Poster Session Proceedings
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One hundred sixty-four posters were received with eighty-six in the innovative idea category and seventy-eight in the research category. Forty-two innovative posters were accepted (48% acceptance rate). Forty posters were accepted for research (51% 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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Whiddon, Ashley	Oklahoma State University
Williams, Robert	Texas A&M University - Commerce
Wimmer, Gaea	Mississippi State University
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Innovative Idea Poster

A Dichotomous Key: Helping Students find their Path in SAE

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A Dichotomous Key: Helping Students find their Path in SAE

Introduction

Supervised agricultural experience (SAE) programs are well-planned, adult-supervised, and agriculturally-based programs where students engage in keeping complete records and apply agricultural concepts that are taught through classroom instruction (Camp, Clarke, & Fallon, 2000; Stimson, 1915; Phipps, Osborne, Dyer, & Ball, 2008). When originally introduced to the agricultural education profession, the project method was to be completed by every student enrolled in the agricultural education program (Stimson, 1915). From 1915 to present day, several changes have occurred within SAE programs such as: name changes, strengthened academic focus, and new SAE types (Phipps et al., 2008). Since the early 1980's, teacher and student participation in SAE programs has decreased (Croom, 2008; Dyer & Osborne, 1995; Kotrlik, Parton, & Leile, 1986; Leising & Zilbert, 1985; Miller, 1980; Phipps et al., 2008; Retallick & Martin, 2008). Dyer and Osborne (1995) asserted that teachers reported difficulty in developing SAE programs for all school-based agricultural education (SBAE) students. Further Dyer and Osborne (1996) poised that the demands on teachers' time has affected the quality of a student's SAE program and the teacher's SAE supervision/management techniques. This research identified a need to adapt SAE programs to meet the education requirements of SBAE students (Dyer & Osborne, 1996; Retallick & Martin, 2008; Roberts & Harlin, 2007). To assist in alleviating the difficulty in developing SAE programs for all SBAE students, the authors have developed a dichotomous key for school-based agriculture students to complete during the planning portion of the SAE development process.

How it works

In part, SAE is not done well because of the management practices and time required of the instructor. The SAE Dichotomous Key allows for the teacher to provide a student with an instructional tool that they work through to engage in the SAE program development process. That in turn decreases the time that the teacher will spend assisting each student with developing an SAE program. This allows the student and teacher to spend less time on the development of the SAE program. Therefore, allowing the focus of the teacher's interaction with a student to be on how the SAE program will be implemented.

The SAE Dichotomous Key is an innovative instrument developed to assist students in identifying SAE programs that best suit their interests based upon the resources available to the student. The researchers developed this instrument to facilitate students in individually identifying an SAE program topic. Finally, a compiled list of SAE programs was included to provide examples of SAE programs in each of the agricultural career pathways (Animal Systems; Plant Systems; Environmental Services/Natural Resource Systems; Food Products and Processing Systems; Power, Structural and Technical Systems; and Social Systems) and type (entrepreneurship, placement, research, and exploratory).

Before using the SAE Dichotomous Key, teachers must complete an introductory lesson on the meaning and purpose of SAE programs. The lesson will ensure that students have a fundamental understanding of the components of an SAE program. Students should then be given time in class to complete the SAE Dichotomous Key. The students should also be instructed that more than one SAE category and type may be identified.

There are four steps to the usage of the SAE Dichotomous Key. First, a student is required to self-identify if they have a pre-existing program that could be established as their SAE program. If the program is agriculturally-related, the student is instructed to describe the project on a separate sheet of paper. The agricultural educator can collect the student's response at the end of the class period. However, the student will continue to the second step if they do not have an existing idea or their idea is not agriculturally related.

Second, students are required to identify the agricultural career clusters in which they have an interest. The agricultural career clusters are presented as statements to the students. For example: Social Science – I enjoy working with people.

Third, a student is required to select statements that accurately describe their available resources to complete an SAE program within an agricultural career cluster. Based upon the statements selected, students are presented with an SAE category (agricultural career pathways) and type. Students may identify multiple types of projects within each agricultural career pathways. However, the student will continue to refine the individual components of the SAE program in step four.

Finally, the student is provided with a complied list of example SAE programs that have been completed by previous school-based agricultural education students. The compiled list of specific examples is utilized for students to modify and adjust based upon their individualized interests. The student is then required to describe the SAE program on a separate sheet of paper. Therefore, the utilization of the SAE Dichotomous Key reduces an agricultural educator's time commitment to working with each student on developing an SAE program.

Results to Date/Implications

Anecdotal evidence suggested that preservice and inservice teachers believed that the use of the SAE Dichotomous Key would assist students in developing an SAE program. Further, school-based agricultural education students that utilized the SAE Dichotomous Key were engaged in the development of an SAE program. It has been qualitatively reported to the authors that the utilization of the SAE Dichotomous Key has reduced a teacher's time needed to assist students with the development of SAE programs.

Future Plans/Advice to Others

When utilizing the SAE Dichotomous Key with school-based agricultural education students, agricultural educators must remind students that multiple SAE categories and types may be identified. Further, students should consult their parents regarding their available resources to conduct certain SAE program categories and types. The SAE Dichotomous Key will assist to alleviate inservice agricultural educators' time constraints of SAE development.

Cost/Resources Needed

The implementation of the SAE Dichotomous Key will require minimal expense for the copying of the documents. The SAE Dichotomous Key is a color copy that requires 10 x 14 copy paper.

References

Camp, W. G., Clarke, A., & Fallon, M. (2000). Revisiting supervised agricultural experiences. *Journal of Agricultural Education, 41*(3), 13-22. doi:10.5032/jae.2000.03013

Croom, D. B. (2008). The development of the integrated three-component model of agricultural education. *Journal of Agricultural Education, 49*(1), 110-120. doi:10.5032/jae.2008.01110

Dyer, J. E., & Osborne, E. W. (1996). Developing a model for supervised agricultural experience program quality: A synthesis of research. *Journal of Agricultural Education, 37*(2), 24–33. doi:10.5032/jae.1996.02024

Dyer, J. E., & Osborne, E. W. (1995). Participation in supervised agricultural experience programs: A synthesis of research. *Journal of Agricultural Education, 36*(1), 6-14. doi:10.5032/jae.1995.01006

Kotrlik, J. W., Parton, G., & Leile, M. (1986). Factors associated with knowledge level attained by vocational agriculture II students. *Journal of the American Association of Teacher Educators in Agriculture, 27*(2), 34-49. doi:10.5031/jaatea.1986.02034

Leising, J. G., & Zilbert, E. E. (1985). Factors associated with supervised occupational experience in California vocational agriculture programs. *Journal of the American Association of Teacher Educators in Agriculture, 26*(2), 56-64. doi:10.5031/jaatea.1985.02056

Miller, T. R. (1980). The changing status of supervised occupational experience in vocational agriculture in North Carolina. *Journal of the American Association of Teacher Educators in Agriculture, 21*(1), 13-18. doi:10.5031/jaatea.1980.01013

Phipps, L. J, Osborne, E. W., Dyer, J. E., & Ball, A. (2008). *Handbook on agricultural education in public schools* (6th ed.). Clift Park, NY: Thomson Delmar.

Retallick, M. S., & Martin, R. A. (2008). Fifteen-year enrollment trends related to the three components of comprehensive agricultural education programs. *Journal of Agricultural Education, 49*(1), 28-38. doi:10.5032/jae.2008.01028

Roberts, T. G., & Harlin, J. F. (2007). The project method in agricultural education: Then and now. *Journal of Agricultural Education*, *48*(3), 46.56.doi:10.5032/jae.2007.03046

Stimson, R. W. (1915). The Massachusetts home project plan for vocational agricultural education. *The School Review, 23*(7), 474-478. Retrieved from http://www.jstor.org/stable/1076877

Agricultural Mechanics Round Robin Training Seminar

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Agricultural Mechanics Round Robin Training Seminar

Introduction/Need for Innovation

Preparing pre-service teachers in all content pathways is a difficult task. In many institutions the power, structure, and technical systems (PSTS) pathway is the most difficult (Burris, Robinson, & Terry, 2005). Finding opportunities for pre-service teachers to gain experiences in the PSTS pathway is a major challenge that institutions face (Burris, Robinson, & Terry, 2005). Pre-service teachers need an opportunity to not only develop skills in this pathway, but also develop a confidence and comfort level in order to teach and manage students in the PSTS laboratory. According to Saucier and McKim (2011) the likelihood of an accident happening in an agricultural mechanics laboratory is reduced when the lab is managed by an instructor who is competent and knowledgeable. The same authors recommend "…agricultural mechanics coursework be integrated into teacher preparation in agricultural education programs" (McKim, & Saucier, 2011, p.39). Changing undergraduate coursework to include more agricultural mechanics may not be feasible option for most pre-service programs because of other graduation requirements (McKim, & Saucier, 2011). In response to this need, in-service agricultural education instructors and the agricultural education teacher training faculty teamed up to create an Agricultural Mechanics Round Robin Seminar. Working together, the in-service instructors spent two days at a local agriculture program to allow the pre-service teachers an opportunity to develop and practice various PSTS skills.

How it Works

The Agriculture Mechanics Round Robin is designed to allow pre-service teachers opportunity to gain skill development and competence in the PSTS laboratory setting. The event takes place starting on a Friday evening and all day Saturday at a local high school agriculture program. The evening time is dedicated to discussions and focuses on facility layout, equipment maintenance and safety. Service technicians from a local welding supply store spend time with the pre-service teachers going over safety and maintenance of shop equipment. The local fire department presents a discussion on laboratory and fire safety. The evening culminates with a practical use of fire extinguishers as the fire department sets fires and all members attending use various fire extinguishers and the proper techniques to put out fires set by the firemen. The next day is dedicated to skill development, tool safety and operation, and the sharing of project plans. Over 20 in-service teachers meet the students at the local program for breakfast and a social time. This allows both groups to get to know one another before the actual round robin event begins. The teachers are asked to bring any safety rules/tests, project plans, or innovative ideas they use in their local programs to be given to all participants at the event.

During the actual round robin part of the event, each in-service teacher is assigned a specific tool to demonstrate for the pre-service teachers. The process is set up in twenty minute rotations in which the in-service teacher works directly with the pre-service teachers in a one to one or one to two teacher to student ratio. This intimate atmosphere allows for greater collaboration for both parties involved. The experienced teacher takes the pre-service teacher through the detailed steps of the tool and shows the operation and skill needed to successfully operate the machine. Each student is then expected to operate the machine with the advantage of having the experienced teacher closely supervising every action. The intimate interaction allows for a greater comfort level of pre-service teachers as they tend to feel more comfortable with the directed attention they receive. In the small setting the students are able to gain immediate feedback from the instructors. In addition, instructors are able to focus their attention on what each individual pre-service teacher feels the most apprehensive about when trying to operate or teach about each individual tool.

Results to Date/Implications

The Agricultural Mechanics Round Robin was first been implemented in fall semester of 2012. The pre-service teachers were extremely appreciative of the effort and dedication of teachers. The experienced teachers also expressed an overwhelming appreciation for the opportunity to participate and have an influence on the younger generation of pre-service teachers. The student teachers were asked in their methods class what they thought of the process and the experience from the previous weekend. All stated that this experience helped to alleviate many of their apprehensions of teaching agricultural mechanics. They all expressed an appreciation to not only have the hand's-on experience with several different technology lab tools, but also the opportunity to share ideas and strategies with experienced teachers. The setting allowed for several informal communications in which the pre-service students were able to gain more knowledge than just the skill of operating the machine. The young teachers in this setting were not intimidated by the experienced teachers and this allowed for collaboration which may not have happened otherwise. The experienced teachers also expressed a rejuvenated feeling and excitement for teaching and setting up shop related experiences. This unintended result has helped experienced teachers feel more connected to the university and to the younger members of the profession.

Future Plans/Advice to Others

The success of the first year for the program indicates that it is a worthwhile project and will be continued. This style of training for student teachers has potential to expand the project beyond the use of basic tool operation. In the future there is a possibility for a modified version of this Round Robin style which may include a Greenhouse Round Robin, an Agriscience Round Robin, or a Natural Resource Round Robin. The important piece when working on growing the Round Robin event is to make sure there is adequate space, the teachers are experts in the area they are presenting, and there are small group interactions.

Costs/Resources Needed

The costs of this project are minimal with the help of a local agriculture teacher who is able to host the event. The main costs for the event were some materials such as wood, metal and consumables. The other expense is food to feed all the participants and instructors of the event. Both of these costs were offset through the generous help of the local agriculture program's community. The main resource needed was time to coordinate the event and arrange for agriculture teachers to assist and set up times for the fire department and service technicians to come out and present. Most of this work was completed by the local instructor where the event was held.

References

Burris, S., Robinson, J.S., & Terry, R. (2005). Preparation of Pre-Service Teachers in Agricultural Mechanics. *Journal of Agricultural Education,* 46(3), 23-34. doi:10.5032/jae.2005.03023

McKim, B. R., & Saucier, P. R. (2011). Agricultural Mechanics Laboratory Management Professional Development Needs of Wyoming Secondary Agriculture Teachers. *Journal of Agricultural Education,* 52(3), 75-86. doi:10.5032/jae.2011.03075

McKim, B. R., & Saucier, P. R. (2011). Assessing the Learning Needs of Student Teachers in Texas Regarding Management of the Agricultural Mechanics Laboratory: Implications for the Professional Development of Early Career Teachers in Agricultural Education. *Journal of Agricultural Education,* 52(4), 24-43. doi:10.5032/jae.2011.04024

Innovative Idea Poster

An Innovative Approach to Enhance SAE Participation: Utilization of the Texas SAE Builder

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**An Innovative Approach to Enhance SAE Participation:
Utilization of the [State] SAE Builder**

Need for Innovation

The amount of students participating in supervised agricultural experiences (SAE) has decreased (Dyer & Osborne, 1995). As a result, concerns for the lack of student knowledge about SAE programs have surfaced in recent years (Lewis, Rayfield, & Moore, 2012). Ramsey and Edwards (2011) concluded that a change needs to be made to increase students' SAE participation. Therefore, a tool was created to increase students' knowledge of SAEs, while giving students direction in choosing a SAE program that fits into their lifestyle.

The Texas SAE Builder was created to increase knowledge and participation in SAE programs. Resources on the site provide students with an opportunity to self-define their SAE interests, view targeted video examples that describe each SAE type, access classroom related activities, and examine detailed examples of the SAE most appropriate for their interest and available resources.

How it works/Methodology

The website went live in August 2011 during the Texas teachers' professional development conference. The following narrative describes steps that visitors go through when accessing the Texas SAE Builder.

The student starts by assessing their previous knowledge of SAEs in the SAE Builder Tool. Students begin by entering in their demographic information in steps one and two. Step three provides students with an opportunity to learn about SAEs in a video. After students are more knowledgeable about SAEs from watching the video, step four provides nine pathways with a brief description of each and a basic understanding of the pathways in which they can choose from. Once students are familiar with all of the pathways, students select which one most interests them. Then students advance to step five where they enter the amount of time they have available to devote to a SAE project. Step six asks students to select the amount of financial investment they have available for the SAE program. By selecting one of the four choices in step six, the SAE Builder Tool directs students to a possible category (i.e. exploratory, placement, research, or entrepreneurship) they could pursue with an example of a SAE project in that category. Additionally, in step six students can select if they are interested in that category or not. If students decides they are not interested in the SAE category suggested, they are be diverted back to choose another possible SAE. However if students select that the suggested SAE category does meet their interest, students are then advanced to step seven to develop a description of their SAE idea. Step eight allows students to reflect on what they have learned about SAEs and gives them an opportunity to restate their understanding of SAEs.

Once students have completed the SAE Builder Tool, and supplied their teacher with their self-directed knowledge of SAEs, the teacher can then use the SAE Videos, SAE Curriculum, and SAE Guides and Presentations pages to choose appropriate classroom activities to further assist in increasing the students' SAE knowledge. The SAE videos page provides a video to give a more in depth understanding of what a SAE is through the Introduction to SAEs video.

Additionally, there are four videos covering each SAE category (exploratory, research, entrepreneurship, and placement) to give students examples of the types of SAEs that could go in each category. The SAE Curriculum and the SAE Guides and Presentations pages provide the teacher with lesson plans, assessments, and video links they can use to teach regarding SAEs.

Results/Implications

After the introduction of the Texas SAE Builder at the Texas teachers' professional development conference in August of 2011, the highest number of visits was recorded in the fall of 2011. The following fall of 2012 was the second highest number of visits. This indicates that teachers and students are visiting the site at the beginning of the school year to learn more about SAEs and to get examples to develop SAE projects within their program.

Table 1 shows how frequently each page of the Texas SAE Builder was viewed. Results show the most frequently visited page on the website is the SAE Builder Tool (*f* = 38,856). The two least visited pages are SAE Curriculum (*f* =3,940) and SAE Guides and Presentations (*f* = 3,513). The data indicates that students are looking for suggestions and examples of an SAE program that aligns with their interests and available resources through the SAE Builder Tool. Furthermore, the data suggests that many teachers are directing students to use the SAE Builder Tool. However, teachers are not accessing the SAE Curriculum or SAE Guides and Presentations pages as frequently. Therefore, instruction of SAEs continues to be a stumbling block for agricultural education teaching.

Table 1

Frequencies of the Pageviews of the [State] SAE Builder (n = 68,309)

SAE Builder Pages	*f*
SAE Builder Tool	38,856
SAE Videos	6,932
SAE Curriculum	3,940
SAE Guides and Presentations	3,513
Other (home page/teacher resources)	15,068

Future Plans

The Texas SAE Builder plans to implement a page that includes videos of previously completed SAE projects. This will allow students visiting the site to see several examples of SAEs and build ideas of what their SAE could include.

Cost of the Program

The creators' largest investment was their time spent to come up with the idea, shoot the videos, and make the website operational. Access to the resources of the website for teachers and students is free. The Texas SAE Builder was commissioned and sponsored by the Texas Education Agency.

