Poster Session Proceedings

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Fifty-one posters were received with 21 in the innovative idea category and 30 in the research category. Fifteen innovative posters were accepted (71% acceptance rate). Twenty-two posters were accepted for research (73% acceptance rate).

Poster Reviewers

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

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Saucier, Ryan	Sam Houston State University
Spiess, Michael	California State University, Chico
Thoron, Andrew	Univeristy of Florida
Westfall-Rudd, Donna	Virginia Tech

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3D Approach to Inclusive Agricultural Connections

Dr. Cecilia E. Suarez
PO Box 112060
Gainesville, FL 32611
352-273-2574
suarez@ufl.edu

Dr. Matthew Sowcik
PO Box 112060
Gainesville, FL 32611
352-273-2654
sowcik@ufl.edu

3D Approach to Inclusive Agricultural Connections

Introduction

According to the 2016-2020 National Research Agenda of AAAE, two current major challenges facing agricultural education are centered around the "need for a critical mass of the next generation of agriculturalists interested in food and agriculture" and to educate individuals not familiar with agriculture and generate and understanding of their connection to food and agriculture systems (Mercier, 2015). Classroom constraints of time, materials, and an ever increasing reliance on technology provide an additional challenge when trying to create meaningful learning opportunities and spaces that could lend themselves to assisting in countering the two aforementioned challenges in agricultural education. Furthermore, as communities grow more multicultural, diverse, and complex, the need for providing students spaces to be challenged by differing opinions and conversations as a way to increase intercultural and interpersonal communication is imperative to the success of the field of agriculture and students.

As educators in these unique and dynamic classroom spaces of agriculture and non-agriculture students, it is imperative to implement content and practices that both challenge agriculture students to connect and make relevant their messages about agriculture while also challenging non-agriculture students to construct an understanding of their role in agriculture and food systems. Understanding that education is a universal and mutually beneficial opportunity and focusing on the major agricultural education challenge of educating individuals not familiar with agriculture, authors of this poster, via leadership development courses, provide opportunities for both agriculture and non-agriculture focused students to engage in peer to peer teaching and learning by implementing classroom practices that challenge agriculture students to think of ways to best connect and communicate issues of agriculture to non-agriculture students while also challenging non-agriculture students to critically analyze common and current event scenarios to understand that agriculture is the common connection across society.

How it works

Authors propose a tri-method approach to creating the innovative praxis of *Inclusive Agricultural Connections* that utilizes a "3D approach" to help both agriculture and non-agriculture students to understand universal connections to agriculture. The 3D approach to facilitating *Inclusive Agricultural Connections* includes three steps: 1) Define, 2) dialogue, and 3) demonstrate.

Step 1, *Define*, requires educators to work with students to establish a common vocabulary and understanding around, not just agriculture terms, such as "organic", "GMO", and "food insecurity", but also around words and phrases that are common for students from various cultures. This allows for students to serve as co-authors of a general understanding of terms and assist in providing common language that may debunk information previously perceived as "true" about agriculture issues and cultural stereotypes.

Step 2, *Dialogue,* provides space for students to talk with each other. Instead of having professors lead the dialogue about why or how students can connect to diverse audiences, providing the space for students to utilize their own agency is imperative to supporting the growth of global leaders. The challenge of needing society to understand their connection to

agriculture is two-fold. Providing opportunities for agriculture students to learn how to practice inclusive language when talking to peers who may not understand agriculture is imperative to the success of agricultural development and sustainability. Additionally, providing in-class opportunities to demonstrate how agriculture is connected to daily life increases the understanding of non-agriculture students and opens up the possibility of further dialogue and commitment to agricultural community support.

Step 3, *Demonstrate*, challenges instructors to present different learning opportunities to empower students and provide them the context to achieve their own goals and actively understand the process of leadership. The practice of active learning is achieved using multiple teaching methodologies, such as utilizing non-agricultural articles (New York Times) to educate students on issues pertaining to agriculture and global societies. Utilizing the self as a learning demonstration, the educator can assist students, regardless of major, learn how to connect everyday occurrences, literature, and media, to agriculture. This empowers students to think more critically about how to engage with diverse communities with diverse understandings, and learn skills of how to use agriculture as a collaboration, rather than a divide.

Implications

Utilizing this praxis will not only increase the diverse dialogue skills of agricultural education students and assist them in understanding how to relate and communicate to diverse populations, but it also allows for non-agricultural students to understand and grow their relationship with agriculture. Although these students may not change majors into the agriculture field, their support as community members and voters is imperative to the progress of agricultural practices.

Future plans

At the end of the Fall 2016 semester, authors of this proposal will conduct a survey among students enrolled in their agricultural education and communication courses that focus on understanding how perception of agriculture's connection to society may have changed or formed throughout the semester. Students enrolled in these courses are both from non-agriculture majors as well as agriculture majors.

Costs/resources needed

Resources needed to support this tri-method approach to increasing intercultural communication and agricultural understanding within classrooms and among students are minimal, however, a great effort and willingness to utilize multiple modes of engaging teaching methods along with content that is not deemed "traditional" to agriculture is imperative to the success of this approach. For example, the utilization of peer to peer dialogue centered around complex problem solving assists in strengthening intercultural communication at various levels. Additionally, utilizing sources deemed "non-agricultural", such as The New York Times or other non-leadership readings, assists in helping all students, regardless of major make major connections of how agriculture is embedded in all aspects of academia and society.

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An Innovative Example of Service-Learning in Agricultural Education

Blake C. Colclasure & Andrew C. Thoron
University of Florida

310 Rolfs Hall
PO Box 110540
Gainesville, FL 32611
(217-898-2036)
bcolclasure@ufl.edu

An Innovative Example of Service-Learning in Agricultural Education

Introduction

The concept of service-learning can be traced back to the philosophical underpinnings of works composed by historic figures such as John Dewey and Aristotle (Roberts & Edwards, 2015). Despite the long-history of service-learning as a method to displace traditional education, in practice, service-learning still remains an emerging pedagogical technique in the typical public institution (Glickman & Thompson, 2011). Due to the gravitation of career and technical education towards hands-on work experience, the development of life-skills, and career-readiness, service-learning has been supported by agricultural education. In fact, many studies have found that service-learning is a preferred pedagogical technique in agricultural education (Mattingly & Morgan 2001; Slavkin & Sebastain, 2013; Webster & Hoover, 2006). According to Roberts and Edwards (2015), large disagreements regarding the pedagogical worthiness of service-learning continue in education, as community service is mistaken for true service learning. Service-learning includes community action in a form that has an academic purpose related to course content. Furthermore, it must provide students with time to reflect on what they have learned during those experiences (Franta, 1994). Therefore, it is essential that models of effective service learning activities are recognized and discussed in order to clearly identify the merit of service-learning in agricultural education. The authors of this innovative idea poster abstract believe to have exemplified a service-learning experience that can be used as a model for service-learning in our discipline.

How it works/Methodology

The service-learning experience was a week-long, overnight, work experience for junior and senior level high school students enrolled in agricultural construction and mechanics courses. This experience was done each year, for a three-year span, at a state-owned living campus for children with disabilities. Before each yearly experience, meetings with the childrens' campus administrators were conducted to identify specific construction related projects. Typical projects represented the equivalent of contracted work such as pouring concrete foundations and sidewalks, roofing, electrical wiring, building construction, and installing windows, siding, drywall, and gutters. For each yearly experience, full collaboration with campus administrators ensured a daily outline of trade industry-specific projects to be completed. In further collaboration, volunteers were sought and found who held careers in the trades. Examples of careers that volunteer tradesmen held included masonry professionals, electricians, roofing professionals, structural engineers, general laborers, and building contractors. Junior and senior high school students who were enrolled in upper level agricultural construction and mechanics classes who demonstrated interest in the construction trades had the opportunity to attend. Each year, around 25 students attended the service-learning trip. Students identified areas of career interest and they were pre-paired with industry experts for the week who held positions in that field.

The first morning of the work week all participants, including industry volunteers, met for a large breakfast to get to know each other. Following the breakfast, all participants traveled to the childrens' campus and unpacked bags and tools for the week. Shortly after, a thorough agenda

was discussed for the week. Students and industry-paired experts started working on projects shortly after. Each day of the work experience was treated as a typical work day for an individual in the trades. Students dressed and acted as they were members at a job site. Work began at 7 AM and went up until a group lunch. Following lunch, work resumed until job sites were at a stopping place, which was usually around 5 to 6 PM. A group dinner, social activity, and time to relax were provided after. Before bed, students were given a reflection prompt in which they wrote in a journal about their experiences that day and what they learned. This cycle continued the rest of the week.

Results/Implications

At the end of the week students were understandably exhausted, but were extremely proud of their work and the friends they made during the experience. Many students proclaimed that they learned more from this experience than any other they had in school. Students who were juniors couldn't wait until the following year's "work camp". Student journals reflected gains in technical skills and confirmations of a future career choice. Students were excited to apply what they learned in agricultural coursework to an actual job site under the guidance of a real-world professional. Journals also reflected students' appreciation for service. They were proud to help out a local community and children who were in need. At least once during each yearly trip, a special social event (cookout, birdhouse making, dodge ball game, etc.) was held with the children who were residents of the campus. Students got to know these individuals and were enlighten by getting to know children who are different and less fortunate than themselves. Lastly, many students wrote about the relationship they developed with their mentor in the trades. Many students remain in contact with these individuals today.

Future Plans

It is expected that the agricultural education program will continue this service-learning experience with the continued support of the childrens' campus and industry volunteers. This service-learning program continues to grow in size as new industry volunteers are recruited and past volunteers return. Expansion of this program is in the works. Projects that lie outside of typical construction and mechanics could be included. For example, students who are interested in landscaping and horticulture could be paired with industry experts from these trades to develop landscapes for the campus. Furthermore, collaboration between other CTE programs such as videography is being discussed to make a mock television show staring students who would explain to viewers how to do construction and home repair.

Resources Needed

This service-learning program would not be successful without the abundance of resource needed. The most important resource is a collaborating partner such as the childrens' campus in this example. This program is fortunate in that all building expenses were paid for by the campus. Industry partners who volunteer their time, work, and energy, as well as the tools they bring to the job site, is another component that makes this program successful. A high ratio of industry experts to students, increases the supervision and individual attention each student receives.

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AN INQUIRY INTO THE NEEDS OF FEMALE TEACHER CANDIDATES

Haley Hensley
205 Agriculture Building
University of Arkansas
Fayetteville, AR 72701
479-575-3837
hmhensley@uark.edu

Don Edgar
205 Agriculture Building
University of Arkansas
Fayetteville, AR 72701
479-575-2037

Donna L. Graham
205 Agriculture Building
University of Arkansas
Fayetteville, AR 72701
479-575-6346

AN INQUIRY INTO THE NEEDS OF FEMALE TEACHER CANDIDATES

Need for Innovation

The National Study of the Supply and Demand for Teachers of Agricultural Education (2010) found that females (54%) represented the majority of newly qualified agriculture teachers (*n* = 394) and males (46%, *n* = 338). However, male agriculture teachers continue to substantially outnumber females with 4,611males (54%) compared to 1,860 (22%) females employed (Kantrovich, 2010). This alludes to a possible question, what causes a larger segment of potential professionals not to enter or persist in their intended career path?

The emergence of women as agriculture teachers over the past 50 years has opened opportunities while revealing issues females still face in agriculture (Enns & Martin, 2015). Foster (2003) stated that the top three barriers women perceived were acceptance by peers (other male teachers), balancing career and family acceptance, and acceptance by administrators. Among those identified female teachers, 39.6% taught agricultural mechanics. In a study by Wakefield, Brandenburg, Pense, and Talbert (2010) agricultural mechanization, considered a male dominated area, caused difficulty when related to competence (32%) by female respondents. It has been further reported that agricultural mechanization was the highest competency that women strongly agreed as being challenging to teach (Wakefield et. al., 2010).

While women are under represented in the agricultural education industry (Kelsey, 2006), exploring women's perceptions on agricultural mechanization and preparatory programs may provide a clearer understanding of why men dominate the agricultural education teaching industry. The knowledge of female's perceptions can guide post-secondary teacher education programs, as well as, close the gap of gender dominance in the agricultural education industry. As purported through the National Research Agenda for Agricultural Education, creating meaningful learning environments is essential to educating future generation (Edgar, 2016).

Methodology & Program Phases

The idea of this project was to determine if intervention of agricultural mechanization modules enhanced the perception of skills for female agriculture teacher candidates. Phase one of the project has been completed which determined the perceptions of female teacher candidates. The population of study (*N* = 14) included 9 females (Spring 2015 & 2017) at the University of Arkansas. All participants identified in this study responded to a questionnaire about their ability to teach agricultural mechanics. The next phase of the project will include the development of skill enhancement modules towards mechanical technologies based on respondent feedback. During the semester of student teaching, participants will enroll in a Methods of Agricultural Education Labs course consisting of educational activities targeting identified needs and competencies. Furthermore, efficacy will be determined before and after completion of this course. Data will be compared to determine if the intervention of these activities enhanced their perceptions and abilities in agricultural mechanization for female teacher candidates. The final phase of this project will be to develop curriculum and gain further efficacy scores of female teacher candidates at other programs.

Initial Results and Implications

Data analysis revealed that before entering the student teaching block, having completed 12 credit hours of agricultural mechanization courses, respondents reported a value of 3.0 (*SD* = 1.63) on a 10 point scale towards their ability to teach agriculture mechanics. After completing a Methods of Teaching in Agricultural Laboratories course, respondents viewed their ability to teach as 6.14 (*SD* = 1.07). At the completion of their student teaching experience, participants noted their ability to teach agricultural mechanics as 7.71 (*SD* = 1.38). Therefore, female students (*n* = 9) perceived that their ability progressed from undergraduate course work to the end of student teaching. An ANOVA analysis determined significance through the three phases and significance was seen at each interval of data acquisition (F (2) = 21.18, p =.0001).

Based on the described pool of potential applicants for careers in agricultural education, improving abilities and efficacy of female agricultural education professionals will be paramount to a sustained workforce in the future. Further, agricultural education is not a program that allows for most teacher candidates to gain knowledge and skills in the diverse scope of traditional programs (pathways in animal, plant, mechanization, etc). Therefore, it is paramount that teacher candidates have the abilities and confidence to teach in other pathways than their sometimes singular focus. It is surmised that through the enhancements, similar action may be taken towards other pathways for teachers, regardless of gender, if success is warranted through further data analysis

Future Plans/ Advice to Others

As described, further data gathering and analysis will ensue throughout this project and the scope will be increased substantially. Perceptions of females will be gathered towards agricultural mechanization but this could be refined towards pathways of need in many other program areas. It is assumed that further refinement of the process and candidate needs will be found and refined through completion of this initial action research project. As others may determine needs of their teacher candidates based on gender or other needs, deciding on best practices should be attempted based on a validated process of inquiry similar to what guides this project.

Cost/ Resources Needed

Because of the initial inquiry of this project, resources are limited to a population of study and an instrument to guide the inquiry needs of this project. Students will need an estimated 5 minutes to allocate towards the initial instrument completion. Further time allocation will be based on student needs and developed curriculum and activities warranted towards the knowledge and skill attainment. Although in the future of this project, equipment and machinery should not extend beyond basic mechanization seem in agricultural education laboratories locally. Therefore, the need for extensive equipment should pose no problem because the needs of students should only extend towards basic mechanization knowledge and skills.

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CDE Workshops as an Innovative Collaboration with Pre-service Teachers

Ryan P. Clarke, Oklahoma State University
Hanna H. Aviles, Oklahoma State University
Marshall A. Baker, Oklahoma State University

456 Agricultural Hall
Stillwater, OK 74078
(405) 744-3686
bakerma@okstate.edu

CDE Workshops as an Innovative Collaboration with Pre-service Teachers

Introduction/Need for Innovation or Idea

Retallick and Miller (2010) established a model for early field experience in teacher education. When examining the teacher development stage of the model, the transition from peer to student interaction among pre-service teachers appears to be gradual. However, this transition is often abrupt, as logistics frequently prevent pre-service teachers from experiencing any sort of genuine, student interaction until they reach their student teaching centers. As such, there is a need for teacher education programs to facilitate more opportunities for pre-service teachers to authentically interact with students before they begin their student teaching experiences.

At Oklahoma State University, this need is being addressed through an innovative approach that connects pre-service teachers to students in authentic settings, builds awareness and participation in low-interest career development events (CDE), and models the teaching of agricultural content embedded within CDEs. This year, the first CDE Workshop is being offered to over 120 students interested in various CDE content areas. This "win-win" project aims to serve pre-service teachers, in-service teachers, and school-based agricultural education (SBAE) students in a unique way by building pre-service teacher confidence, lessening in-service teaching loads, and increasing student skill sets.

How it Works/Methodology/Program Phases/Steps

The CDE Workshop was designed around the Oklahoma State University Agricultural Education Teaching Methods course. This semester long course aims to equip pre-service teachers with a broad spectrum of teaching methods, as well as opportunities to prepare and teach lessons in the classroom setting. For the CDE Workshop, pre-service teachers were instructed to prepare a series of lessons pertaining to their assigned CDE. This concept allows pre-service teachers to develop lessons based on subject material that is applicable to quality contest preparation. Each lesson was designed to focus on a particular teaching method while also allowing the pre-service teachers to gain experience in an authentic setting. Throughout the semester, once-on-one coaching sessions were held to provide quality feedback in preparation for the workshop.

The workshop planning began with the identification of the six CDEs in Oklahoma with the lowest level of participation. This strategy was employed to stimulate the future growth of these CDEs, while also giving workshop participants the opportunity to be successful at the state level. The CDEs selected for the workshop included Milk Quality and Products, Floriculture, Environmental and Natural Resources, Food Science and Technology, Forestry, and Poultry Evaluation. The 20 pre-service teachers within the Teaching Methods course were split into six groups, and each student developed four 20-minute lessons for coaching throughout the semester, and a final 50-minute lesson based their assigned CDE content to be taught at the workshop.

Oklahoma SBAE teachers were contacted and invited to register their students for the workshop via *SignUpGenius*. Each of the six CDE areas was limited to 20 participants, allowing for a total of 120 participants. The workshop was offered free of charge and lunch was provided for both

SBAE teachers and students. The workshop was broken into three 50-55 minute sessions with a one-hour lunch break. For the duration of the workshop, participants remained in the same CDE area workshop they were registered for, while the pre-service teachers presented their lessons throughout the sessions. At the conclusion of the workshop, evaluative questionnaires were distributed to all participating parties.

Results to Date/Implications

Throughout the semester, constant growth was observed in the quality of the pre-service teachers' lesson plans and teaching ability. Overall, it was observed that the majority of the pre-service teachers had increased in his or her confidence level, and with the help or the coaches, were able to produce high quality lessons. The feedback from the participating students was primarily positive, with many students indicating an interest in furthering their knowledge and participation within the CDE area they were exposed to. The feedback provided by the SBAE teachers in attendance was also quite positive, as several participated alongside their students in order to increase their own understanding of a particular contest. Pre-service teachers reported feeling both satisfied and relieved, and several indicated that they felt much more comfortable going into student teaching after receiving authentic exposure to SBAE students.

Future Plans/Advice to Others

Oklahoma State University aims to establish the CDE Workshop as a biannual tradition within the Agricultural Education program. By affording pre-service teachers an authentic teaching platform and providing Oklahoma SBAE teachers and students exposure to unfamiliar CDE content areas, this workshop serves as a mutually beneficial venture. As such, to incentivize continued participation, this workshop must provide SBAE teachers and students the highest quality information and training possible. Moreover, given the overall scope of the workshop, it is recommended that a minimum of two to three months be allocated for lesson preparation and the making of logistical arrangements.

Costs/Resources Needed

The costs associated with facilitating a workshop of this kind depend greatly on the CDEs covered and number of participants. As part of each pre-service teacher's lesson plan, a list of necessary materials must be furnished. For this particular workshop, some items included dairy products, poultry carcasses and by-products, water sampling kits, timber cruising equipment, floral supplies, and GPS units. As such, Oklahoma State University spent approximately $1,200.00 on workshop supplies. Another $1,500.00 was spent on the participants' lunch and hospitality for SBAE teachers.

It is important to ensure pre-service teachers access state and national CDE training materials to answer event-specific questions regarding to contest content, rules, and structure. In order to provide the best instruction to the workshop participants, course instructors must ensure that the pre-service teachers become "experts" in their CDE content areas. Any additional content and contest material should be identified during the lesson planning stages.

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COLLECTIVE THINKING FOR EXTENSION: THE VALUE OF WORLD CAFE

Shannon Wiley
shann83@vt.edu

Sarah Bush
sabush17@vt.edu

Dr. Megan Seibel
mseibel@vt.edu

Department of Agricultural, Leadership, and Community Education
Virginia Polytechnic Institute and State University
Litton-Reaves Hall
175 West Campus Drive
Blacksburg, VA 24061
Phone: 540-231-6836

COLLECTIVE THINKING FOR EXTENSION: THE VALUE OF WORLD CAFE

Introduction/Need for Innovation

Extension professionals are often tasked with solving robust, interdisciplinary, nationwide issues, which plague their constituents. The U.S. Department of Health and Human Services National Prevention Strategy identified healthy and safe community environments, empowered people, elimination of health disparities, and clinical and community preventative services as strategic directions for prevention efforts (U.S. Health and Human Services, 2012). In response, Cooperative Extension conducted an assessment of national health trends and a strategic analysis, which resulted in the development of a National Health Outreach Conference and National Health Implementation Teams (Braun et al., 2014).

Implementation teams have been developed in the following areas: positive youth development for health, health literacy action, chronic disease prevention and management, health insurance literacy, and health in all policies education. For the 2016 National Health Outreach Conference, the pre-conference planner was tasked with creating a session, which involved midway reviews and input on the progress of the implementation team. The pre-conference theme was established as: "A Picture of Health: How are Land-Grant Universities Fitting into the Puzzle?" An interactive world café was developed to accommodate the 90 session participants in meaningful follow up discussions on the implementation team reports.

How it Works

World café is a structured methodology, which provides an opportunity for collective thinking through open dialogue between participants. World café is based on the assumption of participants having knowledge and experience within themselves, which they are able to communicate with others (Kempnich & Costanzo, 2014). The structure of this evolutional network is the opportunity for growth and development in explorations, knowledge-sharing, and innovative ideas (Schieffer, Isaacs, & Gyllenpalm, 2004).

The concept is simple; engaged dialogue, which focuses on information exchange and the generation of ideas for social action, in a relaxed environment with peers (Anderson, 2011). For the National Health Outreach Pre-Conference tables were set with two tables assigned to each team topic. Over the course of five 15 minute rounds, participants were encouraged to either visit all five topics one time, or select a couple of topics they were most interested in and visit both tables during the rotations. There were six overarching questions used as discussion prompts, which were arranged as three on each table. The design allowed participants to visit both tables of a given topic and offer input and discussion around all six questions. This design allowed participants to generate visioning for community development and viable solutions (Burke & Sheldon, 2010). For each round, notes were recorded on flip charts. Further, a host was placed at each table to summarize the previous conversations for the participants to continue fluid movement in conversation.

Results to Date

Observational field notes indicated that the majority of participants were fully engaged in all conversations. Often the group would begin by asking clarifying questions about the previous group's notes or original data reported by the implementation teams. Then, the group would participate in further discussion around the topic and questions posed. Notes written on flip charts were transcribed and shared with implementation teams. Further, a pre-conference

summary was developed to include the overarching themes and topics discussed at the world café session. This summary was reported at the opening general session of the conference. Overall, the data collected served as valuable feedback for implementation teams.

Advice to Others

The overall goal of world café is to bring about an emancipatory nature and empowerment of community members (Aldred, 2009). However, a few things need to be taken into consideration when preparing to conduct a successful world café. To begin, one must elucidate the context and discern the right participants for the event (Schieffer et al., 2004). This includes taking into account the role of power and supporting an environment built on authenticity and mutual respect (Delaney, Daley, & Lajoie, 2006). A facilitator then must focus on questions to start the conversation and provide an opportunity for participants to ask deeper questions (Schieffer et al., 2004). Table hosts should listen for patterns in responses, encourage equitable participation, and to decipher and share collaborative discoveries. With all these things in mind, world café provides an innovative way to generate collaborative visions through engaged collective dialogue.

Cooperative Extension prides itself on being a system where communication and collaboration are the backbone of the organization and the reason for continued program success. While communicative efforts continue to drive and influence decisions made within organizations, active methods of research indicate a shift in collaboration among Extension employees. According the Brown (2002), world café is both a technique for engaging people in group dialogue as well as a metaphor for the way we generate knowledge and make meaning of our world. World café provides an opportunity to improve collaborative efforts across Extension entities, while encouraging visioning, leading and learning together, enhancing community presence, showcasing an active presence of teamwork, and fostering collaborative learning (Sandmann & Vandenburg, 1995).

Cooperative Extension continues to work towards strengthening communities and families, while fostering the lives of constituents. Incorporating a world café approach ensures current knowledge and ideas are shared, heightening the ability to improve upon program facilitation and success. Although there are barriers for utilizing world café, such as proper facilitation, the opportunities and benefits at Extension events and meetings are endless. Extension professionals should consider world café as an approach for increasing communication and generating shared knowledge for programs and meetings.

Costs/Resources Needed

The resources and costs needed to effectively implement a world café approach are minimal. A world café approach requires multiple tables and chairs setup “café” style. Each table will require a table tent to label the respective topic. In addition, paper and a writing utensil are required to record responses. Flipcharts and markers are recommended as writing devices.

