thus enhance the understanding of the severity of the issues and how they could be addressed. The framework allowed the identification of constructs that further defined usability related to assessing a virtual environment. Mixed methods including pre/post questionnaires, observations, and a focus group were utilized to document and describe usability. The study engaged 12 participants during summer 2012 from a college of agriculture. Findings revealed that participants accepted Second Life™ more after exposure; all participants indicated the experience felt "real" and they could sense others in the environment. Observation data provided a picture of participant interaction with the virtual environment. Elements including assistance needs, satisfaction, confusion, and deviation from task were documented. The importance of understanding educational technology usability cannot be underestimated. This study adds to the literature related to educational technology and provides recommendations for use.

The Effect of a Serious Digital Game on the Knowledge Transfer of Secondary Agricultural Education Students: An Experimental Study

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The purpose of this study was to compare the effectiveness of the traditional, lecture and discussion method to a digital game-based learning (DGBL) approach on students' near and far knowledge transfer abilities in agriculture and mathematics regarding a unit on swine diseases in animal science courses. Two research questions guided the study, which employed a quasi-experimental, between-groups design. No statistically significant differences ($p > .05$) were found between the counterfactual group and the treatment group regarding students' near and far knowledge abilities. As a result, it can be recommended that professional development opportunities be created with an emphasis on using serious games to teach course content for in-service teachers without diminishing students' knowledge transfer. Specifically, the creators of this professional development should consider emphasizing Technological Pedagogical Content Knowledge development in teachers. In addition, future investigations should focus specifically on the kind of transfer that occurred, whether it be positive, negative, or zero transfer.

Extension Youth Educators' Technology Use in Youth Development Programming

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Brittany Buquoi
Joe W. Kotrlik
Krisanna Machtmes
J.C. Bunch
Louisiana State University

The purpose of this descriptive-correlational study was to determine the use of technology in youth programming by Extension youth development educators in Louisiana, Mississippi, and Tennessee. Data were collected via e-mail and a SurveyMonkey© questionnaire. Extension educators are using some technology in youth development programming. More than three-fourths of Extension youth educators are using Facebook; however, less than one fourth of Extension youth educators are using Twitter which contradicts previous research. Having technology available for use explains a medium amount of the technology use among Extension youth educators; however, perceived barriers, anxiety, age, gender, years of experience, and sources of technology training do not explain Extension youth educators technology use in their programming. Extension youth educators fit the description of digital immigrants who assume that today's learners acquire knowledge the same way they learned when they were in school.

Knowledge, Skills, and Competencies Needed by Students with Training in Agricultural and Environmental Practices as Perceived by Local Leaders: A Delphi Study

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The purpose of this study was to examine the knowledge, skills, and competencies needed by high school students with coursework in agricultural and environmental practices as perceived by educators and industry members. This study utilized a true Delphi technique in order to obtain the perceptions of the respondents. Respondents indicated 122 items that were important for students to possess with coursework in this area. The top 83 items were reported based upon panel members' perceived importance of these items. There were three major themes or categories of importance identified by the panel members, which include: life/leadership skills, core subject area knowledge, and competence in production agriculture knowledge/practices. The respondents on the panel also indicated the importance of incorporating local conditions and practices into the curriculum. This panel was specific to the needs of Hendry Ccounty in Florida thus limiting the transferability of the results beyond this region. However, some responses may be utilized beyond this population and this study provides a methodological framework for similar studies in other regions.

Future Scientists Philosophical Beliefs Regarding Extension Education and K-12 Outreach

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This qualitative study examined the personal philosophies of Extension and outreach education from 13 graduate students studying in the plant sciences program focused on genetics and plant breeding at a land-grant university. A grant-funded partnership of university, government and industry faculty and researchers focused on graduate students developing the intellectual capital to effectively address complex plant traits through an understanding of transdisciplinary sciences while preparing future plant scientists for leadership roles in agricultural research and education. These scientists in training self-reflected their developing beliefs and meanings of the terms of Extension and outreach education, the practice of Learner Centered Teaching characteristics, the development of outreach and Extension activities and the influence of the program on their personal and professional lives through the construction of their Philosophy of Extension and Outreach education. These graduate students discriminated the value of learning about Extension and outreach education through didactic responses entwined with personal and professional goals.

An Evaluation of the 4-H *Health Rocks* Program: Implications for Program Improvement

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The National 4-H Council developed the Health Rocks substance abuse educational program to prevent youth from engaging in risky behaviors. The program was presented in 2010 to more than 8,000 middle school youth in Georgia. A post-then-pre evaluation was conducted with youth who completed 10 hours of instruction to determine if changes in youth knowledge, beliefs/attitudes, skills, and behavioral intentions occurred during the course of the program. This study sought to measure the impact of the program and critically evaluate the questionnaire used. The data revealed statistically significant increases in knowledge, beliefs/attitudes, skills, and behavioral intentions of participating youth. Suggestions for improvement of the questionnaire included utilizing questions that are more specific to the curriculum and adding questions to measure the influence of peer pressure.

Developing Attitudinal Metrics for Induction-Year Agricultural Education Teachers

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This study was part of a larger regional study of induction-year agricultural education teachers in three Western states. Studies have purported that attitude toward teaching is important for understanding and helping induction-year teachers. Thus, developing an instrument to assess induction-year agricultural education teachers' attitudes toward their job aligns with the National Research Agenda for Agricultural Education (Doerfert, 2011); specifically, "Define the characteristics of effective agricultural education programs and teachers and the means to correctly access the current state of these characteristics" (p. 10). Moir (1999) theorized that induction-year teachers experience Anticipation, Survival, Disillusionment, Rejuvenation, and Reflection, which provided the basis for initial instrument development. Induction-year agricultural education teachers employed in three Western states were randomly assigned to three of six repeated measures during the 2011 – 2012 academic year, which yielded 375 useable responses. Based on the useable responses, Principal Component Analysis (PCA) with varimax rotation resulted in nine constructs: Professional Efficacy, Balanced Reflection, Professional Commitment, Professional Confidence, Anticipated Change, Work-Life Balance, Strategic Renewal, Problem Solving, and Professional Resolve.