References

Dyer, J. E., & Osborne, E. W. (1995). Participation in supervised agricultural experience programs: A synthesis of research. *Journal of Agricultural Education, 36*(1), 6-14. doi: 10.5032/jae.1995.01006

Lewis, L. J., Rayfield, J., & Moore, L. (2012). Supervised agricultural experience: An examination of student knowledge and participation. *Journal of Agricultural Education, 53*(4), 70-84. doi: 10.5032/jae.2012.04070

Ramsey, J. W., & Edwards, M. C. (2011). Entry-level technical skills that agricultural industry experts expected students to learn through their supervised agricultural experiences: A modified delphi study. *Journal of Agricultural Education, 52*(2), 82-84. doi: 10.5032/jae.2011.02082

Innovative Idea Poster

An Urban Fair for Underrepresented Youth in 4-H: The Baltimore City 4-H Expo

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An Urban Fair for Underrepresented Youth in 4-H: The Baltimore City 4-H Expo

Need for Idea

The state of Maryland has a diverse demographic makeup whereby 30% of the state's population is represented by people of color. In Baltimore City alone, 64% of the population is represented by people of color (United States Census Bureau, 2010). The 4-H youth program in Baltimore city has continuously sought effective strategies to incorporate diverse audiences by emphasizing special youth development/leadership opportunities, educational activities, and member driven projects. However, after much observation, the effectiveness of the strategies employed to increase the accessibility of 4-H programs to all populations still remains an issue of concern. Although Extension has historically had great success in effectively reaching rural communities, it has simultaneously lacked effective methods to reach urban communities (Fritz, Karmazin, Barbuto, & Burrow, 2003). Because of the need of a broader scope of programs and activities, the Baltimore City 4-H Youth Expo was developed to provide underrepresented youth these opportunities.

How it Works

The Baltimore City Extension, volunteers, community leaders, and advisory board members implemented the Expo to enrich the 4-H experience for Baltimore City youth. Area schools and after school programs encourage students to develop projects to be exhibited at the Expo. 4-H Clubs within Baltimore City also develop displays and exhibits for the Expo. The projects are 4-H based, judged according to the Maryland State Standards for Agricultural Fairs and Shows, and can entered in the following divisions: Family and Consumer Sciences, Food Preparation, Expressive Arts, 4-H Relations and Promo Posters, General Sciences, Agricultural Sciences, and Flowers and Arrangements. Winning 4-H exhibits are eligible, and entered in the Maryland State Fair. During the Expo, students view entries, listen to motivational speakers, and visit *Skillathon* stations. Skillathon stations are individual booths that are based on topics which are relevant to metropolitan areas such as: recycling, pollution reduction, public transportation, and urban agriculture methods. Youth visit each Skillathon station (which is managed by a University of Maryland Extension volunteers) and begin booth activities that focus on skill and knowledge evaluation of that particular theme. There are three challenges at each station for three levels (elementary, middle, and high school). The Extension volunteer evaluates each participant and ranks them by proficiency level. Individual scores are tallied and prizes are awarded at the end of the day for proficiency at each Skillathon station and an overall composite proficiency score at each level. Skillathon challenges and themes change on a yearly basis. The motivational speakers and Skillathon stations set the Expo apart from traditional county fairs.

Results

Over 400 youth attended the Expo with approximately 135 competitive 4-H youth exhibits entered and judged. Over 300 youth participated in the Skillathon stations. The amount of participation received from youth entering exhibits is dependent on the after school programs and schools that partner with the University of Maryland Extension – Baltimore City 4-H educators. A stronger connection between the educators and the area wide schools and afterschool programs should foster greater participation from youth in the exhibit submission segment as well as higher attendance rates from youth at the Expo. Early observation indicates that participants are more interested in partaking in the Skillathon stations than submitting exhibits. However, participants that went through the Skillathon stations have shown a greater interest in becoming 4-H members and have actively joined 4-H clubs after the Expo. The themes of the Skillathons also serve as a springboard for 4-H project interests.

Future Plans

The Expo will continue to expand toward the various communities in Baltimore City and provide 4-H youth development for all students. Rotating the Expo from its original location in downtown Baltimore City to a host school or recreational center each year is being considered. Integrating more agricultural science and STEM programs in the communities served in order to increase the amount of science exhibits at the Expo is in progress with the appointment of a new STEM coordinator. The STEM coordinator has started 4-H clubs with an emphasis in aquaponics and urban agriculture. Partnering with other local urban Extension offices such as Washington D.C. to help them initiate an Expo in their city is in progress. Plans to incorporate club booths to increase club membership rates and publications about 4-H are being developed. Small animal projects are being considered for allowance into the exhibit phase of the Expo. Small animals would include rabbits, guinea pigs, poultry, and dogs.

Resources Needed

The Expo requires approximately $5000.00 to plan and operate. Fundraising money from the Extension Advisory Board, in-kind donations, and money from the New York Life grant from the National 4-H Council provided the operating cost. Approximately 30 volunteers are needed to lead groups, run stations, set-up and tear-down, answer questions, and promote 4-H.

The following expenses are in-kind donations:

- Building Rental for three days
- Lunch, snacks, and beverages for volunteers and judges
- Services for use of sound equipment, announcements, and introductions

Monetary donations were used for:

- Decorations and exhibit display materials
- Skillathon prizes
- Parking passes

References

Fritz, S., Karmazin, D., Barbuto, J. J., & Burrow, S. (2003). Urban and rural 4-H adult volunteer leaders' preferred forms of recognition and motivation. *Journal of Extension, 41*(3), Retrieved from http://www.joe.org/joe/2003june/rb1.php

United States Census Bureau (2010). *State and county quickfacts*. Retrieved from http://quickfacts.census.gov/qfd/states/24/2404000.html

Innovative Idea Poster

Animal Science 101: Back to the Basics

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Animal Science 101: Back to the Basics

Introduction

Animal agriculture and the skills needed to facilitate experiential learning opportunities in the context of Supervised Agricultural Experience (SAE) programs continues to be an important component of the agricultural education teacher's job. Historically, students have embraced the opportunity to raise and exhibit livestock projects. A positive livestock experience can serve as a context for the development of employability skills as well as the technical skills needed for the animal industry (Ramsey & Edwards, 2011). In addition, students are exposed to opportunities to receive awards and recognition through FFA and earn scholarships. Such awards can assist with post-secondary education that may lead to careers in the agricultural industry (Talbert & Balschweid, 2004).

In agricultural education programs across [State], the primary career pathway is Animal Science ([State] Department of Career and Technology Education, 2009). As teachers of the *Baby Boomer* generation retire, new teachers will be needed to lead these programs. These new teachers must be competent to teach the animal science curriculum, and also facilitate SAE programs focused on animal agriculture.

Skill development of pre-service agriculture teachers is important for universities to consider when developing new curriculum. According to Talbert, Vaughn, Croom, & Lee (2007), teachers must "stay current in the technical content of the profession i.e., agricultural industry" (p. 57). In the context of animal science, Slusher (2009) reported the third most important entry-level technical skill needed in the animal science sector was to "understand animal needs" in the context of animal handling/husbandry (p. 4). Industry professionals reported administering medications, livestock selection and disease identification (animal) as the three most important entry-level technical skills for students (Ramsey & Edwards, 2011). These skills must be taught by the next generation of teachers. Training the next generation of teachers to have the requisite skills needed to facilitate these programs is the focus of a collaborative effort between two departments in the College of Agricultural Science and Natural Resources at [University]. An animal science course with a designated lab for agricultural education majors has been developed to introduce pre-service teachers to the basic animal handling skills needed to facilitate animal agricultural experiences in school-based agricultural education programs.

How it Works

The course provides an overview of animal management and handling techniques used with beef, dairy, sheep, goat, horse, swine, and poultry. The primary objective of the course is to aid students in the acquisition of basic skills associated with livestock production and handling. Students learn basic skills needed to properly restrain animals of different ages, collection of samples for examination, and other husbandry practices. Students also demonstrate their understanding of these concepts and skills under different production settings.
Students gain basic skills needed to properly and proficiently perform husbandry techniques relative to a variety of management or production settings (i.e., injections, castration, banding, disbudding, branding, tattooing, ear notching, and tagging). Emphasis is also placed on

techniques related to physiology and other aspects of animal care such as visual identification, heart rate, respiration rate, and body temperature. In addition, students are exposed to proper loading and unloading of animals during transportation of livestock for the safety and welfare of not only the animal, but the workers as well.

In an effort to maximize the lab experience, an experiential approach is implemented to highlight teaching of animal husbandry skills learned in the course. Pre-service teachers are required to use the demonstration or problem solving teaching method to create *just-in-time* (JIT) teaching plans that are taught to their peers in the lab. The use of educational technology is integrated into the final project of the course that involves the random drawing of an animal husbandry skill and a cooperative learning experience designed to showcase the selected topic. An agricultural education graduate assistant is assigned to the lab to serve as a liaison between the agricultural education program and the animal science instructor responsible for the course. The liaisons' primary objective is to serve as a pedagogical expert and assist students in developing their lesson plans.

Results to Date

Nearly all students who have taken the course found it to be extremely beneficial and useful. For example, one student commented, "The animal handling class has been a great opportunity for me to gain new experiences with livestock to use in the future as an agricultural educator" (K. Brown, personal communication, April 10, 2012) another student said, "The hands on experience offered in this class is what makes it worth taking" (T. Daily, personal communication, March 15, 2012) and finally, "I feel more prepared to help my future students raise and care for their SAE livestock projects" (J. Neal, personal communication, February 8, 2011). Faculty responsible for this course believe it is a crucial component of the curriculum that has potential to fill a need for students who do not have experience working with livestock.

Future Plans

Animal Science 3703 is offered in both semesters, so students and advisors have flexibility to fit the course into students' schedule. The course currently requires instructor permission to enroll; however, steps have been taken to allow agricultural education advisors to grant that permission to their students. The agricultural education lab section will continue to be refined to meet the need for technical and pedagogical skill development.

Resources Needed

The burden for resource allocation is with the Department of Animal Science. Instructor time, lab resources, transportation, and consumable materials required to facilitate 31 students is substantial; however, based on anecdotal evidence it appears to be well worth the investment. The Agricultural Education program contributes the graduate students assistantship.

References

[State] Department of Career and Technical Education, (2009). Agricultural education course and standards. Retrieved July 15, 2009, from http://www.[state]careertech.org/aged/ag%20standards1.htm

Ramsey, J. W., & Edwards, M. C. (2011). *Entry-level technical skills that agricultural industry experts expected students to learn through their supervised agricultural experiences: A modified Delphi study. Journal of Agricultural Education, 53*(3), 42-55. doi: 10.5032/jae.2012.03042

Slusher, W. L. (2009). Assessing the animal science technical skills needed by secondary agricultural education graduates for employment in the animal industries: A modified Delphi study. *Journal of Agricultural Education*, *52*(2), 95-106. Doi: 10.5032/jae.2011.02095

Talbert, B. A., & Balshweid, M. A. (2004). Engaging students in the agricultural education model: Factors affecting student participation in the National FFA Organization. *Journal of Agricultural Education, 45*(1), 29-41. doi: 10.5032/jae.2004.01029

Talbert, B. A., Vaughn, R., Croom, D. B., & Lee, J. S. (2007). *Foundations of agricultural education*. Danville, IL: Professional Educators Publications, Inc.

Becoming a Social Media Content Curator: Using Storify in the Agricultural Communications Classroom

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Becoming a Social Media Content Curator: Using Storify in the Agricultural Communications Classroom

Introduction

With Web 2.0 and social media technologies widely available, educators should consider utilizing social media in their classrooms (Karlin, 2007). It is important to realize the way today's students learn and retain information, and educators should be willing to adjust their teaching methods to accommodate their students (Williams & McClure, 2010). Rather than fighting against using the Internet, embracing it and balancing the use of social networks will only favor student learning (Towner, VanHorn, & Parker, 2007). There are risks involved with social media; however, these risks give educators an opportunity to properly educate students of the do's and don'ts of online social media usage and it is agreed the benefits of utilizing new technologies outweigh the risks with positive outcomes for the students (Karlin, 2007).

In April 2011, a new form of social media, Storify, was launched ("About," 2012). Storify was created as a way to find out what is being said about a topic across various social mediums and compile the information into one story. To start, a search bar allows for searching for a particular topic and then various social mediums are available to see not only what is being written, but also pictures or videos about the topic. Social mediums available through Storify include Twitter, Facebook, YouTube, Flickr, Instagram, and Google+. When something of interest is found, a simple drag and drop feature allows the particular content to become part of the story. Once the story is complied, a publicize feature allows the story to be viewable ("Welcome," 2012).

What makes Storify unique is how it allows the user to break social media up into a more manageable portion (Mantell, 2012). Storify's original form, was meant for journalists, but the social media tool has a place in the classroom to help students contextualize information found on social media (Fincham, 2011). Storify also helps the student recognize creditable sources since "all the images and text are directly attributable to the owner" (Fincham, 2011, p. 59). Because students are already using social media, Storify provides an avenue for student learning; it allows students to determine what is truth versus speculation (Fincham, 2011).

How it Works

Social media is one component taught in an undergraduate agricultural communications public relations writing course at a southwestern university. Students are required to complete a social media-based assignment to help them understand how the tools can be used in a professional setting. In the fall 2012 semester, Storify was introduced during the social media lecture and students were offered bonus points to identify an agricultural issue and create a story utilizing Storify. Students were required to include at least 10 pieces of content found from Facebook, Twitter, and one other social medium whether it be text, videos or photographs. To understand student opinions about using Storify, students completed a brief online evaluation to receive the bonus points.

Results to Date

Fourteen students in the course (56%) completed the Storify bonus. Students were asked about their level of agreement with several statements to explore their opinions of using Storify (Table 1). Of the 14 students, 93% (n = 13) strongly agreed that learning to operate Storify was easy. When asked if they would use Storify in the future, 57% (n = 8) somewhat agreed and 36% (n = 5) strongly agreed.

Table 1
Students' Level of Agreement About Using Storify (n = 14)

	Strongly Agree		Somewhat Agree		Somewhat Disagree		Strongly Disagree	
Statement	*f*	%	*f*	%	*f*	%	*f*	%
I learned more about my selected agricultural issue through the Storify activity.	2	14	11	79	0	0	1	7
Learning to operate Storify was easy for me.	13	93	1	7	0	0	0	0
I found it easy to get Storify to do what I wanted it to do.	9	64	4	29	1	7	0	0
My interaction with Storify was clear and understandable	8	57	5	36	1	7	0	0
I found Storify to be flexible to interact with.	9	64	5	36	1	7	0	0
I will use Storify in the future.	5	36	8	57	1	7	0	0
I found Storify easy to use.	11	79	3	21	0	0	0	0
Storify is appropriate as a learning tool.	6	43	8	57	0	0	0	0
Storify should be a required assignment for this class.	5	36	8	57	0	0	1	7
I enjoyed using Storify	8	57	5	36	1	7	0	0

None of the students had used Storify before this assignment, but 93% (n = 13) said Storify should be used in the classroom as a learning tool.

Future Plans/Advice to Others

Almost all the students reported that using Storify was a beneficial learning tool that was easy to use. Therefore, in future classes, Storify will be integrated into the curriculum and as an assignment. Students in this course work with clients so Storify can be used to research what is being said about their clients on Facebook, Twitter, and other social mediums. Students can then create a story for their client based on social media coverage. This would help students, and their clients, understand the role social media can and should have in their communication efforts.

Costs

Storify is a free social medium so no financial costs are associated with its use. However, instructors should allow time to learn how to use Storify and to demonstrate it to their students.

References

About us. (2012). *Storify*. Retrieved from http://storify.com/about

Fincham, K. (2011). Storify. *Journal of Media Literacy Education, 3*(1), 56-60.

Karlin, S. (2007). Examining how youths interact online. *Education Digest,* 73(4), 6-9.

Mantell, A. (2012). Five ways to digest social media. *Information Today, 29*(5), 14.

Towner, T. L., VanHorn, A., & Parker, S.L. (2007). *Facebook: Classroom tool for a classroom community?* Paper presented at the annual meeting of the Midwest Political Science Association, Chicago, IL.

Welcome. (2012). *Storify.* Retrieved from http://storify.com/tour

Williams, J., & McClure, M. (2010). The effects of teaching methods in leadership knowledge retention: An experimental design of lecture, experiential, and public pedagogy. *Journal of Leadership Education,* 9(2), 86-100.

Big Brother is watching…utilizing split-screen technology to enhance teacher efficacy.

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Big Brother is watching…utilizing split-screen technology to enhance teacher efficacy.

Introduction

The preparation of agricultural teachers is the central mission of post-secondary agricultural education departments (Barrick, 1993). Stripling, Ricketts, Roberts, and Harlin (2008) suggested that the success or failure of agricultural teachers could be dependent upon the teaching efficacy skills developed as part of the pre-service teaching program. One method that has been shown to enhance teaching efficacy skills is the utilization of video, more specifically the integration of split-screen technology. Split-screen technology provides pre-service teachers the opportunity to simultaneously observe teacher actions as well as student reactions.

Martin-Reynolds (1980) determined that videotaping has become recognized as a valuable multidimensional tool for purposes of self-evaluation for teachers. More recently, Zhang, Lundeburg, and Eberhardt (2010) concluded that video recording's ability to capture elusive classroom behaviors that go unseen by the teacher was viewed as a powerful tool to support teacher learning. Playback ability provides the opportunity to see the verbal and non-verbal communications that are present between the students, and allows the teacher to enhance their lessons.

Video recording has been used in a variety of ways to help pre-service teachers enhance their teaching ability. According to Sherin (2004), video has been used in teacher preparation programs for microteaching, modeling experts, lesson analysis, and video-cases. Video recording allows pre-service teachers and mentors to "…replay classroom events and notice aspects of classroom situations that they are too busy to notice while teaching" (Zhang, Lundeberg, & Eberhardt, 2010, p. 61). In a study of pre-service mathematics teachers, Star and Strickland (2007) concluded the use of video in pre-service teaching methods courses increases teacher observation skills, specifically the ability to notice features of the classroom environment.