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CREATING THE TEEN EXCELLENCE IN LEADERSHIP INSTITUTE (TELI)

Sarah Bush
Graduate Assistant
Department of Agricultural, Leadership, and Community Education
sabush17@vt.edu

Dr. Megan Seibel
Assistant Secretary of Agriculture and Forestry
Office of the Governor Commonwealth of Virginia
mseibel@vt.edu

Benjamin Grove
Director of Development
Virginia Cooperative Extension
begrove@vt.edu

Dr. Tonya Price
Assistant Professor and Extension 4-H Specialist
Virginia Cooperative Extension
totaylor@vt.edu

Jeremy Johnson
Associate Specialist, Volunteer Development
Virginia Cooperative Extension
jejohns1@vt.edu

Virginia Polytechnic Institute and State University
Litton-Reaves Hall
175 West Campus Drive
Blacksburg, VA 24061
Phone: 540-231-6836

CREATING THE TEEN EXCELLENCE IN LEADERSHIP INSTITUTE (TELI)

Introduction/Need for Innovation

Current trends in positive youth development include providing new and innovative programs to adolescents, which incorporate the growth of the Five Cs: competence, confidence, character, connection, and caring (Lerner, Almerigi, Theokas, & Lerner, 2005; Larson, 2006; Crawford, Lang, Fink, & Dalton, 2011). Additionally, problem solving, decision making, and communication skill development within a leadership context is essential to foster career readiness (Rutherford, Stedman, Felton, Wingenbach, & Harlen, 2004). Youth leadership development programs have also been found to foster a sense of belonging, mastery, generosity, and independence amongst youth participants (Worker, 2014). With all of this in mind, a planning team was brought together to develop a robust teen leadership program in Virginia, which targeted motivated youth from both 4-H and FFA organizations under the pretense of collective capacity building.

In response, the team produced the Teen Excellence in Leadership Institute (TELI) program, which engages and develops outstanding teens to actively work to identify and address global issues that face communities today. TELI combines two face-to-face weekend seminars with two virtual for team project development and updates. Supplemental content on peer feedback interactions and political process engagement are integrated in recorded and archived virtual learning. In addition, youth-adult partnerships are incorporated based on previous research that demonstrates the effectiveness of these partnerships in positive leadership growth for teens (Anderson & Sandmann, 2009). The experiences fuse a well-rounded lineup of topics that lead youth to a more holistic consideration of their personal leadership skills and philosophies. The program supports the National Research Agenda for the American Association for Agricultural Education Priority 3- Sufficient Scientific and Professional Workforce that Addresses the Challenges of the 21st Century (Roberts, Harder, & Brashears, 2016).

How it Works

The TELI program was designed to meet the following goals: 1) to understand self and develop a personalized action plan for engaged leadership, 2) to network with other teens interested in learning about the issues facing youth and communities, 3) to design a team project to address community leadership needs in Virginia, 4) to learn more about advocacy and outreach that will improve the lives of others. Several frameworks and models reflect the overarching goals of the program and were utilized to create the TELI model. Ricketts and Rudd (2002) conducted a meta-analysis of youth leadership development and established a conceptual model that included five dimensions: leadership knowledge and information; leadership attitude, will, and desire; decision making, reasoning, and critical thinking; oral and written communication skills; and intra and interpersonal relations. With this model in mind, Chickering's (1993) Theory of Identity Development, which is commonly utilized within FFA, provided guidance for the development of the seven vectors: developing competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity. In addition, this program utilizes the 4-H Citizenship Framework by incorporating the key focus areas of civic engagement, service, civic education, and personal development (4-H National Headquarters, 2011). These models and frameworks were utilized to build a solid foundation for teen leadership development.

All program participants must have an application accompanied by a nomination form from their 4-H agent or FFA advisor. Participants are then selected and receive a partial scholarship to attend two face-to-face weekend seminars and two interactive virtual sessions. The full curriculum incorporates personal assessments, skill development, guest speakers, and team- and project-based learning. Topics include: Strengths-Based Leadership, problem solving style, group facilitation skills, youth-adult partnerships, team building, project collaboration, peer feedback and evaluation, leadership principles, and critical reflection. Such topics and skills are typically offered through adult programming. However, based on previous research, exposing teens early is an advantage for developing young leaders.

Each participant also works on an issue-based team project to identify and address a community-wide problem. Team projects are presented to an invited panel of agricultural and leadership stakeholders. Participants receive feedback throughout the process from the TELI leadership team as well as stakeholders. The participants each complete a personalized action plan, which is built upon for implementation into their daily lives upon completion.

Results to Date

At the conclusion of cohorts one and two, participants were surveyed and asked to indicate agreement with 16 4-H Citizenship common measures using a four-point Likert scale, reflecting on views before TELI and after TELI. The 16 4-H Citizenship common measures were chosen based on the goals of the TELI program to begin uniform data collection suitable for ongoing studies and sharing with youth practitioners (National 4-H Headquarters, 2011). Paired t-tests were used to examine whether statistical differences existed between pre- and post-survey results. Cohort one respondents indicated a statistically significant change ($p < .05$) for all 16 common measures evaluated. Cohort two participants indicated statistically significant change ($p < .05$) for 14 of the 16 common measures evaluated.

Future Plans

Currently in the third year of programming, TELI has evolved over time in response to participant survey data from both cohorts and focus group data from Cohort Two. The TELI team intends to develop a program manual for implementing teen leadership training utilizing the TELI model. This manual will provide a framework for other states to successfully replicate the program. We also plan to implement a sustainability/transition plan for ongoing leadership of the current program, holding true to program planning methods incorporating continuous evaluation for improvement. Additionally, given acquisition of adequate resources regionally, teams could be empowered to implement their issues-based team projects in their communities. At present, the project solutions are presented by the teams, but not enacted due to the geographically disperse nature of each project team and limitations imposed by resources and liability.

Costs/Resources Needed

A committed leadership team is required to dedicate time and energy into seminar development and implementation. The costs associated with the program included travel, lodging, conference room rental, meals, assessment instruments, and related activity costs. The average cost is approximately $450 per participant, costs are reduced by utilizing 4-H educational and conference centers for lodging and programming space. Each participant contributes a $199 programming fee and the remainder is paid for by a scholarship provided by foundation and individual donor funds.

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Cultivating Future Leaders of Tomorrow: The Mock Nominating Committee Program

Emily C. Hawkins, K. Jill Rucker, and Casandra Cox

University of Arkansas

kjrucker@uark.edu

Cultivating Future Leaders of Tomorrow: The Mock Nominating Committee Program

Introduction

Peter G. Northouse describes leadership as a "highly sought-after and highly valued commodity" (Northouse, 2016, p.1). Fortune 500 companies such as Tyson Foods, Walmart and J.B. Hunt use leadership training to help employees develop their leadership skills. Leadership training is necessary as research has shown the improvement of leadership capabilities when individuals have the opportunity to analyze, discuss, and personally practice leadership skills (Sogunro, 1997).

Leadership development through training should leave a lasting impression on student leaders so they continually grow throughout their careers. Northouse defines leadership as "a process," and describes the process as "not a trait or characteristic that reside in the leader, but rather a transactional event that occurs between the leader and the followers" (Northouse, 2016, p. 6). As students become experienced in leadership development they have the potential to "create a much stronger leadership pipeline within the FFA" (Rosch, Simonsen, Velez, 2015, p.237).

Each year the National FFA hosts a variety of leadership development conferences such as 212°, 360°, Blast Off, National Leadership Conference for State Officers, New Century Farmer, State Presidents' Conference, and Washington Leadership Conference. Leadership is one of the top three focuses of the National FFA as described in the organizational mission statement. The National FFA's mission statement is "FFA makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agricultural education" (National FFA, 2016). The [State] FFA Association also officers leadership training to [State] FFA members at the annual [State] Leadership Conference during the summer and the Greenhand Conference during the winter.

The purpose of the Mock Nominating Committee program is to allow potential state officers the opportunity to grow as leaders and prepare for the nominating committee process at the [State] FFA Convention. The goals for this program include:

1. Develop leadership curriculum to train future state FFA officers
2. Provide an opportunity for mentorship between current University of [State] students and [State] FFA members
3. Cultivate leadership skills in future FFA leaders by providing leadership training and personal feedback

Program Phases

The MNC program was created to help [State] FFA state officer candidates prepare to run for office. The MNC project is a two-step leadership training program whereby state officer candidates complete a series of six online leadership development modules before attending a one-day workshop hosted by leadership faculty, current university student leaders, and previous state officers. Previously, state officer candidates were provided no formal training to prepare them to run as a state officer candidate. Before the MNC process, candidates would arrive to the [State] convention not knowing what to expect unless they served on the nominating committee in previous year(s). The MNC provides the opportunity for potential state officer candidates to

develop and recognize their individual leadership competencies as well as provide candidates with an overall view of the formal three-day slating process at state convention. The MNC program begins two months prior to [State] FFA state convention with weekly module sessions. The series of six online modules focus on personal awareness, leadership competences, effective communication, formulating cohesive teams, FFA competencies, and engaging others to achieve goals. Each module challenges participants to utilize their leadership skills and knowledge to solve potential problems faced by state officers. The weekly modules include a PowerPoint presentation, a video discussion, and a weekly assessment. Additionally, participants receive weekly feedback on assessments from student mentors at [State] University. Student mentors are comprised of former state officers, agricultural leadership students, and current student leaders. Written feedback is provided to participants to encourage the further development and improvement of their leadership skills before the MNC workshop. Additionally, participants have the opportunity to call mentors to receive additional feedback or gain answers to questions.

Results

MNC is designed to be a comprehensive leadership training program to cultivate future organizational leaders in [State] FFA. The MNC program has been conducted during the past two years, with plans to continue the program in the spring of 2017. During the first year a total of 10 students participated in the MNC program. This inaugural MNC class produced four of the six state FFA officers. In 2016, fifteen students participated with five MNC graduates securing a position on the six-person state officer team. Positive feedback was provided from the state staff, the [State] FFA Executive Secretary, agricultural education teachers, and FFA advisors. Additionally, MNC mentors reported also benefitting from the experience as they were able to further develop personal leadership insights and teaching techniques.

Recommendations

Future plans include continuing to further develop the MNC program. Specifically, the program is expanding to incorporate other youth leadership development programs such as 4-H, FBLA, DECA, FCCLA, and FTLA. Moreover, the expansion of module topics should incorporate agricultural issues, community engagement, and personal ethics and integrity. It is further recommended that this program be duplicated in other states to encourage personal leadership development and training for future state youth organization leaders.

Resources

Resources used in MNC program were not necessarily of monetary value. Instead, time was the main resource used in this program to develop leadership curriculum, upload online modules, provide personalize feedback, and conduct the one-day workshop. A team of approximately 15 students was utilized throughout the program as well as three agricultural leadership and communication faculty members.

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Embracing the Undergraduate Experience: An Approach to Recruiting Secondary Agricultural Education Students

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Submitted by:

Mrs. Kendall M. Wright
Agricultural Education
University of Kentucky
503 Garrigus Building
Lexington, KY 40546
859-257-7587
kendallwright@uky.edu

Dr. Stacy K. Vincent
Agricultural Education
University of Kentucky
505 Garrigus Building
Lexington, KY 40546
859-257-7588
stacy.vincent@uky.edu

Embracing the Undergraduate Experience: An Approach to Recruiting Secondary Agricultural Education Students

Introduction/Need for Innovation or Idea

As vast amounts of millennials graduate from secondary schools and begin to research and apply for admittance to postsecondary institutions, recruiters from various colleges, specifically, recruiters from individual collegiate programs, must develop effective recruitment strategies in order to maintain enrollment numbers (Bulger, Jones, Taliaferro, & Wayda, 2015; Vander Schee, 2009). Recruitment presents challenges for postsecondary institutions. Because of the diversity in post-secondary education options, traditional college programs must compete for student consideration (Han, 2014). Recruiters for college programs must also be committed to dedicating the considerable resources and effort needed for attracting quality students (Bulger et. al., 2015). Institutions face changing demographic, social, and economic factors, which affect the decisions of students and the recruitment strategies, which attract them (Han, 2014; Rau & Hyland, 2003). Post-secondary institutions must develop a sales pitch designed to appeal to high school students in order to convince students they are the best academic fit for their goals (Bejou & Bejou, 2012; Mattern, Shaw, & Kobrin, 2010). Therefore, college programs must determine which recruitment strategies are the most effective. However, this task is made significantly more difficult as recruitment strategies do not fit all students or universities; rather, different institutions and different programs require different strategies as do different types of target student populations (Bulger et. al., 2015). Thus, Agricultural Education programs must develop specific strategies to attain high-quality pre-service teachers.

There is a national need for agricultural educators (Foster, Lawver, & Smith, 2015). Thus, universities with agricultural education programs must be strategic and aggressive in recruiting students. In order to recruit a diverse group of students to an agricultural education program, specific strategies must also be utilized (LaVergne, Larket, Elbert, & Jones, 2011). Developing a positive attitude toward agricultural education is important when recruiting pre-service teachers (Fraze, Wingenbach, Rutherford, & Lawrence, 2011). Furthermore, agricultural education programs must work to build value in their program among recruits (Vincent, Henry, & Anderson, 2012).

How It Works/Methodology

This innovative idea was put into action during the fall semester of 2011 and has evolved each year to include new aspects of recruitment. During the summer, potential recruits were identified at the State FFA Convention, the Institute for Future Agricultural Leaders, and through teacher recommendations. Throughout the semester, contact was made with the potential recruits via email and phone calls, and each recruit was invited to campus for a personalized college experience. Each student's college visit consisted of a meeting with the Director of Student Relations for the college, a tour with an Agriculture Ambassador, a meeting with the Academic Coordinator for Agricultural Education, lunch with current Agricultural Education students, attendance in an Agricultural Education course, and a Q&A with the Director of Undergraduate Studies for the Agricultural Education program. Promotional materials (folders and inserts) were developed to highlight the program and shared with students during their visit.

Prior to each student's visit, welcome flyers were made and posted in the building's elevator and in the foyer of the department. Upon arrival, students received a parking spot located near the college's main academic building. Students and parents had the opportunity to ask any questions they may have regarding the major or college in general. The students received a tentative schedule for their collegiate years. Dual credit and AP credit were discussed and adjusted for in the tentative schedule. The Academic Coordinator facilitated a discussion about agricultural minors and assisted the students in incorporating the classes for their desired minor(s) into their potential schedule without adding additional courses beyond the required agricultural electives. During lunch, current Agricultural Education students met with the student to share their experiences in the program. Recruits were then escorted to the introductory course, where they sat among the students and participated in the day's lesson. Following the visit, the student received a thank you note from the academic coordinator.

Results to Date/Implications

Prior to utilizing these recruitment practices, the enrollment in the Agricultural Education program was 37, with only in-state students. The current enrollment has doubled with approximately 70-80 students, with approximately 15% of that number being out of state students. In the spring of 2016, over 50% of Agricultural Education students earned recognition on the Dean's List. The majority of students are now planning to earn anywhere from one to three academic minors, while some students are also pursuing a second agricultural Bachelor's Degree. Prior to implementing these practices, few Agricultural Education students were active in extracurricular organizations on campus. Currently, the majority of students are active in various organizations, including Ag Ambassadors, Student Government Association, and MANRRS. By the end of the 2017 spring semester, ten undergraduate students who have shown academic and social maturity were selected to complete half of student teaching in Australia.

Future Plans/Advice to Others

The implemented recruitment practices have become a way to recruit high-level students to the Agricultural Education program. Each year, the number and quality of recruits will continue to rise. As recruitment continues, the demographics of students will also increase. Additional practices will be implemented to augment the current practices, including taking pictures with the new recruits for social media posts and hosting a "Signing Day" for committed recruits at the annual Field Day. Increasing our number of recruits will assist in fulfilling the national need for agriculture teachers.

Costs/Resources Needed

During the summer, $1000 is budgeted for the purchase of promotional materials for the entirety of the academic year. Moreover, a professional printed folder and informational handouts were developed at the beginning of the academic year for $800. College tours were provided by the university at no cost. Flyers and personalized stationary were designed and printed in house. The cost of lunch during the college visit was the recruit's responsibility. However, meeting time must be scheduled with faculty and Agricultural Education students.

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Faculty perceptions of an innovative service-learning experience

Carley (Calico) Morrison
Graduate Assistant
Mississippi State University/ School of Human Sciences
P.O. Box 9745
Mississippi State, Mississippi 39762
(662) 325 – 5851 Phone
cpc215@msstate.edu

Laura Downey
Associate Extension Professor
Mississippi State University/ School of Human Sciences
P.O. Box 9745
Mississippi State, Mississippi 39762
(662) 325 – 7690 Phone
ld546@msstate.edu

Stephen Meyers
Assistant Extension Professor
Mississippi State Extension
(662) 489 - 4621 Phone
stephen.meyers@msstate.edu

Laura (Lemons) Greenhaw
Assistant Professor
Mississippi State University/ School of Human Sciences
P.O. Box 9745
Mississippi State, Mississippi 39762
(662) 325 – 1804 Phone
lll95@msstate.edu

Faculty perceptions of an innovative service-learning experience

Introduction / Need for the Innovation or Idea

In 2013 [State] sweet potato stakeholders identified the need for increased value-added sweet potato products. At that time, the supply of processing-grade sweet potatoes exceeded their demand, resulting in excessive waste and low prices. In 2014 the Sweet Potato Innovation Challenge (SPC) was created to address stakeholder concerns while promoting service-learning, increasing undergraduate research opportunities, boosting entrepreneurship and the development of soft and hard-skills, and encouraging underrepresented demographic groups to pursue careers in agriculture, addressing multiple priority areas of the 2016-2020 National Research Agenda (Roberts, Harder, & Brashears, 2016). The SPC is divided into two phases. In Phase 1 (Fall Semester) students are introduced to the need of sweet potato producers, visit with producers to learn about sweet potato production, and begin developing novel sweet potato-containing products. At the end of that semester, the students present their concept designs to a panel of judges. Students with acceptable product ideas move to Phase 2 (Spring Semester). In Phase 2 students continue to develop their product with the guidance of a faculty mentor to create an advanced prototype that can be marketed to an industry partner.

How it Works / Methodology

At the conclusion of Fall Semester 2014 and 2015, the project evaluator conducted an end-of-semester survey of faculty who incorporated SPC into their courses. The purpose of the survey was to better understand the impact of participation in a service-learning project on faculty. The survey was administered electronically at the end of each semester. Four faculty members were invited to participate in 2014 and five faculty members were invited to participate in 2015. Three faculty members participated in 2014 and four faculty members participated in 2015, resulting in 75% and 80% response rates respectively. Survey items were based on a community-based learning survey provided by Gelmon et al. (2001). One question focused on the student and faculty roles in a service-learning course, five questions focused on the faculty members' experience and concept of community involvement, four questions focused on the influence of service to their personal and professional development, and two questions focused on future service-learning courses. The remaining questions were tailored specifically to SPC and were newly developed for the survey.

Results to Date / Implications

Although the SPC has a strong agricultural foundation, both the human and hard science disciplines were represented (Human Science = 2, Agriculture and Bio Engineering = 2, Chemistry = 1) with 329 students integrating agriculture into various educational environments. The SPC has resulted in over 50 novel innovative products with students presenting their finding at events ranging from campus research symposiums to international conferences. The majority of respondents indicated students acted as a learner and teacher rather than just a learner (71.5%)

and participated in learning activities instead of acting as a spectator (71.4%). Additionally, faculty respondents indicated shared control of the learning experience (57.1%), and that they acted as the teacher and the learner (57.2%), reflecting the definition of service-learning according to Gelmon et. al. (2001). Participants answered questions regarding personal community involvement and professional development, results are depicted in Table 1.

Table 1

Faculty's Perceptions of Personal Community Involvement and Professional Development (N = 7)

Question	*M*	*SD*
I had previous community volunteer experience prior to teaching this service-learning course.	1.57	.79
I believe that the work done through this class has benefited the community.	2.43	1.27
I will volunteer in the community now that this class has finished.	2.71	.49
The community work involved in this course has deepened by understanding of community needs.	1.71	.49
I believe that as a faculty member I have a responsibility to serve my community.	1.43	.53
Performing work in the community has helped me to focus on specific areas for my scholarship	2.00	.58
Teaching a community-based learning course has resulted in a change in my teaching strategies.	2.00	.82
I found that my relationship with the students was enhanced because of the community work we performed.	2.14	1.21
Participating in the community has helped me enhance my leadership skills.	1.57	.53

Note. Responses based on a 5-point Likert-type scale with 1 = strongly agree and 5 = strongly disagree.

Future Plans / Advice to Others

Participating faculty listed time constraints, communication with community representatives, and assessment of students learning as difficulties they encountered while implementing the SPC. In an effort to mitigate these difficulties, the faculty respondents suggested the program coordinator provide (a) bi-weekly updates and reminders about SPC events for the students to attend; (b) more events for students to collaborate and mingle with fellow students from the other SPC classes: and (c) more interaction from the community partners, judges, and other professionals to provide an inside point-of-view throughout the process and better prepare the students to succeed in SPC.

Cost / Resources Needed

The SPC was originally funded by an internal seed grant awarded to the program by the Mississippi State University Extension Service. Additional funding was secured through the USDA-National Institute of Food and Agriculture Higher Education Challenge Program. Funding is used to support travel associated with on-farm visits, equipment and supplies needed for product development, and labor required to execute the daily operations of the program.

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Helping 4-H Volunteers Facilitate STEM Literacy in Traditional Non-STEM Projects

Jeremy Elliott-Engel, Kelly Robinson, & Donna Westfall-Rudd

Virginia Polytechnic Institute & State University

jeremyee@vt.edu

Helping 4-H Volunteers Facilitate STEM Literacy in Traditional Non-STEM Projects

Introduction

STEM literacy has been promoted as a necessary skill for the future workforce. STEM literacy is the ability of learners to have an awareness of STEM around them in their everyday lives and the ability to apply that knowledge to resolve everyday situations (Bybee, 2013). The call for more STEM education has caused K-12 and postsecondary education to focus on ways to improve these areas of instruction (Basham & Marino, 2013). 4-H educators have followed this important movement by expanding access to project areas such as Robotics (Arnold, Bourdeau, & Nott, 2013). 4-H youth are enrolled in many traditional non-STEM projects. The Breads project is one excellent example of a traditional non-STEM project that is imbued with STEM concepts

Front-line 4-H volunteers (project and club leaders) need tools to help them plan activities that highlight STEM competency development in all project areas, not just Robotics or similar projects, to build STEM literacy with all 4-H youth. While there is limited literature on the levels of science literacy among current 4-H volunteers, Pottebaum (2013) offers evidence that there is a need to improve recruitment and training of STEM volunteers.

How does it work?

Practical tools are needed by 4-H volunteers to identify STEM in traditionally non-STEM 4-H projects to help 4-H youth build STEM literacy in new contexts (Arnold, Bourdeau, & Nott, 2013). The more a volunteer identifies STEM for the member, the more STEM literacy they will develop. This affirms the current 4-H program model and gives new tools to volunteers to enhance current programing and deliver STEM learning to youth who may not have innate interest in traditional STEM projects such as Rocketry (Nugent, Barker, Grandgenett, & Welch, 2016; Riley & Butler, 2012).

The process of working through the experience, finding needed information, considering other viewpoints, resolving conflicts, and reflecting on the process is the experiential learning framework (Joplin, 1981; Kolb, 1983). While the outcomes or products need also to be correct, the process of arriving at the solution to the problem should be explained, justified, argued, and verified by a community of learners (Lindsey & Berger, 2009). This public debriefing of the learning process allows youth to critically analyze others' work and have social verification of their own. These transactions between social and personal knowledge are an important component of experiential learning (Kolb, 1983).

Steps

The following are the seven guiding questions that can be used by 4-H volunteers to identify and facilitate STEM learning in traditional non-STEM projects:

- Is the project activity problem or activity based?
- Are there connections between project work & STEM topics? Is STEM connected to the project goal?
- Are the resources used authentic?

- Are 4-H members encouraged to seek out more information related to STEM topics in the project?
- Are activities offered with multiple methods or variations for ability levels?
- Are 4-H members encouraged to ask critical questions about the project and STEM?
- Are 4-H members asked to relate learning to their own non-project experiences?

4-H volunteers should be encouraged to use these guiding questions to identify STEM and STEM-related aspects of the traditional non-STEM projects they facilitate to address five characteristics of integrative STEM education identified in literature. These five characteristics drove the formation of the seven questions that are intended to guide volunteers in uncovering STEM thinking and STEM-related methods that may not seem obvious at first glance. The questions address not only finding science, technology, engineering, and math concepts but also provide volunteers guidance for thinking about different ways to pose problems to participants or alternatives to presenting instruction to enrolled youth.

Implications

As the call for STEM literate members of the workforce continues to grow and the challenges of recruiting STEM specific volunteers remains, it is important to help traditional non-STEM 4-H volunteers to support learning about STEM. This capacity growth retains the organizations roots and ensures the organizations relevance into the future. 4-H volunteers, with increased awareness of their role in fostering STEM education and STEM literacy, can be a valuable resource in preparing 4-H youth through traditional non-STEM projects. 4-H professionals can train front-line volunteers to use guiding questions within the 4-H experiential learning method "Do. Reflect. Apply." Volunteers utilizing these questions will better facilitate STEM learning in traditional non-STEM projects and foster improved STEM literacy in 4-H members. When youth are able to take STEM concepts and apply them in unique situations, the goal of STEM education, STEM literacy, has been achieved.