Experiences of Novice Agriculture Teachers in New Communities

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The attrition rate for novice teachers can range between 20%-50% in the first five years. This problem has concerned researchers in school-based agricultural education because of the shortage of agriculture teachers and high demands of the job. Researchers narrowed down the reasons why teachers leave the profession, including the role of the self-efficacy. While the self-efficacy of novice teachers in the classroom has been researched, the general self-efficacy of the novice teacher has not been examined. This research investigated the influence of moving into a new community and adjusting to the new culture and social connections of the new community on the teacher's self-efficacy. The purpose was to determine if cultural shock and social connectedness explained general self-efficacy of novice agriculture teachers. The researchers concluded the construct of core beliefs, how people react internally to their community, within the culture shock theory significantly explained a proportion of the variance in general self-efficacy. The findings implied that the culture distance experienced by a novice teacher in a new community could affect their general well-being and ability to accomplish their goals.

Elementary Teachers Perceptions of Agriculture and their Integration of Agricultural Topics

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Agricultural literacy "depends on the mainstream educational system, particularly on the awareness and attitudes of teachers as they make decisions about what and how to teach" (Malecki, Israel, & Toro, 2004, p. 1). This descriptive study was designed to ascertain the perceptions of agriculture by elementary teachers and the frequency with which they integrate agriculture into lessons, and to identify teachers' perceived barriers to incorporating agricultural topics into elementary curricula. A survey of elementary teachers in the Pacific Northwest reported overall inclusive views of agriculture by teachers and relative comfort with the subject matter. The respondents were mostly mid to late career stage elementary school teachers, and female. Surveyed teachers identified time as the greatest barrier to integration of agricultural topics, although most subjects reported integrating these topics at least monthly. A discrepancy was found between the grade levels where teachers identified instruction in agriculture should occur in their respective school districts and where they reported that it actually occurred. These findings prompted the researchers to recommend targeted professional development for teachers, and, providing teachers with low-cost, curricula.

Level of Agricultural Education Advisory Council Implementation in Idaho Secondary Agricultural Education Programs

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Jeremy M. Falk, University of Idaho

Advisory councils are regarded as a vital component of agricultural education programs. This descriptive study was conducted to further strengthen what is known about advisory councils and provide a basis for continued improvement in local programs. The specific purpose of the study was to describe the level of advisory council implementation in Idaho. Findings include that 90% (n=85) of Idaho agricultural education programs currently had an advisory council. Data indicated that respondents have positive perceptions of advisory councils, but feel that the opportunity exists for the advisory council to have more influence on the program. The notion that the agriculture teacher is the leader of their program's advisory council was also expressed. Future research is recommended to investigate the barriers to increasing the advisory council influence. In addition, professional development programs should be developed that share best-practices on advisory councils to assist teachers in increasing the effectiveness of their local program advisory councils.

Louisiana Secondary Agricultural Educators' Perceptions of an International Experience toward Their Teaching Career

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Joe W. Kotrlik
Krisanna Machtmes
Louisiana State University

As societies across the globe are becoming interdependent, it is becoming increasingly essential for secondary agricultural educators to integrate an international component into the agricultural curriculum. The purpose of this study was to evaluate secondary agricultural educators' perceptions of participating in an international experience (IE) toward their teaching career. This study showed that more than three-fourths of secondary agricultural educators perceived participation in an IE to be beneficial to their careers, and nearly three-fourths perceived participation to be relevant to their careers. It is concluded that secondary agricultural educators perceive minor barriers to participation in an IE. In addition, secondary agricultural educators who perceive participation in an IE to be beneficial and relevant to their careers, perceive locations to be more appealing and activities to be more important than those who do not. Further, secondary agricultural educators who perceive participation in an IE to be relevant to their career perceived less barriers to participation in an IE. However, there were no statistically significant differences between perceived barriers of secondary agricultural educators who perceive participation in an IE to be beneficial to their career and those who do not perceive participation to be beneficial to their career.

Identifying Emergent Themes for Knowledge, Skills, and Dispositions in Globally Competent Agriculture Education Teacher Candidates

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Daniel D. Foster, The Pennsylvania State University
Melanie J. Foster, The Pennsylvania State University
R. Kirby Barrick, The University of Florida

Globalization is a force shaping the future of our world where our children will live. How to prepare our children to live successfully in this world is a challenge to today's education system. Researchers purport an efficient method to influence student thinking on globalization is to influence their teachers' thinking. Teachers with a global mindset can impact students to think beyond their own community, state and country. A course was offered to Agriculture and Extension Education majors to develop the knowledge, skills, and dispositions of global competency. Nineteen students from two land-grant universities traveled to South Korea for 10 days and engaged with Korean school-based agricultural education, Korean professional teacher organizations, and Korean student youth organizations as well as cultural experiences. Students were challenged to keep a reflective journal with provided prompts that were analyzed for emergent themes in global competency knowledge, skills, and dispositions. Findings from the journal prompt show that context matters to help students grow personally, professionally, and globally. Research implications suggest short-term study abroad embedded courses may not have enough impact to develop enduring globally competent skills of participating teacher candidates.

Preparing Agricultural Educators for the World: Describing Global Competency in Agricultural Teacher Candidates

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Melanie J. Foster, The Pennsylvania State University
R. Kirby Barrick, The University of Florida

Colleges of agriculture in the US have been challenged to produce candidates prepared with the knowledge, skills, and disposition to engage in a global agricultural industry. Studies show that one of the most influential factors in secondary student perceptions and outlook is their secondary teachers. The adult learning theory of transformative learning by Mezirow indicates a process of making a new or revised interpretation of the meaning of an experience, which guides subsequent understanding, appreciation, and action that is anchored in life experience. To have the most impact, experiences should be grounded in a context that students can relate. Nineteen teacher candidates participated in a course with a short term study abroad component that was grounded in global school-based agricultural education. Students were administered a researcher-developed instrument measuring knowledge, skills and dispositions of global competency three times: round I -prior to the course, round II -after the course prior to the travel experience, and round III after the travel experience. Findings indicated substantial, sustained change in the candidate knowledge, candidate perceptions of knowledge, candidate perceptions of skills, and candidate perceptions of dispositions related to global competency. Further research is recommended to measure impact on practice in the secondary agriscience classroom.

Agricultural Students' Attitudes and Opinions:
Can Reusable Learning Objects Alter Students' Perceptions of an International Setting?