Procedures

[STATE] University utilizes split-screen technology that allows the user to record the agricultural education classroom from two vantage points simultaneously on one screen. Split-screen technology allows for simultaneous dual analysis of the lesson from teacher and student perspectives. The pre-service teacher has the ability to reach a deeper understanding of agricultural education classroom dynamics by viewing multiple vantage points within the classroom. This technology includes a video recorder that saves directly to a USB flash drive. Cameras are controlled via laptop over a Wi-Fi connection. The cameras have tilt and 360 degree rotation capabilities which allows for the recording of all areas of the classroom. To record the teacher's voice, student's voices, and other classroom noises a sound bar is mounted above the white board along with several microphones placed throughout the classroom. This allows the pre-service teacher to get the whole classroom experience when viewing their recorded lesson.

Pre-service teacher lessons are recorded alongside student reactions. The recorded lessons are then utilized in the agricultural education pre-service teaching methods course. Split-screen technology gives the pre-service teacher the opportunity to see student reactions and immediately relate them to specific teacher actions. This action-reaction association allows pre-service teachers to develop a sense of effectiveness as an educator.

Pre-service teachers complete a series of self-reflections based upon the recorded lessons.

Step 1. Initial reflections are based upon observations of the lesson prior to viewing the recorded lesson.
Step 2. Pre-service teachers then view the recorded lesson and complete a reflection based upon observations from viewpoints of both the teacher and student.
Step 3. Pre-service teachers conclude the series of reflections by coming up with improvements to enhance the lesson.

Results

[STATE] University offered an agricultural education course aimed at enhancing methods of teaching and learning as they relate to agricultural constructs. Students enrolled in the course utilized split-screen technology to complete evaluative reflections of recorded lessons. After completing the reflections, the students appeared more cerebral about their teaching and their surroundings. Pre-service teachers' situational awareness of the classroom has improved, thus enhancing lesson content and overall instructional effectiveness. This technology is now being implemented into the pre-service teachers Methods of Teaching Agricultural Mechanics Class to enhance laboratory-based lessons. The researchers hypothesize that the implementation of the split-screen technology will also aid in enhancing the teachers laboratory awareness.

Future Plans

A quantitative study has been designed to assess the integration of split-screen technology into the agricultural education pre-service teacher course: Methods of Teaching Agricultural Education. Researchers will measure the perceived efficacy of split-screen technology by utilizing a survey instrument with Likert type responses. The researchers recommend conducting qualitative analysis of the reflections looking at reflections that have been submitted by students prior to viewing their recorded lessons and to the reflections submitted by students after they viewed their recorded lessons. The researchers also recommend investigating the possibility of eliminating the need for a USB flash drive by uploading the lessons onto YouTube as outlined by Pate, Lawver, & Warnick (2012).

Resources Needed

The only resources required for this project were media equipment and installation. Media equipment included multimedia video projector ($895.00), two network cameras ($1,336.04), multiple microphones ($485.30), and video and audio accessory equipment ($1,028.42). When combined with equipment installation ($1,662.38), the total project cost was $5,407.14. All of the expenses were paid for using student computer technology fees.

References

Barrick, R. K. (1993). A conceptual model for a program of agricultural education in colleges and universities. *Journal of Agricultural Education, 34*(3), 10-16. DOI: 10.5032/jae.1993.03010

Martin-Reynolds, J. (1980). The effects of a self-evaluation model on the focus reaction of student teachers during split-screen videotape feedback. *The Journal of Educational Research, 73*(6), 360-364.

Pate, M., Lawver, R., & Warnick, B. (2012). Using YouTube® as a medium for teaching self-reflection. *Proceedings of the 2012 American Association for Agricultural Education Research Conference, Asheville, NC.*

Sherin, M.G. (2004). New perspectives on the role of video in teacher education. In J. Brady (Ed.), *Using video in teacher education* (1-28). Oxford: El Sevier Ltd.

Star, J. R. & Strickland, S. K. (2007). Learning to observe: Using video to improve preservice mathematics teachers' ability to notice. *Journal of Math Teacher Education, 11*, 107-125. DOI 10.1007/s10857-007-9063-7

Stripling, C., Ricketts, J. C., Roberts, T. G., & Harlin, J. F. (2008). Preservice agricultural education teachers' sense of teaching self-efficacy. *Journal of Agricultural Education, 49*(4),120-130. DOI: 10.5032/jae.2008.04120

Zhang, M., Lundeberg, M., & Eberhardt, J. (2010). Seeing what you normally don't see. *Phi Delta Kappan. 91*(6), 60-65.

Innovative Idea Poster

Blogging through Uganda: A Way for Undergraduate Agricultural Students to Reflect on a Learning Experience in International Agricultural Development

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Blogging through Uganda: A Way for Undergraduate Agricultural Students to Reflect on a Learning Experience in International Agricultural Development

Introduction & need for innovation

Russell and Vallade (2010) concluded that universities were challenged in their efforts to effectively quantify the "results" or academic outcomes associated with students' international learning experiences. They proposed the use of "qualitative measures through reflective journalliing to demonstrate change" (Russell & Vallade, 2010, p. 109). In the Internet era, journaling purposively, as a way to reflect on and interpret the meaning of an individual's experiences as well as sharing his or her interpretations with others, may include the act of writing a weblog or *blogging*. Hernandez (as cited in West, Wright, Gabbitas, & Graham, 2006) described blogging or weblogs as

> a website where people post thoughts and information about news or topics of interest. They were designed to provide a simple way for individuals to post ideas to the Internet, providing the opportunity and function for others to read and post comments . . . . (p. 54)

Agricultural communications and education faculty at [* University] delivered the project "Food Security Fellows, Improving Food Security by Catalyzing Communication Networks between Key Stakeholders: Linking Media, Policies, and Communities in Kenya and Uganda" during 2011 and 2012. It was funded by the U.S. Department of State, Bureau of Educational and Cultural Affairs. As an exchange, it supported the travel of faculty members of [* University] and other food security experts to Africa for fact-finding and the follow-up of African participants (i.e., project-related assessment) who had traveled to the United States for professional development on food security. Sub-Saharan Africa is home to 239 million hungry people (World Hunger Education Service, 2012). "Sub-Saharan Africa . . . is the only region of the world where hunger is increasing" (Sanchez, Swaminathan, Dobie, & Yuksel, 2005 p. 1), including in the nations of Uganda and Kenya.

How the innovative program works(ed)

During March-April of 2012, the project supported the travel of three [* University] undergraduates – two agricultural communications (AGCM) students and one pre-service, agricultural education (AGED) student – to Uganda as members of a larger team. As part of this international learning experience and as a way to promote the project team's work, the students agreed to create individual blogs featuring their travel and to post to those blogs during the two weeks spent in Uganda.

Results

The student bloggers reported making a total of 29 posts to their blogs; two posts by one student were made prior to the trip (i.e., "preflection"). A sampling of the bloggers' followers' comments and reactions to their postings follow: "I have a new found respect for the continent of Africa."

> What a blessing you have to go see the world. I can only imagine the sights and sounds of Uganda that you must be experiencing! Thanks [to] you for posting on your blog daily. It helps me feel like I am there.

"Great experience. This was one of the most character building experiences I can imagine. Every American youth should participate in such an experience."

> [Name] . . . you made me cry! I knew you would see a side of the world that many of us, here in the U.S., only hear about. Think! You are bringing the realities of the world to many of us who are living vicariously through your adventure. Be strong! Know that you can make a difference in this world through your good works. I'm very proud of you.
>
> You have started a life changing mission and your purpose is much greater than agriculture.
> Thank you for reminding me of how hard this world is for so many. A 'hard' that I have never had to experience in comparison to these precious little children.

One student's reflection on his travel to Uganda and the role blogging played (and plays) as he continues to make meaning of his experiences in Uganda follows:

> . . . . Thanks to the blog, I was able to connect with those who were not there. In terms of reflection, being able to go back at [*sic*] look at my blog posts week[s] and even months following the trip has allowed me to think back and remember every detail of the trip. The words on the page tell my personal story and the pictures bring back the memories and help me visualize each day on the ground . . . . Thanks to the blogging experience, my thoughts in Uganda are forever captured and can be further processed, analyzed, and shared.

Another student blogger opined this sentiment: Blogging was an incredible way to voice my opinion . . . . It gave me a forum to have others across [State], the US and the world (I had some readers in the Netherlands) experience Uganda like they were there with me.

And a third student said this:

> . . . my 20 year old mind could not fully grasp everything happening around me. Blogging each night gave me some much needed quiet time to review, reflect and appreciate the amazing day I had just experienced. I felt a closer connection to my family and friends through my blog posts . . . . Reading my blogs, you can literally follow my individual and emotional growth over two short weeks. Looking back on my trip, blogging was an essential element to my personal understanding and incredible experience during my time in Uganda.

Conclusions/Implications

The students used blogging to share their international experiences with others who may have been interested in Uganda and what the bloggers experienced but were not participants on the trip. As for undergraduates in U.S. colleges of agriculture (CoA), Bunch, Lamm, Israel, and Edwards (in press) concluded students "were not very engaged in IEs [international experiences]." Their findings agreed with a report from the Institute of International Education in 2010, "that agricultural student participation in study abroad opportunities was declining," and asserted it "is important for agricultural educators to encourage and facilitate students in making decisions to gain IEs that stand to increase their employability." Students' participation in the IE described supported Bunch et al. (in press) recommendation. Moreover, by these students sharing their experiences through blogging, making presentations to peers, as well as interacting with fellow students informally, some vicarious learning occurred as well as the stimulation of interest in other students regarding IEs.

Recommendations for future practice

Faculty planning IEs, including travel, are urged to consider using student blogging as a form of reflective journaling and a way of assessing their students' learning (Russell & Vallade, 2010). Murphrey, Rutherford, Doerfert, Edgar, and Edgar (2012), however, cautioned that agricultural students may be more accepting of some technologies for learning than others, and a technology's potential for adding value must be made clear. Therefore, faculty should also consider that point.

Cost/Resources

Travel cost was ~$4200 per person, excluding in-country transport or fees to national parks. Travel expenses were incurred by the project for two students and partially for another, as the students were participants in the project's citizens' exchange and had special knowledge of agriculture and food production as well as AGCM and AGED in the United States. Four [* University] faculty members also participated in this part of the project; their time was considered work-related.

References

Bunch, J. C., Lamm, A. J., Israel, G. D., & Edwards, M. C. (in press). Assessing the motivators and barriers influencing undergraduate students' choices to participate in international experiences. *Journal of Agricultural Education.*

Murphrey, T. P., Rutherford, T. A., Doerfert, D. L., Edgar, L. D., & Edgar, D. W. (2012). Technology acceptance related to second life™, social networking, twitter™, and content management systems: Are agricultural students ready, willing, and able? *Journal of Agricultural Education. 53*(3), 56-70. doi: 10.5032/jae.2012.03056

Russell, M., & Vallade, L. (2009). Guided reflective journaling: Assessing the international study and volunteering experience. In E. Jones (Ed.), *Internationalization and the student voice: Higher education perspectives* (pp. 98-109). New York, NY: Routledge.

Sanchez, P., Swaminathan, M. S., Dobie, P., & Yuksel, N. (2005). Halving hunger: It can be done. UN Millennium Project, Task Force on Hunger 2005, London, England: Earthscan.

West, R. E., Wright, G., Gabbitas, B., & Graham, C. R. (2006). Reflections from the introduction of blogs and rss feeds into a preservice instructional technology course. *TechTrends, 50*(4), 54-60. Retrieved from http://www.springerlink.com/content/c1g64v6l91q03317/fulltext.pdf doi: 10.1007/s11528-006-0054-9

World Hunger Education Service. (2012). World hunger and poverty facts and statistics. Author. Retrieved from http://www.worldhunger.org/articles/Learn/world%20hunger%20facts%202002.htm

Innovative Idea Poster

Clearer Graphic Representation of the School-Based Agricultural Education Program

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Clearer Graphic Representation of the School-Based Agricultural Education Program

Introduction

Historically, agricultural education identified the three-circle model as a conceptual frame to illustrate the main components of the school-based agricultural education (SBAE) program. Classroom/laboratory instruction, Supervised Agricultural Experiences (SAE), and the National FFA Organization (Phipps, Osborne, Dyer, & Ball, 2008) are presented as equal components of the SBAE program. In a report on the state of SAE, Barrick et. al (1992) presented an updated SBAE model that emphasized the need for classroom and laboratory instruction to serve as the initial component of the SBAE program, where the application components (FFA and SAE) of the model are directly influenced by classroom instruction. The model incorporated a student's employment and career choice which is influenced by student learning (application and classroom instruction). However, the Barrick et. al (1992) model gained little traction within SBAE. Currently, agricultural preservice teachers, instructed on the three circle model, struggle with determining the amount of time that should be dedicated to each component of the SBAE program. A clearer representation of the components that make up the SBAE program has merit for the profession. The proposed model presents the importance of each component and the overall structure of the SBAE program.

How it works

The authors developed a SBAE program model comprised of four main components: classroom and laboratory instruction, SAE, FFA, and agricultural career orientation. The model was developed to more accurately depict the function of the SBAE program. The components serve a distinct purpose in the SBAE program.

The keystone of the SBAE model is classroom and laboratory instruction. Classroom and laboratory instruction provides the fundamental environment where skills and knowledge are developed or enhanced through formal instruction. Formal instruction encourages students to be active participants within the learning environment through various teaching methods. Further, SBAE programs would not exist without the classroom and laboratory instruction being the pinnacle of the program.

SAE programs are one form of real-world application in the total SBAE program. When SAE programs are developed, three essential features must be included: an agriculturally-based experience, individual projects and enterprises, and financial management skills. First, agricultural experiences provide students an avenue for the application for knowledge developed through classroom and laboratory instruction. In addition, community support should be garnered through the inclusion of the community-based agricultural industry. Secondly, a project or enterprise should be constructed for each student experience. Formulated projects should be grounded in one of the following categories: entrepreneurship, research, exploratory, or placement. Individual projects or enterprises should be framed to grow in scope and sequence each year of the overall program. Finally, SAE programs should emphasize financial management skill development during each project or enterprise. The practice of keeping records (financial and labor) assists students in making wise financial decisions regarding their SAE program.

The National FFA Organization is the second real-world application of the SBAE program. Three fundamental outcomes support the use of FFA chapters within SBAE: premier leadership, personal growth, and career success. Initially, as FFA members participate in different aspects of the organization, vital leadership skills are learned and enhanced. These leadership skills allow members to be active citizens in society. Further, personal growth is achieved as students determine their niche within the FFA organization. Personal growth is promoted by recognizing student achievement through the National FFA degree and award system. Finally, career success is developed through student participation in Career Development Events (CDE). CDEs increase a student's awareness and aspiration within the agricultural industry through hands-on authentic application.

Agricultural career orientation is integral to the previous components of the SBAE program. Career preparation should be interwoven into classroom and laboratory instruction, SAE programs, and FFA participation. SBAE should prepare some students to enter the workforce, while preparing others to continue their education at post-secondary institutions.

Results to Date/Implications

The proposed model graphically displays each SBAE program component. Further, the model enhances preservice and inservice teachers' conceptualization of the importance and role of each SBAE program component.

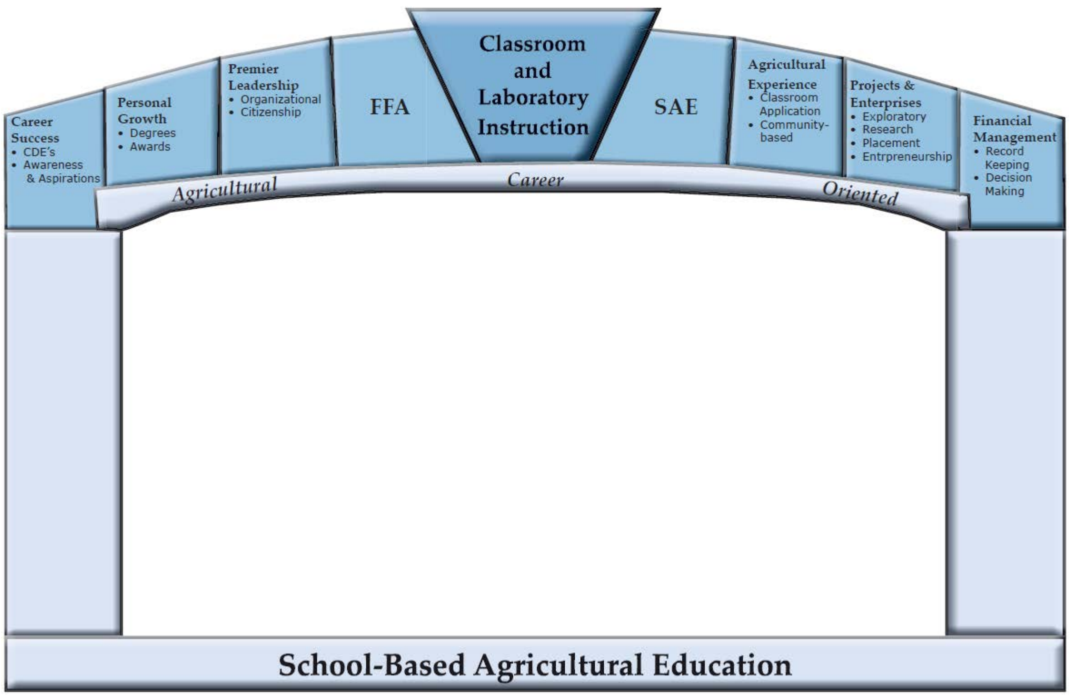

Figure 1: Proposed Agricultural Education Model

Future Plans/Advice to Others

When the proposed model is utilized in preservice teacher education, teacher educators should emphasize that without classroom and laboratory instruction SBAE programs would not function. Likewise, SAE and FFA should be used as application tools for student knowledge gained during classroom instruction. This model will alleviate preservice teacher's confusion to the attention each component requires; without all three components present, the program is not complete. Balance is achieved through including all of the requisite parts of each component rather than the relevant size of three circles.

Cost/Resources Needed

There were no monetary costs with the development of this model. However, acceptance among the profession on inclusion in promotional and development materials would be needed.

References

Barrick, R.K., Arrington, L.R., Heffernan, T., Hughes, M., Moody, L., Ogline, P., & Whaley, D. (1992). *Experiencing agriculture: a handbook on supervised agricultural experience.* Alexandria, VA: The National Council for Agricultural Education.

Phipps, L. J, Osborne, E. W., Dyer, J. E., & Ball, A. (2008). *Handbook on agricultural education in public schools* (6th ed.). Clift Park, NY: Thomson Delmar.