Future Plans

The questions were developed out of the literature and theoretical components and research needs to be conducted on the efficacy of these questions. Additionally, this strategy needs to be elaborated on so that 4-H professionals and volunteers can utilize this easily and effectively. The authors are interested in engaging others in pilot testing, revision, and development of a volunteer training guide.

Resources Needed

The strength of this model is that there are few resources that are required. 4-H volunteers and professionals can use these questions within any of their project areas to help improve STEM literacy in 4-H members, no matter the 4-H project.

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Implementation of Visual and Video-Based Reflection During a Simulated Experience

Joenelle Futrell, Oklahoma State University
Krysti L. Kelley, Oklahoma State University
Marshall A. Baker, Oklahoma State University

456 Agricultural Hall
Stillwater, OK 74078
405-744-8251
bakerma@okstate.edu

Implementation of Visual and Video-Based Reflection During a Simulated Experience

Introduction/Need for Innovation

Leadership development within Departments of Agricultural Education, Communication and Leadership have long been rooted in the Experiential Learning, a key of which is reflective observation. According to Kolb (2015, p. 57), experiential learning theorists deem reflection as the "primary source of transformation that leads to learning and development." In order for an experience to be transformed into further thinking, growth, and action, student reflection must be purposefully designed and facilitated. Students may be engaged in dichotomous reflection types: in-action and on-action reflection (Baker, M. A., Brown, N. R., Blackburn, J. J., & Robinson, J. S., 2014; Dibendetto, C.A., Blythe, J. M., & Myers, B.E., 2016). In-action reflection occurs throughout the teaching process and provides the student with time to process content during the learning experience (McAlpine & Weston, 2000; Schon, D.A., 1983). On-action reflection occurs after the learning activities are complete, allowing students to look back on the experience and process (McAlpine & Weston, 2000; Schon, D.A., 1983). Often, educators utilize on-action or inaction reflection in the classroom, missing the opportunity to benefit from both and to encourage the development of higher order thinking skills through varied reflection styles (Arnold, S.,Warner, J., & Osborne, E. W., 2006).

The McKnight Scholar Leadership Program is structured upon the Experiential Learning Theory, providing varied experiences in and out of the classroom to develop and equip high-achieving college students with leadership skills. As part of the McKnight Scholar Program, scholars participate in a three-day simulation at the Heifer International Ranch in Perryville, Arkansas. Learning objectives during the simulation include an understanding of components of culture and development of empathy for members of the global community. In previous years, after the simulation was complete, students returned to college without an increased depth of understanding of these learning objectives. A need for meaningful and rigorous reflection throughout and after the simulation experience was apparent.

How it Works

Students participated in a simulated international experience at the Heifer International Heifer Ranch in Perryville, Arkansas October 13-15, 2016. Prior to the experience, students attended a class session to prepare for the experience. In this class, students learned about the characteristics of culture and identified the five components of culture. At the Heifer International simulation, 47 students were sorted into four groups or "villages", each with a distinct cultural identity. The village each student was sorted into determined the student's experience including the food eaten, shelter used, chores done, and simulated family choices made to sustain the group. In the simulation, some villages might have members with injuries inhibiting their work while others might have far less food resources allocated to them creating an individual experience for each member.

Occasions for meaningful reflection were two-fold. Reflection in-action was facilitated through a group assignment utilizing GoPro Hero 4 cameras to create a mini-documentary. Students used the GoPro cameras to capture footage of the Heifer International experience that display the five components of culture previously studied. Assignment groups matched the groups students were sorted into at the Heifer Ranch. The assignment purposefully required students to communicate with group members to prioritize activities to capture GoPro video of and to reflect continuously throughout the learning process. After the three-day simulation, groups synthesized raw footage

into a five-minute mini-documentary displaying the required cultural components.
Reflection on-action was facilitated through an individual assignment after each major learning experience during the simulation like meal preparation, group chores, and housing selection. Students reflected immediately after each of the seven major learning experiences and captured their thoughts on a blank postcard. On the postcard, students wrote a message home about what key thoughts and feelings they would share with their home community about the learning experience and drew a picture representing the learning experience on the opposite side.

Results to Date

As a result of using this reflection technique during the annual McKnight Scholars trip to Heifer International, scholars created four reflective videos, each five minutes in length, using the GoPro cameras. Creating these videos required the students to reflect in the experience and document moments they thought best represented each element of culture. Scholars filmed an average of an hour of footage during their three-day experience and synthesized and edited their footage into a concise mini-documentary. Students also reflected on the Heifer International Experience through the use of written postcards. Scholars completed seven postcards each resulting in 322 total postcard reflections.

Future Plans

The success of this two-pronged, purposeful reflection strategy lends itself to application in other facets of the McKnight Scholar Leadership Program. One such facet is the 2017 McKnight International Experience, where second-year scholars will travel to Czech Republic for a week of cultural immersion. The development of a GoPro mini-documentary as a form of reflection inaction will be a key assignment for trip participants. The same task will be completed as in the Heifer International assignment, but will be pressed to a higher level of synthesis as seven days of cultural immersion will serve as the learning experience. This extended time frame and amount of raw footage will push students to work within their groups to continuously identify cultural components to display in video form during a new and exciting experience abroad. Postcards, like those used in the Heifer International assignment, will be used as a form of reflection on-action at the end of each day in addition to discussion-based reflection and debriefing. Use of such a small space to process and reflect on a full day of culturally immersive activities forces students to prioritize experiences. Utilizing these varied approaches to reflection while on an international trip should improve depth of understanding of experiences and increase retention of cultural content upon return.

Costs/Resources

Some initial cost is associated with this reflection technique. For the reflection-in technique, five GoPro Hero 4 Sessions bundles were purchased at a cost of $250 per kit, $1,250 total. We consider this a program investment and plan to use these GoPros for additional activities as well as for other reflection assignments. The only resources needed for the reflection-on technique were postcards. We used a free online template and printed copies for each of the students participating.

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Poultry and Egg Education Project (PEEP): Curriculum for 4-H Youth Designed to Teach Safe Handling and Use of Poultry and Poultry Products

John C. Ricketts, PhD
Professor of Agricultural Education | Agricultural Sciences
Tennessee State University
3500 John A. Merritt Blvd.
Nashville, TN 37209
615.630.0526
jricket1@tnstate.edu

Sandria Godwin, PhD
Professor of Food Safety | Family and Consumer Sciences
Tennessee State University
3500 John A. Merritt Blvd.
Nashville, TN 37209
615.963.5619
sgodwin@tnstate.edu

Poultry and Egg Education Project (PEEP): Curriculum for 4-H Youth Designed to Teach Safe Handling and Use of Poultry and Poultry Products

Introduction

The Centers for Disease Control (2011) estimates that approximately one in six Americans (~ 48 million people) is affected by foodborne illnesses, and approximately 128,000 of these people are hospitalized and 3,000 die. Both Salmonella and Campylobacter are two of a handful of pathogens that cause the most foodborne illnesses, hospitalizations, and deaths each year (2011). According to the United States Department of Agriculture (2015), raw and undercooked poultry and eggs are often associated with Campylobacter and Salmonella caused illnesses. Consumers can reduce their risk of foodborne illness from these pathogens by safely purchasing, storing, handling, and preparing poultry products and eggs. Our project developed a curriculum for youth as a means of disseminating information to society as a whole, a proven, traditional method utilized by Extension and 4-H over the years.

The multidisciplinary, multi-institutional Poultry and Egg Education Project (PEEP), funded by a 5-year USDA National Food and Agriculture Institute (NIFA) Agriculture and Food Research Initiative (AFRI) grant (Project Number TENX-2011-06512), seeks to reduce illnesses from Salmonella and Campylobacter pathogens by conducting bench science research on best practices for safe handling and use of poultry and egg products and creating science-based educational programming for consumers. This poster will describe a curriculum developed from key findings of the project.

Methodology

The content for the curriculum was developed from a content analysis of all research findings of the aforementioned grant. The following findings guided curriculum development of educational activities. The research presented in the PEEP project summaries (Godwin, 2015; Godwin, 2014a; Godwin, 2014b; Godwin, 2013) presented certain areas where consumers are lacking in food safety practices. These areas include the following practices when dealing with raw poultry and shell eggs:

- Utilize hand sanitizer and plastic bags provided at meat sections in grocery stores
- Understand safe egg purchasing
- Follow recommended storage practices for raw poultry
- Thaw poultry correctly, including not washing or rinsing raw poultry in sink
- Wash hands properly
- Store eggs and poultry at home properly
- Prevent cross contamination at grocery store and at home
- Understand thermometer use and proper food temperatures for egg dishes and poultry
- Cook egg yolks and whites until firm
- Do not consume raw or undercooked eggs

Results to Date

The PEEP Curriculum for youth, one of the major outcomes associated with a USDA-AFRI project to develop a research-based educational program comprised of consumer-focused, impactful messages addressing poultry and egg safety practices, was developed from project findings and reviewed by multiple agricultural educators at different levels. The six lesson plans and objectives herein were developed directly from the research associated with the Poultry and Egg Education Project (PEEP). A curriculum handbook, lesson plans, PowerPoints, and videos can be accessed by educators at www.tnstate.edu/tsuaged.

Advice to Others

The lesson plans are complete with requisite background information, objectives, activities, in some cases videos, and evaluations. The lessons can be integrated into standing or special 4-H programs related to food science, poultry, STEM, and health science. The lessons can also be integrated into school-based agricultural education programs, specifically in pathways related to animal science, food science, or biotechnology. Homeschool families or others seeking to introduce food safety in a way that is backed by science and not sensationalized reports in the media may also use the lessons.

Future Plans

Future plans include research to document knowledge gained as a result of the lesson plans and curriculum options for adolescents more appropriate for students of school-based agricultural education in high schools. Curriculum developers will also host train-the-trainer workshops for educators to make them aware of the materials and to demonstrate their usage.

Cost/Resources

The resources are free and available to anyone on our website. Their development was funded by the aforementioned USDA-NIFA_AFRI project.

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Swivl – An Intuitive Approach to Video-Based Reflection

Hanna H. Aviles, Oklahoma State University
Mason Jones, Oklahoma State University
Marshall A. Baker, Oklahoma State University

456 Agricultural Hall
Stillwater, OK 74078
(405) 744-3686
bakerma@okstate.edu

Swivl – An Intuitive Approach to Video-Based Reflection

Introduction/Need for Innovation or Idea

Defined as "a mechanism for the construction of knowledge from experience" (McAlpine & Weston, 2000, p. 371), reflection plays a major role in Kolb's (1984) experiential learning theory. While research supports the importance of reflection in the provision of a holistic, experiential education (Baker, Robinson, & Kolb, 2012; Kolb, 1984; Lamm et al., 2011), it is evident that not every teacher makes a point to reflect (McAlpine & Weston, 2000). As such, the teacher-education faculty at Oklahoma State University recognized a need to provide pre-service teachers the opportunity to purposefully reflect on their instructional practices.

Oklahoma State University has chosen to answer this challenge by requiring pre-service teachers to record and reflect on their own instructional practices. However, poor audiovisual quality, camera reliability, and video storage are frequently encountered problems. To combat these problems while supplementing the program's recent adoption of EDTHENA, an internet-based, video-sharing system that allows for the delivery of peer and instructor feedback, Oklahoma State University has turned to Swivl. This innovative technology has two primary components: (a) a web-based, cloud platform, and (b) an automated, video-capturing robot. Paired with EDTHENA, Swivl provides pre-service teachers easy, hands-free access to high quality audiovisual recordings of their teaching practices in order to facilitate self-reflection and a healthy exchange of feedback.

How it Works/Methodology/Program Phases/Steps

Pre-service teachers are able to exchange feedback and reflect on their own teaching practices through the combined use of Swivl and EDTHENA. Before recording their first lesson, a pre-service teacher must download the Swivl application onto the mobile device or tablet they intend to film with. After the application has been downloaded, the student may log on to the Swivl Cloud using the class account credentials. From this point, the student may mount their mobile device or tablet onto the Swivl robot, place the *primary marker* on their person, and begin recording. In addition to prompting the Swivl robot to follow the student's movements, the *primary marker* also serves as a microphone and allows the student to begin and end recordings. Once a recording has ended, it is instantly available for download on the Swivl Cloud. Additional features of the Swivl platform include a legible, on-screen timer to be referenced by those teaching, as well as content slide integration and real-time synchronization for videos once uploaded to the Cloud.

After the video has been downloaded from the Swivl Cloud, the pre-service teacher may then upload the video to the EDTHENA platform and attach any supplementary materials seen fit or necessary. The recording is then made available on the pre-service teacher's EDTHENA profile and shared with their instructors and peers. For purposes of honing a specific teaching method or instructional skill, instructors may assign their own *Explorations*. Peers and instructors may then tag videos and provide feedback, in real time, through notes, questions, strengths, and more.

Results to Date/Implications

In the fall semester of 2016, Oklahoma State University began utilizing a combination of EDTHENA and Swivl technology in the Methods of Teaching Agricultural Education laboratory course. As this laboratory is generally split into four groups of approximately five students, the department opted to purchase four C1 robots, four floor stands, and four Apple iPads. Currently, a total of 19 pre-service teachers have used Swivl technology to record four different *Explorations*. To date, 76 videos have been recorded and stored using Swivl technology. These videos have also been uploaded to EDTHENA for further reflection and feedback. In total, these 76 videos have produced over 600 instances of peer and instructor feedback, and approximately 700 instances of self-reflecting notes and observations.

Future Plans/Advice to Others

Oklahoma State University intends to continue its use of both the Swivl and EDTHENA platforms in an effort to enhance student opportunity for reflection and feedback. Within the next academic year, Oklahoma State University plans to fully integrate this combination of technology into all other, on-campus agricultural education courses. Oklahoma State University recommends the combined use of the Swivl Cloud, robot, and EDTHENA to other universities interested in providing their students an easily accessible and structured platform for feedback and reflection. Adequate time for set up of the robot should be allocated prior to the beginning of each laboratory or class period. Users should also be cognizant of battery life for both the robot and *primary marker*. The robot has an approximate battery life of six hours, while the *primary marker* will hold a charge for an estimated four hours. For those institutions interested in remotely employing this technology at student teaching centers, it is recommended that students are encouraged to purchase and utilize this system early on in their coursework to merit the expense.

Costs/Resources Needed

To successfully implement Swivl technology, a Cloud account, robot, *primary marker*, and floor stand are required. The Swivl Cloud is available free of charge and features unlimited storage. The C1 robot, equipped with *primary marker*, can be purchased from Swivl for $599.00. With the purchase of any C-series robot, the Swivl floor stand is available for the discounted price of $89.00. For those without access to an Apple mobile device or tablet, Swivl offers Android compatible cables for $19.00.

At Oklahoma State University, EDTHENA has become a course requirement for pre-service teachers. Therefore, in paying their course fees, students are also purchasing an EDTHENA subscription. Rather than publishing a blanket cost, EDTHENA privately discloses prices to individual institutions based on the needs and scope of each program. As such, EDTHENA discourages any disclosure of specific quotes or costs. However, we have been permitted to share that the subscription cost for each student is generally similar to that of an ordinary, college textbook.

By pairing EDTHENA with Swivl, the need for teacher-education faculty to manually store and transfer videos to students has been eliminated. This technology has also alleviated the need for instructors to designate a person to film while the students are teaching. However, a reliable internet connection is still necessary to access both web-based systems.

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To the Barn and Beyond: Connecting Livestock Skills to Leadership Development

Jackson Alexander, Program Associate – 4-H Volunteerism & Leadership
University of Arkansas Division of Agriculture
Cooperative Extension Service
2301 South University Avenue
Little Rock, Arkansas 72204
(501)-671-2352
jalexander@uaex.edu

Dr. Chelsey Ahrens, Specialty Livestock/Youth Education Specialist
University of Arkansas Division of Agriculture
Cooperative Extension Service
2301 South University Avenue
Little Rock, Arkansas 72204
(501)-671-2067
cahrens@uaex.edu

To the Barn and Beyond: Connecting Livestock Skills to Leadership Development

Introduction

Leadership development programs have been found to possess a variety of benefits to participants, as well as the communities in which they work and live (Galloway, 1997). New experiences often lead to observation, reflection, and conclusion, and through the incorporation of critical reflection of leadership development programs, this allows for organizations to harness the opportunity to ensure students are learning the most effective and efficient practices related to leadership (Roberts, 2008). Agriculturally-focused youth leadership organizations, such as 4-H and FFA, strive to build leadership competencies in students through programs related to agricultural sciences and natural resources, citizenship, science, technology, engineering, and mathematics (Dykes, Cox, Ahrens, & Burris, 2013). Since 4-H's inception, the organization has flourished into the largest youth leadership organization in the United States by providing life skills and character education to youth (National 4-H, 2011).

The 4-H Professional Research, Knowledge, and Competencies include two focus domains that were used to develop the goals for a Livestock Leadership Academy. The domains "youth development" and "youth program development" were employed as guides due to their focus on "understanding how young people learn and grow" and "creating quality experiences for young people" (National 4-H Professional Development Task Force, 2004). These domains shaped the academy goals, which were to promote greater youth understanding of the policy making process, expand youth knowledge of current livestock issues, develop youth leadership skills, and improve communication techniques among youth. Extension personnel sought to align sessions and activities with the AAAE National Research Agenda. Specifically, the specialists worked to showcase priorities one and four, which are: public and policy maker understanding of agriculture and natural resources; and meaningful, engaged learning in all environments (Roberts, Harder, & Brashears, 2016).

How it Works

Day one began by focusing on leadership, where 4-H'ers participated in icebreaker activities led by a former state FFA officer and national conference facilitator. After lunch, they participated in a low ropes course offered by the Arkansas 4-H Center, where the academy was held. A battle of "Minute to Win It" team challenges and reflections rounded out the day. Day two included a motivational speaker who owns and operates a dairy farm. She was selected due to her ability to relate to students from a livestock perspective while also encouraging them in personal growth and leadership development. Later, an "agvocacy" session was conducted, where 4-H'ers worked in teams to research and develop problem-solving strategies for current issues in agriculture. During lunch, the Arkansas Secretary of Agriculture spoke about current affairs related to the agriculture industry, and the role 4-H'ers can play in sharing that message.

The afternoon on day two focused on career building with a college fair and career panel. 4-H'ers later toured the Arkansas Livestock and Poultry Commission, where they learned about veterinarian practices, rules, and regulations pertaining to livestock and poultry. The evening ended with a dance and reflections. Finally, day three had one session dedicated to the importance of effective written communication. 4-H'ers were responsible for writing a thank you card to an academy sponsor explaining their experience. Upon completion of the thank you cards, there was a final reflection session where 4-H'ers wrote short-term "SMART" goals for themselves that would be mailed back to them six months after the conference.

Results to Date

Upon completion of the academy, a survey was disseminated to attendees in order to assess demographics and measure various key areas from the academy. A response rate of 100 percent from all 25 attendees revealed there were six males and 19 females with an average age of 15.64 years old. Furthermore, 4-H'ers were asked to indicate their project focus area, and participants revealed 80 percent were involved in project areas related to the animal agriculture industry, such as swine, beef, goats, dairy, animal science, or veterinary science.

In reference to assessing what skills or knowledge participants walked away with, a number of targeted areas were measured. Before the conference, 63 percent of participants indicated they were "somewhat" or "very" knowledgeable about agricultural issues, while 86 percent said they were "somewhat" or "very" knowledgeable after the academy. Next, participants were asked to rate their level of confidence in being an "agvocate" before and after the academy. Fifty-nine percent indicated they were "somewhat" confident before, and 78 percent said they felt "confident" or "very confident" after. Finally, within the scope of leadership development, participants were asked to indicate their ability to set measureable, effective goals. Before the conference, 77 percent of participants said they felt "moderately" or "significantly" confident in their goal setting abilities, while 91 percent indicated they felt "moderately" or "significantly" confident after taking part in the academy.

As a final measure of assessing the success of the academy, participants were asked about the overall effectiveness of the leadership development sessions, as well as the advocacy and communication training. Eighty eight percent indicated the leadership development sessions were "effective" or "very effective," and 84 percent said the advocacy and communications sessions were "effective" or "very effective" Finally, participants were asked to assign an overall letter grade indicating their level of satisfaction with the academy, and 94 percent assigned the letter grade "A-."

Future Plans

After conducting an evaluation of the academy, the curriculum will be assessed and improved to meet educational standards and participant needs at the following year's academy. The utilization of open communication and feedback will foster innovation to enhance curriculum taught at the academy in order to more effectively meet student's needs, while also empowering students with the necessary skills to become quality, informed leaders inside and outside the animal agricultural industry.

The Livestock Leadership Academy is scheduled to take place for a second year in March 2017. For the upcoming year, the academy coordinators are aiming to double the enrollment in order to expand livestock and agricultural knowledge, leadership skills, and advocacy abilities to a broader variety of 4-H members. In hopes of further offsetting the registration fees for academy participants, new donors are being sought from a variety of sectors within the animal agriculture industry. Finally, academy planners see the necessity of broadening the types of people who will sit on the career panel to include academic leaders, elected officials, and industry professionals.

Costs/Resources Needed

Expenses incurred for the conference included lodging, meals, guest speaker honorariums, ExCEL low ropes course fees, event insurance, and conference materials. In order to keep registration costs to a minimum, over $4,000 in donor support was received. This allowed the conference registration to be $85 per participant.

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Utilizing LEDs and Breadboards to Teach Electricity: Emphasizing STEM Principles through Agricultural Education Teacher Professional Development

Trent Wells
Graduate Teaching Assistant
Iowa State University
223C Curtiss Hall
Ames, IA 50011
ktw0004@iastate.edu

Dr. J. Chris Haynes
Assistant Professor
University of Wyoming
McWhinnie Hall 114, Dept. 3374
1000 E. University Ave.
Laramie, WY 82071
jhaynes4@uwyo.edu

Dr. Brian Parr
Professor and Department Head
Murray State University
213 South Oakley Applied Science
Murray, KY 42071
bparr@murraystate.edu

Utilizing LEDs and Breadboards to Teach Electricity: Emphasizing STEM Principles through Agricultural Education Teacher Professional Development

Introduction

Timely and appropriate professional development opportunities for teachers remains a priority for the agricultural education profession (Haynes & Stripling, 2014; Lawver, Pate, & Sorensen, 2016; Phipps, Osborne, Dyer, & Ball, 2008). Phipps et al. (2008) posited that professional development opportunities function to increase the human capital of teachers. Rising demands for increased student achievement in STEM content have created opportunities for contextualized learning from other disciplines (i.e., agricultural education) (Haynes & Stripling, 2014; Parr, Edwards, & Leising, 2006). As such, a significant need exists for continuing professional development in Science, Technology, Engineering, and Mathematics (STEM) content within school-based agricultural education (SBAE) (Haynes & Stripling, 2014). This is especially true in contextualized instructional areas that emphasize STEM principles, such as agricultural mechanics (Parr et al, 2006; Shultz, Anderson, Shultz, & Paulsen, 2014; Wells, Perry, Anderson, Shultz, & Paulsen, 2013). Agricultural mechanics remains a diverse, STEM-based field popular with secondary students, and of great value to the agricultural industry. As such, it is imperative high-quality teacher professional development and growth in this area continues (Burris, Robinson, & Terry, 2005; Wells et al., 2013).

Within agricultural mechanics, the teaching and learning of electrical principles, theory, and its application is not uncommon in many modern SBAE programs (Herren, 2010). Remarkably, as Shultz et al. (2014) described, many agricultural education teachers have reported limited competence in teaching the topics (e.g., tool identification and use, basic wiring skills, and electrical safety) within this content area. Could this perhaps be related to the lack of professional development within this important skill area? Moreover, could teacher-perceived competencies in a particular skill area result in limited training in the content for secondary students? As such, student exposure to instructional opportunities in STEM-based, real-world concepts could be lacking (Wells et al., 2013; Shultz e al., 2014; Byrd, Anderson, Paulsen, & Shultz, 2015). As such, involvement in professional development that emphasizes the incorporation of STEM content within the context of agricultural education (e.g., agricultural mechanics) may hold promise for increasing both the technical and academic competence of agricultural education teachers (Parr et al., 2006).

How it Works

At the 2015 National Association of Agricultural Educators (NAAE) convention in New Orleans, Louisiana, agricultural education teachers from across the United States were engaged in professional development opportunities designed to enhance knowledge and competence in agricultural education (NAAE, 2015). One session focused upon enhancing the teaching and learning of STEM content vis a vis contextualized agricultural mechanics. The goals of this professional development session included increasing teacher confidence and competence in teaching STEM content, providing teachers with additional training in the field of electrical technology and, ultimately, increasing secondary student interest and performance in STEM content and agricultural mechanics (B. Gill, personal communication, November 18, 2015).

These goals led the workshop leaders to focus upon an area often overlooked within the field of agricultural mechanics education, the use of light emitting diodes (LEDs) and breadboard solderless circuit systems, often found within a variety of residential and commercial applications. These items are often incorporated in small and large electronic devices and systems used throughout the agricultural industry. Professional development facilitators focused upon training teachers how to interpret blueprints for creating basic functional circuits, teaching strategies for integrating this area into existing electrical technology curriculums, as well as the STEM principles that allowed each LED system to operate. Teachers were paired together and allowed a variety of materials to use in constructing the given LED circuits, ultimately creating several combinations of fully functional circuits. Upon the conclusion of the session, participants were given teaching materials and resources to promote the use of LED circuitry technology and contextually taught STEM content within their respective agricultural mechanics curricula.