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Understanding students' attitudes, opinions, and perceptions is a critical component of the educational process. This understanding becomes even more critical when one considers the need to encourage global awareness as instructors strive to identify ways to positively impact student perceptions related to international settings. The purpose of this study was to measure the impact of reusable learning objects (RLOs) that were created related to the culture of Trinidad and Tobago on undergraduate agricultural students' attitudes about the country. There were three phases to the study: creation of the Thurstone scale, administration of the pre-assessment, and administration of the post-assessment. The population of the study consisted of four classes containing a total of 103 students in a College of Agriculture. Findings revealed that viewing the RLOs had an impact on students' attitudes toward the culture of Trinidad and Tobago. Implications exist for the creation and delivery of vicarious learning tools and for the globalization of students.

Measuring Florida Extension Faculty's Agricultural Paradigmatic Preferences

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As the demand for sustainable agriculture has increased in policy and communities, colleges and institutions have adopted this paradigm into their goals and objectives. The University of Florida has identified agricultural sustainability as a major goal. Extension agents have been identified as critical information sources, important to producers who wish to pursue sustainable agricultural growing techniques. However, previous research has concluded that an institution's goals may not be represented by the actions and beliefs of its staff members (Eveland, 1986; Minarovic & Mueller, 2000). While Extension faculty have been identified as change agents in the shift to a more sustainable agriculture, the literature contained little regarding Florida Extension agents' perceptions towards this topic. This study utilized an updated Alternative and Conventional Agricultural Paradigm (ACAP) scale instrument to quantitatively measure Florida Extension agents' agricultural paradigms. Within a potential range of 24 – 120, with higher values indicating a stronger alignment with sustainable agriculture, the Sustainability Score mean for Florida Extension agents was 80.64. The study identified three paradigmatic groups: Conventionals, Moderates, and Sustainables. The authors determined that University of Florida Extension faculty are supportive of their organization's goals and objectives related to sustainable agriculture, and likely to facilitate teaching about this topic given appropriate training and resources.

Information Seeking Habits of Montana County Extension Agents

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Nikki Bailey, Montana State University
Alexandra Hill, Montana State University

Extension agents face unique challenges in finding precise information when trying to meet the educational needs of their clientele. The purpose of this study was to examine the educational resources used by Montana State University Extension agents. An online survey was administered with questions that sought to evaluate agents' motivations for seeking information, perceived quality of informational sources, frequency of source use, self-efficacy and barriers to finding information, and professional development preferences related to informational needs. Agents reported client questions (93.8%) and program/workshop planning and presentations (91.7%) as the main reasons for seeking professional information. Respondents unanimously reported that when searching for information via the internet, it was filtered by university, Extension, and other .edu sources. The only information source a majority of agents reported using on a daily basis was the general internet. Notably, this source was also reported as the least credible. Agents rated trustworthiness and quality of the informational source as the most important factors for professional use. The most frequently reported barriers to finding information were lack of time, technology, inadequate support staff, funding/cost, and insufficient specialists. Preferences for professional development were budget conscious opportunities, technical subject education, program planning, and research education.

Louisiana Extension Educators' Perceptions of the Benefit and Relevance of Participating in an International Extension Experience toward Their Career

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The purpose of this study was to assess Extension educators' perceptions of the benefit and relevance of an international Extension experience (IEE) toward their career. It was concluded that almost two-thirds of Extension educators perceive that participation in an IEE is beneficial and relevant to their careers. Further, Extension educators perceive the following barriers to participation in an IEE: a) cost, (b) time commitment, and (c) work obligation. Extension educators who perceive participation in an IEE as beneficial and relevant to their career perceive the locations rated for an IEE to be more appealing and the activities they experience during an IEE to be more important than Extension educators who do not perceive an IEE as beneficial or relevant to their career. However, no differences exist in Extension agents perceptions of barriers between educators who perceive participation in an IEE as beneficial and relevant to their career and those who do not perceive that an IEE as beneficial and relevant. As a result of these findings, it can be recommended that Extension administrators should put forth an effort to promote and create opportunities for Extension educators to participate in an IEE.

An Exploration of the Formal Agricultural Education System in Trinidad and Tobago

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A team of nine researchers from the United States spent 10 days exploring the formal agricultural education system in Trinidad and Tobago from primary education through post-graduate education. Data were collected from interviews and observations from students, teachers/instructors, agricultural producers, and the general public. The team concluded that (a) the people in Trinidad and Tobago involved in agriculture (teachers, students, and producers) are passionate about agriculture, but believe that the general public looks down on agricultural work; (b) Trinidad and Tobago has the capacity to develop a well-trained workforce through a comprehensive agricultural education system that spans from primary education to PhD level instruction; (c) agricultural educators at the postsecondary level have very little pedagogical training; and (d) there is very little interaction between the various educational programs.

Relationships between Agriculture Teaching Efficacy and Decision to Teach Among Agricultural Education Majors

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This study implemented a correlational research design to identify relationships between agriculture teaching self-efficacy and decision to teach among undergraduate agricultural education majors at an 1862 Land-grant University and a regional state school who had not completed their student teaching internship (n = 63). Teaching self-efficacy was studied through the domains of classroom, FFA, and SAE since agricultural education teachers have a set of skills they must master in addition to the skills needed by general educators. Results indicated self-efficacy was highest for the SAE domain, followed by FFA and classroom domains respectively. Most participants planned to teach if the perfect opportunity presented itself, and there was a moderate and positive relationship between FFA teaching efficacy and decision to teach as well as SAE teaching efficacy and decision to teach.

Developing Professional Standards for Teacher Educators in Agriculture

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The role of teacher educators in agriculture demands a specific set of knowledge, skills, and dispositions unique to the profession. While standards exist for teacher educators in general and program standards exist for agricultural education teacher preparation programs, little knowledge is available on standards for teacher educators in agriculture. The purpose of this study was to develop a set of professional standards for teacher educators in agriculture at institutions of higher education. A modified Delphi approach was utilized to achieve the purpose; 30 experts in the field were selected to help answer the research questions. The results yielded 260 statements on what teacher educators in agriculture should know and be able to do, grouped in 21 primary standards. Additionally, a conceptual model for what teacher educators in agriculture should know and be able to do was developed to help guide the career responsibilities of professionals in the field. Future studies are warranted to determine if a more meaningful and interpretable set of items can be established through statistical analysis. The profession of teacher educators in agriculture can use the results to begin dialogue on the topic in an effort to show the uniqueness, relevance, and necessity of the profession.