Innovative Idea Poster

Connecting National Research Council Reports: Development of an Agricultural Literacy Course

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Connecting National Research Council Reports:
Development of an Agricultural Literacy Course

Introduction

"Administrators of teacher education programs and schools of education should offer units of instruction or courses about agriculture" (National Research Council [NRC], 1988, p. 16). When rereading the 1988 NRC report, this quote spurred development of an agricultural literacy course. Further demand for a collegiate agricultural literacy course was evidenced in the 2009 NRC report titled, *Transforming agricultural education for a changing world.* Inspiration was drawn from one recommendation, which charged institutions to "take steps to broaden the treatment of agriculture in the overall undergraduate curriculum" (NRC, 2009, p. 6). Further, the NRC committee suggested that colleges of agriculture "have a unique and continuing role if they can bridge the many academic domains that can contribute to a broader understanding of agricultural issues" (p. 6). The connections between these reports led to the conceptualization of a collegiate agricultural literacy course articulated with the institutional general education curriculum.

Steps to Implementation

The first step in creating the course was to conduct a course audit among existing courses in the college; none existed. The assistant dean for academic programs was consulted, as she provides oversight to the college curriculum committee, and represents the college on the University-wide General Education Committee. Upon explaining the course idea, she suggested proposing the course as an option to meet the Individuals and Societies requirement of the general education curriculum.

The next step was to review the institution's general education course guidelines and policies ([state] Board of Regents, 2010), comprised of four overarching goals, including think critically; communicate effectively; understand and value differences; and use information effectively. The integration of writing is also a critical aspect of the general education curriculum.

With the general education learning outcomes serving as the foundational context for course design, the course purpose and objectives were created, using information from *Food and farm facts* (American Farm Bureau Federation, 2011) and *Exploring agriscience* (Herren, 2011). The following course purpose was developed: Develop citizens who are literate in agriculture and the life sciences in order to make informed decisions and choices related to their personal and professional lives as they relate to food, fiber, and natural resources.

The following course objectives were developed: Identify significant events in the history of American agriculture; Describe the state of present day American agriculture; Identify elements of the food, fiber, and natural resources industries that comprise American agriculture; Recognize current issues in American agriculture; Engage in informed dialogue regarding the agricultural industry; Utilize knowledge of the food, fiber, and natural resources industries to make informed decisions as consumers of American agriculture; Communicate information related to the agricultural industry.

The topical outline and syllabus were then constructed, including units on food, fiber, and natural resources. Activities and assessments were designed to achieve the course objectives. Development of a written speech and delivery of the speech at the end of the course were included as key elements. The title of the course is, “Food, Fiber, and Natural Resources: Agriculture and Life Science Literacy.” The course was institutionally approved and taught for the first time in the Fall 2012 term, with a maximum enrollment of 30 students. Course enrollment resulted in 28 students at the census date. Of the 28 students, only six were enrolled in the college of agriculture. The remaining students’ majors included programs in business; engineering; letters, arts, and sciences; medicine; science; and social and behavioral sciences.

Results to Date/Implications

At the end of course, a retrospective pre-then-post assessment was conducted, asking students to rate their perspective of agriculture. Students were instructed to use a 10 point scale with 1 representing “very negative” and 10 “very positive”. The mean rating at the beginning of the term (retrospective) was 6.2, with a range from 3 to 10. The mean rating at the end of the course (the current perspective of agriculture) was 8.5, with a range from 6 to 10. Students were also asked to provide comments. One student’s response illustrates a retrospective viewpoint of agriculture at the beginning of the term: “I didn’t know much about agriculture besides the fact that it was relevant to my major. I thought of agriculture as farming but had no idea the real scope/ impact of agriculture.”

The student’s perspective at the end of the course: “I feel that I have a much more accurate and informed perspective of what agriculture is. I understand much more about the history of ag and all the various aspects of agriculture today. I have developed a basic knowledge that will allow me to make informed decisions regarding agricultural issues in the future and be able to hold a conversation about ag topics.”

The evaluation-based data suggest that the course had a positive impact on students’ perceptions of agriculture, as well as helped increase their level of knowledge, and ability to communicate about agriculture related topics.

Future Plans/Advice to Others

The course will be taught during the Fall 2013 term, with plans to continue teaching each year. Ultimately, the goal is to expand the enrollment offering, as well as expand the terms offered. The course was written to accommodate multiple instructors. Faculty commitments must be considered before additional sections are added. Plans are underway to assist other institutions in implementing similar coursework. Local and regional aspects of agriculture should be considered for implementation at other institutions.

Resources Needed

One faculty member’s time was required for implementation, estimated at 30% of the time effort toward teaching responsibilities.

References

American Farm Bureau Federation. (2011). *Food and farm facts.* Washington, DC: American Farm Bureau Federation® Public Relations Department.

[state] Board of Regents. (2010). *General education course guidelines and policies.* Retrieved from [removed for review]

Herren, R. V. (2011). *Exploring agriscience* (4th ed.). Clifton Park, NY: Delmar, Cengage Learning.

National Research Council. (1988). *Understanding agriculture: New directions for education.* Washington, DC: National Academy Press.

National Research Council. (2009). *Transforming agricultural education for a changing world.* Washington, DC: The National Academies Press.

Developing Essential Skills by Focusing on Leadership

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Developing Essential Skills by Focusing on Leadership

Introduction

Developing the agricultural leaders of tomorrow is vital to the future of our nation. In 2009, the Association of Public and Land-Grant Universities (APLU) issued a call for human capacity development. Specifically, the report called for the creation of seamless leadership development programs in an effort to ensure "that the next generation is sufficiently qualified to lead in the quest for continued prominence of the U.S. FANRRS [Food, Agriculture, Natural Resources and Related Sciences] industries internationally" (APLU, 2009, p.8). More recently, in 2011, the APLU conducted a study (Crawford et al., 2011), which surveyed employers, students, faculty, and alumni, and concluded students need to engage in activities that enhance their ability to see the "big picture," develop an action plan, and think strategically. Specific to leadership, the Crawford et al. (2011) research discovered that "guided, active learning environments are ranked as more effective than self-directed and informal learning experiences" (p. 19). As a result of the needs identified by the APLU, the [state] college of agriculture purposefully designed and implemented an innovative undergraduate leadership education and development program.

The program is based on the concept that students will be better able to develop the leadership and "essential skills" needed for industry success, if they participate in a personalized, reflective, systematic professional development program. What makes this program innovative is that it is purposeful, directed, yearlong, includes both academic credits and non-credit experiences, and provides the student with a faculty mentor. It is a cohort-based, college-wide program that merges students from all departments within the college of agriculture. Instead of working only within a traditional college structure, designers of this program analyzed research and developed a program specific to the needs of both students and industry. Students who enroll in and complete this program will be capable of successfully merging technical knowledge, practical application, relationship to industry, and an awareness of others into a powerful blend of exceptional leadership.

Methodology

The program was developed based on the rigor (coursework), relevance (experience) and relationship (mentoring) model (Daggett, 2004). Implemented in 2011, this program, termed a Leadership Academy, has operated successfully for two full years. Working with their mentors, students create a Personal Development Plan (PDP), which includes the individual's leadership development goals and specific action plans to work toward those goals. Based on the PDP, students select courses, leadership growth texts, on- and off-campus group experiences, and leadership development workshops to attend. Individually, each student develops and executes a plan that creates change within his/her community experience. As a group, the students participate in a yearlong seminar class, trait and skill development exercises, and read several leadership growth texts. Throughout the year, students reflect on their experiences in both written and verbal forms, and near the end of the program capture their learning in a poster session highlighting their community experiences and personal growth. After completion of the program, students may voluntarily continue to participate in the leadership program by taking on leadership roles in the seminar, helping with student recruitment, and participating in special events.

Much of the program is customizable for each student, but the program administrators design and facilitate the seminar course. Occurring weekly, the seminar focuses on personal leadership assessments, goal setting, specific skill and trait development, reflection, articulating and capturing learning, and sustaining leadership by giving back to the program, school, and the community. Guest speakers are often invited to speak to students about leadership topics during seminar. Oversight for the program comes from an advisory committee consisting of industry professionals, a steering committee composed of university faculty, a program director, a graduate teaching assistant and an endowed professorship.

Results

During individual interviews, students expressed the value of the Personal Development Plan in helping them select goal-oriented activities and intentionally apply the principles discussed in mentor meetings, seminars, and to leadership texts. Program requirements caused students to step out of their traditional realm of involvement and seek opportunities outside the college and the university. Students indicated the mentor relationships are a highlight of the program and that mentors have provided invaluable feedback related to developing leadership goals, identifying activities to work toward those goals, and reflecting on the outcomes of applying what they are learning. In individual mentor interviews, mentors have indicated the structure of the program works well for them. The mentors enjoy spending time with students outside the classroom, are observing student growth, and have found it beneficial to have flexibility to let their mentoring relationship take a unique shape, rather than following an established format.

Future plans

Looking ahead to future development of the program, several ideas have surfaced from program administrators, mentors, students, college faculty, and industry professionals. The number of students selected for the program in future years is expected to continue to grow, with the expectation of growing to about 60 students per year. To maintain the cohort culture, this growth would necessitate dividing the students into smaller cohorts. In addition, graduates of the program will be asked to return as peer mentors and ultimately industry professionals will be recruited to serve as mentors, as well.

Costs

The initial program startup costs were offset through the establishment of an endowment, which allowed for the hiring of a program director. In addition, industry partners and college supporters have provided $230,000 in endowed scholarship money for students for personal leadership development opportunities. As the program continues to grow, the program administrators hope to raise funds specific to the support of student workshops, travel, and leadership training opportunities. The estimated costs per year of the program are approximately $50,000 dollars.

References

APLU. (2009). *Human Capacity Development The Road to Global Competitiveness and Leadership in Food, Agriculture, Natural Resources, and Related Sciences* (FANRRS).Washington, DC. Retrieved from http://www.aplu.org/NetCommunity/Document.Doc?id=1639

Crawford, P., Lang, S., Fink, W., Dalton, R. & Feilitz, L. (2011). *Comparative analysis of soft skills: What is important for new graduates?* Retrieved from http://www.aplu.org/document.doc?id=3414

Daggett, W. R. (2004). Reforming America's high schools – Why, what, and how. Retrieved from http://sam.spnetwork.org/spn/media/files/articles/research/Reforming%20HS%20White%20Paper.pdf

Innovative Idea Poster

Developing Reflective Practitioners through VoiceThread Technology

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Developing Reflective Practitioners through VoiceThread Technology

Introduction

Despite exposure to specific scaffolding intended to develop reflective practice, reflections of pre-service teachers tend to be mostly descriptive, failing to connect to a theoretical framework or societal issues (Wunder, 2003). There is an emerging consensus that pre-service and novice teachers can be helped to reflect at higher levels with multifaceted and strategically constructed interventions (Rhine & Bryant, 2007; Russell, 2005). Researchers have found that helping prospective teachers acknowledge, articulate, and challenge their beliefs enhances reflection (Walkington, 2005; Yost, Sentner, & Forlanza-Bailey, 2000). Teacher education programs in agricultural teacher preparation are directed towards the development of knowledge, skills, professional behaviors, and dispositions that will ensure that candidates are well prepared and meet all university, state, and national expectations of pre-service teachers at the completion of their respective programs of study. An integral part of the development process is capturing and assessing the teaching performance of teacher candidates, yet time of teacher educators to facilitate this process is always a concern. Fortunately, multiple forms of technology have been developed to assist in the reflective process.

VoiceThread is a web-based application that permits users to create a shared presentation as a media album that participants can asynchronously comment on either by text, voice, or video (Voicethread, Inc., n.d.). The presentation can include any form of digital media, including images, audio, video, and text. The resulting output of this combination of the digital presentation and accumulated viewer comments is called a “VoiceThread.” VoiceThread allows an entire group conversation to be collected from anywhere in the world and then shared for playback in one place.

How it Works

Learning by doing is a fundamental philosophy of agricultural education. In keeping with that philosophy and in wanting to provide contextual learning opportunities, teacher candidates were provided the opportunity to participate in seven laboratories to apply what they learned in the required teaching methods class and reflect on the teaching and learning process. Teacher candidates were given the opportunity to practice teaching in front of their peers, the course instructors, their cooperating teachers, and secondary students. Each lab was captured on video and uploaded by the lab instructor to VoiceThread.

Teacher Candidates were responsible for uploading individual and peer feedback via VoiceThread every week. The uploaded media was viewed by teacher educators and provided comments and advice based on the recorded performance and teacher candidate comments and conversation. The individual feedback was not accessible to peers; however, the peer feedback provided by each teacher candidate was seen by all those in their respective lab sections. Uploaded feedback was required once a teaching lab was completed.

The purpose of the VoiceThread reflection sessions was to critically and reflectively talk through each teacher candidates’ progress and address any concerns. It was also a time to answer any questions that teacher candidates may have regarding classroom management, planning, or teaching strategies. A Reflective Journal entry submission was required prior to a teacher candidate uploading their thoughts. This was to help develop expressing written reflection as well as facilitate talking points and discussion. For purposeful and constructive reflection to occur, the teacher candidate was responsible for watching their videotaped teaching session, reviewing their performance, reviewing their journal entry, and engaging in reflective conversation via VoiceThread. A critical component was the multiple points of reflective feedback provided: individual, instructor and peers.

Results to Date

Students expressed their favor for the VoiceThread approach to reflection, because of the flexibility to work around their class schedules. Students also expressed their appreciation of the ability to make specific comments at specific time points while watching their video. There was a sense of community and collaboration that was fostered among the teacher candidates in providing constructive feedback to one another and providing suggestions on alternative teaching approaches and points of improvement.

There was an expected initial learning curve to adopting the technology with some students expressing reservation to learning “another program”; however, this was mitigated through additional professional development. In addition, students expressed frustration with repetitive nature of written reflection in addition to required Voicethread reflection.

Future Plans/Advice to Others

Future plans are to continue the use of VoiceThread as a reflection tool for teacher candidates. Future plans include some revision to the requirements for completion credit to provide more clarity of expectations and increase student participation. Specifically, the requirement of written reflection and Voicethread reflection will clearly be differentiated for purpose and reason of both. Instructors plan to seek additional feedback and review of literature to see the value and gain of requiring both in the development of the reflective teacher candidates. Collaboration with <university> teaching technologists on potential of a mobile computing application that would allow for teachers to access videos and reflections through tablets and mobile devices.

Costs/Resources Needed

The resources needed for implementation of equipment include access to a web-based tool like VoiceThread where media can be uploaded and viewed by participating students. <university> has an institutional commitment with VoiceThread, however, there are other similar tools available. For <university>, the cost of implementation was absorbed by the institution, however, the Voicethread website indicates that a single instructor license for use is $99/year and a department license for use in $999/year.

Other resources needed include a camera to capture the teacher candidates performing. The instructors at <university> utilized a Kodak handheld camera that was available through their respective Media Commons Services. There is a substantial amount of time invested in the uploading of the videos and providing individual feedback from the instructor to each student.

References

Rhine, S., & Bryant, J. (2007). Enhancing pre-service teachers' reflective practice with digital video-based dialogue. *Reflective Practice, 8*(3), 345–358.

Russell, T. (2005). Can reflective practice be taught? *Reflective Practice, 6*(2), 199–204.

Voicethread, Inc. (n.d.) Voicethread products. Retrieved February 26, 2013. Retrieved from http://voicethread.com/products/highered/**.**

Walkington, J. (2005). Becoming a teacher: Encouraging development of teacher identity through reflective practice. *Asia-Pacific Journal of Teacher Education, 33*(1), 53–64.

Wunder, S. (2003). Preservice teachers reflections on learning to teach elementary social studies. *Reflective Practice, 4*(2), 193–206.

Yost, D.S., Sentner, S.M., & Forlenza-Bailey, A. (2000). An examination of the construct of critical reflection: Implications for teacher education programming in the 21st century. *Journal of Teacher Education, 51*(1), 39–48.

Innovative Idea Poster

Developing Resources to Help Agricultural Communications Students Prepare for the Grammar, Spelling, and Punctuation Exam

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Developing Resources to Help Agricultural Communications Students Prepare for the Grammar, Spelling, and Punctuation Exam

Introduction

In a study of agricultural communication program alumni, Morgan (2012) found the most important competency needed by agricultural communications undergraduates is the ability to write well. This competency included writing in both journalistic and business style. Other studies have echoed the importance of foundational communication skills. A recent joint study with the Association of Public and Land-grant Universities (APLU) and the University Industry Consortium (UIC) researched the most important soft skills employers want in new graduates (Crawford, Lang, Fink, Dalton, & Fielitz, 2011). The 282 employers from across the United States were asked to rank seven soft skill clusters. While all are recognized to be important, communication skills were ranked the highest overall. Another study (Norwood & Henneberry, 2005) explored the monetary value of agricultural job candidates' attributes and having excellent communication skills was worth $8,900 more than when those skills needed improvement.

Despite the emphasis on writing skills, post-secondary students struggle with basic grammar, spelling, and punctuation (Seaman, 2001). In a profession that is dependent upon the written word, a decline in these skills is detrimental to one's career. In 2000, Northwestern State University developed a Language Skills Diagnostic Test prerequisite for their media writing class after concern that many journalism majors could not write competently (Brocato, Furr, Henderson & Horton, 2005). A study by West Virginia University found that out of 100 randomly selected journalism schools, 39% utilized an entrance exam to evaluate grammar, spelling, punctuation, and AP style competence (Seaman, 2001).

At the university in this innovative idea narrative, agricultural communications students are required to pass the Grammar, Spelling, and Punctuation (GSP) exam with a score of 70 or higher before enrolling in the required news writing course. This pre-requisite is viewed as an intimidating aspect of the agricultural communications degree plan. In an attempt to help students become more confident in their ability to pass the GSP exam, a workshop and supplemental resources were developed and provided.

How it works

A graduate student enrolled in special problems hours was tasked with developing resources to help agricultural communications students prepare for and successfully pass the GSP exam. She researched grammar, punctuation, and spelling books and other resources to develop a one-hour workshop and supplemental materials. The workshop was one hour long and discussed the three focus areas of the GSP exam. The presentation was PowerPoint-based with interactive exercises at intermittent points. Having previously taken the GSP, the presenter shared personal experiences and preparation advice. Students received additional worksheets with exercises, a practice test, and handouts with study tips. In addition to this material, an online study guide and practice exam was posted on the departmental website.