Implications

Participating teachers anecdotally reported a high level of engagement and interest in the professional development session topic, its use of technical and academic content, and its delivery. These positive remarks indicated teachers exhibited a great deal of interest in covering like topics within their own SBAE programs, indicating teachers appreciated the coverage of academic content in a familiar and useful context that can be, in turn, used with secondary students. Improving technical competence, such as that related to electrical technology, is an important step in improving the quality of agricultural mechanics education (Shultz et al., 2014). Furthermore, advancing SBAE through effective and engaging teacher professional development is paramount to the continuity and long-term sustainability of programs (Phipps et al., 2008).

Future Plans & Advice to Others

Due to the popularity of this professional development, a demand exists with agricultural education teachers for new, engaging, and emerging session topics that create broader opportunities for themselves and their students. There currently exist plans for the continued inclusion and expansion of STEM-based agricultural mechanics professional development sessions at future NAAE conventions. It is advised that the agricultural education profession look to continue the expansion and diversification of these STEM-based sessions across the country in other ways as well, such as during state- and regional-level agricultural education teacher association meetings. Such efforts will continue to pay dividends toward improving the human capital within SBAE.

Costs

The costs associated with implementing this professional development workshop were small. In total, a budget of $200.00 was utilized to purchase the LED circuitry materials, breadboards, and necessary instruments. Selected session materials, such as online resources, were provided to participating teachers at no cost.

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Texas 4-H Members' Sense of Community

Emily R. Perdue
P.O. Box 6108
Office G210
West Virginia University Extension Service
Agricultural Sciences Building
Morgantown, WV 26506-6108
(304) 293-2708
emily.perdue@mail.wvu.edu

James R. Lindner
5058 Haley Center
Auburn University, AL 36849-5212
(334) 844-4434
jrl0039@auburn.edu

Gary E. Briers
Department of Agricultural Leadership, Education, and Communications
Texas A&M University
2116 TAMU
College Station, TX 77843-2116
(979) 862-3000
g-briers@tamu.edu

Kirk C. Edney
Department of Agricultural Leadership, Education, and Communications
Texas A&M University
2116 TAMU
College Station, TX 77843-2116
(979) 458-2306
kc-edney@tamu.edu

Harry N. Boone
P.O. Box 6108
Office 4418
Agricultural Sciences Building
Morgantown, WV 26506-6108
(304) 293-5451
Harry.Boone@mail.wvu.edu

Texas 4-H Members' Sense of Community

Introduction

A study by Tuft's University and the Institute for Applied Research in Youth Development (Lerner, Lerner, & Colleagues, 2013) found that 4-Hers are four times more likely to actively contribute to their community, two times more likely to be civically active, and five times more likely than their peers to graduate from college. Brennan, Barnett, & Baugh presented the need for program developers to better understand the role of youth in community development (2007). Extension programming like 4-H "plays a vital role in engaging youth through interactions with the local community" (Brennan, Barnett, & Baugh, 2007,p.1).

The purpose of this study was to examine the influence of community engagement and youth leadership life skills development on Texas 4-H members' sense of community which fits within research priority six; vibrant, resilient communities of the American Association of Agricultural Education National Research Agenda (Roberts, Harder, & Brashears, 2016). The findings presented in this abstract are part of a larger study. One of the main objectives of the study were to determine participants' sense of community.

Theoretical Framework

The theoretical framework for this study is based upon McMillan Chavis' theory of sense of community. Sense of community is defined as the feeling community "members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together (McMillan & Chavis, 1986, p.9). Community can refer to either a territorial or physical community such as a neighborhood or a relational community such as a professional organization or church (McMillan & Chavis, 1986). The theory of sense of community includes four essential components: membership, influence, integration and fulfillment of needs, and shared emotional connection (McMillan & Chavis, 1986).

Methodology

Survey research methodology was used to conduct this study. The target population for this study included members of the Texas 4-H & Youth Development Program who were enrolled for the 2015-2016 year. Cochran's (1977) formula for continuous data was used to calculate sample size. Stratified random sampling was used to select equal numbers of participants per strata (in this case grade level). This sampling technique is used when researchers want to look at differences among strata (Ary, Jacobs, & Sorenson, 2010).

The Tailored Design Method for developing and distributing an electronic survey was employed for this study (Dillman, Smyth, & Christian, 2014). The questionnaire was administered using Qualtrics. The research instruments in this study have been previously developed. The survey had three sections: sense of community, career and educational aspirations, and leadership life skills. A pilot test was conducted with members of the Texas A&M University Collegiate 4-H Club. Reliability of the scale was measured using Cronbach's alpha coefficients. The alpha level for the pilot test was .801 and .800 for the formal study. A reliability of .80 generally acknowledged as an acceptable rate of internal reliability (Bryman, 2012). Data was analyzed using the Statistical Package for Social Sciences (SPSS, 23.0). This

portion of survey used a seven-point Likert scale with responses ranging from "Strongly Disagree = 1, Moderately Agree = 2, Disagree = 3, Neither Agree nor Disagree = 4, Agree = 5, Moderately Agree = 6, and Strongly Agree = 7" and consisted of 12 statements. The scale was interpreted as follows: strongly disagree = 1.00 – 1.49, moderately disagree = 1.50-2.49, disagree = 2.50 – 3.49, neither agree nor disagree = 3.5 – 4.49, agree = 4.50 – 5.49, moderately agree = 5.50 – 6.49

Results and Findings

Table 1
Participants' Sense of Community

Items	*N*	*M*	*SD*
I feel a strong connection to the community where I live.	163	5.17	1.56
I feel my relationships with my neighbors are very valuable.	163	4.90	1.48
I have many places and friends to go to for help in my neighborhood.	163	4.87	1.56
I have many friendships with adults in my neighborhood.	163	4.78	1.60
The adults in my neighborhood serve as role models.	162	4.75	1.52
My relationships with my neighbors have helped me to be a better person.	163	4.63	1.48
I know my neighbors very well on a personal basis.	162	4.57	1.81
Considering the residents in my community, I personally know most of them.	163	4.47	1.67
I communicate with my neighbors at least once a week.	162	4.30	1.69
I do not know many neighbors well.	162	3.65	1.74
I spend quality time with my neighbors at least once a week.	163	3.64	1.61
I do not feel a strong sense of connection to the community where I live.	163	2.98	1.70

Note. Overall M = 4.39, *SD* = .90. *Scale*: 1 = *Strongly Disagree*, 2 = *Moderately Disagree*, 3 = *Disagree*, 4 = *Neither Agree nor Disagree*, 5 = *Agree*, 6 = *Moderately Agree*, 7 = *Strongly Agree*.

Table 1 describes participants' overall sense of community and attachment. Respondents agreed that they feel a strong connection to the community where they live (*M* = 5.17, *SD* = 1.56) and disagreed that they *do not* have a strong sense of connection (*M* = 2.98, *SD* = 1.70).

Conclusions, Implications, and Recommendations

Respondents in this study agreed that they have valuable relationships with neighbors and adults in their territorial neighborhood, see adults as role models, and have a strong connection to their community. However, they neither agreed nor disagreed that they communicate or spend time with their neighbors or know them well. Although they feel they have valuable relationships in their community, this does not seem to impact their connection to their community. Therefore, future research should study what aspects of relational communities (e.g., 4-H, youth groups, school, clubs, etc.) impact connectedness. Do relationships within their peer groups and other relational communities have more of an impact on connectedness than relationships with adults? This study only included current Texas 4-H members. It is recommended that future research studies compare current, former, and non-4-H members in both rural and urban environments.

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Aquatic Invasive Species Professional Development Improves Teacher Environmental Attitudes and Perceived Knowledge Long-term

Blake C. Colclasure, Katie Stofer, Eric Stubbs, & Dehlia Albrecht
University of Florida

310 Rolfs Hall
PO Box 110540
Gainesville, FL 32611
(217-898-2036)
bcolclasure@ufl.edu

Aquatic Invasive Species Professional Development Improves Teacher Environmental Attitudes and Perceived Knowledge Long-term

Introduction

One of the main goals of environmental education is to influence learner awareness and behavior towards the environment in order to protect and improve it (Frantz & Mayer, 2013; Hungerford & Volk, 1990). The importance of environmental education in our nation is well warranted due to increasing environmental degradation and decreasing levels of adolescent contact with nature (Wells & Lekies, 2006). In fact, governmental policies and grass-root movements have increased the recognition of the the importance of environmental literacy in the school system by implementing programs in education such as 'Agenda 21' and the 'No Child Left Inside Act' (Castleberry, Green, & Larson, 2010). To assist in the creation of good stewards of the environment and natural resources, Priority 4 of *The National Research Agenda in Agricultural Education* calls for the design, development, and assessment of meaningful learning to properly educate citizens of the 21st century (Roberts, Harder, & Brashears, 2016). Professional development can help teachers achieve this goal by creating a paradigm shift in how they educate their students about the environment (Robottom, 1987). Efforts to prepare teachers to develop curriculum that effectively guides students' critical thinking about environmental issues is essential in shaping positive social and environmental values, behaviors, and attitudes.

Using a long-term follow-up study, this research examines the effectiveness of a week-long teacher workshop in environmental education that has a 10-year history. Specifically, this research attempts to understand the effect of this experience in changing participants' environmental management attitudes, improving their knowledge of aquatic invasive species, and increasing their integration of available aquatic invasive species curricula.

Theoretical Framework

The Elaboration Likelihood Model (ELM) of Persuasion was used as the framework for this study. According to the ELM, individuals process information through either the central or the peripheral route (Petty & Cacioppo, 1986). Mental processing done through the central route contains in-depth thought and careful consideration of the information presented, impacted by an individual's knowledge and experience. Central processing leads to long-lasting attitudes over time and is predictive of behavior (Petty & Cacioppo, 1983). Providing individuals with motivation to process a message, and by directly involving them in the message, increases the likelihood that they will use the central processing route. The professional development workshop in this study is designed to provide motivation and engagement in issues regarding invasive plant management, creating lasting knowledge and positive attitudes towards this construct by provoking teacher participants to use central processing in the ELM.

Methodology

The targeted population of this long-term follow-up study was all past participants of the workshop. A convenience sampling method was used through 250 electronic surveys sent to past participant's emails. Seventy respondents partially completed the questionnaire and 44

individuals responded fully. Participant knowledge of aquatic invasives and management were tested through 25 survey questions consisting of true/false and multiple-choice questions composed by expert external evaluators. Six questions were asked to determine the participant's perceived knowledge of aquatic invasive management before the workshop, immediately after the workshop, and at the time of the survey through a five-point, Likert-type scale (*strongly disagree, disagree, neither agree nor disagree, agree, strongly agree*). Lastly, participants were asked four questions regarding their attitudes towards the use of chemical, mechanical, biological, and physical methods of controlling aquatic invasives before the workshop, immediately after the workshop, and at the time of the survey, using the same five-point, Likert-type scale. Paired *t*-tests were used to determine if significant differences existed between participants' perceived level of knowledge before the workshop, upon completion of the workshop, and at the time of the survey. Paired *t*-tests were also used to determine if significant differences existed between participants' attitudes of using a variety of control methods before the workshop, after the workshop, and at the time of the survey.

Results & Discussion

Knowledge scores indicated that over half of participants (n=25) answered 72% or more of the content knowledge questions correctly, demonstrating a moderate performance in participants' actual long-term content knowledge retention. However, significant results were found for after workshop and before workshop variance in participants' perceived knowledge of invasive plant management (p<.001). The paired *t*-test showed insignificant results for after workshop and current scores (p=.529). A paired *t*-test showed significant results for after workshop and before workshop variance in participants' attitudes towards using a variety of methods to control aquatic invasive plants (p<.001). The paired *t*-test showed insignificant results for after workshop and current scores (p=.385). The significant pre- and post-workshop results support a change due to the workshop experience, while the insignificant results between post workshop and current scores demonstrated that participants retained their perceived knowledge or attitude from the time they experienced the workshop to the time of the survey. This data supports the ELM theory in which individuals who experience central processing change perceptions and attitudes immediately after the experience and then maintain the perceptions and attitudes long-term.

Conclusions & Implications

The importance of increasing the public's knowledge and shifting attitudes and actions towards the use of best environmental practices is crucial in an effort to stop environmental degradation and to begin to repair environmentally-sensitive ecosystems. K-12 education that includes environmental-based curriculum is one strategy to address this need. Curriculum design similar to this study's workshop that focuses on localized, real-world issues, supported through inquiry-based and problem solving techniques, has been shown to make the largest impacts in student achievement, attitude change, and behavior change (Ernst & Monroe, 2004; Glynn, 2000). It is critical that teachers not only develop the skills to implement this type of curriculum, but also that teachers themselves demonstrate positive attitudes and behaviors in best environmental management practices. In an effort to achieve these goals, continued research on teacher professional development in environmental education must be conducted, particularly research that addresses actual behavior changes.

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Citrus Greening Solutions: Extension's Role in Florida, California, and Texas

Taylor K. Ruth
Graduate Student
University of Florida
P.O. Box 110540
310 Rolfs Hall
Gainesville, FL 32611
Phone: 352-273-2614
t.ruth@ufl.edu

Peyton N. Beattie
Graduate Student
University of Florida
P.O. Box 110540
408 Rolfs Hall
Phone: 352-273-2095
pbeattie@ufl.edu

Dr. Alexa J. Lamm
Assistant Professor
University of Florida
P.O. Box 112060
121E Bryant Hall
Phone: 352-392-6545
alamm@ufl.edu

Dr. Joy N. Rumble
Assistant Professor
University of Florida
P.O. Box 112060
121D Bryant Hall
Gainesville, FL 32611
Phone: 352-273-1663
jnrumble@ufl.edu

Introduction

Genetic engineering (GE) within the realm of food production is one of the most complicated and contentious topics extension agents have to discuss with the public (Martin, 2016). Florida, California, and Texas, the top three citrus producing states in the US (USDA, 2015), have been affected by citrus greening, a disease currently destroying the citrus industry (Ferris, 2015; UF/IFAS Citrus Extension, 2016). Florida and Texas have lost $236 million and $15 million in production value respectively since 2012 (USDA, 2015). One, and very possibly only, solution to citrus greening is the use of GE citrus trees (Satran, 2015). Yet consumers are not generally accepting of GE food products and may resist consuming the products of GE trees. Consumers in Florida, California and Texas may not recognize the importance of the citrus industry to their community and overlook the potential need for GE trees. Extension will likely have to facilitate difficult conversations in the future regarding the use of GE to save the citrus industry. Priority one of the national research agenda (Roberts, Harders, & Brashears, 2016) emphasizes the need for public understanding of issues facing the agricultural and natural resource industry. Extension will need to understand how residents of citrus producing states view the industry to develop effective outreach programs regarding citrus greening. Given this, the purpose of the study was to explore the importance of the citrus industry to residents of Florida, California, and Texas.

Conceptual Framework

Cognitive dissonance was used to guide this study. Festinger (1957) described cognitive dissonance as the feeling people have when presented with information that does not align with what they have already established as true. Inconsistency of information leads people to feel psychological discomfort. For extension agents, presenting information that reduces inconsistency is critical to meet the needs of clients (Everly, 1967). Increasing direct involvement of subjects in extension programs, through program planning or interactive activities, can also help shape attitudes (Whaples & Ryden, 1975), which could decrease cognitive discomfort (Hunt, 2004). Dissonance can also be relieved if messages promoting a product focus on desirable qualities for the consumer (Oshikawa, 1969), thus reducing their sense of discomfort with qualities they deem as undesirable.

Methods

Qualtrics, an online survey company, distributed a survey instrument to a panel 2,757 potential respondents 18 years or older in September 2015. Respondents did not necessarily live in citrus producing counties, but they were all residents of Florida, California, or Texas. Non-probability sampling methods were used and quotas were set to collect approximately equal number of respondents from each state. There were 1,541 usable responses (55.9% participation rate) after quotas and manipulation checks were passed. Seven questions within the instrument were analyzed for the purposes of this study. The questions were researcher-developed, and a panel of experts reviewed the survey prior to distribution to account for face and content validity. The first question asked if respondents purchased citrus; those who answered yes were asked how often they purchased citrus (never, less than once a month, at least once a month, at least 2-3 times a month, once a week or more). The final five questions asked about the importance of the citrus industry to the respondent and the respondent's community. The questions were measured

on a five-point Likert-type scale that ranged from 1 = *strongly disagree*, 2 = *disagree*, 3 = *neither agree nor disagree*, 4 = *agree*, to 5 = *strongly agree*. All data were analyzed in SPSS. Frequencies were reported for all questions.

Results

The majority of respondents (91.0%) indicated they purchased citrus in the past year. Of the 1,402 respondents that purchased citrus, 83.3% specified they purchased citrus at least once a month or more. Table 1 displays respondents' thoughts about the role citrus plays or does not play in their community.

Table 1

Effects of Citrus on Community

Statement	Strongly Disagree / Disagree (%)	Neither Agree nor Disagree (%)	Agree / Strongly Agree (%)
My community's history is strongly tied to the citrus industry	46.8	19.7	33.5
The citrus industry contributes to the character of my community	45.5	26.5	27.9
The citrus industry has helped put my community on the map	49.8	23.0	27.3
My community's economic development depends on the citrus industry	56.7	24.2	19.1
I am very attached to the citrus industry	56.5	26.9	16.7

Discussion and Recommendations

The majority of residents in citrus producing states buy citrus at least once a month. This finding illustrates that citrus is an important staple in the consumers' households. However, most respondents neither agreed nor disagreed or simply disagreed that the citrus industry affected their community. Cognitive dissonance is evident in that respondents live in citrus producing states and regularly purchase citrus, yet do not recognize the importance of citrus to their community (Festinger, 1957). Given this, consumers will likely not see the need for a solution to citrus greening or the potential use of GE citrus. There is a need for extension agents to facilitate discussions about citrus production and the effects of citrus greening on the industry to diminish the cognitive dissonance that consumers experience and to raise awareness about the disease. In order to reduce cognitive inconsistencies, extension agents should focus on contributions of citrus to their state specifically (Everly, 1967) and invite consumers to tour different citrus groves and interact with growers (Whaples & Ryden, 1975). Extension agents should also provide information to consumers about citrus greening and how the disease impacts the consumers' communities. Since citrus is not necessarily produced in all parts of the states studied, future research could compare the responses of non-citrus producing counties to citrus producing counties. Additional research should further evaluate cognitive dissonance related to citrus greening by exploring consumers' knowledge of the disease compared to their level of concern.

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Communicating water-related information to landowners: Identifying preferred communication channels, perceived source trustworthiness, and preferred type of information

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Stacey Dewald, Graduate Student
Department of Agricultural Leadership, Education, & Communications
Texas A&M University
262 AGLS, 2116 TAMU
College Station, TX 77843-2116
sdewald@tamu.edu

Holli Leggette, Assistant Professor
Department of Agricultural Leadership, Education, & Communications
Texas A&M University
262 AGLS, 2116 TAMU
College Station, TX 77843-2116
hollileggette@tamu.edu

Theresa Pesl Murphrey, Associate Professor
Department of Agricultural Leadership, Education, & Communications
Texas A&M University
236 AGLS, 2116 TAMU
College Station, TX 77843-2116
t-murphrey@tamu.edu

Allen Berthold, Research Scientist
Texas Water Resource Institute
Texas A&M University
1500 Research Parkway A110
2260 TAMU
College Station, TX 77843-2260
taberthold@ag.tamu.edu

Kevin Wagner, Deputy Director of Engagement
Texas Water Resource Institute
Texas A&M University
1500 Research Parkway A110
2260 TAMU
College Station, TX 77843-2260
klwagner@ag.tamu.edu

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Introduction/Need for research

Pollution is impacting water quality in the Little River watershed in Texas. More specifically, the Little River tributary is failing to meet recreational use standards (TCEQ, 2014a). Failure to meet standards is partially due to bacteria pollution. Such bacteria pollution can be traced to agricultural practices—the leading nonpoint sources of pollution in the nation's waterways (CDC, 2010)—which can be reduced when landowners adopt best management practices (BMPs) associated with watershed-based plans (WBPs). To increase adoption of BMPs, landowners should be educated about adoption of BMPs and information should be diffused through preferred communication channels and preferred sources of information.

Rosenberg and Margerum (2008) noted newsletters were a preferred method of communication because they are a "quick, convenient, and non-invasive method of getting information" (p. 488). Yet, some agri-marketing individuals and organizations successfully used social media to communicate about current agricultural issues, such as water quality, and to educate the agricultural community (White, Meyers, Doerfert, & Irlbeck, 2014). Additionally, Midwest landowners preferred to receive information from local university extension, soil and water conservation districts, and the natural resources conservation service because of their perceived level of trustworthiness (Mase, Babin, Prokopy, & Genskow, 2015).

The information diffusion theory guided this study, focusing on shortening, sharpening, and assimilating messages for specific audiences (Stone, Singletary, & Richmond, 1999). In this context, messages should express the positive effects (e.g., economic gain, visual pleasing, property and environmental improvements) of implementing BMPs (Guo, 2014) and not express specific environmental dimensions (e.g., current water quality levels; Jackson-Smith & McEvoy, 2011) or negative impacts of agricultural practices on water quality (Baumgart-Getz, Prokopy, Floress, 2012). Noted in research priority one of the AAAE National Research Agenda, "understanding of agriculture must take into account a person's contextual differences" (Roberts, Harder, & Brashears, 2016, p. 15), which was applied in this study to describe landowners' preferred communication channels, perceived source trustworthiness, and preferred types of information.

Method

This quantitative study was part of a larger research project focused on the Little River watershed in Texas and was conducted using survey methodology. We identified a population of 7,592 landowners using Geographic Information System (GIS) coordinates from local county assessors along the Little River, San Gabriel River, and Big Elm Creek tributaries of the Little River watershed. Using an online sample calculator with a 95% confidence level and a 1.96 confidence interval, a simple random sample of 1,881 was obtained from the GIS database of 7,592 population (Bryman, 2015). We mailed questionnaires using Dillman's Tailored Design method (Dillman, Smyth, & Christian, 2014), and participants had the option to return the questionnaire via mail or to complete the questionnaire online. The instrument included a total of 24 questions with dichotomous, modified four- and five-point Likert-type scales. The five-point *preference scale* included ≤ 1.50 = least preferred; 1.51 – 2.49 = slightly not preferred; 2.50 – 3.49 = no preference; 3.50 – 4.49 = slightly preferred; 4.50 ≤ = most preferred. The four-point *trustworthy scale* included ≤ 1.50 = not trustworthy; 1.51 – 2.49 = somewhat trustworthy; 2.50 – 3.49 = trustworthy; 3.50 ≤ = very trustworthy. A total of 1,880 questionnaires were delivered.

We achieved a 25% (n = 462) response rate, resulting in a total of 15% (n = 275) usable data. Of those 275 participants, 28.4% were 55 to 64 years of age (n = 78), 67.3% were males (n = 185), 83.6% were Caucasian (n = 230), and 24.0% had a bachelor's degree (n = 66). We analyzed the data using SPSS 23 and ran descriptive statistics and t-tests on categorical data (Field, 2013). No significant differences were found between early and late respondents (Lindner, Murphy, & Briers, 2001). We found the instrument reliable with a post-hoc Cronbach's alpha of .954 (Field, 2013), and we established instrument validity using content experts who specialize in water resources and have extensive experience in developing WBPs (Bryman, 2012).

Findings

Although there were no significant differences between direct mailings and all other preferred channels ($t(221) = .431$, $p = .682$), participants had a higher preference for receiving water-related information quarterly (n = 69) through direct mailings (M = 3.99; SD = 1.16). Additionally, no significant differences were found among participants' reported ages $F(3,214) = 1.172$, $p = .321$, 1- $\beta = .313$) although participants aged 55 to 64 (M = 4.08; SD = 1.19) reported higher preference for direct mailings than other age groups. Although there were no significant differences between male and female participants regarding preferred communication channels ($t(91.82) = -.391$, $p = .697$), social media was less preferred by males (M = 1.87; SD = 1.07) than by females (M = 2.04; SD = 1.28).

Furthermore, although landowners rated all groups as somewhat trustworthy, they had a higher preference for information from Texas A&M AgriLife Extension (M = 3.16; SD = .82). Although no statistical differences were found among age groups related to perceived source trustworthiness ($F(3,229) = .679$, $p = .130$, 1- $\beta = .488$), participants aged 54 and younger and participants from all other ethnicities found Texas A&M AgriLife Extension to be more trustworthy than participants from other age groups and Caucasian participants. Participants ages 65 to 74 (M = 1.88; SD=.87) reported the lowest level of trust for government agencies. Participants who had received information from Texas A&M AgriLife Extension reported the organization more trustworthy than those who had not received information from Texas A&M AgriLife Extension. Additionally, participants reported interest in receiving all types of water-related information (e.g., water quality levels, specific conservation practices).

Conclusions/Implications/Recommendations

Participants wanted to receive water-related information through direct mailings, which was similar to Rosenberg and Margerum (2008) and Howell and Habron (2004), and they reported Texas A&M AgriLife Extension as a somewhat trustworthy source (Rosenberg & Margerum, 2008; Mase et al., 2015). Understanding which information sources participants view as trustworthy can help communicators build communication strategies to assist landowners in assimilating content (Stone et al., 1999). Although a lack of preference for social media was reported in this study, agricultural organizations use social media in today's society to inform agricultural audiences (White et al., 2014) due to its cost effectiveness. Additional research is needed to determine if and how social media and Internet technologies could be used to deliver water-related information. It is imperative that effective outreach and educational topics be delivered to landowners in an effort to reduce pollutants entering the waterways and, ultimately, improve the quality of water in the watershed.