Flipping an Agricultural Education Teaching Methods Course

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Flipping or inverting a course is a relatively new approach to structuring a course. Using this method, the lectures traditionally delivered during regularly scheduled class time are converted to a media for delivery online, often in the form of videos. Students are expected to view the online lectures prior to class. Then in turn, class time is used for a variety of application-type activities. This study documents student perceptions of flipping an agricultural education teaching methods course. Based on data from a focus group with students, it was concluded that the preservice teachers thought that the flipped classroom approach aided their learning of the teaching methods and the teaching and learning principles presented in the teaching methods course. However, the preservice teachers offered numerous suggestions for improving the flipped classroom experience.

Preservice Agricultural Education Teachers' Perceptions of Their Ability to Perform Skills Related to Agricultural Mechanics: A Longitudinal Study

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This longitudinal trend study sought to determine the perceptions of preservice agricultural education teachers regarding their ability to perform welding related skills at the beginning of the semester in a mechanized agriculture course centered on metal fabrication. Further, this study sought to compare those perceptions to their final course grade at the end of the semester. Preservice agriculture teachers (N = 240) who completed the course between the fall 2006 and spring 2012 semesters served as the population for the study. No preservice teacher in any semester indicated an excellent ability in performing any of the welding related skills. However, skills related to SMAW and GMAW tended to be rated higher than those related to GTAW or OAW. The course instructor should be made aware of this discrepancy and encourage students to seek additional experiences in metals and welding. Then, the course instructor should continue to collect these data at the beginning and end of the course to determine the impact these changes have on students' ability to perform and teach the skills as future instructors. Similar studies should be conducted in other areas of agricultural mechanics, such as small gasoline engines, plumbing, and agricultural structures.

Classroom Instruction and FFA/SAE Responsibilities Creating the Most Stress for Female Teachers in the Southeast

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Teacher attrition research in agricultural education has found that teachers are at high risk of leaving the profession early in their careers (Kelsey, 2006; Myers, Dyer, & Washburn, 2005; Heath-Camp & Camp, 1990). In addition, female teachers are more likely to leave the profession than male teachers (Kelsey, 2006; Thompson, 1986). Identified dis-satisfiers include lack of administrative support and working long hours (Boone, 2003; Moore & Camp, 1979). Lazarus's Theory of Psychological Stress indicates that once a teacher appraises a stressor they will seek to master, tolerate, or reduce the demands of the stressor (Lazarus, 1991). If mastery is not deemed possible, toleration and/or reduction of stressor demand could result in attrition from the profession. By identifying specific stressors related to classroom instruction and FFA/SAE responsibilities, coping strategies may be developed to aid in reducing stress for female teachers. Results indicated that preparing proficiency applications, planning FFA banquet, preparing CDE teams, paperwork/reports, creating new curriculum, and lack of teaching materials were the FFA/SAE responsibilities and classroom responsibilities creating the highest amount of stress. Time management strategies, especially related to planning spring semester events when FFA banquets are held and applications are due, may be useful for the teachers in this study.

Identifying Barriers of Supervised Agricultural Experience Implementation Perceived by Preservice Agricultural Education Teachers: A Longitudinal Study

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The purpose of this study was to ascertain whether preservice agriculture teachers perceived Supervised Agricultural Experience (SAE) to be important and identify perceived barriers to conducting SAE. A census of the junior level agricultural education course at Oklahoma State University was conducted to gauge perceptions at the beginning and end of the course. This study was framed around Ajzen's Theory of Planned Behavior. These preservice teachers perceived SAE to be an important component of the total agricultural education model and that SAE was important at the secondary school they attended. The item "[t]here are new SAE categories, such as research that I am not familiar with conducting" was perceived to be the greatest barrier both at the beginning and end of the course by the preservice teachers. It is recommended that preservice agriculture teachers be exposed to all types of SAE. This would allow preservice teachers to perceive they have more control over this particular barrier of SAE implementation. In addition, this cohort of preservice teachers should be surveyed over time to determine whether their perceived barriers of SAE implementation change as they progress in the teacher preparation program. In-service agriculture teachers also should be surveyed to determine if perceived barriers differ with professional experience.

A Quasi-Experimental Study to Explore the Interaction Between Students' Learning Outcomes and Preferred Learning Style in a Non-Formal FFA Camp Environment

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Robert Terry, Jr., Oklahoma State University
Kathleen D. Kelsey, Oklahoma State University

Twenty-four states host FFA summer camps to support adolescent maturation along with indoctrination into the culture and values of the FFA. Camps typically include a variety of activities designed to engage members in social activities and non-formal academic content. More than 1500 campers attend the Oklahoma FFA Alumni Leadership Camp annually and are taught leadership curriculum. Using a split-plot factorial repeated measures quasi-experimental design, we established learning styles of campers and the relationship between learning style and learning outcomes. Campers did not retain knowledge taught over time regardless of learning style and no differences were found between learning outcomes and learning style. However, extroverts had more positive attitudes toward camp than introverts. Camp planners are advised to developmentally evaluate the use of academic curriculum during camp and to attend to the unique psychosocial needs of introverts to improve their attitudes toward camp.

An Examination of Student Learning Outcomes and Knowledge Retention at FFA Summer Camp

Nicholas R. Brown, Oklahoma State University
Robert Terry, Jr., Oklahoma State University
Kathleen D. Kelsey, Oklahoma State University

The National FFA Organization is committed to providing non-formal learning activities focusing on leadership. Summer camps are a major component of FFA activities and concentrate on personal growth, leadership development, and recreational activities for youth. This repeated measures study determined the level of cognitive gain and the amount of information retained by campers who participated in the 2011 Oklahoma FFA Alumni Leadership Camp and was informed by Vygotsky's sociocultural theory, a lens for viewing camper learning in the context of social interactions. In addition, the study described the relationship between learning outcomes and selected characteristics (sex, race, age, grade level, socioeconomic status, years of camp attendance, chapter FFA officer status, and grade point average) of participants. On average, campers doubled their score from the pretest to the posttest but the amount of information retained after six-months was negligible. Three personal characteristics were related to camper performance: GPA, socioeconomic status, and chapter officer status.