Results to date

Twenty-seven agricultural communications students attended the inaugural workshop in the Spring of 2012. Nearly half of these students (*n* = 11) had taken the GSP prior to the workshop, with four students having already have passed the exam. Some instructors encouraged workshop attendance by offering extra credit in a course. The students who had passed the exam where able to share their perspectives to successful pass the exam. This helped other students realize that the GSP exam is not as difficult as they have been led to believe.

To help make adjustments for future offering of this type of workshop, students completed a brief evaluation. On a scale from 1 (*strongly disagree*) to 5 (*strongly agree*), students agreed the workshop was valuable ($M = 4.07$, $SD = 1.0$) and that they were satisfied with the topics covered ($M = 4.15$, $SD = .72$). Students were neutral about their satisfaction on how the workshop was conducted ($M = 3.63$, $SD = 1.00$).

Students were asked to rate their confidence in their grammar, spelling and punctuation abilities before and after the workshop using a scale of 1 (*not at all confident*) to 5 (*extremely confident*). The biggest improvement was in the grammar section. Students noted they were slightly confident before ($M = 2.85$, $SD = .77$) and somewhat confident afterwards ($M = 3.67$, $SD = .68$). Based on open-ended comments, many of the students recommended the instructor take more time and use more examples. Some students also suggested the instructor break up the workshop into multiple sessions because they felt rushed, and thus, material was not thoroughly covered.

Future plans/ advice to others

Overall, the results showed positive feedback from the students and encouraged the continuing of the workshop in the future. In the future, more time should be allotted to go over the material with more examples ad opportunities for students to complete practice questions. It would be ideal to divide into the three areas – grammar, spelling, punctuation – and dedicate one hour to each topic. This would not only allow for more in-depth coverage of the material, but it would also give students the option to attend a specific workshop if they needed help in only one or two areas.

In addition to the evaluation questionnaire used, agricultural communications faculty should track how successful students were at passing the GSP exam after this training. This type of training may not be enough for 100% of the students to pass, especially on the first try, but it does demonstrate to students the importance of this exam and the willingness to help them meet this pre-requisite.

Costs and Resources

Although the workshop was offered free of charge to students, it did require the attention and dedication of a graduate student to develop the materials. However, an upperclassman could design something similar for an honors or service project. The graduate student did purchase several grammar, spelling, or punctuation books to help develop the materials, but many of these resources could be borrowed from the campus library.

References

Brocato, M. K., Furr, P. F., Henderson, M. V., & Horton, S. G. (2005). Assessing student written communications skills: A gateway writing proficiency test for aspiring journalism majors. College Student Journal, 39(3), 510-517.

Crawford, P., Lang, S., Fink, W., Dalton, R., & Fielitz, L. (2011). Comparative analysis of soft skills: What is important for new graduates? Perceptions of employers, alum, faculty and students. Retrieved from http://www.aplu.org/document.doc?id=3414

Morgan, A. Christian. (2012). Competencies Needed by Agricultural Communication Undergraduates**:** A Focus Group Study of Alumni. *Journal of Applied Communications*, 96(2), 18-29.

Norwood, F. B., & Henneberry, S. R. (2006). Show me the money! The value of college graduate attributes as expressed by employers and perceived by students. *American Journal of Agricultural Economics*, 88(2), 484-498.

Seaman, M. (2001). Assessing the need for change in J-school grammar curricula. *Journalism & Mass Communication Educator,* 55(4), 60-69.

Innovative Idea Poster

Drawing on Deeper Understanding: Using Concept Maps to Encourage Critical Thinking in Agricultural Communications

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Drawing on Deeper Understanding: Using Concept Maps to Encourage Critical Thinking in Agricultural Communications

Introduction

Novak (2010) defined concept maps as a "tool to represent knowledge held by a learner, and also the structure of knowledge in any subject matter domain" (p. 35). This tool is a graphic organizer characterized by mapped relationships using linked and labeled concept nodes (Nesbit & Adesope, 2006).

In education, concept maps have been used to record what is known about a topic pre- and post-instruction (Novak, 2010). Concept maps can supplement course activities including lectures, collaborative learning, study materials, and constructive learning activities (Cañas, et al., 2003). Nesbit and Adesope (2006) concluded that concept maps benefit learner knowledge retention and transfer across education levels, subject areas, and settings.

Dillard and Myers (2008) stated well-developed maps benefit both the teacher and the learner in their ease of preparation and result in higher comprehension while serving all learning styles. Retallick (2010) explored the specific use of concept maps in agricultural education. He found using concept maps caused students to use critical thinking, problem solving, and reasoning to internalize and communicate their understanding of agricultural education. This encourages the integration of concept maps into agricultural communications courses to reveal if similar outcomes occur across disciplines.

The *National Research Agenda: American Association for Agricultural Education's Research Priority Areas 2011-2015* (Doerfert, 2011) places an emphasis on creating meaningful and engaged learning environments. The use of concept maps in education promotes higher-level learning and evaluation. The purpose of this innovative idea poster is to describe the use of concept maps in an agricultural communications course to stimulate critical thinking.

How It Works

Students in a graduate-level agricultural communications course completed two concept maps – one at the beginning of the semester and one at the end. This course explored historical and philosophical foundations of agricultural communications and relevant communication theories. For each of the concept maps, students were asked to visually display their answer to two questions: "What are the foundations of agricultural communications?" and "How do you conceptualize agricultural communications?"

Assignment descriptions and a rubric for both maps were provided on the first day of class. Students submitted the preliminary concept map on the second day of class. The final concept map was due on the last day of class, which was used as a day to discuss the content from the semester. Students were expected to create maps using non-linear structure depicting relationships among concepts. Students were required to visually depict the major concepts, principles, and aspects of agricultural communications, preferably through hand-drawing. A brief, descriptive commentary was also required to further explain their maps. For the final concept map assignment, students had to provide a brief commentary describing how their map changed as a result of the course.

Results to Date/ Implications

The concept map approach provided evidence of growth in knowledge and understanding of agricultural communications concepts. At the beginning of the course, the maps were often focused on communication methods, including various forms of new and traditional media and message receivers (e.g. consumers, agriculturalists, media). Several students specifically wrote their preliminary maps were not exhaustive and many aspects of agricultural communications went unlisted.

The final concept maps reflected a deeper understanding of agricultural communications the students had gained through the course. The focus of the maps broadened to include historical and theoretical foundations as well as the connection and interdependence of major concepts. As a result of this project, students were able to visually explore their knowledge of the topic in a personal way without constraint.

The concept maps required students to demonstrate an improved understanding of agricultural communications in an organized manner. Engaging in systems thinking, the students developed expansive concept maps that triggered critical thinking, problem solving, and reasoning skills.

Future Plans/ Advice to Others

This assignment will continue to be used in future offerings of the course. Although some students were anxious about the lack of guidelines for this assignment, many thrived in being able to create a visual depiction of their understanding of agricultural communications. When using this assignment, other instructors should cautiously balance the assignment expectations for critical reflection with flexibility for students to individually respond to the thought-provoking question(s). It was the decision of the instructor to not provide an example of an "ideal" concept map with the assumption that this might limit the creative potential of some students in developing their own concept maps. Despite having a number of different concept map designs, these will not be shared with future students in the course.

Novak (2010) noted university students find creating concept maps difficult due to years of learning through memorization. Participating students in this course agreed with and reinforced Novak's statement. Instructors should ensure that students have a definite understanding of the concept map purpose and there is no definitive answer or path to completion.

Costs/ Resources Needed

This innovative idea had no associated monetary costs. Students in this course were asked to hand draw their concept maps (the accompanying reflections were typed). Some instructors may require students to use design software (e.g. InDesign, Illustrator, Photoshop) to create the concept map. However, it was the instructor's belief that the technological capability of the students may limit the creative potential of the concept maps.

References

Cañas, A. J., Coffey, J. W., Carnot, M. J., Feltovich, P., Hoffman, R. R., Feltovich J., & Novak, J. D. (2003). *A summary of literature pertaining to the use of concept mapping techniques and technologies for education and performance support (Report to the Chief of Naval Education and Training)*. Pensacola, FL: Institute for Human and Machine Cognition.

Dillard, L., Myers, B. E., (2008). *Visual teaching tools: concept maps.* White paper, Agricultural Education and Communication Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Retrieved from http://edis.ifas.ufl.edu/wc071

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Nesbit, J. C., & Adesope, O. O. (2006). Learning with concept and knowledge maps: A meta-analysis.*Review of Educational Research, 76*(3), 413-448. Retrieved from http://www.jstor.org/stable/4124424

Novak , J. D. (2010). *Learning, creating, and using knowledge: Concept maps as facilitation tools in schools and corporations*. (2nd ed.). New York, NY: Routledge.

Retallick, M. S. (2010, May). *Using concept maps to better understand the discipline of agricultural education.* Poster presented at the American Association of Agricultural Education National Conference, Omaha, NE.

Innovative Idea Poster

Edmodo: Social Networking for Education

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Edmodo: Social Networking for Education

Introduction

American high school students find themselves immersed in digital technology. Prensky (2001) referred to these technology savvy connoisseurs as *digital natives*. Many students find themselves in classrooms being taught by teachers who are *digital immigrants;* these educators are individuals who were not born into the digital world. The teacher education unit at Oklahoma State University serves a diverse population of pre-service teachers comprised of both digital immigrants and digital natives (M. Baker, personal communication, September 12, 2012). Although they have been exposed to modern technology during their adult lives, digital immigrants can become fluent with information technology (FITness) if they are willing to embrace and engage new technology as it becomes available (Brown, Baker, Edwards, & Robinson, 2011).

The appropriate use of social media in schools is an ongoing national debate with a number of school districts choosing to block or ban social networking sites entirely (Merino, 2012). The inability for some administrators and teachers to communicate with students outside the classroom has created a professional dilemma (Merino, 2012). "The solution isn't to just hide from the Internet and pretend it doesn't exist. The jobs of tomorrow are going to assume a certain baseline of Web fluency" (Merino, 2012, p. 2).

Agricultural educators must formulate a plan to achieve educational objectives, communicate with students and parents, and speak to *digital natives* by means of social networking tools while maintaining a safe environment for everyone involved; one solution is Edmodo.

How it Works

Edmodo (www.edmodo.com) is a closed social network for the classroom. Administrators, teachers, parents, and students can connect in an open online platform; students are given a private invitation code for their class. Merino (2012) aptly described Edmodo, "in essence, it is like having an entire Facebook ecosystem devoted to one class at a time" (p. 3). Teachers have the freedom to create as many groups as they would like (e.g. FFA chapter, booster club, FFA officer team, communities of practice). Teachers and students can set the notification preference to email or text them when a new post is created. Additionally, teachers can upload videos to enhance student learning, post assignment materials, quiz students on materials taught, and alert students of upcoming assignments, extra credit opportunities, and last minute reminders. Teachers also have the option to post communications in real time or scheduled sequence for increased user ease. Students can upload assignments, ask questions, and collaborate with each other safely and securely. Teachers also have an opportunity to join a Career and Technical Education community of practice across the nation with Edmodo.

Results to Date

The fall 2012 student teaching *block* at Oklahoma State University was the pilot test group for integrating Edmodo into the student teaching experience (N = 5). In an effort to maintain technological FITness and introduce new educational technology to cooperating teachers, students are required to utilize different educational technologies in their practice. Consequently, all pre-service teachers including the spring 2013 student teaching *block* (N = 51) are using this online platform as a tool to share teaching experiences with other members of the class and upload lesson plans, resources, and activities. The majority of students are experiencing teaching for the first time; therefore, Edmodo provides a forum for a community of practice to occur. Registering for Edmodo was optional and Table 1 describes the level of participation in each of the student groups.

Table 1

Student Participation in Edmodo

Group	Total Students	Edmodo Users	%
AGED 3103	46	19	41.3
AGED 3203 Lab	15	15	100
Spring 2013 Block	17	17	100

The class instructor in each course uses Edmodo to communicate with students. The following statements are examples of what students have shared about their experience with Edmodo:

"Being able to network with students, parents, and colleagues will benefit me the most as a classroom teacher" (J. Jenkins, personal communication, January 29, 2013).

"Students are given more ownership in the learning process and parents are informed of what's going on…all while maintaining a professional student teacher relationship" (R. Branscum, personal communication, January 12, 2013).

"I really appreciate being able to have lesson plans available for topics I am unfamiliar with that people I know and trust created; I do not have time to reinvent the wheel" (T. Thomasson, personal communication, February 14, 2013).

Future Plans

"The use of technology within and outside the classroom cannot be ignored" (Murphrey, Miller, Roberts, 2009a, p.110) Student teachers at Oklahoma State University will continue to be introduced to Edmodo during the four-week student teaching *block*. If pre-service teachers are not introduced to a variety of instructional technologies during their pre-service education, we cannot expect them to implement those during in-service teaching (Murphrey, et al., 2009b). "Many who currently use information technology have only a limited understanding of the tools they use and a (probably correct) belief that they are underutilizing them" (National Research Council, 1999, p.1). Teacher educators have a professional responsibility to prepare pre-service teachers for success in the teaching profession upon graduation.

Costs/Resources Needed

Costs for the implementation of Edmodo is minimal as it is free to educators, parents, and students. This technology requires access to a computer, an Internet connection, and web browser software. The objective of this innovative idea is to improve delivery of content in the classroom, supply a safe environment for collaboration and student learning, increase communication in teacher-student and teacher-parent relationships, and improve technological "FITness" with no additional cost to an individual, school district, or instructor.

References

Brown, N. R., Baker, M. A., Edwards, M. C., & Robinson, J. S. (2011). Becoming technologically FIT: Enabling pre-service teachers to become fluent with information technology as part of the teacher preparation experience. *Proceedings of the National Agricultural Education Research Meeting*, 69-72.

Lesser, E., & Everest, K. (2001). Using communities of practice to manage intellectual capital. *Ivey Business Journal, 65*(4), 37-41.

Merino, F. (2012, July 30). Resetting education: social networks for the classroom [Web log post]. Retrieved from http://vator.tv/n/28cc

Murphrey, T.P., Miller, K. A., Roberts, T. G. (2009a). Examining ipod use by texas agricultural science and technology teachers. *Journal of Agricultural Education*, *50*(4), 98-109. doi: 10.5032/jae.2009.04098

Murphrey, T.P., Miller, K. A., Roberts, T. G. (2009b). Agricultural science and technology teacher's perceptions of ipod and mp3 technology integration into curricular and cocurricular activities. *Journal of Agricultural Education*, *50*(4), 110-119. doi: 10.5032/jae.2009.04110

National Research Council. (1999). Being fluent with information technology literacy. Computer science and telecommunications board commission on physical sciences, mathematics, and applications. Washington, DC: National Academy Press.

Prensky, M. (2001). Digital natives, digital immigrants. *On the Horizon, 9*(5), 1-6.

Innovative Idea Poster

Engaging Agriculture Faculty as Leadership Mentors of College Undergraduate Students

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Engaging Agriculture Faculty as Leadership Mentors of College Undergraduate Students

Introduction

Faculty-student interaction is a critical component of the students' higher education experience (Kuh & Hu, 1999). Pascarella and Terenzini (2005) highlighted the impact of faculty interactions on student learning and in their research synopsis, they stated, "Substantive interaction with faculty influences elements of students' perceptions of the environment such as the scholarly-intellectual emphasis and the relational emphasis, which, as we observed in the between-college effects section of this chapter, has direct, positive impacts on learning" (p. 123). Astin (1999) stated, "Students who interact frequently with faculty members are more likely than other students to express satisfaction with all aspects of their institutional experience, including student friendships, variety of courses, intellectual environment, and even the administration of the institution" (p. 525). What makes this faculty mentoring program innovative is that it is flexible, purposeful, allows faculty the opportunity for service without direct benefits, and meets the personal development and leadership needs of the students.

Methodology

While faculty programs exist that facilitate "mentoring" within the research or lab context, the question remains whether faculty will serve as mentors when they receive no tangible, direct benefits to research, promotion and tenure. This project sought to engage faculty in a new, innovative mentoring process. The goals of this innovation, specific to mentors, were to: 1). Determine whether faculty would willingly volunteer to work with students in a year-long, intensive, non-research program, 2). Identify the type and amount of support that faculty members prefer 3). Identify the potential mentor benefits associated with the mentoring process.

This program was intentionally designed to allow maximum flexibility for faculty and students to develop a unique mentoring relationship. Mentors were initially recruited via an email request soliciting interest. Students and mentors selected each other through a short interview process initiated by the student. Following mentor-student pairing, program administrators facilitated a two-hour mentor orientation workshop, which included discussion about the structure and timeline of the program, expectations of students, expectations of mentors, and available resources. The mentor role in this program was to provide guidance, offer ideas, and stimulate critical thinking about developing leadership goals and reflecting on leadership experiences. Mentors were not responsible for ensuring students met the requirements of the program, nor were they responsible for assisting with job or internship placement. Beyond the orientation, the program administrators initiated limited contact with mentors but were available to answer questions and provide support as requested. Early in the yearlong process, a group meeting was held for mentors, students, and program administrators to be able to check in, share insights, and address any questions or concerns about the mentoring process.

Results to Date

In the first year of the program, mentors were recruited via an e-mail request for volunteers and nominations of faculty by department heads. The request outlined the purpose of the program and the essential mentoring component. There was little incentive for faculty to volunteer, other than the goodwill of contributing to the development of a student, because the program does not provide a stipend, research support, or other tangible rewards. Despite this, faculty willingly volunteered to work with students as mentors. Twenty-six faculty members either volunteered or were nominated and agreed to serve as mentors. Of those, twenty-one were tenure-track, five were professional faculty; sixteen were male and ten were female. Of the 26 volunteers, four were at the dean level and six were department heads. Ten of the volunteers were paired with a student during the first year. During the second year of the program, mentors were not recruited. Through word of mouth, two additional faculty members and a university administrator expressed interest in mentoring and were added to the list while one mentor from the previous year declined due to time concerns.