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Community Member Perceptions of Student Service at a Land-Grant University

Joaquin R. Amaral[1], Jeremy Elliott-Engel[1], Sarah Bush[1], Elli Travis[1], Lane Woodward[1], NithyaPriya Ramalingam[2], and Abdulmueen Bogis[3]
[1] Department of Agricultural, Leadership, and Community Education
[2] Graduate Program in Translational Biology, Medicine, and Health
[3] Department of Architecture Design and Research

Virginia Polytechnic Institute and State University

Department of Agricultural, Leadership, and Community Education
175 West Campus Drive
214 Litton Reaves Hall, Virginia Tech
Blacksburg, VA 24061
(540-315-1021)
ramaral1@vt.edu

Introduction

The land-grant mission of extension, research, and teaching often requires students to interact with the community because ideally, each part of the mission should benefit from each component (Settle & Telg, 2013). Students are involved with their surrounding university community through participation in community service activities and service-learning courses, due to the integral nature of the institution (Franz, Childers, & Sanderlin, 2012). Much is known about benefits and impacts of community service to students and land-grant universities. However, little research exists on the views and experiences of community members that receive services, work alongside, or supervise these college students during community service projects and events. This qualitative study seeks to fill this gap by describing the perceptions of community members who have directly interacted with students through community service.

Conceptual Framework

Partnerships are created through basic human relationships. Good partnerships are founded on trust, respect, communication, and governance structures, which improve resource sharing and positive decision making processes (Worrall, 2007). Community service and volunteer efforts of college students are one way the university builds partnerships and relationships with community members (Bringle & Hatcher, 2002). Community service efforts have the capacity to build positive relationships with community members.

Land-grant institutions include local community engagement in their institutional missions. A great deal of literature exists on the benefits and impacts engaging in community service can have on college students. Students gain valuable, real world knowledge, which can increase their leadership skills and attitudes toward civic responsibility. In addition, communities benefit from the time and talents of the students because of their proximity (Bruning, McGrew, & Cooper, 2006). However, both parties are best served when volunteering is viewed from an altruistic perspective, where the intention of the student is to help others (Gage & Thapa, 2012). Little research exists on the views and experiences of community members that receive services, work alongside, or supervise these college students during community service.

Equity theory of motivation and social exchange theories play a role in successful campus-community relationships. Equity theory stresses the sense of fairness between partners, where both partners are satisfied as long as outcomes are proportionate to inputs, even if the outcomes to both partners are unequal (Miner, 2005). Social exchange theory is based on the evaluation of a current relationship's benefit, and whether it exceeds the benefits of other possible relationships (Cook & Emerson, 1987; Cropanzano & Mitchell, 2005).

Methodology

The research questions of this qualitative study on the perspectives of community members who have directly interacted with students through community service projects, are: How do community members describe their connection with the university? How do community members view the community service outreach efforts of students? What are the community members' perceptions of the relationships between the community and institutions through the community service efforts of students? The study participant target audience is community members, over the age of 18, who worked alongside, supervised, or received services from university students. All community members with the appropriate prior experiences were eligible regardless of demographic characteristics. Seven participants volunteered after receiving IRB-approved invitations. Interviews were conducted by two members of the research team, one

interviewer and one technical assistant. All participants were Caucasian and had post-secondary degrees. Most (86%, n=7) resided within five miles from campus and their ages ranged between 33-87. Three male and four females participated. The research team was comprised of seven graduate students at a land-grant institution. Many members of the research team have been, or currently are, active in community service activities and involved in the university's community.

Interviews were audio-recorded and transcribed verbatim. Data was broken down into meaning units (i.e., stand-alone thoughts or ideas). Each individual set of meaning units was coded by three research team members. The team identified initial emerging themes by grouping together like codes. Based on emerging themes, researchers used their meaning units to conduct a second round of coding (Creswell, 1998). In this iterative process, thematic analysis was concluded when the team agreed upon themes and identified sub-themes during the final coding.

Results

Seven essential themes emerged from the interviews: (1) description of involvement; (2) why the interviewee is involved; (3) personal impact felt by interviewee; (4) perception of students; (5) perceived impact of student community service on the community; (6) perceptions of why the community gets involved; and (7) university role. Themes were connected to sub-themes that were identified for the essential themes. The university role theme is integral, which demonstrates the university as an integral component of all the other themes and subthemes.

Community members had inconsistent experiences with the land-grant university students who provided community service. The participants suggested improvements that could positively impact implementation. Mutually beneficial experiences occurred when there was a clear match between student and community member expectations and outcomes of service, which supports social exchange theory. As suggested by the findings of this study, students need to have the applicable knowledge and level of motivation for service activities. Students are a transient population and may not build strong ties with the surrounding town. However, students are still representative of the land-grant university and community as a whole. Outsiders tend to not separate university students from the rest of the population of the town, and as such, students can be good ambassadors not just of the university, but of the community as well.

Implications and Recommendations

This research adds to the adds to the National Research Agenda for the American Association for Agricultural Education Priority 4- Meaningful, Engaged Learning in All Environments (Roberts, Harder, & Brashears, 2016). The results indicated that it is important to measure the perceptions of community members when implementing community service efforts. Community members want the work to be pertinent and valuable to the student and community. Participants had inconsistent experiences with students and their positive perceptions of the university increased when students were knowledgeable, supported by faculty and staff, and the work was relevant to the community member. As faculty and student organizations plan community service efforts it is important to create service projects that reflect the needs of the community, community members, and student participants. This study focused on one land-grant university's student community service efforts. However, research needs to be done on individual community members' perspectives. The researchers did not focus on service-learning efforts and there were emergent indicators on how service learning projects were implemented and would impact community members' perceptions of both the students and the university.

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Current Agriculture Teachers' Preferences when Selecting Ideal Teaching Partners

Hailey N. Gates, Catherine W. Shoulders

University of Arkansas

cshoulde@uark.edu

Current Agriculture Teachers' Preferences when Selecting Ideal Teaching Partners

Introduction

Historical trends have long suggested a need for more teachers (Darling-Hammond & Bransford, 2005). The National Association of Agricultural Educators reported 1,028 open teaching positions that remained unfilled during 2015 (Foster, Lawver, Smith, & Thompson, 2016), displaying the need for teacher recruitment and retention within agricultural education. Previous studies have identified sources of beginning teacher dissatisfaction, frequently citing stress in the workplace as a source of discontent and subsequent abandonment of the profession (Burris, Kitchel, Grieman, & Torres, 2006). Researchers have noted that induction into professional communities and formal mentoring relationships with colleagues have been successful at reducing stress and, in turn, reducing teacher attrition (Burris et al., 2006; Darling-Hammond & Bransford, 2005; Odell & Ferraro, 1992). However, Burris et al. (2006) found that perceived similarities between teachers led to more satisfying collaborative experiences. Therefore, an examination of inservice agriculture teachers' preferences when identifying ideal teaching partners can provide insight into the complex relationships between factors related to initial impressions, such as appearance and demographic characteristics, and new teachers' abilities integrate into existing professional communities of agriculture teachers. This study used a theoretical framework built on teachers' roles as professionals (Darling-Hammond & Bransford, 2005) and homophily (Rogers & Bhowmik, 1970), to examine how perceived similarities or differences may play a role in who teachers want to include in their professional communities.

Purpose/Methodology

The purpose of this study was to describe the preferences of current agriculture teachers when identifying ideal teaching partners. A convenience sample of teachers attending the 2015 National FFA Convention was collected. A display booth dedicated to data collection was set up within the exposition center for two days. Teachers passing by the booth were initially identified via their National FFA designated "advisor" pins, which are required to enter the exposition center. Passersby identified as teachers were asked to confirm their role as a current agriculture teacher and then given a response form on which they stated their gender and age. Participants were then offered a verbal scenario in which they were given the opportunity to select a teaching partner to hire for their existing agriculture program. Teachers selected from eight teacher images displayed on boxes in which response forms could be deposited. Images were pictured and displayed following the procedures of Morris, Gorham, Cohen, and Huffman (1996), with headless figures of trained models representing different ages (20s and 40s), genders (male and female), and attire (business casual and casual) (Table 1). Business casual attire consisted of a dress shirt or blouse, dress slacks or a skirt, and dress shoes, while casual attire consisted of a polo shirt or plain shirt, jeans or khakis, and boots or shoes (Morris et al., 1996). Models' posture was also controlled, with each maintaining a neutral stance. These sartorial categories and their corresponding attire were evaluated for face validity by an expert in apparel merchandising.

Table 1
Teacher Confederates and Their Attire

Photograph Identification	Gender	Age	Attire
A	Female	20s	Casual
B	Male	40s	Business Casual

C	Female	40s	Casual
D	Male	20s	Casual
E	Female	40s	Business Casual
F	Male	20s	Business Casual
G	Female	20s	Business Casual
H	Male	40s	Casual

Results/Findings

Responses were received by 400 teachers. Males made up 75.8% of the participants (n = 303), while 24.3% were female (n = 97). The majority of participants were under 40 years old (n = 251; 62.8%). Participants' selections of ideal teaching partners are displayed in Table 2.

Table 2
Participants' Selections of Ideal Teaching Partners

Confederate	***f***	**%**
Younger, Male, Casual Attire	89	22.3
Older, Male, Business Casual Attire	75	18.8
Younger, Male, Business Casual Attire	73	18.3
Older, Male, Casual Attire	66	16.5
Younger, Female, Casual Attire	48	12.0
Younger, Female, Business Casual Attire	41	10.0
Older, Female, Business Casual Attire	5	1.3
Older, Female, Casual Attire	3	0.8

Conclusions/Recommendations

Results from this study indicated that male confederates were chosen much more frequently than their female counterparts, regardless of age or attire. Contrary to Burris et al.'s (2006) notion of a preference for perceived similarities between teachers, female confederates were chosen 24.3% of the time, while 34.5% of the participants were female. These findings suggest a concerning implication regarding the ease with which female teachers can integrate into professional communities of agriculture teachers, even among other female teachers. This implication is supported by the findings of Kelsey (2006), who reported that females were less successful than males in securing employment within agricultural education after graduation. With women's current minority status in agricultural education (Kelsey, 2006), this preference for males could expand the existing gender gap and continue to limit opportunities for females in agriculture.

We recommend further research be conducted to understand participants' selections of teaching partners, as we did not attempt to collect data on the processes they used to identify ideal teaching partners. Informally, we heard teachers mulling over the benefits of gender variation for chaperoning overnight field trips and weighing the life experience of older teachers versus the enthusiasm of younger teachers during data collection, and believe qualitative inquiry could enhance our understanding of how teachers prioritize needs when identifying ideal teaching partners. Further, we understand that teachers are capable of collaborating well with others, regardless of whether they perceive them to be an ideal choice; therefore, we recommend

research be conducted to better understand the relationship between teachers' preferences and their abilities to work with those that deviate from those preferences.

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Does more time matter? Results of 15-week student teaching experience

Jorge Gonzalez, Marshall Baker, Jon W. Ramsey

Oklahoma State University

jon.ramsey@okstate.edu

Does More Time Matter? Results of a 15-Week Student Teaching Experience

Introduction

For decades, the student teaching experience has been touted as the seminal experience for prospective teachers of agricultural education (Edgar, Roberts, & Murphy, 2009; Edwards & Briars, 2001; Schuman, 1969). As such, the knowledge and skills learned in teacher preparation programs are intended to be practiced to a level of accomplishment needed for initial employment as a school based agricultural educator. However, teacher educators recognize a "disconnect" between the theoretical preparation of pre-service teachers and their ability to practically apply that training in real world classrooms (Grossman, Hammerness, & McDonald, 2009). To create a stronger connection between theory and practice and help pre-service teachers practice and acquire effective teaching behaviors in real world settings, the [Department] increased the student teaching experience from 12-weeks to 15-weeks. This study features an investigation of two student teaching cohorts and the amount of time spent observing, team teaching, and teaching lesson topics aligned with Agriculture, Food, and Natural Resources career pathways.

Conceptual and Theoretical Framework

This study is theoretically grounded in Kolb's (2015) experiential learning theory. The teacher preparation program at [State] University utilizes Kolb's framework to design the student teaching experience. As such, it is essential to identify what experiences students are having during the experience and if that is drastically different in the 12-week or 15-week format. Conceptually, the model for developing and researching early field experiences (Retallick & Miller, 2010) identifies the desire for melding theory and transition that occurs during the student teaching experience. This study seeks to explore the stand-alone, program-centered, student-teaching experience directed by the cooperating teacher.

Purpose and Objectives

The purpose of this study was to describe the amount of time pre-service teachers spent observing, team teaching, and teaching lesson topics aligned with Agriculture, Food, and Natural Resources (AFNR) career pathways. Specifically, the objectives were to 1) describe the amount of time the 12-week cohort and the 15-week cohort spent observing, team teaching, and teaching; 2) determine the frequency of AFNR career pathway topics taught by the 12-week cohort and the 15-week cohort; and 3) describe changes in time spent teaching and frequency of lesson topics taught between the 12-week and 15-week cohort.

Methodology

This survey research focused on the census of preservice teachers completing their student teaching internship during spring 2015 and spring 2016 ($N = 34$). The spring 2015 cohort ($n = 12$) completed 12-weeks of student teaching while the 2016 cohort ($n = 22$) completed 16-weeks. Data were retrieved from archived, weekly journal reflection reports submitted electronically each week by the student teachers. Students self-reported the days that were spent observing, team teaching, and teaching along with the lesson topics taught. Each report was reviewed and data recorded into SPSS Version 20 for analysis. A census study permits conclusions to be drawn about the entire population. Therefore, random sampling, hypothesis testing, and the use of inferential statistics are not necessary (Creswell, 2005).

Results/Findings

Findings for research questions one and two are depicted in Figure 1. Table 1 summarized the findings for research questions three and four.

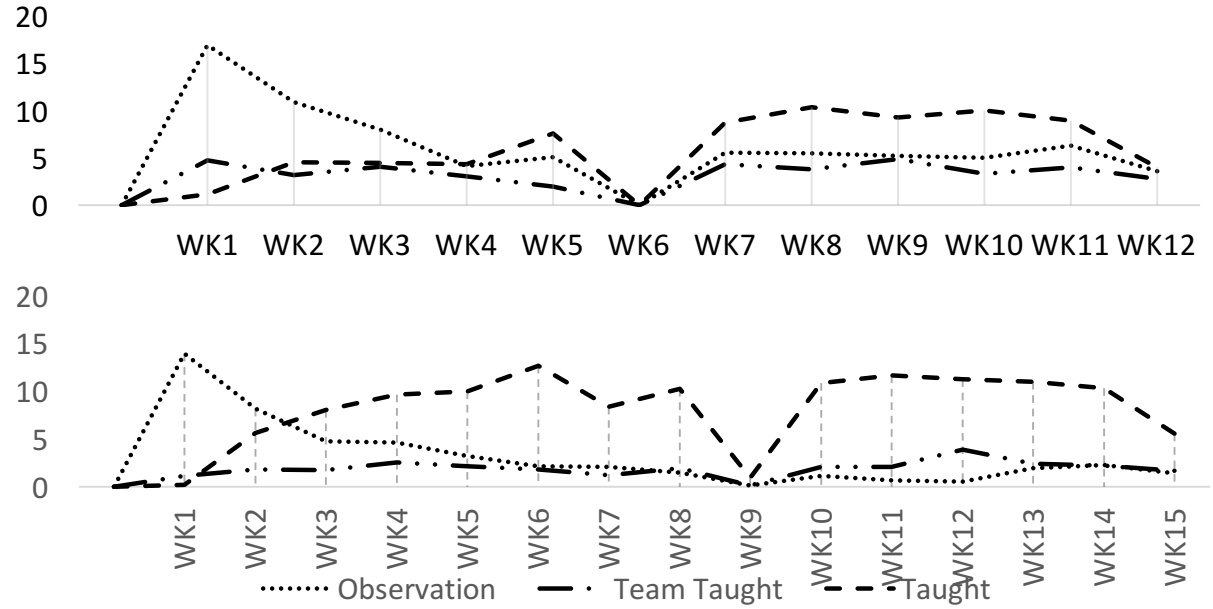

Figure 1. Summary of mean number of times student teachers observed, team-taught, and taught various topics in the Spring of 2015 (top chart) and in the Spring 2016 (bottom chart).

Table 1

Summary of Average Courses Taught Per Student in Each of the [State] AFNR Career Pathways During Spring 15 and Spring 16 Student Teaching Cohorts

Pathway	Spring 15	Spring 16	Δ
Food Products and Processing	9	10.81	+1.81
Plant and Soil Science	26.83	20.13	-6.7
Animal Science	32.83	55.5	+22.67
Agricultural Power, Structures, & Technology	41.33	44.68	+3.35
Agribusiness Management	5.75	9.40	+3.65
Agricultural Communications	28.75	16.72	-12.03
Natural Resources & Environmental Science	14.92	13.54	-1.41
FFA Advising	62.41	45.22	-17.19
Miscellaneous	29.83	3.45	-26.38

Conclusions and Implications

Preservice teachers who student taught for 15-weeks began teaching sooner than the 12-week cohort. In addition, they taught more lessons creating opportunities to practice and implement effective teaching behaviors more frequently (Coplin, 2003). Teacher educators should be mindful of the limited time students are observing the mentor teacher and work with cooperating teachers to encourage more opportunities for observation of "best practice" regarding teaching, advising, and facilitating student learning in both formal and informal settings.

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Employers' Perceptions of Student Participation in High Impact Experiences: Generational Differences

Jennifer Ann Scasta, Texas A&M University
Theresa Pesl Murphrey, Texas A&M University
Kim E. Dooley, Texas A&M University

600 John Kimbrough Blvd, Suite 515
College Station, Texas 77843
979-845-5596

jas11@tamu.edu
t-murphrey@tamu.edu
k-dooley@tamu.edu

Introduction and Theoretical Framework

Discussions related to workplace readiness and competencies needed for college graduates to meet industry needs is common; however, literature documenting workplace readiness and competency needs related to agricultural leadership graduates is limited and what is available is dated (Graham, 2001). Further, no research could be identified that looked at how generational differences impact employers' perceptions within the context of agricultural leadership graduates. In many work places, the generational gaps stretch from baby boomers to generation X to millennials (Schullery, 2013). Lyons, Urick, Kuron, and Schweitzer (2015) explain that there is a need for understanding generations from a qualitative perspective as this can help us better understand the ways that generation shapes our thoughts and identities.

Recent literature has focused on how to improve classroom teaching to better prepare students for the workplace (Rateau, Kaufman, & Cletzer, 2015), the importance of team-based projects for students (Lamm, Carter, & Melendez, 2014), and student perceptions of an agricultural leadership degree (Moore, Odom, & Moore, 2013). Curricula to shape and mold graduates should be continuously reviewed and revised in order to remain up-to-date and relevant (Kunkel, Maw, & Skaggs, 1996). "As the agricultural industry changes over time, the educational systems pertaining to agriculture and related subjects must not fall behind" (Graham, 2001, p. 22).

Purpose

This purpose of this study was to document the generational differences among employers of agricultural leadership students in regard to perceptions of student participation in high impact experiences. Research objectives were:

1) Determine the high impact learning activities valued by entry-level employers of agricultural leadership graduates,
2) Determine how high impact learning activities are valued by employers of agricultural leadership graduates, and
3) Determine how high impact experiences are valued by generationally different employers of agricultural leadership graduates.

Methodology

Currently, over 50 companies recruit and hire agricultural leadership graduates from Texas A&M University (Moses, personal communication, April 15, 2016). Utilizing non-probability, convenience sampling, the researcher identified five employers of agricultural leadership graduates who could share meaningful information regarding the topic of workplace readiness and competencies. Each employer possessed unique experience and competence (Merriam & Tisdell, 2016). The selected employers each had participated in the Texas A&M University Agriculture & Life Sciences (AGLS) Career Fair consecutively for the last three years and had hired at least five students each year who had majored in agricultural leadership. Specifically, three men and two women were selected for participation. One participant was a Millennial, two participants were members of Generation X, and two participants were classified as Baby Boomers. Each participant took part in a semi-structured interview via telephone (Kvale, 1996) which focused on knowledge and skills needed as well as their perceptions of the importance of high impact experiences related to entry-level undergraduate hires. The researcher employed constant comparative analysis to analyze the data. Data was organized into categories and

themes. Trustworthiness was established through member checks, multiple peer debriefings, and triangulation.

Results and Conclusions

Multiple prominent themes resulted from the data that indicated each generational group carried differing opinions regarding high impact experiences. When asked how employers valued high impact practices such as internships, research mentorships, and study abroad experiences, distinct differences emerged based on generational groupings.

The Millennial respondent preferred students to participate in study abroad experiences over internships and research. Respondent three stated, "study abroad shows me they have studied another culture and been exposed to the idea of adapting." This respondent also commented on the importance of being flexible in the workplace and noted that study abroad experiences can encourage flexibility. Additionally, this respondent ranked internships over research experiences. Generation X respondents collectively valued internships the highest followed by study abroad experiences and research, respectively. Respondent four stated, "Getting experience in the field related to my company is key." This respondent explained that the only way to get this experience is through a hands-on internship. An additional Generation X respondent explained that internships build upon the students' self-motivation, initiative, and drive. Baby Boomers were the most passionate and opinionated group, particularly opposing study abroad trips. Respondent one stated in a concerned tone, "Sometimes study abroad is a vacation." Both Baby Boomer respondents commented on a study abroad trip's return on investment related to the student's performance in the workforce. According to both respondents, students who have participated in multiple study abroad trips often expect to travel extensively, request more vacation time, and have unrealistic expectations.

Based on findings, it was concluded that an employer's generational grouping has the potential to impact their perceptions of high impact experiences and how those high impact experiences can benefit or detract from job performance. These findings are consistent with research studies related to generational differences in the workplace (Lyons et al., 2015).

Implications and Recommendations

Clear understanding of employer expectations is necessary in order to properly prepare students for the workforce, and recognition that expectations can vary depending on an employer's generation can be helpful to students. High impact experiences are believed to provide an advantage to students; however, as found in this study, interpretation of those experiences may vary depending on the employer's generational category. For those employers who did not value study abroad or research experiences, students need to highlight and emphasize the learned skills and traits in a way that the employer can connect those experiences to future job performance. A post study abroad program to guide students in marketing their experiences to employers would be beneficial. Further, encouragement for students to participate in multiple high impact learning experiences that connect with their interests should be accompanied with instruction as to how to relate those experiences to future employment opportunities.

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Establishing a Model for the Design and Delivery of Online Agriscience Learning Environments to Impact Student and Faculty Success

Christopher A. Clemons, Ph.D.
5070 Haley Center
Auburn University
Auburn, AL 36849-5212
334-844-6789
chrisclemons@auburn.edu

Establishing a Model for the Design and Delivery of Online Agriscience Learning Environments to Impact Student and Faculty Success

Introduction

The availability of open access models provides all levels of student's opportunity for college credit, study at a personal pace, and a computer-based setting, which emphasizes a multitude of instructional methodologies tailored to the individual student (Lowerison, Sclater, Schmid, & Abrami, 2006). As a result of the availability of technology, students are gravitating towards less restrictive and more convenient avenues in their education. A three panel, national Delphi Study was designed to investigate the instructional, design, and delivery needs of secondary students, high school agriscience teachers, and post-secondary faculty in Agriculture Education.

Theoretical/Conceptual Framework

The theoretical framework for this study was based on the convergence of three established theories within the field of educational psychology: Moore's Transactional Distance Theory for Web Based Instruction (1993), which identifies the relationship between instructor and student in the online environment where student and instructor are separated in physical and location presence. The Constructivist Learning Model for Information Construction (ICON). Black and McClintock (1996), espoused that constructivist design as an interpretation of authentic artifacts in the context of background materials is a means for developing meaningful and tangible outcomes within the online learning environment. Bandura's Social Learning Theory (1977) is a fundamental aspect of social learning which identifies how students experience learning through group interaction. Bandura (1977) postulated that learning by direct experience would lead to new patterns of behavior being acquired by observing the behavior of others.

Methods

The purpose of this study was to determine the needs for stakeholder groups (Guba & Lincoln, 1989) engaged with online learning modules. The population for this study included ten post-secondary agriculture students, ten secondary agriscience teachers, and nine post-secondary Agriscience Education faculty. Using the Delphi Model for consensus, three distinct expert panels were asked to participate in a three-round study to evaluate statements related to online course design and delivery, online teaching methodologies, and instructional use of multimedia within online course content. To accomplish the purpose, two research objectives were used to guide this study: assess the essential components for the development of a model for the design, application and delivery on online agriculture content, and identify and analyze stakeholder perceptions of instructional design, application of course content and delivery through online learning systems.

Results

Objective one sought to identify and analyze stakeholder perceptions of instructional design, application of course content and delivery through online learning systems. Undergraduate students demonstrated a higher interest when asked their attitudes and perceptions related to mobile technology (cellular, tablet) use for online learning, while

post-secondary faculty indicated little interest in preparing mobile based learning opportunities. Post-secondary faculty and secondary agriculture teachers indicated their support of professional development activities to improve their understanding and application of skills related to online learning development and implementation. All expert panelists indicated strong agreement between the role of online learning and student discussion through faculty engagement through online learning coursework.