The FFA Sweetheart: Past, Present and Future(?)

Jillian Casey, North Carolina State University
Gary Moore, North Carolina State University

This study documents the history of the FFA Sweetheart program, examines the current practice of having a FFA Sweetheart and raises questions about the future of the FFA Sweetheart program.

The practice of having a FFA chapter sweetheart started in the 1930s and grew in popularity through the next four decades. The sweetheart attended the chapter banquet and represented the chapter at school events and other functions such as the county fair. Even though the FFA Sweetheart program was never sanctioned by the National FFA they did sell sweetheart jackets and other sweetheart supplies from 1949 until 1993. State level sweetheart competition was common in many states.

After girls were allowed into the FFA in 1969 the Sweetheart competition at the state level slowly disappeared; but many chapters continued to have a Sweetheart. Today chapters that have a FFA Sweetheart often have a male counterpart known as the Sweethunk or FFA King. The selection of the FFA Sweetheart (or Queen) has, in many instances, changed from a popularity/beauty contest to a competition involving fund raising, knowledge of agriculture, public speaking and advocacy for a cause.

The researchers make several recommendations regarding the future of the FFA Sweetheart program.

Promising Practices of Dairy, Horse, and Livestock Evaluation Career Development Event Coaches: A Mixed-Methods Study

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Steve McKinley, Purdue University
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Career Development Events (CDEs) are a traditional learning experience offered to thousands of youth through venues such as 4-H, FFA and breed associations. Adults coaching these youth come from a variety of backgrounds, with a wide range of formal and non-formal training in preparation and coaching of a team. The purpose of the present study was to describe promising practices of successful dairy, horse, and livestock CDE coaches in Indiana. Utilizing the theoretical framework of social cognitive theory, the researcher interviewed expert dairy, horse, and livestock CDE coaches taking into account previous experience, coaching philosophy, coaching objectives, coaching style, and advice. A questionnaire was sent to the accessible population of all Indiana dairy, horse, and livestock CDE coaches to determine utilization of promising coaching practices and relationship to student performance. Twenty-seven promising practices and eight themes were identified from the interviews of expert coaches. Influential and motivating promising practices were found to be most utilized by coaches. Youth performance was related to utilization of promising practices, specifically competitive and expectancy related promising practices. Findings from this study suggest the utilization of promising practices would facilitate greater coaching success in terms of competition and youth development.

Identifying STEM Concepts Associated with Junior Livestock Projects

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John Rayfield, Texas A&M University
Lori Moore, Texas A&M University

Science, technology, engineering, and mathematics (STEM) education is intended to provide students with a cross-subject, contextual learning experience. To more fully prepare our nation's students to enter the globally competitive workforce, STEM integration allows students to make connections between the abstract concepts learned in core subject classrooms and real-world situations. FFA and 4-H programs are intended to provide students with hands-on learning opportunities where abstract core subject principles can be applied and more fully understood. Junior livestock projects through FFA and 4-H can provide rich connections for students between what they learn in school and how it is applied in the real world.

Using a modified Delphi technique, this study identified 21 STEM concepts associated with junior livestock projects. According to the panel of experts, math and science concepts were more prevalent in junior livestock projects. Conversely, experts identified fewer technology and engineering concepts as being present within junior livestock projects. The link between science, technology, engineering, and mathematics, core subject education, and the concepts present in junior livestock projects should be emphasized in curricular and programming efforts.

A Secondary Agricultural Education Student Picture of Student Apathy

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Student motivation continues to be a source of concern for educators. This phenomenological study captured the voices of secondary agriculture students as they shared their perspectives and experiences surrounding student apathy. Four focus group interviews were conducted at four central California high schools with distinguished agriculture programs. The following question guided the research: What experience do secondary agriculture students have with student apathy in their academic environments? Findings suggest student apathy is born of personal choice and grown through mediocre teaching, archaic assessment and the absence of learning purpose. Recommendations suggest students, teachers, the local school and teacher educators form a unified front to combat the phenomenon through purposeful and consistent action.

Profiling the Youth Leader: Personality and Emotional Intelligence Trends and Their Relationship to Leadership Skills

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The transfer of leadership to younger generations is an important factor in agricultural communities and is likely one reason developing leaders is a central mission of many youth organizations, including 4-H and FFA. In adults, researchers have extensively explored the relationship between personality traits and leadership (Judge, Bono, Ilies, & Gerhardt, 2002), *but a clear profile of youth leaders has not been developed. This profile could help in planning for and developing the next generation of community leaders. In this study, we explored the relationship between traits, including the Big-Five model of personality and emotional intelligence, and self-perceived leadership skills in youth participating in summer leadership conferences. Emotional intelligence and age predicted the youths' self-perceived leadership skills. The potential need for youth leadership development programming to include, and perhaps even focus on, emotional intelligence is outlined.*

Factors Influencing Agricultural Leadership Students' Behavioral Intentions: Examining the Potential Use of Mobile Technology in Courses

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Mobile technology is pervasive at institutions across the U.S. The study was framed with self-efficacy theory, self-directed learning theory, and the unified theory for acceptance and use of technology. The purpose of this study was to assess undergraduate students' behavioral intention towards mobile technology acceptance in agricultural education courses. The population was undergraduate agricultural leadership students (N = 687) in a department of agricultural education at a land-grant university. Random sampling was employed to assist the researchers in answering the study's objectives and to generalize findings to the target population. Survey research was employed as the data collection method and descriptive statistics, correlations, and multiple regression were implemented to analyze the data. Three hundred forty-four students were surveyed and 88.10% (n = 303) of the sample responded to the survey. Self-efficacy, level of self-directedness, and GPA explained 32% of the variance of students' behavioral intention to use mobile technology. The data suggested students are accepting the use of mobile technology in academic settings to enhance learning. By developing a better comprehension of factors that influence student's behavioral intentions with mobile technology, institutions may improve student learning and better assist institutions achieve strategic objectives through disseminating institutional information with mobile technology.