Faculty were supported in this project with resource materials, an orientation session, and access to program developers. Faculty mentors and students met frequently, usually twice per month, during the yearlong mentoring process. Although the program administrators had limited contact with mentors, they did not express the need for more support. Mentors indicated the mentoring experience was beneficial because it allowed them to get to know the students better and participate in some of the same experiences as the students. Mentors indicated they had positive experiences during the process and appreciated the flexible nature of the program. Each mentoring relationship was unique, based on the personalities and leadership styles of both the mentors and students. And, while the program is limited to one year, mentors made it clear they expect the mentoring relationship to continue beyond the official end date of the program. In addition to this continued mentoring relationship, mentors have committed to working with new students the following years.

Future plans

As the program grows, additional faculty volunteers will be paired with students. An attempt will be made to prioritize matching faculty who did not have a mentee in the first or second years with a student during the program's third year. Because the response was so remarkable, mentor recruitment is not currently a high priority for program administrators, but in the third and fourth years, additional recruitment efforts will likely need to be made. Although tenure-track faculty members are not expressing a need for additional incentives, it would be ideal to develop a system by which mentors receive credit for their work with this program during the promotion and tenure review process.

Costs

The initial startup costs included the development of a mentoring website (~100 hours), time spent recruiting the mentors (~10 hours), time spent planning the new mentor orientation session (~40 hours) and time spent on mentor support (~20 hours). Small expenditures were made on advertising and marketing costs as well. The program developers offset the costs through industry, alumni, and supporter donations. Very minimal additional costs were incurred in year two since most of the components were in place after the first year.

References

Astin, A. W. (1999). Student involvement: A developmental theory for higher education. *Journal of College Student Development, 40*, 518-529. Retrieved from http://www.eric.ed.gov/ERICWebPortal/detail?accno=EJ527217

Kuh, G., & Hu, S. (1999). *Learning productivity at research universities.* Paper presented at the annual meeting of the American Educational Research Association, Montreal.

Pascarella, E.T., & Terenzini, P. T. (2005*). How college effects students: A third decade of research.* San Francisco, CA: John Willey and Sons, Inc.

Innovative Idea Poster

Engaging Globally Through the Fulbright Specialist Program: Opportunities for Agricultural Educators

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Engaging Globally Through the Fulbright Specialist Program: Opportunities for Agricultural Educators

Introduction

The purpose of this innovative idea poster is to acquaint agricultural educators with the Fulbright Specialist Program, share my Fulbright Specialist experience, and encourage others to consider using this program to support global engagement opportunities in agricultural education. Facts about Fulbright programs presented in this abstract are based on information contained in the following website: http://www.cies.org/.

Most academics are aware of the core Fulbright Scholar Program which supports international teaching and research assignments ranging from two to twelve months in duration. For scholars who cannot commit to an international assignment lasting several months, there is an alternative. The lesser known Fulbright Specialist Program supports a broad range of international activities for periods ranging from 14 to 42 days. Activities may include lecturing, conducting seminars, training teachers, special conferences or workshops, curriculum planning, and institutional development. Agricultural education faculty are uniquely qualified to provide the expertise needed in this program. The Fulbright Specialist Program is available in more than 100 countries.

How It Works

Operation of the Fulbright Specialist program can be subsumed into three things. First, scholars from the United States must apply and be approved for the Fulbright Specialist Roster. Second, a foreign degree granting institution must formally request a Specialist for a specific project. Third, the Council for International Exchange of Scholars (CIES) matches Specialists with program requests.

Major components of my application for the Specialist Roster included basic demographic data, academic credentials, professional background, discipline and specialization, a statement about my motivation for and interest in being a Fulbright Specialist, and two letters of reference. Three months after submitting the application I was notified by CIES that I had been added to the roster. Eighteen months later I was invited to apply for the Thailand project.

The Thailand project was proposed by Naresuan University in Phitsanulok, Thailand. This university is located approximately 400 kilometers north of Bangkok. Naresuan University requested a specialist to provide advice and guidance on the internationalization of graduate programs in Plant Biotechnology and Natural Resources and the Environment. The project duration was 42 days. My two-page application included a proposed approach for conducting the project and my relevant qualifications. From three applicants, I was selected as the official grantee.

Several activities took place after my selection but before traveling to Thailand. Naresuan University and I agreed on the project period, approval for my participation was granted by [state] University, a grant authorization and budget were approved, airline tickets were purchased, invitation letters from the Thailand – United States Education Foundation and the President of Naresuan University were received and submitted with my visa application, and a scope of work was prepared. Upon completion of the project a final report was submitted to CIES, the honorarium was received, and a certificate of completion was presented to me by the J. William Fulbright Foreign Scholarship Board and the Bureau of Educational and Cultural Affairs of the United States Department of State.

Results to Date

During the project, I spent most of my time in the Faculty of Agriculture, Natural Resources and Environment. Departments in the Faculty of Agriculture, Natural Resources and Environment include Agricultural Science, Agro-Industry, and Natural Resources and Environment. A primary focus of the project was on internationalization of graduate programs in Plant Biotechnology and Natural Resources and Environment. I prepared a list of best practices for internationalization and I presented written observations, conclusions and recommendations to the dean of the faculty and to the president of the university. I engaged in a variety of other academic activities that included editing research papers, editing grant proposals, giving presentations about [state] University and [state] agriculture, team teaching a program on academic writing, and demonstrating distance learning techniques to faculty and students.

I was also able to participate in several cultural activities. I attended a performance called Power Cheer involving the entire freshman class of the university. I visited Sukhothai which is a UNESCO World Heritage historical park. Sukhothai, the first kingdom of Siam, was founded about 800 years ago. I attended a wedding dinner for a former employee of the Faculty of Agriculture Natural Resources and Environment. I also attended a Thai funeral. Sadly, Dr. Keith Syers, who was responsible for developing this Specialist project, died shortly after I arrived. During a national holiday, I traveled to Chiang Mai. I visited an elephant camp, Hill tribe villages, Doi Suthep Temple, and Doi Inthanon National Park.

The Fulbright Specialist project was an unforgettable experience and a major highlight of my career thus far. My 42-day experience was long enough to gain a deeper understanding and appreciation for Thailand, Thai culture, and Naresuan University. I also believe that six weeks provided enough time to make a positive contribution to Naresuan University.

Future Plans/Advice to Others

My goal is to participate in one additional Specialist project and one core Fulbright Scholar program during my academic career. I encourage faculty in agricultural education to read more about the Fulbright Specialist Program here: http://www.cies.org/Specialists/. This program could be a valuable tool in meeting your global engagement goals.

Costs

My Fulbright Specialist grant included $1902 for airfare, $292 for in-transit expenses, and $8400 for an honorarium. Naresuan University provided in-country transportation, lodging, meals in kind, and $1000 to cover meals not provided by the university. As a general rule, costs associated with travel to and from the host country, visa costs, and an honorarium are paid for by the Fulbright Specialist Program. Transportation in country and subsistence expenses are paid for by the host institution.

References

Council for International Exchange of Scholars. (n.d.). Fulbright scholar program. Retrieved from http://www.cies.org/

Council for International Exchange of Scholars. (n.d.). Fulbright specialist program. Retrievedfrom http://www.cies.org/Specialists/

Innovative Idea Poster

Enhancing Student Led Presentations Using Prezi

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Enhancing Student Led Presentations Utilizing Prezi
Introduction/Need for Innovation

A 21st century classroom is one that incorporates tried and true literacy skills with new technology. As teachers, we should encourage students to use and incorporate technology as a tool for teaching and learning (Beers, 2007). By exposing students to new technologies and allowing them to incorporate these into their presentations, we make the classroom a welcome place of creativity, collaboration, and investigation. The beneficial use of emerging technology to facilitate learning has been established in numerous research studies (Selwyn, 2007; Messner, 2009; Young, 2009). More research is necessary to adjust current teaching practices and investigate how to effectively use technology to improve learning (McGlynn, 2005). This study addresses research priority four of the American Association for Agricultural Education (AAAE) National Research Agenda – Meaningful, Engaged Learning in All Environments (Doerfert, 2011).

An effective teacher needs to use a variety of instructional methods. Phipps, Osborne, Dyer, and Ball (2008) found that students from the millennial generation (born after 1982) were spending an average of 6.5 hours in front of some form of media each day. This constant bombardment has led to generally short attention spans. Agricultural science teachers need to take advantage of the strengths and interests of today's students by using technology to develop the most effective means of educating their students (Phipps et al, 2008). Agricultural science teachers must excite students and use a variety of instructional methods to hold their interest. The creative use of communicative technology can bring an increased excitement and interest from the student (Clark, 2008). An excellent "learner-centered" teaching approach is requiring students to develop multimedia presentations.

Several new presentation software systems are available to enhance teacher's and student's presentation skills in agriculture education. One such program that is newly being used by agriculture science teachers is Prezi. It is an interactive and visually pleasing tool that uses zooming and spatial relationships to present information. Similar to PowerPoint, Prezi has the capability to incorporate text and various other types of media (YouTube videos, pictures, weblinks, etc.). The difference is that Prezi uses a more streamlined approach that emphasizes both the big picture as well as the connections among ideas. A benefit of Prezi as a presentation tool is that it allows presenters to create an interactive display which is expressive in showing relationships between concepts.

How It Works

Teachers and students are able to use this program for free, and if using an edu-based email address, will be rewarded with a larger storage capacity. This allows educators to make a large number of these presentations and store them online for free. At the beginning of the course students will be required to sign up with Prezi and will begin exploring various templates. The instructor should present several lessons with this software and expose students to the different options available.Students should be encouraged to experiment with Prezi early on to become familiar with it.

Students will be required to develop a Prezi and use it as a presentation tool for at least one lesson within their teaching methods course. The presentation must follow the lesson plan format for their specific program and will incorporate aspects of a formal lesson structure (interest approach, objectives, activity, summary, etc). Lessons should contain multiple paths between objectives that provide a clear pattern of relationships. Teachers are encouraged to promote creativity and the use of multiple types of media within the lessons.

Results to Date

Prezi has proven to be a transformative tool that has built student's abilities to present information through visual and spatial relationships. With this software, students have successfully developed lessons that visualize logical relationships and enjoyed the unique nature in which they can manipulate images, text, and video. Many students have taken the use of Prezi to their other classes and have impressed fellow students and other teachers. Participants seemed to enjoy the creativity in Prezi versus the linear approach of PowerPoint. Many have commented on the benefit of seeing the "big picture" within their presentations. Purchasing the desktop version would allow some students to edit their presentations without having to go online.

Future Plans/Advice to Others

The researcher will continue to use the Prezi software in their classes and will encourage students to utilize this, and other creative ways, of presenting material and developing lessons. Prezi should be encouraged within classes that require students to present relationships and patterns. This software could be used to effectively communicate connections between research and effective inquiry. The use of Prezi in presentations and lessons should be required in a wide variety of courses. The use of a Prezi can also be used as a form of assessment. Instead of a two page paper written on a subject, students can present their ideas through more of a visual medium. Future research plans include comparing student's opinions of Prezi and other presentation software.

Cost/Resources Needed

There are several variations of Prezi, including a free version. To get started a Prezi account must be set up online. The free version gives students and teachers 500mb of online storage. The free version must be edited online, but can be saved and presented offline with a computer containing an updated flash player. There are two pay versions, for $59 or $139 annually, which offer additional features like added storage space, the use of personal logos, system support and a desktop editor to modify your Prezi offline.

Resources

Beers, K. (2007) *Adolescent literacy: Turning promise into practice*. Portsmouth, NH: Heinemann.

Clark, J. (2008) PowerPoint and pedagogy: Maintaining student interest in university lectures *College Teaching 56* (1) 39-44. Retrieved from http://www.jstor.org/stable/10.2307/27559351

Doerfert, D. (2011*) National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Dept. of Agricultural Education and Communications.

McGlynn, A. P. (2005) Teaching Millenials, Our newest cultural cohort. *Education Digest*, 71(4), 12-16. *doi 19097974*

Messner, K. (2009). Pleased to tweet you: Making a case for twitter in the classroom. *School Library Journal. Retrieved from* http://www.schoollibraryjournal.com/article/CA6708199.html

Phipps, L., Osbonre, E., Dyer, J., & Ball, A. (2008) *Handbook on agricultural education in public schools (6th ed)*. Clifton Park, NY: Thompson Delmar Learning.

Selwyn, N. (2007) Designing and fostering effective online group projects. *Adult Learning* 22(*2*) 13-18.

Young, J. (2009) When computers leave classrooms, so does boredom, *Chronicle of Higher Education* 55(*42*). *doi* 44972349

Innovative Idea Poster

Expanding Communication Opportunities: Blogs for Agricultural Communication Programs

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Expanding Communication Opportunities: Blogs for Agricultural Communication Programs

Introduction

Writing is regarded as the most valuable skill among alumni, faculty and supporters of agricultural communications programs (Morgan, 2010). In fact, industry has indicated the need for program completers to improve their writing skills. Many universities offer opportunities for students to develop their writing by publishing in printed media such as student magazines (Hall, Rhoades & Agunga, 2009). However, magazines are limited due to their high printing costs, space restrictions, scheduling deadlines and the permanency of the final product. Inclusion of online publications like blogs, can expand opportunities for students.

The [Center] is an extra-curricular aspect of the [University] Agricultural Communication program. The [Center] is funded by an endowment with the purpose of providing students a way to practice skills in a real-world setting. The [Center] is composed of one faculty adviser and four paid associate student editors. The editors assign stories and photos to volunteer student contributors from the Agricultural Communication program as well as throughout the [College]. Each publication has a distribution of 1,500 copies and is hosted online.

The [Center] created a blog in December 2011 to compliment its student-run publication. The [Center]'s goal in creating a blog was to: give students more experience with web media, expand the reach of their audience, encourage more students to write and provide an additional channel for publication and student portfolio material.

How It Works

In December, 2011 the [Center]'s four student employees created a free account on wordpress.com and selected a simple design theme. The team immediately began planning content and posting news stories and editorials. The team also began soliciting content through the [center's] Facebook page and in Agricultural Communicators of Tomorrow meetings. When the team has received content, they place the text and photos into a new blog post. The post can remain saved as a draft version until the team decides it is ready to publish on the blog. After publishing, the student associates then share links to the blog postings on both Facebook and Twitter to increase traffic. They have also added a QR code and web address for the blog to the back cover of their magazine.

Given the variety of student knowledge and skill development, the blog quickly became an outlet for editorial stories that are better suited for blog posts rather than magazine articles. This also provided a means of sharing news which falls between the magazine's deadline schedules. The blog has served as a forum for discussing current events in agriculture, such as the January 19, 2012 release of the Yahoo article titled, “College Majors that Are Useless” (Loose, 2012). The blog site received 1,358 views on that day.

In Fall 2012, the [Center] associates decided to place more emphasis on planning blog posts for each week and assigning student volunteer writers a deadline for submitting articles oto allow for editing before posting.

Results to Date/Implications

The [Center] has traditionally produced three magazines annually, with an average of 33 stories per year. The number of stories published in the magazine began to decreasing in Spring 2012 when the [Center] began selling ad space to offset printing costs. This proved to be another limiting factor to student opportunities to write.

The blog site statistics analysis reveals the [Center] has published a total of 48 posts to date. While the posts have received a total of 29 comments, the blog has received a total of 6,982 views. There are currently 12 WordPress users following the blog. The blog has also helped drive viewership to the online version of the magazine with a total of 42 clicks to date.

Future Plans/Advice

The [University] Agriculture Communication program plans to maintain its current schedule of one blog post per week, while encouraging more students to get involved. The [Center] associates of the often struggle to assign blogs for each week while also maintaining the printed magazine schedule. This often results in the [Center] student associates posting more blogs themselves, rather than affording other students the chance. While the increased blog writing is helpful to the four student associates, it does not engage others or support their growth.

The [Center] plans to continue promoting blog stories and other posts through social media, including Facebook and Twitter. The [Center] would like to increase its role in participating in the online conversations about agriculture by networking with other bloggers and university programs.

Additionally, the [Center] would like to increase its number of visual posts. Wordless Wednesdays can feature the skills and talents of students with the desire to develop, refine and publish their photography. The [Department Name] plans to create a YouTube channel to share information with prospective students and supporters. Connecting the YouTube channel with the blog could help promote a positive web presence for the program while giving students with video interest and expertise more experience with multi-media communication.

Costs/Resources Needed

The WordPress account blog theme used are free. Managing the blog has added to the workload of the four Brock Center student employees. However, student employees are still limited to claiming the same number of paid hours per week, so there has not been an increase in costs associated with labor. The [Center’s] blog also has the capacity to refer potential magazine advertisers to the program which may have a role in generating more revenue.

References

Hall, K., Rhoades E., & Agunga R. (2009). Student Publications’ Place in the Agricultural Communication Curricula. *Journal of Applied Communications,* 93(1-2), 35-44.

Loose, T. (2012, January 19). *College majors that are useless*. Retrieved from http://education.yahoo.net/articles/most_useless_degrees.htm

Morgan, A. (2010). Competencies Needed by Agricultural Communication Undergraduates: An Industry Perspective. *Journal of Applied Communications*, 94(1-2), 19-32.

Innovative Idea Poster

Flip It or Flop It: Semi-flipping Classes to Promote Student Engagement

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Flip It or Flop It: Semi-flipping Classes to Promote Student Engagement

Introduction/Need for Innovation or Idea

Research on today's generation of college students suggests they have different needs and expectations than previous generations (Roehling et al., 2011). The learning these students engage in is relevant, real-world, and in many cases, technology-based (Wisniewski, 2010). Because of their diverse needs and expectations for learning, traditional lectures may not be as effective with today's college students (Roehling et al., 2011); therefore, alternative methods of teaching may be necessary to reach these students. Implementing learner-centered teaching methods may help address this issue and can lead to greater success for students and increased job satisfaction for instructors (Wright, 2011). Getting students engaged in an active learning environment promotes higher-order thinking, multiple intelligences, problem solving, and critical analysis and helps students process, understand, and retain the information they have learned (Gleason et al., 2011; Wisniewski, 2010).