Objective two was designed to assess the essential components for the development of a best practices model for the design, application and delivery on online agriculture content. For this objective, undergraduates and post-secondary faculty agreed the use of video for providing online tutorials for online courses, while secondary faculty expressed the need for this type of video to provide foundational instruction for student use. Secondary teachers and post-secondary faculty agreed more often than undergraduates and post-secondary faculty in regards to methodology and best practices for course development, while undergraduates and post-secondary faculty agreed on the role of online learning and the level of quality instruction was dependent on the organizational skills of the instructor and ultimately the usability of the course by students. Additionally, undergraduates and post-secondary faculty demonstrated a significant difference related to ease of use of the course layout, where faculty upload materials, discussion boards, video chat, and assignments, and the use of formative assessment in online environments. Undergraduates indicated their dislike for formative assessment while post-secondary instructors viewed this type of assessment as vital to the success of the student and the mastery of the content of the course.

Conclusions

The three panel Delphi expert groups reached consensus for the development of the Unified Model for Online Learning, Design, and Learning Management Systems. The panel identified three areas vital to the success of online learning: instructional design components, perceptions and attitudes of online learning, and methodology for online learning and course design at colleges of agriculture. This model is intended to be useful in the planning, organizing, development, and implementation of online courses and content. A further conclusion of this study indicated students require clear and concise design of online content and content should be developed for ease of use by faculty for the uploading materials, discussion boards, video chat, and downloading assignments.

Implications/Recommendations/Impact

This study indicated that online learning systems typically are incomplete and do not meet the needs of the major stakeholders in online education. There exists a need to implement the proposed model or individual components of the model based on the needs of students and faculty within colleges of agricultural science. Generational differences exist in the acceptance of online learning related to access through various means of hardware. Specifically, a large discrepancy existed within this study on the importance of mobile technology and its equal use compared to the desktop software. Further study should be undertaken to determine why a difference in attitude exists between undergraduate and post-secondary agriculture education faculty regarding mobile technology. Identifying barriers and perceptions would help educational researchers understand why attitudes vary between the two stakeholder groups with specific technology. Future generations of students will continue to demand easier and more global access to their education. If we do not address their needs

from the practitioner standpoint, our role as educational experts will cease to exist.

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Experience in Agriculture and Cultural Worldview May Influence Public Opinion

Tracee M. Schiebel

Kathryn A. Stofer

University of Florida
P.O. Box 110540
Gainesville, FL 32611

Tracee Schiebel, tschiebel12@ufl.edu
***Kathryn Stofer, stofer@ufl.edu, (352) 273-3690**
***Corresponding Author**

Experience in Agriculture and Cultural Worldview May Influence Public Opinion

Introduction

Risk perceptions and cultural worldviews are connected, perhaps more so than simple literacy about an issue (Kahan, 2008). Individual cultural worldview as well as experience with or exposure to an issue (Zajonc, 2001) can shape opinions and beliefs on current issues. Understanding worldview and experience with agriculture, therefore, can be beneficial to the agricultural industry who may want to understand consumer perception of environmental impact risk and acceptance of various agricultural techniques. Few Americans live on farms today (Environmental Protection Agency, 2013). Discovering effective methods to learn public opinions in agriculture is a priority of the American Association for Agricultural Educators (Enns, Martin, & Spielmaker, 2016). Our study compares two new tools, worldview and agricultural experience, as a precursor to using the scales in public opinion research.

Theoretical Framework

The Cultural Theory of Risk states that perceptions reflect and reinforce a person's "cultural way of life." Inspired by a collection of Douglas and Wildavsky's (2010) cultural theory work, Kahan's (2008) cultural worldview scale produces a grid with each quadrant defined to represent a worldview on two continua: *Hierarchical-Egalitarian* and *Individualism-Communitarianism*. The statements on the cultural cognition scale are social statements, reflecting how a person views government, society, and personal rights broadly.

Methods

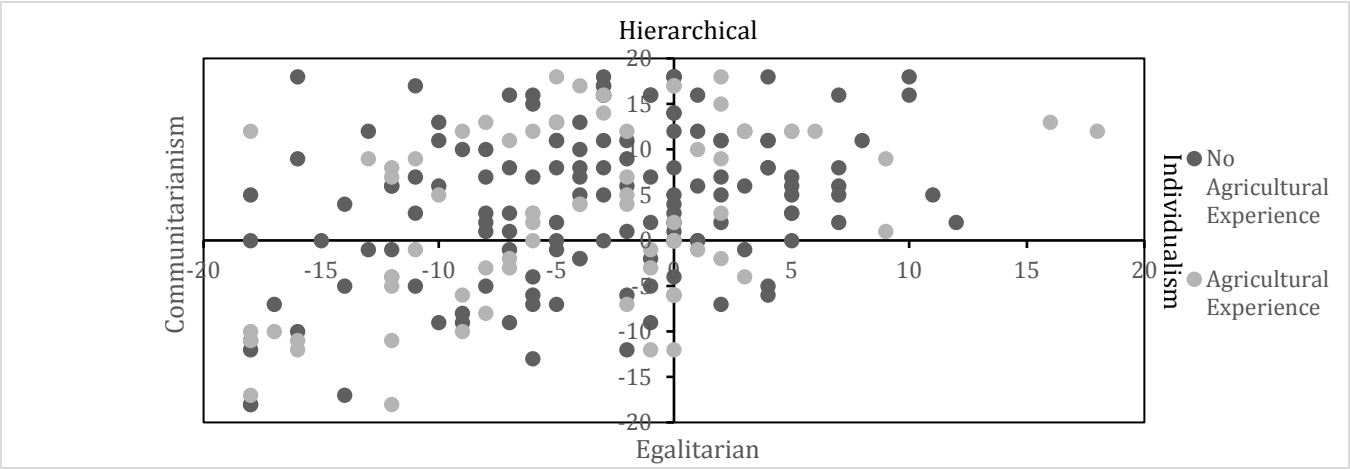
We collected responses from a sample of 216 United States adults at the end of August 2016 using Qualtrics survey recruitment. These questions were part of a larger survey including information on genetic engineering. Participants were asked the short form of the cultural worldview scale (Kahan, 2008), indicating agreement with statements using a Likert-type scale ranging from -3 *strongly disagree* through +3, *strongly agree.* We summed responses from all 12 statements to provide coordinates in one of the four quadrants for each respondent. We determined respondents' experience in agriculture using self-report on seven statements, including experience with agriculture from school, living or working on an agricultural operation, or other non-formal experience. We considered respondents who indicated experience in any of these areas to have agricultural experience; other respondents had none.

Results

Of the 216 respondents, 72 (33.3%) had experience in agriculture. Less than five percent (n = 7) of respondents were Egalitarianism-Individualism. Figure 1 includes the respondents' worldviews coded by their amount of agriculture experience, and Table 1 shows the specific Cultural Cognition categories and experience in agriculture for each. Overall, we found nearly a 2:1 ratio between hierarchy (n = 114) and egalitarianism (n = 59), and between communitarianism (n = 124) individualism (n = 49). These ratios also varied depending on whether respondents reported experience with agriculture.

Figure 1

Cultural Cognition and Experience in Agriculture



Note. The graph does not display data points where multiple have the same coordinates (n =36).

Table 1

Cultural Cognition Category and Experience in Agriculture

	Hierarchical Individualism	Hierarchical Communitarianism	Egalitarian Individualism	Egalitarian Communitarianism
No Agricultural Experience	29	49	4	29
Experience	13	23	3	23
Total	42	72	7	52

Note. The table does not include data points that fell between categories (n = 43).

Conclusions/Recommendations

Our sample revealed differences in worldview between people with and without self-reported experience in agriculture. Particularly, few people with or without experience were egalitarian individualists in our sample, and more people in both experience categories were communitarian. However, agricultural experience made a difference in the proportion of people in each quadrant of worldview. We did have almost 20% of respondents fall on the line between categories on one or more continua. Overall, a larger sample size would help reinforce findings. However, we think our results indicate a need for a better-defined experience in agriculture scale as well as better understanding of the distribution of cultural worldviews among U.S. adults.

Understanding an individual's worldview, agricultural experience, and their relationship are promising ways to understand public views about agriculture beyond simply their level of knowledge about issues such as genetic modified organisms, as well as design interventions to help promote agricultural issues among various groups. This relationship is important to discuss because an individualistic worldview includes beliefs that dismiss environmental impact and technological risk in agriculture (Kahan, 2008). Together, these measures will help our efforts to promote agricultural literacy (Enns et al., 2016).

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Humility, Overconfidence, and Leadership in Agricultural Education

Matthew Sowcik, Ph.D.
University of Florida
Assistant Professor—Leadership Development
117D Bryant Hall
Gainesville, FL 32611-2060
352-273-2654
sowcik@ufl.edu

Valerie McKee, M.S.
University of Florida
UF/IFAS Center for Leadership Programs Coordinator
101A Bryant Hall
Gainesville, FL 32611-2060
352-273-2584
vmckee@ufl.edu

Humility, Overconfidence, and Leadership in Agricultural Education

Priority seven of the American Association for Agricultural Education National Research Agenda (Roberts, T. G., Harder, A., & Brashears, 2016, p. 61) suggests, "Our ability to be exercise empathy, model humility, and practice the idea of accompaniment, where we seek to understand those we are working with and those we are attempting to serve before seeking to be understood and attempting to implement solutions, will be paramount as we attempt to create the solutions our world needs most." This focus on practicing humility to address and mitigate complex problems is essential to the future of the field.

However, humility does not come easy. Although human behavior is complex and often unpredictable, one of the more consistent findings in social-psychological research is that people often see themselves to be better than others on different personal characteristics (Myers 1995). For example, in 2002 research conducted by Rowatt, Ottenbreit, Nesselroade and Cunningham found that significantly more than 50% of individuals estimated they were above average on desirable traits and below average on undesirable traits when comparing themselves to others. This is in line with Myers (1995) research who found that 90% of college faculty rated themselves as superior to their average colleague.

These findings are troubling, especially when they are compared to recent research supporting humility as an important personal and professional characteristic. Even though humility has received very little attention in the social science research, the construct has gained more attention lately in Positive Organizational Psychology and the study of leadership. Collins (2001), in his book *Good to Great*, found that leaders in the most enduring successful companies demonstrated a blend of determination and personal humility. These "Level 5" leaders, as he called them, were better able to entertain different perspectives, manage others emotions, and connect back to the organizational goals than those who had low levels of humility. Furthermore, recent research suggests that humility predicts prosocial behaviors such as generosity (Exline & Hill, 2012; LaBouff, Rowatt, Johnson, Tsang, & Willerton, 2012) self-esteem (Exline & Geyer, 2004), better performance on the job (Exline, 2012) and forgiveness (Powers Nam, Rowatt, & Hill, 2007). The research presented in this poster will explore the perceptions of individuals across the United States and the impact overconfidence and optimism bias has on individual's perception of leadership and humility. Additionally, this research will address overconfidence as it relates to leadership, work performance, ethical behavior and our ability to address complex adaptive problems.

Method

Two hundred and fifty-five Americans (126 male and 129 female), with ages ranging from 18 to over 60, participated in the survey. The online survey tool *Survey Monkey* (www.surveymonkey.com/) was used to house the online survey and to gain access to a diverse population of Americans throughout the United States. The survey consisted of five demographic questions and eight questions comparing the perception of one's own personal characteristics, work performance, ethical character, leadership and humility to the average person. Responses were measured on a Likert scale from 1-5, where 1 indicates far less or far below average and 5 indicated far more or far above average on the individual questions.

Results

In the study, overconfidence was addressed by comparing the perception of one's own personal characteristics, work performance, ethical character and leadership to the average person. The data suggests that people are overconfident in all areas of personal characteristics, work performance, ethics behavior and leadership. A series of one-sample hypothesis tests were performed and in each case there is enough evidence to support the corresponding hypothesis from the research.

Analysis of Individual Overconfidence Measures

	Mean	**Test Statistic (z-value)**	**P-value for one-tailed test**
(a) Intelligence	3.78	15.72	< 0.0001
(b) Attractiveness	3.26	4.32	< 0.0001
(c) Performance at work	4.18	22.79	< 0.0001
(d) Performance at work vs. coworkers	3.78	15.51	< 0.0001
(e) Ethics	3.89	16.21	< 0.0001
(f) Likelihood of ethical behavior	4.20	22.75	< 0.0001
(g) Leadership compared to manager	3.49	7.63	< 0.0001

Discussion

The importance of humility is laid out in priority seven of the American Association for Agricultural Education National Research Agenda. The purpose of this research is to better understand the overconfidence that exists throughout our society as it pertains to personal characteristics, leadership, work performance, and ethical issues. The researched affirmed that, as individuals, we believe that our own personal characteristics, work performance, ethical character and leadership are more or better than the average person.

Additionally, the purpose of this research is to start the discussion of ways to educate those in Agricultural Education about the perils of being overconfident, while still holding onto all the benefits of being over optimistic. This is extremely important if we are going to work across disciplines to address the complex problems associated with agriculture and natural resources. As Myers (1995, p. 203) suggests, "Optimism beats pessimism in promoting self-efficacy and persistence when facing initial failures. Nevertheless, a dash of pessimism can save us from the perils of unrealistic optimism…The moral: success in school and beyond requires enough optimism to sustain hope and enough pessimism to motivate concern." It could be argued that Myers has the right idea, however, instead of a dash of pessimism, we all need a heavy dose of humility, as outlined in the research agenda. This is especially important when it relates to our capacity to utilize humility as a lens to address our most pressing problems in agriculture and natural resources.

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Identifying Landowners' Motivations for and Barriers to Adopting Best Management Practices Related to Watershed Based Plans: Economic, Intrinsic, and Knowledge Factors

2017 AAAE Southern Region Research Poster Session

Stacey Dewald, Graduate Student
Department of Agricultural Leadership, Education, & Communications
Texas A&M University
262 AGLS, 2116 TAMU
College Station, TX 77843-2116
sdewald@tamu.edu

Holli Leggette, Assistant Professor
Department of Agricultural Leadership, Education, & Communications
Texas A&M University
262 AGLS, 2116 TAMU
College Station, TX 77843-2116
hollileggette@tamu.edu

Theresa Pesl Murphrey, Associate Professor
Department of Agricultural Leadership, Education, & Communications
Texas A&M University
236 AGLS, 2116 TAMU
College Station, TX 77843-2116
t-murphrey@tamu.edu

Allen Berthold, Research Scientist
Texas Water Resource Institute
Texas A&M University
1500 Research Parkway A110
2260 TAMU
College Station, TX 77843-2260
taberthold@ag.tamu.edu

Kevin Wagner, Deputy Director of Engagement
Texas Water Resource Institute
Texas A&M University
1500 Research Parkway A110
2260 TAMU
College Station, TX 77843-2260
klwagner@ag.tamu.edu

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Introduction/Need for research

Recently, the Texas Commission on Environmental Quality (TCEQ; 2014a) deemed Little River unusable for recreational use as it "fail[ed] to meet contact recreation use standards" (Foust, 2010, para. 1). The presence of bacteria is an indicator of pathogens that can cause harm to humans and animals if ingested (Lewis, n.d.), which could be reduced if landowners adopted best management practices (BMPs) associated with watershed based plans (WBPs). Although BMPs can help reduce bacteria pollution, many landowners face barriers that prevent adoption. Thus, landowners should be educated by targeting their motivations, which Knowles, Holton, & Swanson (1998) determined as one of six important principals in adult education, and assisting them to persist through perceived barriers towards adoption. Although many organizations use external rewards and economic incentives to educate and entice or reinforce individuals' behaviors (Rogers, 2012), De Young (1993) admitted that immediate short-term influences, such as economic incentives, were not effective in long-term use of conservation practices. Rather, internal motivations can encourage individuals to pursue a behavior for personal satisfaction (Ryan & Deci, 2000). De Young (1986) supported intrinsic motivations suggesting individuals are driven by their personal satisfaction of performing conservation activities.

Knowledge is considered an important factor in the process of adoption (Rogers, 2010); thus, lack of access to educational information or knowledge can be a barrier. Rodriguez, Molnar, Fazio, Sydnor, and Lowe (2009) found "lack of knowledge or education 'concerning sustainable agricultural practices' was frequently expressed as a barrier" (p. 66; Berthold, 2014). Rogers (2010) states that as an innovation is disseminated through a social system over time, individuals go through the five-stage innovation-decision process: knowledge, persuasion, decision, implementation, and reinforcement. Research priority two of the AAAE National Research Agenda encourages research to be conducted to better understand new practices and develop educational opportunities, to create sustainable agricultural systems (Roberts, Harder, & Brashears, 2016). This study supports research priority two (Roberts et al., 2016), to understand how a target audience receives educational information about agricultural innovations, such as BMPs, to impact the diffusion of the innovation and impact the future of water resources related to agriculture.

Method

This quantitative study was part of a larger research project focused on the Little River watershed in Texas. This study used survey methodology to assess landowners motivations for and barriers to adopting BMPs along the Little River, San Gabriel River, and Big Elm Creek tributaries of the Little River watershed in Texas. We identified a population of 7,592 landowners along the watershed using a Geographic Information System (GIS). Using a simple random sampling method, we obtained a sample of 1,881 (Bryman, 2015). Those 1,881 landowners received mailed questionnaires following Dillman's Tailored Design method (Dillman, Smyth & Christian, 2014) and had the option to return the questionnaire via mail or to complete the questionnaire online. The instrument included a total of 24 questions with dichotomous and modified four- and five-point Likert-type scales. The five-point *motivation and barriers scale* included ≤ 1.50 = strongly disagree; 1.51 – 2.49 = disagree; 2.50 – 3.49 = somewhat agree; 3.50 – 4.49 = agree; 4.50 ≤ = strongly agree. We delivered a total of 1,880 questionnaires and achieved a 25% (n = 462) response rate, which resulted in 15% (n = 275) of usable data. Of those 275 participants, 28.4% were 55 to 64 years of age (n = 78), 67.3% were

male (n = 185), 83.6% were Caucasian (n = 230), and 24.0% held a bachelor's degree (n = 66). We calculated descriptive statistics and t-tests on categorical data (Field, 2013). The questionnaire established validity using content experts who specialize in water resources (Bryman, 2012), and was reliable with a post-hoc Cronbach's alpha of .969 and .905. No significant differences were found between early and late respondents (Lindner, Murphy, & Briers, 2001).

Findings

Data revealed 39.2% of participants were aware of the term BMP, 51.3% were aware of efforts to control water pollution through BMPs, and 41.9% were aware of the term incentive program. Participants reported water quality in their area was very important (M = 1.16, SD = .38), believed water quality status in their area was average (M = 1.96, SD = .62), and expected the future water quality in their area would remain the same (M = 2.08, SD = .62).

Participants agreed the economical profitability of a BMP (M = 4.19, SD = .94) and the potential for a BMP to improve or maintain the environment for future generations (M = 4.19, SD = .94) influence adoption of BMPs. Participants reported they were less influenced by loans that could ease the cost of implementing the practice (M = 3.09, SD = 1.05). There was no significant difference between male and female participants regarding factors that influence them to adopt BMPs (t(102.836) = .089, p = .053). However, there was significant difference between Caucasians and other ethnicities (t(20.45) = -.320, p = .007). Caucasians (n = 209) (M = 4.20, SD = .92) participants reported to be more motivated to adopt BMPs that improved or maintained the environment for future generations than were participants from other ethnicities (n = 20), (M = 4.00, SD = 1.29).

Additionally, participants reported barriers to adoption of BMPs as uncertainty of government regulations and rules associated with implementing BMPs (M = 3.75, SD = .99), lacking information about the effectiveness of the BMP (M = 3.67, SD = .99), and lacking awareness of incentive programs (M = 3.66, SD = 1.09). Overall, participants did not report neighbors' influence (M = 2.39, SD = 1.06) as a barrier. There were significant differences between male and female participants regarding barriers to adoption as female participants (M = 3.82, SD = 1.07) were more unsure of government regulations than male participants (M = 3.72, SD = .97). However, no significant differences were found among Caucasians and other ethnicities (t(214) = -.028, p = .336).

Conclusions/Implications/Recommendations

In this study, 39.2% of participants were unaware of the term BMP and lacked knowledge-type information to adopt BMPs, which was consistent with prior research (Berthold, 2014; Rodriguez et al., 2009). Thus, instructors should provide educational opportunities for landowners leading with the reported motivations, while addressing the potential barriers of adopting BMPs (Knowles et al., 1998). This method can possibly increase adoption of BMPs and reduce bacteria entering the waterways, ultimately creating a healthy agricultural system. Further qualitative research of the landowners should be conducted to gain a more in-depth understanding of factors that influence BMP adoption. It is also imperative that a holistic understanding of all perceptions of stakeholders through a systems thinking approach (Weinberg, 1975) to encourage overall support and adoption of BMPs.

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Impact of Credit Education on Farm Loan Worthiness

Crysti Hopkins, Virginia Tech
Matt Spindler, Virginia Tech

204 Litton-Reaves
Virginia Tech
Blacksburg, VA 24061

hcrysti2@vt.edu
spindler@vt.edu

540-231-8188

Impact of Credit Education on Farm Loan Worthiness

Building financial resilience through helping consumers make educated decisions about credit and other financial decisions is critical to rural community viability and stability. Personal financial decisions made by consumers directly affect their current and future credit. The information on credit reports is used to determine credit scores. Credit scoring is based on five factors: payment history, amounts owed on accounts, length of credit history, taking on more debt with the request made at the time of application, and types of credit in use which is negatively impacted by loans from finance companies (O'Neill, 2011). Financial institutions use credit scores to make loan risk and credit worthiness decisions when faced with approving or denying credit requests. (State's) Cooperative Extension System has a vision for strengthening the ability of the agricultural sector to support rural economic development through helping beginning farmers to purchase home properties. That vision includes teaching future farmers planning to purchase a home agricultural property about property ownership, being a wise shopper, handling credit wisely, and managing finances successfully. Previous research indicates most consumers overestimate their credit ratings, typically acquire financial knowledge from difficult past experiences, and are unlikely to save for future needs (Bhattacharya, Gill, Stanley, 2016). Previous findings also indicate that financial education is linked to improvements in purchasing, saving, and credit related decision making. Therefore, there is a clear rationale for providing financial education opportunities to future agricultural property owners and farm operators.

Theoretical Framework

This research project utilized a social cognitive framework for guiding activities and understanding the perspectives through which the context and data were analyzed. Social cognitive theory holds an agentic view of human cognitive development, adaptation, and change (Bandura, 2001). According to Bandura (2006), to be an individual agent means that one has robust influence over one's own intentionality in daily life functions and life circumstances. This means that individuals are contributors to their life circumstances and should understand themselves as self-organizing, proactive, and self-regulating entities (Bandura, 2006).

According to social cognitive theory there are four core properties of human agency: intentionality; forethought; self-reactiveness; and self-reflectiveness (Bandura, 2006). Intentionality is realized in behaviors that include action plans and strategies for actualizing them. Forethought includes extending agency through temporal spaces. In this way individuals construct goals and anticipate likely outcomes of their guided actions. Bandura (2006) states that it is the ability to anticipate outcomes that motivates current behaviors to be purposeful. Self-reactiveness properties are tied to self-regulation. Agency is realized once a plan of action is constructed which follows appropriate pathways including a series of steps in a process. The fourth agentic property, self-reflectiveness, includes aspects of self-examination and self-awareness. In this way individuals' assessments of personal efficacy in relation to planned pursuits and actions help to drive corrective adjustments in behaviors if necessary (Bandura, 2001).

The financial literacy workshops used in the study are aligned with the social cognitive approach to improving the capacity of individuals to manage their financial credit. The course begins by helping the participants to develop a higher level of intentionality with respect to improving and maintaining a positive credit history and score. Aspects of forethought are critical in helping the

participants to address their challenges and construct a plan for building good financial credit. Part of the financial literacy course also assists the participants to strengthen their self-reactiveness so that they are able to follow through with critical actions and behaviors throughout the process of building their financial health. Through monitoring their financial credit the participants with the help of the instructor are able to develop their ability to exercise human agency through self-reflectiveness. By learning skills, such as, monitoring personal credit scores the participants are developing their ability to use self-reflectiveness to adjust their behaviors and exercise more human agency over the health of their financial credit.

Methodology

This research project included a series of six financial literacy workshops offered weekly through (state's) Cooperative Extension Service System. The workshops enabled the (N=25) participants, who were planning on purchasing a home agricultural property, to learn about how financial decisions effect credit and how their credit scores are used by lenders as tools to make decisions about loan worthiness. Specific workshop topics included consumer debt, loans, strategies for improving credit scores, budgeting, and monitoring spending. Bandura's (2006) conception of human agency was used to frame the instructional process and drive programmatic decisions. For example, teaching self-monitoring of spending because it is particularly important to long term financial stability is grounded in the need for human agents to guide future intentions and forethoughts through self-reactive and self-reflective behaviors. Initial data for the project was collected before the first workshop session and follow-up data was collected three months after the final workshop. Quantitative data collected for analysis included: a) decreases in consumer debt; b) decreases in credit card debt; c) increases in credit scores; d) increases in savings. Qualitative data collected for analysis included a) plans concerning credit and lending decisions (intentionality; forethought); b) budgetary decision processes to improve credit (intentionality; forethought; self-reactiveness); c) comparison of planned versus actual budgets (self-reactiveness; self-reflectiveness).