The Effect of Undergraduate Extracurricular Involvement and Leadership Activities on Community Values

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The purpose of this study was to examine extracurricular experiences that result in increased community values of the Social Change Model. Senior students in the College of Agriculture and Life Sciences at Iowa State University completed an online questionnaire about their extracurricular experiences. Leadership development was conceptualized using the social change model. The Socially Responsible Leadership Scale (SRLS–R2) was used to assess leadership community values. Students who participated in more clubs and organizations, students who reported spending more time per week involved in extracurricular clubs and organizations, students who served as an officer, and females scored significantly higher on the SRLS–R2 citizenship scale. Additional information was collected in regards to the clubs and organizations in which a student participated. Students who participated in college–wide organizations, Greek organizations, university–wide organizations, and social/recreational organizations scored significantly higher on the SRSL–R2 citizenship scale than students who did not. Participation in major–related organizations, competitive/team based organizations, faith–based organizations, or community–based organizations did not provide significant results.

This manuscript is a product of the Iowa Agriculture and Home Economics Experiment Station, Ames, Iowa. Project No. 3713 and sponsored by Hatch Act and State of Iowa funds.

The authors would like to acknowledge the national clearinghouse for Leadership Programs and the Center for Student Success for allowing us to use the SRLS–R2 instrument.

A History of Professional Associations for Teacher Educators in Agriculture: 1929 to Present

James Connors, University of Idaho

The history of professional organizations for teacher educators in agriculture is long and diverse. As formal vocational agriculture programs were established in the early 1900s it became evident that there was a need for professionally trained vocational agriculture teachers. This demand for agriculture teachers resulted in the new profession of teacher trainers, which evolved into teacher educators in agriculture in departments of agricultural education in land-grant universities across the country. The professional organizations started as informal social gatherings to discuss critical issues facing agricultural education in the 1920s. As the century progressed, so did the teacher education profession and the corresponding organizations. The organizations expanded their scope to include formal administrative structures, scholarly conferences, refereed research journals, professional development activities, research conferences, and innovative poster presentations. Throughout their history, the professional organizations for teachers reached out to collaborate with other professional organizations in the areas of education, vocational education, teacher education, and scientific agriculture. This historical research study presents a synopsis of the 84 year history of professional organizations for teacher educators in agriculture.

Trends in Agriscience Fair Participants' Perceptions of Science and Agriculture

Jessica M. Blythe, University of Florida
Catherine A. DiBenedetto, University of Florida
Brian E. Myers, University of Florida

There is a national cause of concern for the state of science education in the United States, especially as the demand for a scientifically literate workforce has increased. While the opportunities for school-based agricultural education to strengthen the ties between science education and agricultural education have been explored, there is little known about how extracurricular activities, such as the Agriscience Fair, can impact students' attitudes toward science. The purpose of this study was to describe Florida Agriscience Fair participants' attitudes toward science and agriculture at two different points in time to investigate trends. Participants from both the 2007 Florida Agriscience Fair and the 2012 Florida Agriscience Fair indicated positive attitudes toward science, though the 2012 participants had stronger overall attitudes toward science and agriculture. The findings also indicate that there is a substantial correlation between student attitudes of science and agriculture. While the implications and findings from this study cannot be generalized past the respondents, the study can be used as a foundation for future research exploring changes in students' attitudes toward science and agriculture over time.

Agriscience Fair Participants' Perceptions of Science and Agriculture

Jessica M. Blythe, University of Florida
Brian E. Myers, University of Florida

As the demand for a workforce skilled in scientific and problem solving skills increases, the opportunities to strengthen ties between agriscience education and science education need to become more evident. The purpose of this study was to ascertain the perceptions of science and agriscience held by student participants of the Florida Agriscience Fair. The participants indicated their perceptions of science and *agriscience were positive and the findings indicate there was a substantial correlation between the two attitude constructs, with the agriscience perceptions being slightly stronger than the science perceptions. Respondents also indicated that most often teachers and family were the ones to provide support and assistance in the development of the project. When choosing a topic for a project, most participants indicated the idea arose from a life experience or observation. While implications and findings from this study do not suggest drastic changes in the Agriscience Fair practices, and generalizations should not be made past the respondents, the study can serve as a foundation for future research expanding the possible relationships between agriscience fair participation and student attitudes toward science and agriscience and the potential careers within.*

The Effect of Vee Maps and Laboratory Reports on High- and Low-Order Content–Knowledge Achievement in Agriscience Education

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Instruction in the laboratory is essential to the success of a total agricultural education program. The development of students' critical thinking, argumentation skills, technical skills, reasoning ability, and engagement are all found within the agriscience laboratory. Yet, utilizing the laboratory setting to its maximum potential is challenging for the instructor. The development of sound research-based assessment tools that enhance high-order thinking and are easily incorporated are needed in secondary agriscience education. This quasi-experimental study investigated the effect of two formative assessment tools on student high- and low-order content knowledge achievement. The Vee map was compared to the standard laboratory report in six different secondary schools across the state of Illinois. Utilizing student pretest score as a covariate, there was a statistically significant difference between groups on the high-order thinking posttest. Further, the study indicated that nine weeks later students who utilized the Vee map retained more low- and high-order knowledge than those who utilized the standard laboratory report. This study recommends the use of the Vee map as an effective formative assessment tool that should be utilized in agriscience education.

Correlation of Secondary Agricultural Education Students' Science Achievement to Number of Agricultural Education Courses Passed

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This study sought to determine the relationship between number of agricultural education courses passed and science achievement of regular education and special education agricultural education participants and concentrators. This study found that regular education agricultural education concentrators (n=1,320) had a statistically significant higher Georgia High School Graduation Test (GHSGT) science mean score than regular education agricultural education participants (n=2,345) with a GHSGT science mean score of 238.77. ($F_{(1, 3664)} = 3.883$, $p = .049$) at a priori alpha level of .05 although the effect size was .1 which was small. A point-biserial correlation test did reveal a low, but positive and statistically significant relationship between the number of agricultural education courses passed and GHSGT science scores of all regular education students. Special education students who were agricultural education concentrators did have a statistically significant relationship with science achievement on the GHSGT. Regular education students who were agricultural education concentrators did not have a statistically significant relationship with science achievement on the GHSGT

Perceived Levels of Teacher Self-Efficacy among Secondary Arizona Agricultural Education Teachers

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The purpose of this study was to describe the level of teacher self-efficacy among novice (one through five years teaching) and experienced (more than five years teaching) secondary Arizona Agricultural Education teachers related to classroom, FFA, SAE, and content domains. A mailed questionnaire generated an 80% response rate (n = 74). Arizona Agricultural Education teachers reported high levels of efficacy in all constructs. Experienced teachers were slightly more efficacious in all of the constructs, compared to novice teachers. Opportunities for novice and experienced Agricultural Education teachers should continue to be a primary focus for teacher preparation programs, teacher associations, and state departments of education.