With limited time available during class meetings, providing students with the necessary background knowledge and facilitating engaging, learner-centered activities can be a challenge. One solution to this issue may be through the use of an innovative teaching method known as flipping a course. Flipping a course involves presenting lecture and homework materials online for students prior to class time. Students are expected to prepare for class meetings by viewing lectures and completing homework assignments prior to coming to class. Class time is then used for discussion, application or problem-solving based activities that allow students to be more engaged in learning activities. Courses may also be semi-flipped which involves flipping only certain topics or units of a course using the same methods.

How It Works

The instructor chose to flip the first module (four weeks) of a senior-level, service learning agricultural communications campaigns course as a means of promoting student engagement and student-centered learning. The first module of the course was dedicated to event planning, and students worked in groups to plan an event for an agriculturally-related client.

During this module, the course instructor pre-recorded, lecture-style videos using Camtasia software. The videos were saved in a file format that was compatible to PC or Macintosh computers. The videos were then uploaded to a Dropbox folder created for the class, which all students in the course had been invited to join. Students were expected to watch each lecture video prior to the corresponding class meetings, which served as the formal presentation of class material from the instructor. No in-class lectures were conducted during class time throughout this module of the course. Quizzes were given at the beginning of each class as an incentive for students to watch the lecture videos ahead of time. The instructor also provided time for any student questions about the videos or the material presented in them as a means of clarifying anything that may have been unclear to the students.

By having students watch pre-recorded lectures prior to class meetings, the instructor was able to use class time for student-centered activities that promoted student engagement rather than presenting new material to students. Since students had been exposed to the lecture material prior to meeting for class, they had the necessary background knowledge to implement their learning in innovative ways during class time.

Results to Date/Implications

The average quiz grade for students during the flipped portion of this course was 84.7% compared to an average of 76.73% for the non-flipped portion of the class. Students were observed to be more engaged in class activities, were more willing to speak up during class time, and spent less time on their personal computers during the active class sessions. They were also observed interacting and communicating with their group members on a regular basis.

Some technical issues were experienced during the flipped portion of this course. Some students reported not having audio when they watched certain videos and others had trouble opening video files from their personal computers. Dropbox also presented some problems with video sharing because some videos were accidentally deleted by students which made them unavailable for the rest of the class to access.

Student reaction to the course structure was mixed. Some students commented that they would prefer to watch the lecture online rather than read a textbook. Others said they enjoyed the opportunity to review the lectures before their projects were due. However, some stated watching the lecture online was a hassle, and they preferred the in-class presentation of materials so they could ask questions and have more of an interactive class.

Future Plans/Advice to Others

The researchers recommend instructors give some type of assessment at the beginning of each class meeting to help motivate students to do the required preparation prior to class. These assessments may be in the form of quizzes or activities centered on the materials prepared for students ahead of time. Care should be taken when choosing the mode of delivery of videos to students to ensure that access to the videos is available to everyone in the class. The instructor should also take care to ensure that video files are uploaded properly and are not corrupted during files transfers. The researchers also recommend instructors attempt to semi-flip a course before fully flipping a course for the first time.

Costs/Resources Needed

The most significant resource needed to flip or semi-flip a course is time. Recording and posting lecture materials prior to class meetings requires considerable time commitments from instructors. These materials must be planned for, prepared, and posted in a timely manner to allow students adequate time to review them and prepare for class meetings. It takes additional time to prepare and evaluate assessments that can measure student learning. Beyond time, flipping courses requires some type of online avenue to post lecture materials to students prior to class meetings. This can be done through several outlets including Dropbox or an online course management system such as Blackboard. An audio/video capturing program is also needed to record the video lectures. There are several of these programs available in a variety of price ranges, including Camtasia, which was used for this course.

References

Gleason, B. L., Peeters, M. J., Resman-Targoff, B. H., Karr, S., McBane, S., Kelley, K., & Denetclaw, T. H. (2011). An active-learning strategies primer for achieving ability-based educational outcomes. *American Journal of Pharmaceutical Education*, *75*(9), 1-12.

Roehling, P. V., Kooi, T. L. V., Dykema, S., Quisenberry, B., & Vandlen, C. (2011). Engaging the millennial generation in class discussions. *College Teaching. 59*(1), 1-6.

Wisniewski, M. A. (2010). Leadership and the millennials: Transforming today's technological teens into tomorrow's leaders. *Journal of Leadership Education*, *9*(1), 53-68.

Wright, G. B. (2011). Student-centered learning in higher education. *International Journal of Teaching and Learning in Higher Education*, *23*(3), 92-97.

Innovative Idea Poster

FOCUS on Building Science Proficiency

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FOCUS on Building Science Proficiency

Introduction/Need for Innovation

Current initiatives in education, both governmentally, and privately funded, have focused on improving student achievement in science, math, and technology (U.S. Department of Education, 2004, American Association for the Advancement of Science, 2007). Efforts include new curriculum, reformed assessments, and even national summits geared toward improving teachers' abilities to teach content matter (Allan, 2004). According to the Alliance for Excellent Education (2005), teacher quality is an essential factor in predicting student performance. Research also supports using experiential learning techniques to enhance content retention, especially in mathematics and science (Weinberg, Basile, & Albright, 2011). One way to add exposure to experiential learning activities and increase teacher efficacy without adding work for in-service teachers is to develop a partnership with a university offering majors in science. By, offering course credit for university students interested in working with the local school system, students are exposed to more hands-on activities, the university students are engaged in the community, and the teachers gain exposure to activities they can recreate in the future.

How it Works

Project FOCUS (Fostering our Community's Understanding of Science) is a university course pairing university students with local school teachers. University students enroll in a three credit hour course which involves them spending three hours a week in a public school classroom conducting hands-on science activities. University students are expected to spend a total of 40 hours in the public school by the end of the semester. A partnership exists between university faculty and the local 5th grade principal who identifies potential teacher participants. The university students provide a weekly calendar of their available free time and the principal matches the university students with teachers based upon best schedule fit. University students plan with their teacher each week and develop hands-on activities to accentuate the content lessons presented by the teacher. The university students do not teach the class as a whole. Instead they work with small groups that rotate through while the teacher works with the rest of the class. While the university students do prepare activity plans for each activity, they do not present new content or prepare full lesson plans.

Results to Date

Project FOCUS is in its third year of implementation. Teachers are very interested in participating and each year more teachers have applied for consideration. The greatest challenge to make schedules work and get 40 hours of contact time when working around school testing, spring break and other holidays for both university and grade school. The first year, all of the university students were majoring in agriculture education. Word has spread about the class and now students of other majors are taking part as well.

Agriculture education majors indicate this class has increased their comfort level in the classroom and solidified their interest in becoming future teachers. In one case, course participation was a factor in a student deciding not to pursue a teaching certificate. In addition, the experience of developing science activities had integrated them to the process of lesson planning on a small scale. Other university faculty indicated that ag ed majors who were involved with Project FOCUS as juniors performed better on lesson planning assignments as part of their senior level curriculum planning course than did students not involved in Project FOCUS.

Students in other majors have shared that they have developed greater understanding of science principles due to the act of teaching those principles to others. The process of breaking the information down to a 5th grade level and conducting hands on activities has helped with their own knowledge retention. Additionally, university students have developed better overall communication skills.

Participating teachers have shared that their students are very excited about days when the university students were present. Students' desire to participate has boosted good behavior and helped struggling students become more involved in the classroom. In addition, teachers have requested copies of activity plans so they can continue to perform the activities with their students even if they do not continue to participate in Project FOCUS.

Future Plans

With the 2013 FOCUS class progressing successfully, plans are to continue the partnership with the 5th grade campus for the foreseeable future. If student participation increases beyond the number of interested 5th grade teachers, opportunity exists for a partnership with the 4th grade principal and teachers as well. A database of most successful activities is being built for use by future participants. Activities are being made available digitally in addition to hard copies being assembled and available in the on-campus resource room.

Costs/Resources Needed

University students are responsible for their own transportation to and from the school and are also responsible for obtaining a local background check from the police department which costs five dollars. The school has some supplies on h and which are made available to the university students. Additional consumable resources are the responsibility of the university students in lieu of a textbook. Copies of the 5th grade standards coaching book are provided by the university on a loan basis. These books cost about $20 each. Copies of the science textbook are made available for loan by the classroom teacher. Activities are available through the class database as well as other free online resources.

References

Allan, B. 2004. Bayer to sponsor U.S. summit on science. http://www.bayerus.com/MSMS/MSMS_News/MSMS_NewsDetail.aspx?ID=5F6BE504-B77A-CAE9-49023246C125F878. Bayer Corporation.

Alliance For Excellent Education (2005). Teacher Attrition: A Costly Loss to the Nation and to the States. *Alliance For Excellent Education, Issue Brief August 2005.*

American Association for the Advancement of Science. 2007. About project 2061. http://www.project2061.org/about/default.htm.

U.S. Dept. of Education. 2004. Four pillars of NCLB. http://www.ed.gov/nclb/overview/intro/4pillars.html.

Weinberg, A. E., Basile, C. G., & Albright, L. (2011). The effect of an experiential learning program on middle school students' motivation toward mathematics and science. *Research in Middle School Education, 35*(3), 1-12.

Innovative Idea Poster

“Growing Connections With Junior Master Gardeners”

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“Growing Connections With Junior Master Gardeners”

Introduction/Need for Innovation

The Master Gardener Program within the Cooperative Extension Service was developed in 1972 to train volunteers to educate the community with horticultural information. The enormous success of this program has been based on meeting the needs for “consumer” horticulture, locally focused projects, and high quality information (McAleer, 2005, p.1). One of the most popular outreach projects conducted by Master Gardeners is teaching gardening skills to youth through the Junior Master Gardner (JMG) program. Considerable research has documented the positive impacts of gardening programs on youth, such as improved decision-making, problem solving, physical activity, leadership, healthy living, community pride, environmental awareness, self-efficacy, science achievement and attitudes, love for learning, academic and social skills, and youth participation (Children, Youth, and Environments Center for Research and Design, 2009; Lekies, Eames-Sheavly, & Wong, 2006; National Gardening Association, 2013; Phelps, Hermann, Parker, & Denney, 2010; Welsh et al., 1999). The JMG program specifically engages youth in learning experiences that “promote a love of gardening, develop an appreciation for the environment, and cultivate the mind” through research based curriculum (JMG, 2013, p.1). Developed by Texas AgriLife Extension in 1999, the JMG program has approximately 35 state partners and 3 international partners with registered coordinators (JMG, 2013). Currently, there are no JMG programs active in <state> due to lack of agent and specialist time, resources, and funding; however, there is local interest in the program as evidenced by growth in community and school gardens, 4H gardening projects, and local requests (Toby Day, Master Gardener Coordinator, 2012). In 2011, a youth gardening program was started in <County> 4H; however there is currently no project leader to manage the program, but still active youth. The goal of this project is to help educate youth interested in gardening, create the first registered JMG program in the state, and provide realistic student teaching experiences.

How it Works

<state> 4H is the largest out-of-school youth development program that offers an avenue for <university> on-campus students to educate community youth. <University> Agricultural Education students in a “Philosophy and Programs in Extension” course will teach <county> youth using the JMG curricula in three workshops during Spring 2013. These workshops are integrated into the course as a service learning component for students to gain teaching

experience and knowledge of youth programming. Each lesson will be taught on the <university> campus and incorporate hands-on experiences. <State> Extension distributed promotional materials created by the students through newsletters, social media, and club meetings. 4H members were the targeted group of participants, although non 4H members were also encouraged to participate with the hope of future 4H involvement. Adult Master Gardeners were also recruited to assist with programming. <University> students collaborate with the Master Gardeners to design the workshops, select educational activities, and serve as expert consultants. A final service project will also be organized by students and youth in the summer. The project will involve hands-on learning of gardening, harvesting, preserving, and distributing vegetables. Finally, the 4H youth will be mentored on how to complete the requirements for establishing a local JMG chapter.

In the summer, <University> Agricultural Education and Extension will conduct a train-the-trainer conference for Master Gardeners on JMG content, educational programming principles, and youth development education. The Master Gardeners will then be encouraged to serve as JMG project leaders and transfer the information to the local chapter. This will assist in providing necessary resources to the county through trained volunteer leaders.

Results to Date/Implications

Within 24 hours of promoting the local JMG program, forty youth signed up to participate; although, due to location restraints, only 30 will be able to participate in this workshop series. Others have been placed on a waiting list with the number growing each day. Anticipated results by the end of Summer 2013 are: 1.) <university> Agricultural Education students will deliver at least 3 two hour educational workshops using the JMG curricula for <County> youth; 2.) <county> youth will increase their gardening knowledge and skills by at least 25% as measured by standardized tests given at the end of each workshop and the entire program; 3.) <county> youth will increase their life skills by at least 10% as measured by a life skills assessment following the service learning project; 4.) Master Gardeners will attend the Train-the-Trainer conference and increase their knowledge in educational programming, youth development, and JMG curricula by at least 25% as measured by pre and post-test surveys; 5.) <county> 4H will establish a JMG club by submitting a registration for certification to the National JMG program, and 6.) <university> Agricultural Education students will increase their teaching and learning skills as measured by a post-test reflection interview.

Future Plans/Advice to Others

As a result of the partnerships in this project, learning will occur for all participants: <university> students will improve their teaching and learning skills through authentic teaching; youth will learn about the environment and develop life skills; Master Gardeners will learn about educational programming; the course design will engage students in integrated teaching experiences, service learning, and address community needs. This type of structured experiential program can be utilized by all university educators to give students access to a realistic population outside of the classroom and fill a need within the community. It is important that educators continue to strive to connect student learning with community involvement.

Cost/Resources

Potential partners for this program include school gardens, local garden clubs, Master Gardeners, local nurseries, agricultural stores, and Farm to School and afterschool programs. Funding for this project was acquired through a <university> instructional innovation grant to purchase JMG leader and youth guides, food, and educational supplies. However, many of the JMG activities can be conducted with a limited budget using copies of activities and local resources.

References

Children, Youth and Environments Center for Research and Design. *Benefits of gardening for children: Fact sheet #3.* University of Colorado at Denver and Health Sciences Center. Retrieved from: http://www.childrenandnature.org/downloads/CYEfactsheet3gardening2009.pdf

Junior Master Gardeners. (2013). Retrieved from http://www.jmgkids.us/index.cfm

Lekies, K, Eames-Sheavly, M., & Wong, K. (2006). Encouraging youth participation through children's gardening consulting. *Journal of Extension* [Online], *44*(6) Article 6IAW3. Available at: http://www.joe.org/joe/2006december/iw3.php

McAleer, P. (2005). *A national survey of master gardener volunteer programs*. CSREES. Retrieved from: http://www.csrees.usda.gov/nea/plants/pdfs/survey_master_gardener_programs.pdf

National Gardening Association. (2013). *Why youth gardens?* Retrieved from: http://www.nationalgardenmonth.org/index.php?page=educators

Phelps, J., Hermann, J., Parker, S., & Denney, B. (2010). Advantages of gardening as a form of physical activity in an after-school program. *Journal of Extension* [Online], *48*(6) Article 6RIB5. Available at: http://www.joe.org/joe/2010december/pdf/JOE_v48_6rb5.pdf

Welsh, D., Whittlesey, L., Seagraves, R., Hall, G., & Harlow, M. (1999). Junior Master Gardeners program addresses youth needs. *Journal of Extension* [Online], *37*(3) Article 3IAW1. Available at: http://www.joe.org/joe/1999june/iw1.php

Innovative Idea Poster

Launching Agricultural Education Programs for At-Risk Students

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Launching Agricultural Education Programs for At-Risk Students

Introduction

Since 2001, the *No Child Left Behind Act* has driven educational reform for students at-risk, including those who are socioeconomically challenged and minority groups (Fusarelli, 2004). This student population has been called "at-risk" or "disadvantaged" interchangeably as a group of students who, because of demographic factors, are at a greater risk of dropping out or failing in the educational system (Natriello, McDill, & Pallas, 1990). Studies have shown that there are many strategies which have an impact on at-risk student retention and academic success. Among these strategies are the increase of hands-on learning (Dewey, 1916; Resnick, 1987), allowing students to develop self-directed learning objectives (Jones, Rasmussen, & Moffitt, 1997), and participation in school activities outside of class time (Finn, 1989; Horn & Adelman, 1998). The hands-on classroom and laboratory activities, student guided Supervised Agricultural Experience (SAE) programs, and leadership activities outside of school with FFA membership, make agricultural education a natural fit to improving at-risk student retention and academic performance. However, research shows that minority and other at-risk populations are often underrepresented in agricultural science classes (Bowen, 1987; Luft, 1996; Talbert & Larke, 2005). Agriculture classes are often seen as high-quality instruction in applied sciences (Balschweid, 2002; Osbourne & Dyer, 2000). Embracing and implementing agricultural education programs in magnet high schools serving at-risk populations may have positive impacts on student retention, academic competency, and school engagement.

Methodology

The purpose of this poster is to share the experiences of implementing an agricultural education program at a magnet high school for at-risk students in [State] to increase retention, academic competency and school engagement.

In 2011, the district alternative high school built a greenhouse and offered a greenhouse management class one class period a day. During the spring of 2012, the principal approached the district Career and Technical Education Director to hire an experienced full-time agriculture science teacher to implement a full scale agricultural education program at the school for the 2012 – 2013 school year. The school schedule was modified and science credit was available to students enrolled in Animal Science I, Agricultural Science 1, Plant and Soil Science 1, and Natural Resource Science 1. In the summer of 2012, the new agriculture instructor taught an agriculture-based summer school course and began identifying students who needed science credits for graduation. Strong emphasis was placed on developing student SAE programs, most of which came through the school greenhouse and garden, along with providing the opportunity for students to raise turkeys at the district animal lab. All students were able to have a school-initiated SAE. Additional emphasis was placed on chartering an official FFA chapter and building strong leadership oriented activities. The FFA chapter utilized the affiliated dues system established by National FFA in order for all students in an agriculture course to become FFA members.

Results to Date / Implications

Students who have been enrolled in the agriculture program at this school have shown a dramatic increase in school engagement, academic grades, and attendance according to school guidance counselor monitoring. The school guidance counselors have monitored "active FFA members" from a list provided by the agriculture teacher and estimate that these students have approximately 25% fewer absences than their non-FFA member peers. Data also suggests that students in the agriculture classes are more engaged in learning other classes, and have had a reduction in behavioral interventions. The enrollment in the agriculture classes is currently 40% higher than the other classes offered at the school, with all agriculture classes operating at full capacity. Other faculty members are noting that hands-on agriculture classes has had a positive impact on the mastery of concepts in math, English, and science courses.