Findings

The findings indicate that the 88% of the participants were able to reduce their debt load, increase their credit scores, and increase their savings. The participants credited the financial literacy workshops with helping them to change their behaviors and recognize better decision options when faced with dilemmas. The data also indicate that the participants believed the workshops helped them develop and strengthen their intentionality related to financial wellbeing. Further, the participants indicated that because they were better able to anticipate the results of various financial decisions (forethought, self-reactiveness), they were able to direct their behavior towards making better choices. Participants were also able to better understand how they made mistakes and put themselves into positions which jeopardized their newly established financial wellbeing. The participants shared that recognizing that building financial wellbeing is an ongoing process which may include setbacks helped them make corrections and avoid similar financial missteps (self-reflectiveness) in the future. The participants which were not successful as reducing their debt load or increasing their savings were challenged most by establishing forethought practices which were accurate.

Future Plans

Information from this study will be used to create resources for future workshops and online resources that people can use on their own to change their financial decision making.

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Integrating Food Science into High School Agricultural Education

John C. Ricketts, PhD
Professor of Agricultural Education | Agricultural Sciences
Tennessee State University
3500 John A. Merritt Blvd.
Nashville, TN 37209
615.630.0526
jricket1@tnstate.edu

Sandria Godwin, PhD
Professor of Food Safety | Family and Consumer Sciences
Tennessee State University
3500 John A. Merritt Blvd.
Nashville, TN 37209
615.963.5619
sgodwin@tnstate.edu

Integrating Food Science into High School Agricultural Education

Introduction/need for research

Approximately one in six Americans, or approximately 48 million people, are affected by foodborne illnesses each year. Approximately 128,000 of these people are hospitalized and 3,000 people die (Centers for Disease Control and Prevention, 2011). *Salmonella* and *Campylobacter* pathogens are in the top five list of pathogens that cause humans to become sick, hospitalized or die (Centers for Disease Control and Prevention, 2011). Raw and undercooked poultry and eggs are often associated with *Campylobacter* and *Salmonella* caused human illnesses (United States Department of Agriculture, 2015). Consumers can reduce their risk of foodborne illness from *Salmonella* and *Campylobacter* pathogens by safely purchasing, storing, handling, and preparing poultry products and eggs (Kosa, Cates, Bradley, Chambers IV, & Godwin, 2015), and educators can help by making sure future consumers (e.g. Youth) know the science behind their food (Beaty, 2016).

The Poultry and Egg Education Project (PEEP), funded by a USDA National Food and Agriculture Institute (NIFA) Agriculture and Food Research Initiative (AFRI) grant, conducts bench science research on best practices for safe handling and use of poultry and egg products and creates science-based educational programming for consumers. This poster will detail efforts to integrate science-based research findings in secondary education in (state).

Conceptual or theoretical framework

Historically, youth were taught new agricultural practices through FFA and 4-H with the goal to bring that knowledge to their parents and adult farmers. If youth could demonstrate the success of a new corn variety or farming practice, adults were more likely to adopt the practice (Rasmussen, 1989). This same concept is being implemented through high school agricultural education and food safety in this study. Students in agricultural education can bring food safety knowledge and practices home to their families and other adults.

Methodology

The objectives of this study were the following.

1. Gauge teacher interests and intentions regarding the new Food Science and Safety Pathway being introduced [state].
2. Identify current and expected food science/food safety integration that could take place in current courses and topics being taught.
3. Discover the importance of and teachers' ability levels in five food safety practices.
4. Identify the training priorities of five food safety practices by calculating mean weighted discrepancy scores.

Survey research was utilized for this descriptive study. The survey instrument was developed by researchers at [University] and contained 20 questions that sought to determine current teaching practices, intentions, and views regarding the new food science pathway. Teachers were asked

to rate their importance and abilities in five food safety practices using a five-point summated rating scale. Teachers' knowledge of food safety was tested through seven questions. The demographic questions were gender, age, name of teachers' current school, years of teaching experience, and number of students in teachers' FFA chapters. Researchers conducted in-person surveys of agricultural educators at the 2014 [State] FFA Convention Career Show. The survey was also entered into Qualtrics Survey Software and disseminated electronically via email to agriculture educators in [State]. A total of 89 educators completed the survey either in person or electronically. Data was analyzed using Qualtrics Survey Software, Microsoft Excel, and SPSS-PC.

Results/findings

Half of the respondents indicated they were somewhat interested in the new food science pathway (n = 39, 50%) followed by 21% (n =16) stating they were not at all interested. A total of 33 respondents (43%) indicated they were somewhat qualified to teach food science and safety while 27 respondents (35%) indicated they were somewhat unqualified. Nine teachers (12%) indicated they were very qualified, and eight teachers (10%) indicated they were not at all qualified. Teachers were asked which courses listed they believed lessons in food safety could be incorporated. Food science and safety received the most responses (f =71) with 92% of respondents choosing this course, and advanced food science received the second most responses (f = 67) with 87% of the respondents choosing this course. Agriscience received the third most responses (f = 65) with 84% of the respondents choosing this course. MWDS scores indicated the most need for professional development training in How to safely transport packaged food products to market, Creating a clean & safe environment for slaughter & packaging, and How to safely store packaged food products while at market.

Conclusions

Teachers had some interest in offering courses in the new food science pathway. They had largely different responses regarding confidence in their level of qualification to teach in the pathway. Teachers believed the new courses, Food Science and Safety, Advanced Food Science, and Agriscience were the courses where food science and safety could be integrated best. Teacher professional development in the area needs to focus on safe transport of food to market, creating safe and clean environments for slaughter and packaging, and safely storing foods at market.

Implications/recommendations/impact on profession

Given the impact teaching food science has on knowledge gained (Beaty, 2016), teacher preparation programs should consider revising course maps to include food science and safety content knowledge. The PEEP project will develop curriculum to support current teachers and educate youth about poultry and egg food safety, and ultimately reduce foodborne illnesses. This curriculum will be disseminated at teacher professional development institutes in the summer, and through webinar presentations. Teachers in (state) will also be encouraged to consider the Curriculum for Agricultural Science (CASE) institute, Food Science and Safety to feel most comfortable in the new Food Science pathway.

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Investigating CALS Faculty Knowledge and Perception of Social, Behavioral, and Educational Research and the Scholarship of Teaching and Learning

Shelbie Dalton
Mississippi State University
215 Lloyd Ricks Watson
Mississippi State, MS 39762
662-325-7834
sgd71@msstate.edu

Dr. Gaea Hock
Kansas State University
315 Umberger Hall
Manhattan, KS 66506
785-532-1166
ghock@ksu.edu

Investigating MSU CALS Faculty Knowledge and Perception of Social, Behavioral, and Educational Research and the Scholarship of Teaching and Learning

Introduction/Literature Review

Educators must understand the importance of sharing teaching methods and learning from each other to continue to improve the efficiency of teaching ever-changing curriculum. The ability to conduct, write, and publish social, behavioral, and educational (SBE) research is a vital aspect of the education profession. Most SBE research requires approval by the Institutional Review Board (IRB) for use of human subjects. Understanding how to apply for IRB approval is necessary for publishing research (Institutional Review Board, n.d.)

One important type of SBE research is typically known as SOTL or Scholarship of Teaching and Learning. "The Scholarship of Teaching and Learning (SoTL) uses discovery, reflection, and evidence-based methods to research effective teaching and student learning." (What is the Scholarship of Teaching and Learning (SoTL)?, n.d.) Scholarship of Teaching and Learning could improve the effectiveness of teaching and provide guidance for prospective faculty (McKinney, 2013). If a teacher cares about being a good teacher, he/she is practicing the scholarship of teaching and learning (Meyers, 2007).

Conceptual Framework

This study was framed by Boyer's idea of scholarship of teaching (Boyer, 1990), which we now call scholarship of teaching and learning (SoTL). This type of inquiry centers on an effort to improve teaching and learning through purposeful study and examination. While he promoted SoTL as its own category of research, he recognized that it works in conjunction with other research efforts.

Methodology

Survey research was conducted in an effort to measure Mississippi State University College of Agriculture and Life Sciences (CALS) faculty's knowledge and confidence of conducting, writing, and publishing SBE and SoTL research. The survey was researcher-created and contained three sections. The sections consisted of demographic, SBE research and the institutional review board (IRB) process, and Scholarship of Teaching and Learning (SoTL) questions. The survey was emailed to the CALS (N = 225) via a third-party list serve. Dillman's Tailored Design method (Dillman, 2000) was used to send the emails and reminder emails to participants.

There were three research objectives for this research study:

1. Explore CALS faculty's knowledge and perception of SBE research and the IRB process.
2. Identify faculty's current use and interest in SoTL.
3. Investigate CALS faculty recommendations for IRB and SoTL research.

Results

The survey was administered in the 2016 Spring semester. There were 49 respondents (22% response rate); with 67% (n = 32) males, 41% (n= 20) assistant professors, and each of the nine departments in the college represented.

For the first research question, 63% (n = 31) of respondents know what to publish when conducting SBE research, but 20% (n =10) respondents did not know how to share SBE research. Thirty-five (74%) participants indicated they would conduct social, behavioral, and

educational research at least every other year if they were informed about the IRB process, but 31 respondents (67%) did not indicate interest in attending a workshop about the IRB process. There were 28 respondents who believed their research was worth sharing. The majority of the respondents (n=43) recorded that they would use their colleagues research to improve their methods of teaching.

In response to research objective 2, almost two-thirds (60%, n = 25) of respondents had never previously conducted SoTL research, but the same number reported an interest in attending a workshop about how to conduct SoTL research. Respondents would be more likely to conduct SoTL research if they received national recognition (n = 26) or if they could publish their research internationally (n = 28).

Research objective three aimed to investigate CALS faculty recommendations for IRB and SoTL research. CALS faculty indicated SoTL is research that benefits students' education and improves pedagogical methods. SoTL has allowed faculty to be more reflective about their teaching methods by having data or narrative to compare with learning objectives. It also helps faculty recognize and follow best practices. SoTL provides a basis for continual improvement and allows faculty to keep up to date on new advances in teaching methodologies. SoTL increases the likelihood of successful instruction.

Conclusions

There is interest by CALS faculty in learning more about SBE research, but the low response rate could display a lack of interest by CALS faculty in improving social, behavioral, and educational research. The low response rate also does not allow for a generalized view to the larger population of faculty. The conclusions that were drawn from the SBE research section were that 74% of the respondents would conduct SBE research if they were informed about the IRB approval process; however, 67% of the respondents did not indicate interest in attending a workshop about the IRB approval process. A majority of the respondents had not conducted SoTL research previously, so there could be a lack of demonstrated importance among the CALS faculty to practice the scholarship of teaching and learning. The respondents are interested in learning more about SoTL research and would likely practice SoTL if they were more educated on the process and motivated to share their findings. CALS faculty are not interested in a workshop on the IRB process, therefore, the IRB office of compliance should be more effective in educating faculty members on how to publish their research. It was confirmed that those who have conducted SoTL research indicate it improves instruction.

Recommendations

It is recommended more clarification of the IRB approval process in regards to SBE research be practiced. The Mississippi State University Office of Research Compliance can better communicate when to use the IRB process when conducting SoTL research. Also, CALS should emphasize and promote SoTL in an effort to enhance teaching and learning across the college. One way to encourage more SoTL projects could be to provide incentives for faculty members to conduct, write, and publish social, behavioral, and educational research. Workshops on SoTL would give faculty confidence in conducting research. A website could be created to share various faculty research findings on the scholarship of teaching and learning within the college. Finally, faculty should be encouraged to mentor each other in an effort to improve SoTL research practices throughout the college.

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Investigating How Participants Attribute Their Acquisition of Targeted Life Skills to 4-H Residential Summer Programs

Alayna Naro
Graduate Assistant
School of Human Sciences
Mississippi State University
P.O. Box 9745
Mississippi State, Mississippi 39762
(662) 325–4597
acn77@msstate.edu

Laura L. Greenhaw
Assistant Professor
School of Human Sciences
Mississippi State University
P.O. Box 9745
Mississippi State, Mississippi 39762
(662) 325–1804
laura.l.greenhaw@msstate.edu

Carley C. Morrison
Graduate Assistant
School of Human Sciences
Mississippi State University
P.O. Box 9745
Mississippi State, Mississippi 39762
(662) 325–5851
cpc215@msstate.edu

Investigating How Participants Attribute Their Acquisition of Targeted Life Skills to 4-H Residential Summer Programs

Introduction

It is at the forefront of discussion that youth are not developing the set of skills necessary to succeed in a 21st century work force. Present-day employers are searching for employees who possess self-motivation, effective communication, learning agility, self-awareness, effective communication, multicultural awareness, and adaptability (Van Velsor & Wright, 2012). In response, youth development professionals create programs structured around helping youth become proficient in life skills. These particular skills enable youth to make decisions and solve problems, set goals, improve communication and social skills, accept differences in others, give back to the community, make healthy lifestyle choices, encourage teamwork, and improve one's character (Norman & Jordan, 2006). Research Priority 3 of the *American Association for Agricultural Education National Research Agenda for 2016-2020* recognizes that "we must build our research programs in these areas to close the gap of workforce preparedness" (Stripling & Ricketts, 2016, p. 31).

Conceptual Framework

The Targeting Life Skills Model (Hendricks, 1996) assists youth development professionals in advancing youth towards their fullest potential. Life skills are "abilities individuals can learn that will help them to be successful in living a productive and satisfying life" (Iowa State University Extension and Outreach, n.d., para. 3). The model was created as a means to help guide planning, implementation, and evaluation of 4-H programs (Garton et al., 2007). The model contains 35 life skills that can be used as a way to improve the experiences of youth by focusing on achieving specific, measurable goals. Though mastering any number of the 35 life skills takes repetition, the benefits of utilizing the Targeting Life Skills Model as a way to expose youth to various skills far outweigh the costs (Iowa State University Extension and Outreach, n.d.).

Methodology

The purpose of this study was to investigate how youth participants attributed their acquisition of targeted life skills to the residential 4-H summer program they attended. Two focus groups were utilized and were differentiated based on their setting. The first comparison group ($n = 10$) consisted of participants whose program took place in a traditional summer camp setting, while the second comparison group ($n = 6$) consisted of participants whose program took place on campus at Mississippi State University. The group sizes directly align with Morgan's suggestion of focus groups being between six and ten participants in order to stimulate meaningful discussion without participants competing for speaking time (Morgan, 1998).

Youth program participants were asked a series of ten questions which enabled them to reflect on their experiences that occurred throughout the duration of their program. The number of questions aligns with Morgan's recommendation of eight to twelve questions for the group size that was utilized (Morgan, 1998). Further, the questions were peer reviewed by individuals who had expertise in youth development programs, 4-H common measures, and conducting qualitative research with youth participants.

Transcript-based analysis was utilized (Krueger, 1998). Focus groups were transcribed verbatim from an audio recording and were accompanied by notes taken during the process. Once the groups were transcribed, responses were critically analyzed and coded in order to identify emerging themes. Further, trustworthiness was ensured through an audit trail, maximum variation, rich descriptions, and triangulation (Merriam, 2002).

Findings/Conclusions

Four themes emerged in the focus group from those participants who attended a residential 4-H summer program within the naturalistic environment:

1. Making Friends and Accepting Others
2. Satisfaction of Hands-On Learning Activities
3. Challenges of Group Living
4. Mixed Perceptions of the Naturalistic Environment

The first three themes can be directly related to the Targeting Life Skills Model (Hendricks, 1996). Though the fourth provides valuable insight, it does not fit within the model. Theme one aligns with the life skills of nurturing relationships and accepting differences. Theme two can be seen in the life skill of learning to learn. Finally, theme three can be seen in the life skill of cooperation.

In regards to the second focus group, where participants attended a residential 4-H summer program that took place on campus at Mississippi State University, five themes were revealed:

1. Developing Social Skills and Making Friends
2. Teamwork and Respecting Others
3. Leadership: Who, What, When, Where, and How
4. Overcoming Personal Barriers and Accepting Self
5. Promoting 4-H Through Local County Outreach

Utilizing the Targeting Life Skills Model (Hendricks, 1996), the first four themes can be directly associated with identified life skills. However, while the fifth theme was enlightening, it does not fit within the model. Theme one aligns with the life skills of social skills and nurturing relationships. Theme two can be seen in the life skills of teamwork and character. Theme three can be seen in the life skill of leadership. Finally, the fourth theme four can be seen in the life skill of self-esteem.

Recommendations

Youth who attended a residential program in a traditional camp setting developed different life skills than those who participated in an on-campus program. However, both program types provided meaningful experiences that helped youth to mature in an all-encompassing way. Due to the differences in life skill development, it is recommended that these programs be used as building-blocks for one another. For example, as youth strengthen and develop the life skills of nurturing relationships, accepting differences, and cooperation they can be further exposed to the life skills of social skills, teamwork, character, leadership, and self-esteem.

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Student and Faculty Perceptions of Academic Entitlement: A Look at One Southern Land-Grant University

Donna L. Graham
205 Agriculture Building
University of Arkansas
Fayetteville, AR 72701
479-575-6346
dgraham@uark.edu

Leslie D. Edgar
205 Agriculture Building
University of Arkansas
Fayetteville, AR 72701
479-575-6770
ledgar@uark.edu

Don Edgar
205 Agriculture Building
University of Arkansas
Fayetteville, AR 72701
479-575-2037
dedgar@uark.edu

Student and Faculty Perceptions of Academic Entitlement: A Look at One Southern Land-Grant University

Introduction

Faculty are increasingly asked to accommodate student needs and preferences related to the growing occurrence of academic entitlement behaviors of college age students (Baer & Cheryomukhin, 2011). These behaviors may include students lobbying for higher grades, expectations of special accommodations, asking for concessions that relate to their needs, requesting class notes, or asking for grades they have not earned. Many students become very distressed if a grade less than an A is the expected outcome. Multiple phenomena are believed to contribute to these behaviors such as narcissism (Twenge, 2006), self-esteem (Greenberger, Lessard, Chen, & Farruggia, 2008), and psychological entitlement (Campbell, Bonacci, Shelton, Exline, & Bushman, 2004). Faculty contribute to this expectation by easy grading, avoiding too much out of class work or less rigorous requirements, often because tenure and promotion decisions are tied to student evaluations (Tabachnick, Keith-Spriegel, & Pope, 1991). Faculty modify their behavior so that students will like them. Grade inflation also contributes to student entitlement by creating the expectation of a high grade with little effort (Kun & Hu, 1999).

Theoretical and Conceptual Framework

Academic entitlement is "the tendency to possess an expectation of academic success without taking personal responsibility for achieving that success" (Chowning & Campbell, 2009, p. 982). Greenberger et al. (2008) defined academic entitlement as the "expectation of high rewards for modest effort, expectations of special consideration and accommodation by teachers when it comes to grades, and impatience and anger when their expectations and perceived needs are not met" (p. 1194). Self-entitlement is conceptualized as a construct of maladaptive and socially problematic traits or dispositions such as narcissism, an inflated sense of self-importance to the exclusion of others (Twenge, 2006), self-esteem, or generalized personality entitlement (Baer & Cheryomukhin, 2011) defined as "a pervasive sense that one deserves more and is entitled to more than others" (Campbell et al., 2004, p. 31).

Methodology

This study examined the entitlement expectations of agricultural students and faculty at the University of Arkansas (N = 338). Approval from the Institutional Review Board was obtained. All participation was voluntary. Data were collected in regularly scheduled face-to-face class sessions with the students, and faculty completing the Academic Entitlement (AE) questionnaire and the personality entitlement instrument (PE) on their own time (Greenberger et al., 2008). Examples of items represented on the AE are: "If I have attended most classes for the course, I deserve at least a grade of B," and "Professors have no right to be annoyed with me if I tend to come late to class or tend to leave early." Faculty instruments had slightly modified phrasing compared to student assessments. Responses were indicated on a Likert-type scale that ranged from 1 (strongly disagree) to 6 (strongly agree). Demographic information was gathered.

Findings

The majority of student respondents were 19 to 24 years (77.8%), followed by 18 years or less (16.7%). The remaining students were over 25 years of age (5.6%). The majority of students were females (59.5%) and classification was nearly equally dispersed between freshmen through seniors. There were 20.6% freshman, 27.8% sophomores, 25.4% juniors and 25.80 seniors based on identified classifications. Twenty four percent of the students' assessed were Honors students and 64.7% were on academic scholarship. The majority of students had one or two siblings (66.7%), followed by three to five siblings (25.0%), no siblings (5.2%), and over five siblings (3.2%). The highest frequency of student respondents were the youngest in their family (39%), followed by oldest (32.7%), and then middle (33.5%). Of the faculty assessed, 66.7% were female. The largest percentage of faculty were associate or full professors (33.3% each), 22.2% were instructors, 11.1% were assistant professors. All faculty (100%) had appointments in the Dale Bumpers College of Agriculture, Food and Life Sciences and most had 10 years or more in teaching experience (88.8%). The largest percentage of faculty assessed were 31-40 years or 41-50 years (33.3% each).

Using a previously validated 6-point scale to assess academic entitlement (AE), participant responses on average tended toward "slightly disagree" for students (M = 2.70, SD = .77) and faculty (M = 2.71, SD = 1.09). Of the 15 items, agriculture students disagreed with six of the statements and strongly disagreed with the statement, "A professor should be willing to meet with me at a time that works best for me, even if inconvenient for the professor" (M = 1.89, SD = 0.87). Among the most highly endorsed items by students was "if I have explained to my professor that I'm trying hard, I think he/she should give me some considerations with respect to my course grade" (M = 4.21, SD = 1.32). However, for faculty the highest item was "I treat students poorly when I cancel an appointment on the same day as we were supposed to meet" (M = 4.67, SD = 1.33). Three other items related to lending class notes, responding to an email on the same day, and responding to phone messages appeared to be of more concern for faculty than students. Of the personal entitlement items, the statement "I do not necessarily deserve special treatment" received a mean score of 4.19 (SD = 1.48) and "I honestly feel I'm just more deserving" received the lowest disagreement rating (M = 1.81, SD = .95).

Conclusions, Implications/Recommendations

The findings are limited to the population of agricultural students and faculty in this study. These findings suggest that agricultural students have a different perception of academic entitlement than students from previous studies (Baer & Cheryomukhin, 2011, Greenberger et al., 2008).

On a practical note, increasing feedback on assignments and course grades may help overcome the perceived threat with students. Recommendations include integrating AE instruction and objectives into the entering student orientation course to assist students with more realistic expectations. This study needs to be expanded to assess more students at this land-grant institution. A study of students in other colleges on campus is needed to determine if this is a phenomena specific to agriculture students. Additionally, a study should focus on comparing self-esteem and academic entitlement to determine if students with higher self-esteem have higher perceptions of entitlement.

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Targeting Water Conservation Extension Programming to Residents Governed by Homeowner's Associations

Jyothi Swaroop Bommidi
University of Florida
310 Rolfs Hall, Gainesville, FL 32611, USA
swaroopphd@ufl.edu

Pei-wen Huang
University of Florida
101D Bryant Space Science Center, Gainesville, FL 32611, USA
agnespei@ufl.edu

Alexa J. Lamm
University of Florida
121E Bryant Space Science Center, Gainesville, FL 32611, USA
alamm@ufl.edu

Targeting Water Conservation Extension Programming to Residents Governed by Homeowner's Associations

Introduction

Research has shown residents living in homeowners associations (HOAs) use more water than those who are not restricted by HOA governance (Monaghan, Ott, Wilber, Gouldthorpe, & Racevskis, 2013). Marella (2014) found water use for recreational-landscape increased from 2005 to 2010 in Florida. Baum, Dukes and Miller (2005) found that turfgrass is typically over-irrigated, estimating 71% of total water consumption for landscape irrigation is used on turfgrass. Since consumer consumption of water in Florida is greater than that used for any other purpose, and most of this water is being used on the home landscape, getting residents to reduce water use in the home landscape is imperative to ensuring a future water supply. According to Huang, Lamm, and Dukes (2016) homeowners using an excessive amount of water have specific demographic characteristics and behavioral patterns and many live in HOAs. Thereby extension programs can be formulated targeting water conservation to HOA residents. The purpose of this study was to examine Florida residents living in HOAs and their perceptions of turfgrass to inform extension programming focused on driving HOA policy that will reduce water use aligning with Priority Area 1 and Priority Area 7 of the National Research Agenda (Roberts, Harder, & Brashears, 2016). The objectives of the study were to 1) describe residents living in HOAs and 2) identify HOA residents' perceptions of turfgrass.

Theoretical Framework

Ensuring psychological knowledge accessibility to program planners helps in effective program design (McKenzie-Mohr, 2000). Community based social marketing as a theoretical lens asserts behavioral change can be achieved by removing structural barriers based on established norms, which requires direct contact among community members. Therefore the benefits of community based social marketing within HOAs is feasible (McKenzie-Mohr & Smith, 1999). Norms outline the set of external behaviors which must be attended to by a group (Hackman,1992), and they in turn result in perception shifts resulting in behavioral change.

Methods

This study was descriptive using an online survey. The instrument was researcher-developed and reviewed by a panel of experts. After the instrument was pilot-tested to ensure its validity and reliability, the survey was administered electronically. Data were collected from Florida residents aged 18 or older using a non-probability opt-in sampling technique. The survey was sent to 982 residents with 524 received complete responses after passing manipulation checks resulting in a 53% participation rate. To ensure the representativeness of the respondents to the population, post-stratification weighting methods were used (Kalton & Flores-Cervantes, 2003). Data were analyzed using SPSS® 24.0.

Respondents were asked if they lived in neighborhoods with a HOA to be identified as HOA residents and used in further analysis. Nearly 31% (n = 164) of the respondents were identified as living in a HOA. Respondents' perceptions regarding turfgrass were measured using 10 statements on a five-point Likert-type scale. Lastly, respondents were asked a set of demographic questions, including sex, age, income level, and home ownership status.