The Thornless Rose: A Phenomenological Look at Decisions Career Teachers Make to Remain in the Profession

Mindi S. Clark, Oklahoma State University
Kathleen D. Kelsey, Oklahoma State University
Nicholas R. Brown, Oklahoma State University

Attrition among the agricultural education profession is concerning as approximately 50% of agriculture teachers leave within the first six years of teaching (Heath-Camp & Camp, 1990). Therefore, the purpose of the phenomenological study, conducted from an emic perspective, was to explore and describe secondary agriculture teachers' experiences related to remaining in the profession past the point of retirement eligibility. Four themes emerged from the study: (1) Career teachers experienced a transformative shift in mid-career, leading to career sustainability; (2) Career teachers experienced an abundance of support from students, parents, administrators, and community; (3) Career teachers maintained a balance between work and personal life; and (4) Career teachers reduced their workload later in their careers to coincide with aging. The essence deduced from the data revealed that teachers balanced work, family, and community life, reduced known stressors, and found satisfaction that led to long-term engagement in the profession. The emergent metaphor of this phenomenon was the Thornless Rose and served as the structural framework for reporting the findings. The results of this study can serve as a transferrable means to help teachers remain in the profession.

Using Coping Strategies to Manage Stress in Agriculture Teachers

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Kasee L. Smith, Utah State University

This purpose of this study was to examine the level of occupational stress among Utah agriculture teachers, and to determine the coping mechanisms utilized to manage teaching related stressful events. Teachers were asked to rank their level of occupational stress according to the scale used by the American Psychological Association Stress in America report. Additionally, respondents completed the Ways of Coping Questionnaire (Folkman & Lazarus, 1988) to identify a significant stressful teaching related event and further evaluate the coping mechanisms used to manage that event. Upon identifying coping mechanisms teachers utilized, results were analyzed and compared to demographic characteristics using Pearson bivariate correlation. Results concluded that agriculture teachers reported significantly higher levels of stress than the average American. A significant correlation was found between age and level of stress, indicating that levels of stress increase as agriculture teachers age. Additionally, significant correlations existed between age, length of teaching, time spent on teaching and teaching related tasks, and type of certification related to preference for specific coping mechanisms.

The Status of Science Integration into Agricultural Education According to State Supervisors: Twenty-five Years after the "Green Book"

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Brian E. Myers, University of Florida
Brian K. Warnick, Utah State University
Elizabeth Wilson, North Carolina State University

State supervisors of agricultural education play a critical role in curricular decisions in agricultural education as well as in the professional development of teachers in their respective states. While the integration of science has been discussed and researched over the past two decades, no studies have been conducted to determine the perceptions of state leaders in agricultural education toward science integration. Forty-five state supervisors of agricultural education completed an online survey to determine their perceptions of science integration and to determine the perceived level of integration in their respective states. Overall, state supervisors reported positive perceptions of science integration/enhancement in agricultural education programs. Further, the state supervisor perceptions were found to be similar to the perceptions of other agricultural education professionals, as reported by other researchers.

Aesthetic Qualities of Websites and Their Effects on Public Perceptions of Agricultural Issues and Organizations

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Morgan Large, University of Arkansas
Jefferson D. Miller, University of Arkansas

This study sought to evaluate perceptions of agricultural issues and organizations based on how information is presented visually in websites. Researchers intended the results to be used to help the agriculture industry more effectively communicate information through better website design and increased persuasiveness. The study was conducted through the use of three focus group sessions. The study used non-agriculture college students as participants. Four websites containing information on pink slime, or lean finely textured beef, were selected for the focus groups to review. Characteristics considered in the selection of the websites were positive or negative textual content, images/video, organization, typography, and colors. The study's first objective was to identify how webpage visitors' perceptions of agricultural issues and sources are affected by visual design. The second objective was to identify the specific peripheral cues in organizations' websites that were most important in the visitors' formulation of opinions related to agricultural issues or organizations. Users' perceptions of credibility were acutely affected by visual design. In websites with low aesthetic quality, participants thought the credibility of the site was very low, but for websites with high aesthetic quality, users' perceptions of credibility were much more positive, regardless of the content.

Exploring U.S. Agricultural Commodity Organization's Use of Blogs as a Communications Tool

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Courtney Meyers, Texas Tech University
Erica Irlbeck, Texas Tech University
Scott Burris, Texas Tech University

Current communications trends and social media have given individuals and organizations new means to foster relationships while stimulating new thoughts and creations. One particular form of social media is blogging, which allows people to connect with a community. Although any social medium creates connections with communities, blogs have the opportunity to share a wider variety of information than other forms of social media. The purpose of this study was to explore how agricultural commodity organizations use blogs as a communication tool. The researcher purposively selected nine U.S. agricultural commodity groups that had an organizational blog and collected data through in-depth interviews. The results indicated that the organizations started blogging to accomplish a number of goals and to reach new and traditional audiences. The U.S. agricultural commodity organizations used some online analytics and mentions on other social media outlets to measure blog success, but did not establish goals for their blog prior to launching the blog. The results for this study provide an understanding of how agricultural commodity organizations are utilizing blogs, which provides insight for others in the agricultural industry who may decide to use this technology.

A Little Learning is Dangerous: The Influence of Agricultural Literacy and Experience on Young People's Perceptions of Agricultural Imagery

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Billy R. McKim, Texas A&M University
Tracy Rutherford, Texas A&M University

Agricultural knowledge gaps are forming between American agricultural producers and the consumers they feed and clothe. These divides in agricultural literacy and firsthand experience in the food and fiber industry may affect how consumers perceive images of modern production practices that are presented in the news media and, subsequently, the industry itself. In a quantitative study, researchers surveyed students at a large public university about their agricultural literacy—knowledge and awareness of and familiarity with agriculture-related issues—and agricultural experience, their firsthand interactions with agricultural production. The students also responded to images taken from a television news broadcast about antibiotic use in livestock production. Using these three variables, an analysis of variance was conducted that revealed significant differences between students experienced in agricultural production and those somewhat inexperienced, indicating that those with minimal exposure to agriculture may have done so in a context related to traditional, rather than modern, production. A regression analysis also revealed that agricultural literacy was a significant predictor of reaction score. The researchers suggest that, given the ability of agricultural literacy to influence perceptions, agricultural literacy initiatives should be promoted, while experiences with agriculture may be enhanced by hands-on learning at agritourism sites and agricultural fairs and expositions.

Students' Reflections of Service-Learning in Agricultural Communications

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Courtney Meyers, Texas Tech University
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Cindy Akers, Texas Tech University

University faculty and instructors continuously search for teaching methods that will enrich student learning and critical thinking skills, spark creativity, refine technical abilities, and provide a greater understanding of the subject matter being taught. One approach to doing this is the use of service-learning to provide opportunities for experiential learning. Within agricultural communications, service-learning has been utilized as a pedagogical tool, but little research has been conducted to evaluate the use of service-learning in the agricultural communications curriculum. The purpose of this study was to examine the perceptions of students who completed service-learning projects in two agricultural communications courses during two separate semesters (Fall 2010 and Spring 2011) at a southwestern university. A qualitative case study design was used to collect data from 79 students related to their opinions of the service-learning experience and interactions with their clients. Students reported a positive attitude about the service-learning experience; improved upon their communication skills, and enjoyed the hands-on experience that is applicable to their future in communications. Service-learning can be an effective and enjoyable pedagogy for students to gain communication competencies. Future research is needed to further evaluate the use of service-learning in the agricultural communications classroom.

First Generation College Students: Motivations and Support Systems

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Shylo Adams, Cleburne High School
Cindy Akers, Texas Tech University
Scott Burris, Texas Tech University
Stephanie Jones, Texas Tech University

The number of first generation college students enrolling at universities is on the rise. These students often struggle with the transition into university life because of the lack of knowledge about this new environment. Some do not have support systems that are needed to be successful. Understanding how to assist these college students to improve retention is extremely important. A case study was conducted to determine the motivations and support systems of first generation college students within a college of agriculture at a university in the Southwest. Nine respondents from different departments in a college of agriculture and one representative of the university's first generation college student program were interviewed. It was determined that three factors lead to their enrollment: parental/family support, teacher encouragement, and self-motivation. The researchers also found most participants were involved in at least one department/college organization, religious group, or other university program. It was also determined these students depended upon three major support groups and systems, such as parents, friends, and advisers/professors. The researchers found the students were very satisfied with their experiences within the college and university as a whole.

Examining the Impact of Class Size, Enrollment Capacity and Room Capacity on Student Ratings of Instruction

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Anna L. Ball, University of Missouri
Michael Monson, University of Missouri

This study was conceptualized around the psychological literature regarding environmental stress and how the stressors of course and classroom crowding can impact students' perceptions of instructional effectiveness (Gifford, 2007). The purpose of this study was to examine the relationships between class size, room capacity and enrollment capacity for specific Agricultural Economics and Agricultural Education classes on end of semester ratings of instruction. The population included all undergraduate courses in agricultural education and agricultural economics taught at the University of Missouri (n=393). Hierarchical multiple linear regression was utilized to describe the variance in student ratings of instruction contributed by enrollment capacity and room capacity when controlling for class size. A total of 17,541 students were enrolled across 393 undergraduate courses representing 55 different instructors. It was concluded that when controlling for class size, enrollment capacity and room capacity contributed to 8% of the statistical variance in student ratings of teaching effectiveness and 11% of the course as a whole. This study illustrated that students can still be satisfied in courses with more students, however the study did not pinpoint the major source of that student satisfaction. Further research is warranted to better explain the remaining variance in student ratings of instruction.

Teacher Clarity and Student Achievement in Undergraduate Courses Taught in the College of Agricultural and Life Sciences

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University of Florida

A study of teacher clarity as perceived by students enrolled in undergraduate courses was conducted during spring semester 2012. The teacher clarity instrument designed by Cruickshank and others was administered in person. Demographic data were also collected about the course instructors and students. A total of 2,074 responses were received from students enrolled in 55 course sections. In general, teachers perceived as clear by their students tend to focus their teaching on providing specific information and key points. The instructors who were perceived as less clear focused less on teaching behaviors that allow students to think, to solve complex problems, and to assist students in remembering key points. Few relationships were discovered between the instructors' overall clarity and the demographic traits. The more experience in teaching and teaching the particular course, the clearer the instructors are perceived to be by their students. A low relationship was found between class size and clarity; teachers in larger classes tend to be perceived as less clear. Since agricultural teacher educators are considered to be the college experts on teaching and learning, teacher educators should provide professional development opportunities for college faculty to improve clarity and therefore improve student achievement.

Faculty Voices: Experiences Teaching Introductory Life Science Courses in Colleges of Agriculture

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Neil A. Knobloch, Purdue University
Bryan J. Hains, University of Kentucky

Projections indicate that STEM occupations are expected to grow in the years 2008-2018 by 17%, doubling the rate from the previous decade. Examining the minimal number of college students declaring STEM majors creates concern that a lag in the development of skilled STEM professionals has serious implications for the future of the U. S. economy within the global marketplace. The National Research Agenda for the American Association for Agricultural Education identifies the need for a scientific workforce that addresses challenges of the 21st century as a national priority. They also recognize that STEM coursework that is engaging, applicable, learner-centered, and relevant can increase both student motivation and knowledge retention. This study highlights the developmental experiences and teaching strategies employed by faculty in teaching first-year students. Consistent with Lortie's theory of apprenticeship of observation, the teaching strategies employed by the faculty were largely influenced by the "way they were taught". When describing teaching methods employed in the classroom, faculty members used words such as lecture and laboratory interchangeably as a location as well as an instructional practice. This study provides evidence for engaging university teaching faculty in a systematic process of professional development surrounding the teaching and learning process.