Results

More than half of the respondents residing in a HOA were male (57%) and between 20 and 49 years of age (60%). Almost 58% owned their home. Approximately 37% reported being Democrats and 25% Republican with the rest indicating Other. Annual household income was distributed fairly evenly between $29,999 and $149,999.

Table 1
Residents Governed by HOAs Perceptions of Turfgrass (*n* = 164)

	Strongly Disagree/Disagree %	Neither Agree or Disagree %	Strongly Agree/Agree %
Turfgrass lawns have an overall negative impact on the water quality of nearby water bodies.	17.1	58.5	24.4
I think too many people have turfgrass lawns.	23.2	50.6	26.2
Overall, I believe turfgrass lawns have a positive effect on the environment.	17.1	53.0	29.8
I appreciate when the homes in a neighborhood have well-maintained turfgrass lawns	6.1	23.2	70.7
Having a healthy turfgrass lawn is important for maintaining a proper.	8.5	24.4	64.6
I prefer native plants over turfgrass	15.9	40.2	43.9
A turfgrass lawn is the best landscape option for providing a safe space	15.9	54.3	29.9
I feel turfgrass lawns are unnatural	32.3	40.2	27.4
Most people put too many resources into managing their turfgrass lawns	20.1	44.5	35.4
Turfgrass lawns require too much water to maintain	15.9	51.2	32.9

Discussion and Recommendations

The majority of those residing in HOAs appreciate homes with maintained lawns. This displays perceived importance of lawns and partly explains why so many acres in Florida are turfgrass (Milesi et al., 2005). But awareness on this is limited, with a majority of the respondents being undecided about too many people having turfgrass lawns and over 30% reporting they believed turfgrass lawns are unnatural. While respondents were undecided on many of the statements related to turfgrass and its impacts on the environment they did strongly agree or agree with those statements related to aesthetics, which is what HOAs typically focus on and regulate as confirmed by Dunbar and Dudley (2007). This signals that extension programming can use a community based social marketing approach targeting behavior change (Monaghan et al., 2013) but should not necessarily focus on the environmental impacts of water management. Rather, those living in HOAs need to learn that there are other aesthetically pleasing landscapes that do not require as much water as turfgrass and how to water their existing turfgrass properly. By using social norms to target specific respondents living in HOAs, a greater change could be realized. As residents in HOAs are primarily concerned with aesthetics, future research should focus on the causes and types of motivation that could lead to knowledge gain and ultimately behavior change related to lawn management.

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The Impact of Self-Efficacy on Teacher Candidates' edTPA Performance

Kevin Curry Jr

704-619-0268

Box 7607 NCSU

1 Lampe Drive

North Carolina State University

kwcurry@ncsu.edu

Wendy Warner

919-515-6080

wendy_warner@ncsu.edu

Travis Park

919-515-9441

tdpark@ncsu.edu

The Impact of Self-Efficacy on Teacher Candidates' edTPA Performance

Introduction

Teacher self-efficacy has been recognized as an important contributor to student success. Tschannen-Moran, Woolfolk Hoy, and Hoy (1998) noted the impact of self-efficacy on the amount of time invested in teaching, educational goals, and the level of both personal and student aspirations. As teacher educators, it is important to consider how the self-efficacy of teacher candidates impacts their performance in coursework, student teaching, and the completion of a high stakes teacher performance assessment, such as the edTPA. Currently, successful completion of the edTPA is required at North Carolina State University in order to be recommended for a teaching license. While there is an extensive literature base concerning the relationship between self-efficacy and teacher performance, there is little research that supports factors contributing to student teachers' perceived confidence in completing a high stakes performance assessment (i.e.: edTPA). The current study sought to address this deficiency by investigating correlates to edTPA performance and aligns with priority three of the National Research Agenda: Sufficient Scientific and Professional Workforce that Addresses the Challenges of the 21st Century (Stripling & Ricketts, 2016).

Theoretical Framework

The theoretical frame for this study is Bandura's (1997) self-efficacy theory. Self-efficacy is defined as "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (Bandura, 1995, p. 2). A teacher's sense of positive self-efficacy leads to greater effectiveness in the classroom and assists in the management of day-to-day teaching responsibilities (Bandura, 1993; Gibbs, 2002; Kagan 1992). In this study we specifically addressed the confidence of preserivce teachers in their ability to perform on the edTPA. Considering the edTPA measures all facets of teaching and learning (planning, instructions, assessment), it is reasonable to suggest those with high confidence to succeed on the edTPA will have similar confidence in their general teaching abilities.

Methodology

The purpose of this investigation was to examine the relationship between self-efficacy and time investment on performance of teacher candidates on edTPA. Participants (n = 30) included all senior student teachers during a two-year span at North Carolina State University. Teacher candidates were surveyed in the last month of the student teaching semester to gauge their level of self-efficacy prior to completing the compulsory edTPA portfolio. Participants were asked to estimate their predicted score on each of the three tasks and reported the total number of hours invested in preparation for the edTPA. EdTPA scores were collected for all respondents, including average performance for Task 1 (Planning for Instruction), Task 2 (Teaching), and Task 3 (Assessing Learning). Kendall's Tau correlations were conducted to determine the relationship between predicted task performance (ordinal scale) and actual task performance. Pearson correlations were conducted to determine the relationship between hours invested and edTPA performance.

Results

Average scores for each section of the edTPA were as follows: Task 1; *M* = 3.24, *SD* = .59, Task 2; *M* = 2.97, *SD* = .64, Task 3; *M* = 2.88, *SD* = .76, for an overall edTPA score of *M* = 3.03, *SD* = .55. When correlated to predicted scores, Kendall's tau coefficients displayed a moderate positive relationship between predicted task score and actual performance (see Table 1). Contrastingly, there was no significant relationship between the reported number of hours invested in preparing for the edTPA over the course of the student teaching semester and actual performance (see Table 2).

Table 1

Kendall's Tau Correlations for Predicted and Actual edTPA Scores (n=30)

	Task 1 Performance	Task 2 Performance	Task 3 Performance
Predicted Task 1	.45*	.38*	.31*
Predicted Task 2	.37*	.40*	.33*
Predicted Task 3	.40*	.24	.44*

*Note. * p < .05*

Table 2

Spearman Correlations for Hours Invested and edTPA Scores (n=30)

	Task 1 Performance	Task 2 Performance	Task 3 Performance	Overall edTPA Performance
Hours Invested	.26	-.14	.24	.15

*Note. * p < .05*

Conclusions/Implications

Results suggest teacher candidates are precise in determining their level of performance in the edTPA. Further, those with a high level of confidence in their ability to plan, teach, and assess learning, have greater performance outcomes as measured by a similarly aligned high stakes teacher performance assessment. Interestingly, although higher confidence was associated with better performance, the same was not true for the amount of time spent preparing. In the context of preparing teacher candidates to successfully complete the edTPA, this suggests it is more beneficial to build the self-efficacy of students than to assign more work in preparation. Accordingly, future research should seek ways to improve the self-efficacy of teacher candidates as it pertains to completing the edTPA.

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The Perceived Leadership Behaviors and Practices of Selected Scholars

Krysti L. Kelley, Oklahoma State University
Joenelle Futrell, Oklahoma State University
Marshall A. Baker, Oklahoma State University

456 Agricultural Hall
Stillwater, OK 74078
405-744-8251
bakerma@okstate.edu

The Perceived Leadership Behaviors and Practices of Selected Scholars

Introduction/ Need for Research

In 1996, the Higher Education Research Institute (HERI, 1996) stressed the importance of leadership development on college retention and success. Furthermore, students who were identified as leaders and honed leadership skills during their college years outperformed their peers academically and in securing a job after graduation (HERI, 1996). Carter and Spontanski (1989) found that students who received formal leadership training exhibited more desirable employability skills. The McKnight Scholars Leadership Program at Oklahoma State University seeks to identify, equip and empower students to be leaders on campus and in their home communities (McKnight Scholars, 2016). Scholars are trained through leadership development coursework and experiences. In the past, this has been done through the Student Leadership Challenge curriculum. The Student Leadership Challenge outlines five practices of exemplary leadership: model the way, inspire the shared vision, challenge the process, enable others to act and encourage the heart (Kouzes & Posner, 2014). The Student Leadership Practices Inventory 360 (SLPI) provides students with 360-degree feedback in all five of these practices from themselves as well as mentor observations and allows for introspection of their current behaviors and actions (Posner, 2010).

The purpose of this study was to analyze scholars' 360 feedback for their use of the five practices of exemplary leadership and compare their feedback to the national college student SLPI averages. The following research questions were used to address the purpose of the study:

RQ1. What are the scholars' perceived frequencies of their use of the five practices of exemplary leadership?

RQ2. What are the observers' perceptions of the scholars use of the five practices of exemplary leadership?

RQ3. How do the McKnight Scholars compare to the national average for use of the five practices of exemplary leadership?

RQ4. What are the differences between scholar perceptions and mentor perceptions of frequency of use for the five practices of exemplary leadership?

Theoretical Framework

The social change model of leadership (SCM) served as the theoretical framework for this study (HERI, 1996). This framework describes leadership as a "purposeful, collaborative, values-based process that results in positive change" (HERI, 1996, p. 9). SCM outlines the relationship between individual, group and community values (HERI, 1996). The McKnight Scholars Leadership Program works to develop all three components of this model and used the Student Leadership Challenge curriculum to focus on the development and understanding of individual values. SCM associates three critical elements with individual values: collaboration, congruence and commitment (HERI, 1996). This framework states that the outcome should be recognition of behaviors and change over time (HERI, 1996).

Methodology

This census study included the McKnight Scholars enrolled in the McKnight leadership course taught in Fall 2014 and Spring 2015 (n=50). The Student Leadership Practices Inventory 360 was used to measure perceived use frequency for 30 behaviors; six behaviors in each of the five practices of exemplary leadership. At the beginning of the course, students rated their perceived frequency on a likert type scale ranging from 1 (rarely) to 5 (very frequently). Scholars asked observers such as peers, mentors, superiors, etc. to also rate their frequency for the five behaviors. The five leadership practices on the Student Leadership Practices Inventory 360 have

Cronbach's Alpha reliabilities for leaders (self) between .814-.900 and for observers between .855-.921 (Posner, n.d.).

Results/ Findings

As seen in Table 1, McKnight Scholars identified their use frequencies for three of the five practice at above the national average: Model the Way (*M*=22.92, *SD*= 3.02, Δ= 0.8), Inspire a Shared Vision (*M*=21.34, *SD*= 3.54, Δ= 0.16) and Encourage the Heart (*M*=24.06, *SD*=3.69, Δ= 1.35). McKnight Scholars' observers rated scholars above the national average in all five of the practices. In response to research question four, the differences between the students' self-perception and that of the mean observer score were as follows: (a) -2.96 – Model the Way, (b) -3.79 – Inspire a Shared Vision, (c) -3.20 – Challenge the Process, (d) -1.96 – Enable Others to Act, and (e) -1.55 – Encourage the Heart.

Table 1

McKnight Self and Observed Practice Frequencies Compared to the National Average

	Self					Observer				
	McKnight		National		Δ	McKnight		National		Δ
	M	*SD*	*M*	*SD*		*M*	*SD*	*M*	*SD*	
Model the Way	22.92	3.02	22.12	3.30	0.8	25.88	1.46	24.05	3.92	1.83
Inspire a Shared Vision	21.34	3.54	21.18	4.03	0.16	25.13	1.83	23.97	4.24	1.16
Challenge the Process	20.76	3.76	21.51	3.71	-0.75	23.96	1.92	23.69	4.19	0.27
Enable Others to Act	23.84	2.82	24.00	3.07	-0.16	25.76	1.83	25.30	3.66	0.46
Encourage the Heart	24.06	3.69	22.71	4.05	1.35	25.61	1.97	24.22	4.41	1.39

Conclusions

For each of the five practice frequencies, the McKnight self and observed scores are higher than the national average in all but two combinations, Self—Challenge the Process and Self—Enable Others to Act. Noting the change in means between the students' self-perception and national averages, the largest difference is in the practices of Encourage the Heart and Model the Way. This pattern repeats when comparing the mean observer scores to the national averages, except at a larger magnitude. Overall, the mean observer scores are higher than mean self-perception scores for each of the five practices.

Implications/ Recommendations/ Impact on Profession

As the McKnight self-perception and observer scores are higher than the national average, perhaps the individual values outlined in the SCM are positively developed through the SLC. However, as 360 evaluations were completed early in the college career of the scholars, self-perceptions and observer scores could have been influenced by participation at the high school level. Thus, further evaluations must be completed to determine if individual values develop as a result from curriculum or change of environment. Further 360 evaluations should include observers from the scholars' collegiate experiences and should be compared against previous observer scores. This study presents further implications for the profession as students who understand and are trained on their leadership skills are apt to experience higher rates of college engagement and retention, as well as employability (Carter and Spontanski, 1989; HERI, 1996). Additionally, multiple perspective evaluation could be utilized in other areas of the profession to offer a multi-faceted picture of student teacher and communicator performance.

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The Relationship of Media Type and Engagement and Reach of an Agricultural Education Professional Development Facebook Page

Anna J. Warner
Graduate Student
University of Florida
P.O. Box 110540
310 Rolfs Hall
Gainesville, FL 32611
Phone: 352-273-2614
anna.j.warner@ufl.edu

Kate Shoulders
Assistant Professor
University of Arkansas
465 N. Campus Drive
205 Agriculture Building
Fayetteville, AR 72701
Phone: 479-575-3799
cshoulde@uark.edu

Ashley Hassan
Undergraduate Student
University of Florida
P.O. Box 110540
310 Rolfs Hall
Gainesville, FL 32611
Phone: 352-273-2614
Ashley.hassan@ufl.edu

Marshall A. Baker
Marshall A. Baker
Assistant Professor
Oklahoma State University
456 Agricultural Hall
Stillwater, OK 74078
Phone: 405-334-1413
bakerma@okstate.edu

Brian E. Myers
Professor and Chair
University of Florida
P.O. Box 110540
305 Rolfs Hall
Gainesville, FL 32611
Phone: 352-273-2567
bmyers@ufl.edu

The Relationship of Media Type and Engagement and Reach of an Agricultural Education Professional Development Facebook Page

Introduction

Extension personnel create educational programs to disperse researchers' knowledge to the general public; however, current clientele needs require a restructuring of delivery (Campbell, 1998). Social media has provided extension the flexibility in disseminating information while monitoring interests through social media metrics (Gharis Bardon, Evans, Hubbard, & Taylor, 2014; Kinsey, 2010) Agricultural Education faculty created the Owl Pellets: Tips for Ag Teachers Facebook page to disseminate current research to practicing agriculture teachers. Guskey (2002) underscored the need for researchers to identify creative systems to support teachers as they implement knowledge gained from professional development into educational practice. While researchers have investigated the role of social media in enhancing learning (Waite & Wheeler, 2014) a gap in the literature exists when examining the use of practitioner briefs distributed through social media to enhance professional learning of agricultural educators.

Theoretical Framework

The Uses and Gratifications Theory provided a framework for analyzing the motivation behind consumers' usage of media to meet their needs (Katz, Blumer, & Gurevitch, 1973; Korhan & Ersoy, 2015; Whiting & Williams, 2013). Individuals select forms of media which they feel will fulfill their needs; they will return to a medium that has successfully gratified their needs in the past (Chen, 2011; Whiting & Williams, 2013). This theory has reemerged as a framework for analyzing social media usage. In this study, researchers used the Uses and Gratifications Theory to determine which forms of media distributed through the Owl Pellets Facebook Page resulted in the most engagement from individuals. The following objectives guided the study:

1. Describe the frequencies of blog, informational, infographic, podcast, and shared page posts.
2. Describe the trends in Daily New Likes, Daily Total Reach, and Total Engaged Users of the Owl Pellets Facebook community in regards to media type.

Methods

A case study of the Owl Pellets Facebook page was completed to determine page engagement of users. Page and post data from July 22, 2015 to July 22, 2016, the first complete year of the page, were exported from Facebook to Microsoft Excel and analyzed using descriptive statistics. Analysis of page data focused on daily new page likes, the number of new users who liked the page each day; daily page engaged users, the number of people who liked, commented, viewed photos or videos, clicked links, or shared page content; and daily total reached, the total number of people who have seen any content (Facebook, 2016). Analysis of the post data focused on post type as categorized by the researchers, total likes, likes on posts, likes on shares, total comments, comments on posts, comments on shares, total shares, shares on post, and shares on shares. Researchers recoded each post type to reflect specific categories aligned with the study's objectives: blogs, inforgraphics, informational updates, podcasts, and shared posts.

Findings

The majority, almost 46%, of posts on the page were shared content (see Table 1). Post likes were split nearly equally with 50.2% of likes occurring on the post and 49.8% of likes occurring on shares. However, a majority of comments, 77.1%, occurred on shares with less than 25% of comments occurring on the Owl Pellets page post. The opposite was true for shares; almost 79% of shares were from the Owl Pellets page post. Figure 1 illustrates the number of daily new page likes during year one. Similar graphs were analyzed for daily total reach and daily engaged users.

Table 1
Frequencies of Post Types, Likes, Shares, and Comments

Category	% (*f*)
Post Type (n=57)	
Blog	12.3 (7)
Infographic	7.0 (4)
Informational	22.8 (13)
Podcast	12.3 (7)
Shared	45.6 (26)
Total Likes (n=560)	
Likes on Post	50.2 (281)
Likes on Shares	49.8 (279)
Total Comments (n=35)	
Comments on Post	22.9 (8)
Comments on Shares	77.1 (27)
Total Shares (n=89)	
Shares on Post	78.7 (70)
Shares on Shares	21.3 (19)

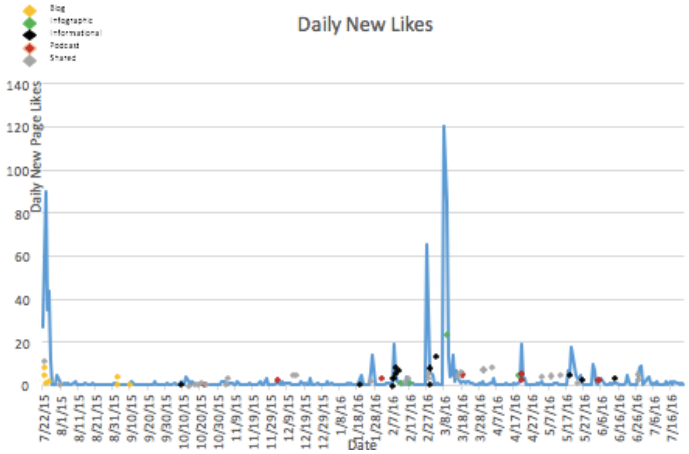

Figure 1. Daily New Likes of Owl Pellets Facebook Page July 22, 2015-July 22, 2016

Analysis of Results, Conclusions, and Recommendations

Although the findings of this study cannot be generalized, they can provide insight on trends related to media type and page likes, total reach, and user engagement and provide practical advice for the administrators of the Owl Pellets Page to allow them to refine this model program for teacher professional development. Analysis of Figure 1 indicated all posts lead to an increase in page likes; multiple posts within a few days lead to higher peaks in daily new likes. A noticeable difference was not seen between post types with the exception of multiple posts of shared content which did not follow that trend. The additional graphs showed similar patterns. The more posts which occur within a short time frame, the larger the total user engagement and daily reach, indicating a benefit to regular posting. Some posts seemed to have a more extreme impact on total reach. This may indicate a preference for a particular media type or may be due to content. User engagement patterns and total reach patterns mimicked each other. Houk and Thornhill (2013) indicated that data on engaged users provided a better measure because it measured the users' active involvement with content rather than passive observance. Administrators of the Owl Pellets Facebook Page should increase the percentage of the posts which align with the intent of the page through blog posts, infographics, and podcast and post several times a week throughout the year (Houk & Thornhill, 2013) to increase total page likes, total reach, and daily user engagement. Researchers should continue to investigate the types of media which gratify the needs of teachers for professional learning using inferential statistics. Particular attention should be given to determining the cause of the more extreme peaks in page reach and user engagement so page administrators can purposefully implement strategies. Content of posts should be analyzed to determine impacts on engagement (Houk & Thornhill, 2013). Experimentation should examine methods of increasing engagement data to levels closer to total reach data. Researchers should investigate and document steps for increasing engagement and working EdgeRank algorithm in order to increase reach (Houk & Thornhill, 2013).

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Using the Community Capitals Framework for the Development of an Agricultural Community Life Center

Chantel Simpson, Virginia Tech
Matt Spindler, Virginia Tech

204 Litton-Reaves
Virginia Tech
Blacksburg, VA 24061

cysimpso@vt.edu
spindler@vt.edu

540-231-8188

Using the Community Capitals Framework for the Development of an Agricultural Community Life Center

Introduction

As society has grown, the inward migration of citizens from rural to more metropolitan areas has increased. Consequently, rural areas have seen tremendous decline in human, social, and economic capital. This research investigated the process of developing an agriculturally based family life center in a rural southeastern community. The research utilized the community capitals framework (Emery and Flora, 2006) as a guide for contextualizing the space around the intended family life center and its plan for providing agriculturally based programs and services. Respondents believed that human capital development through agriculturally based professional development and adult programming was an important consideration for the family life center.

As the economy has changed, many rural areas have experienced tremendous turmoil and economic recovery programs have not spurred sufficient rural development. In an effort to improve the economic sustainability of their rural area, a community in southeastern state is working to build an agriculturally based family life center that will provide resources and services to improve the food security, educational, employment, and entrepreneurial prospects of its members. Census data for the community indicate that the locality has a poverty rate well above the mean for the state and a below average level of educational attainment. The community also has limited infrastructure and opportunities for economic development.

Theoretical Framework

The community capitals framework provides a conceptual model which can be used to organize research about how communities function (Emery and Flora, 2006). Figure 1 illustrates that the community capitals framework is organized around seven forms of capital. Emery and Flora (2006) indicate that communities that are most successful in supporting sustainable economic development are engaging in the development of all seven types of community capital depicted in Figure 1. Conceptually, the forms of capital in the community capitals framework model overlap each other to create a wholly inclusive picture of community assets and to help direct the focus of community members to areas of improvement. Emery and Flora (2006) define the forms of capital in the community capitals framework in the following ways: natural capital consists of assets that abide in a location including amenities and natural beauty; cultural capital is reflective of how people understand the world and act within it; human capital consists of the skills and abilities of people; social capital reflects the interconnections among people; political capital is related to the ability to influence standards, rules, and regulations; Financial capital reflects to the financial resources available for investment to support capacity building; and built capital is measured by looking at the infrastructure that supports a community.

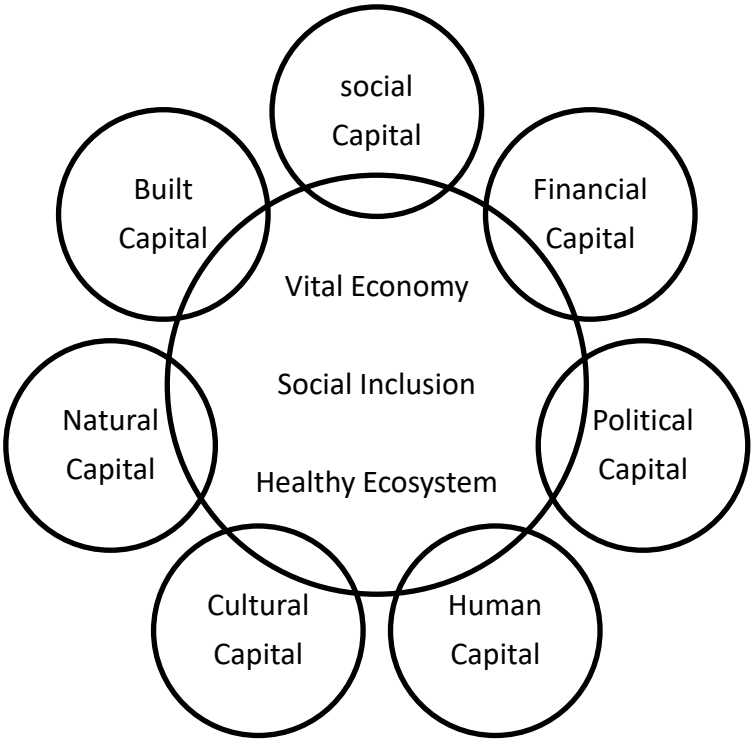

Figure 1. Illustration of the Communities Capital model adapted from Emery and Flora, 2006

Purpose, Objectives, Methods

The purpose of this research project was to provide the community leaders and organizers information specific to the community's congregants, their families, and the local community so that needs can be determined and addressed. Data for this project was collected using a needs assessment survey. The sample for this survey consisted of community members that attended services at several local churches and or those that attended a countywide event.

Findings & Conclusions

There were a total of 93 valid survey responses. The data indicate that the majority of survey respondents were female and over the age of 35. The internal consistency of the instrument was adequate with all subscales attaining an α of .70 or greater. The respondents indicated that there was a need for agricultural education both through the schools and informal spaces like church youth groups. Further, the respondents believed that agricultural education experiences for youths and adults would help their community build human, social, and cultural capitals which would strengthen their communities. The participants also believed that agricultural education programming would have a return on investment which would far exceed the initial financial costs associated with operationalizing the programming. More information about the STEM foundations of agricultural career and entrepreneurial opportunities needs to be packaged for easy knowledge transference to youths and the adults who influence their life choices.

Future Efforts

Future efforts will entail looking at intersectionality and the challenges associated with attracting people of color to agricultural education and agricultural career pathways.

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