Feedback from students, parents and administrators has also been very positive. In relation to learning in the agriculture classroom, one student said, "one of the reasons I didn't learn in my old high school is that nothing applied to my life, in my ag classes, math, science and even English make more sense; my GPA is increasing." Allowing students to have control over learning is helping to build self-esteem and positive life-skills. A student remarked, "If I'm honest, I have no support at home, in ag classes I felt like I was somebody, and could do something important, like raise my turkey." The students who were performing well had the chance to attend the [State] FFA Leadership Conference. After the conference, one of the participants said, "going to FFA activities let me see that there are kids out there who can have a good time, without doing something illegal." Administrators have commented that students who are in the agriculture program are excelling at a rate that is exceeding their expectations based on previous interactions with individual students.

Future Plans / Advice to Others

After a one-year pilot of the program, the decision has been made to continue offering a full schedule of agriculture classes at the school. Plans have also been suggested to expand the agriculture department to include an additional half day schedule of classes. An idea for future expansion of this concept is to hire a "mobile" agriculture teacher to work with an agricultural education program at each of the district self-contained behavioral units. To replicate the success of this program, it is suggested that the agriculture teacher selected for implementation be a veteran teacher with experience in program development and strong classroom management skills. Additionally, other districts should consider adding an agriculture program to their at-risk or alternative schools.

Costs / Resources Needed

The costs associated with the implementation of this program are no more than the costs to start any other agricultural education course. Cost of teacher salary is defrayed by the use of a school allotted teacher salary. Upon startup, the program budget included $1500 for FFA chapter paraphernalia and a chapter set of FFA jackets, and a classroom supply budget of $500. A school district awarded technology grant in the amount of $7500 was obtained to purchase computers for use in the agriculture classroom. The yearly operating budget for the costs of student travel and dues was estimated at $5000 and was paid from the profits of the school greenhouse.

References

Balschweid, M. A. (2002). Teaching biology using agriculture as the context: Perceptions of high school students. *Journal of Agricultural Education, 43*(2), 56-67.

Bowen, B.E. (1987, December). A minority perspective on minorities in agriculture. *The Agricultural Education Magazine, 60(6), 3-4.*

Dewey, J. (1916). *Democracy and education.* New York, NY: MacMillan.

Fusarelli, L. D. (2004). The potential impact of the No Child Left Behind Act on equity and diversity in American education. *Educational Policy, 18*(1), 71-94.

Finn, J. D. (1989). Withdrawing from school. *Review of educational research*, *59*(2), 117-142.

Horn, L., Chen, X., & Adelman, C. (1998). Toward resiliency: At-risk students who make it to college (p. 53). US Department of Education, Office of Educational Research and Improvement.

Jones, B. F., Rasmussen, C. M., & Moffitt, M. C. (1997). *Real-life problem solving: A collaborative approach to interdisciplinary learning*. Washington, DC: American Psychological Association.

Natriello, G., McDill, E. L., & Pallas, A. M. (1990). *Schooling disadvantaged children: Racing against catastrophe*. New York, NY: Teachers College Press.

Osborne, E. W., & Dyer, J. E. (2000). Attitudes of Illinois agriscience students and their parents toward agriculture and agricultural education programs. *Journal of agricultural education, 41*(3), 50-59.

Resnick, L. B. (1987). Learning in school and out. *Educational Researcher, 16*(9), 13–20.

Talbert, B.A. & Larke, A. (1995). Factors influencing minority and non-minority studentstoenroll in an introductory agriscience course in Texas. *Journal of agriculturaleducation36*(1), 38-45. doi: 10.5032/jae.1995.01038

Innovative Idea Poster

Making Agricultural Research Come to Life for High School Students: A STEM Initiative for Agricultural Education

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Making Agricultural Research Come to Life for High School Students: A STEM Initiative for Agricultural Education

Introduction

All across the country, agricultural programs are facing limited budgets and the need for collaboration to assist in implementing experiential curriculum has never been greater. In (State), two high schools have found a creative collaboration that is benefitting not only the high school students but also a state supported research campus, extension service, and the community. This unique project encompasses several of the National Research Agenda's priorities, but specifically: Priority 3, Scientific Professional Workforce, and Priority 4, Meaningful, Engaged Learning (Doerfert, 2011). Through this program, students are developing skills needed to enter careers in agricultural research, and the nature of the program provides high levels of contextual student engagement. The "Strawberry Project" allow high school agriculture students to engage in hands on learning at the research campus and experiment station while being instructed by their high school agriculture teachers and world renowned researchers. These research projects involving strawberry plant trials incorporate agricultural concepts, science methodology, and math skills while teaching students valuable 21st century skills such as teamwork and problem solving. These students possess a strong STEM background and diverse range of skills suitable for employment ranging from farm positions to laboratories upon their completed agriculture class.

The incorporation of science and research is nothing new to the agricultural realm and was one of the main priorities of the Hatch Act. The Hatch Act emphasized the need for a strong relationship between those secondary high schools and experiment stations to better communicate the latest scientific information and technologies (Moore, 1988). With the recent government program, Race to the Top, and other STEM initiatives, it's imperative that agricultural education make steps to assist in this effort to prepare students who are globally competitive and critical thinkers. This strawberry collaborative research project does those things. The goals of this project included: expand students image of agricultural careers beyond production agriculture, incorporate scientific principles into high school agriculture courses, involve students in agricultural research and provide them practical experience, and utilize community resources for teaching agriculture.

How It Works

This particular project was initiated by the local state supported research station whose greenhouses were under construction. The research station used part of the local high school greenhouses to raise their strawberry plants. The students assisted in caring for the plants and then both parties decided the collaboration was equally beneficial, allowing students to be involved until the completion of the project. The researcher updated the teachers about the current research procedures that need to be done and the teachers integrated those concepts into their curriculum. The high school students participated in laboratory experiences at the research stations with the guidance of both the agriculture teachers and researchers. Students learned plant growth and physiology, plant diseases, genetics related to plant improvement, and were involved in the field trial experiments from day one, including making hypotheses, collecting data, determining results, and then developing recommendations. Through their involvement, students were exposed to possible research-based careers in the science and agricultural industry.

Results to Date

Not only were over 175 students engaged in active applied research through this project, but also the teachers were provided with continuous professional development regarding the latest technologies and science techniques. The emphasis on conducting scientific agricultural research that benefits the agriculture industry permitted students to be involved in every step of the process. Students enjoyed this “non-traditional” method of learning in a real world environment about plant physiology, plant varieties, nutrition, disease prevention, scientific methodology, math concepts, and research aspects. Students interviewed appreciated the opportunity to be exposed to new agricultural/science related jobs. They also discussed how the reinforcement of science concepts in the agriculture class helped them gain a better understanding. Research conducted by Myers and Washburn (2008) found that integrating science and agriculture concepts together increased student understanding and their problem solving abilities, supporting the statements made by the students concerning the strawberry project. Another study by Chiasson and Burnett (2001) found that high school students enrolled in an agriscience course scored significantly higher on the science portion of Graduate Exit Exam compared to those students who had not taken an agriscience course. These two studies support the positive impacts made by the incorporation of science into the agricultural curriculum.

In addition to the learning outcomes, students were also involved in a service learning project. Strawberries not used for the experiment were collected and donated to the local mission to be distributed to the needy families in the community. Students take pride knowing that their class work is also benefitting the community.

Future Plans/Advice to Others

This strawberry project will continue this year, but has also expanded to include additional school-based research projects that involve experiments on container grown tomatoes in four high schools in the county. Each school is looking at a different horticultural practice to discover the best practice for producing quality fruit. This collaborative project is continuing to engage more students and agriculture programs with its unique integrated approach. It is hoped that this project will serve as a model for more high schools and state supported research stations. Currently, meetings with other experiment stations are taking place to discuss collaborative opportunities with agriculture programs across the state. By sharing the strawberry project experiences with others, duplicate programs can be designed and implemented to focus on horticultural crops for that area. There is also discussion to include more science classes as well as the Advanced Placement Statistics classes to provide them with the hands on skills related to their particular subject. The integration of science and research into these courses will help students be successful in their high school career and future.

Costs/Resources Needed

There are no costs associated with this project due to the close proximity of the research station to the high schools. Typically, the schools budget does include the use of activity buses to transport students to lab activities and other curriculum related events. Access and proximity to research stations also play a key role in the implementation of this project. The research station provides the resources for the experiments. In the strawberry project, the school greenhouses were used until the greenhouses on the research campus were completed which could have resulted in some costs.

References:

Chiasson, T. C., & Burnett, M. F. (2001). The influence of enrollment in agriscience courses on the science achievement of high school students. *Journal of Agricultural Education, 42*(1), 61–71. doi: 10.5032/jae.2001.01061

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015.* Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Moore, G. E. (1988). The Involvement of the agricultural experiment stations in secondary vocational agricultural, 1887–1917. Agricultural History, 62(2), 154–166.

Myers, B. E., & Washburn, S. G. (2008). Integrating science in the agriculture curriculum: Agriculture teacher perceptions of the opportunities, barriers, and impact on student enrollment. *Journal of Agricultural Education, 49*(2), 27-37. doi: 10.5032.jae.2008.02027

Innovative Idea Poster

Performing a Lesson Plan Checkup: Utilizing the Tuning Protocol to Provide Peer Feedback for Student Teachers

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Performing a Lesson Plan Checkup: Utilizing the Tuning Protocol to Provide Peer Feedback for Student Teachers

Introduction

Student teaching is the capstone component of the pre-service teacher education program and has been described as one of the most crucial components of the teacher preparation process (Alger & Kopcha, 2009; Edgar, Roberts, & Murphy, 2011; Kasperbauer & Roberts, 2007). Several studies have indicated that the self efficacy of student teachers drops during the middle of the capstone experience, especially in the areas of student engagement and instructional strategies (Roberts, Harlin, & Ricketts, 2006; Harlin, Roberts, Briers, Mowen & Edgar 2007). Faculty members can provide learning opportunities for student teachers that best meet their learning needs. Adults learn better when they participate in activities that are directly related to their work (Knowles, 1990). Student teaching provides a framework for reflective practice that can enhance learning for the pre-service teacher. Fritz and Miller (2003) recommended that student teachers should participate in daily reflection regarding their concerns. One effective way to implement reflection is through discussion with other student teachers.
The purpose of this innovative idea poster is to explain how the Agricultural Teacher Education program at [University] utilized the tuning protocol (Easton, 1999); a formalized process for providing feedback on lesson implementation. During the 2012 spring and fall semesters, 26 student teachers from [University] participated in a midterm student teacher meeting held on campus during the seventh week of the capstone experience. Student teachers came from twenty cooperating teaching centers throughout [State] while one was located out of state and participated electronically. [University] faculty supervisors and doctoral students assisted in facilitating the tuning protocol groups.

How It Works

Two weeks prior to the scheduled midterm meeting, student teachers were asked to identify a lesson that had been previously implemented during the capstone student teaching experience to present at the midterm meeting. Student teachers were also asked to bring copies of student work from that lesson. Student teachers were trained in using the tuning protocol as developed by Allen and McDonald (1993) and conceptualized by Easton (1999). The tuning protocol provided a formalized structure for peer lesson sharing and the reviewing of student work.

Students were divided into groups of three in each meeting. The student teacher from out-of-state participated through Skype™ and an iPad. One faculty member or graduate student was assigned to each group to help facilitate the process. The protocol session was one hour in length, providing a twenty minute session for each student teacher to present and receive feedback. The tuning protocol began with a five minute presentation by the student teacher. During the presentation, the student teacher explained the context in which the lesson was implemented, how the lesson was implemented, and provided the group members with samples of student work from the lesson. Most importantly, during the presentation, the student teacher posed one or two key questions for the group to consider in framing their feedback. Group members were instructed to remain silent and take notes during this section of the protocol.

Step two of the protocol allowed group members two minutes to ask the presenting student teacher clarifying questions. These questions were asked to clarify anything that was not clear from the presentation, not for providing feedback. After the clarifying questions step, three minutes were given for members of the group to write feedback relative to the presentation and presenter's key questions.

Eight minutes were then provided for discussion of the lesson by the members of the group regarding the key questions. Group members provided feedback that was not overly judgmental or sycophantic. During the discussion, the presenter remained silent and took reflective notes. After the discussion stage, the presenter was given two minutes to reflect and share thoughts regarding the discussion. Special attention was given to the critical feedback received pertaining to the key questions. This process was then completed for each of the remaining two student teachers in each group. Following the one hour session, a large group debriefing was completed. This debriefing session concentrated on the process as well as what was learned by the participants regarding reflective practice.

Results

Student teachers who participated in the tuning protocol session at the midterm student teacher meeting were able to receive critical feedback from their peers regarding lesson design and implementation. Up to this point of time in their capstone experience, student teachers had only received feedback from their cooperating teacher and university supervisors. Several students shared during the debriefing session that it was refreshing to receive feedback from their peers. One student teacher stated, "I was glad to get constructive feedback on my lesson from another student teacher. She understood where I was coming from."

Future Plans and Recommendations

Each semester the class of student teachers will participate in a tuning protocol activity at the midterm student teaching meeting. To further enhance the quality of the activity, it is recommended that the tuning protocol be implemented at the pre-student teaching meeting with each student sharing the first lesson the student teacher has planned to teach at the cooperating center. This will provide student teachers with initial training in the tuning protocol process as well as provide them with peer feedback prior to implementing the lesson in their cooperating teaching center. Then during the midterm meeting when student teacher self efficacy has been identified as being the lowest in student engagement and instructional strategies (Roberts, et al., 2006; Harlin et al., 2007) the tuning protocol will have the potential to be even more effective. Faculty will be encouraged to assist student teachers in determining lessons to bring to the meeting for peer feedback through the tuning protocol process.

Resources Needed

Tuning protocol forms can be modified by faculty to fit the time frame available for student teacher meetings. These forms can be developed easily on word processing software. Numerous examples are available online and easily accessible. Adequate copies for each student teacher per group should be printed and provided at the time of the meeting. Faculty facilitators for each group are not mandatory to have a successful session, however are helpful when student teachers first learn the process.

Resources

Allen, D. & McDonald, J. (1993). Keeping student performance central: The New York assessment collection. Studies on Exhibitions No. 14. Providence, RI: Coalition of Essential Schools.

Alger, C., & Kopcha, T. J. (2009). eSupervision: A technology framework for the 21st century field experience in teacher education. *Issues in Teacher Education, 18*(2), 31-46. Retrieved from http://www.caddogap.com/periodicals.shtml

Easton, L. (1999). Tuning protocols. *Journal Of Staff Development*, *20*(3), 54-55.

Edgar, D. W., Roberts, T. G., & Murphy, T. H. (2011). Exploring relationships between teaching efficacy and student teaching—Cooperating teacher relationships. *Journal of Agricultural Education. 52(1), 9-18. doi:10.5032/jae.2011.01009*

Fritz, C. & Miller, G. (2003). Concerns expressed by student teachers in agriculture. *Journal of Agricultural Education. 44(3), 47-53. doi:* 10.5032/jae.2003.03047

Harlin, J. F., Roberts, T. G., Briers, G. E., Mowen, D. L., & Edgar, D. W. (2007). A longitudinal examination of teaching efficacy of agricultural science student teachers at four different institutions. *Journal of Agricultural Education, 48*(3), 78–90. doi: 10.5032/jae.2007.03078

Kasperbauer, H. & Roberts, G. (2007). Changes in student teacher perceptions of the student teaching-cooperating teacher relationship throughout the student teaching semester. Journal of Agricultural Education. 48(1), 31-41. doi: 10.5032/jae.2007.01031

Knowles, M. S. (1990) *The Adult Learner. A neglected species* (4e), Houston: Gulf Publishing.

Roberts, T. G., Harlin, J. F., & Ricketts, J. C. (2006). A longitudinal examination of teacher efficacy of agricultural science student teachers. *Journal of Agricultural Education, 47*(2), 81–92. doi: 10.5032/jae.2006.02081

Innovative Idea Poster

Pin It! Using Pinterest in the Agricultural Mechanics Laboratory

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Pin It! Using Pinterest in the Agricultural Mechanics Laboratory

Introduction

Pinterest, an online bulletin board, is surpassing Twitter and even Facebook in social media website popularity (Falls, 2012). A hit among hobbyists and do-it-yourselfers, Pinterest is an online storage space for crafts, recipes, and ideas. Individuals, after creating a profile and becoming an official "pinner", can re-pin previously posted ideas to their personal page under customized boards for future reference. According to the Pinterest website, "Browsing pinboards is a fun way to discover new things and get inspiration from people who share your interests. In addition, pinners can also upload their own ideas/projects to share with other Pinterest users.

Pinterest has been a popular education tool among elementary teachers, and often used to locate creative lesson ideas, and also share original ideas with others in the profession. However, Pinterest need not be limited to elementary teachers and can be used by agricultural educators in the secondary classroom, specifically the agricultural mechanics laboratory. This innovative idea aligns well with the American Association *for* Agricultural Education 2011- 2015 Research Priority Areas Technologies, Practices & Products as well as Efficient & Effective Programs (Doerfert, 2011).

How it Works

Agricultural educators can use Pinterest in the agricultural mechanics laboratory to search for new, unique, affordable agricultural mechanics projects that they can integrate into their curricula. The teachers are also able to share a large collection of projects with their students. The teachers can also use Pinterest as a virtual filing cabinet to store agricultural mechanics projects for future reference. The teachers are also able to upload current agricultural mechanics projects to share other teachers/professionals. The instructors also have the ability to connect with individuals within the same discipline and with similar interests. Table 1 outlines the process needed to create a Pinterest account and begin collecting projects.

Table 1.

Steps to Pinning in the Agricultural Mechanics Laboratory

Step	Activity	Description
Step 1	Create log-in name and edit personal profile.	A pinner's personal profile will be displayed when fellow pinners search for them specifically or others within their discipline.
Step 2	Follow pinners with similar interests and career objectives	Following agricultural instructors and mechanics professionals allows one to browse pins and boards most like their own and in line with their own interests.
Step 3	Create boards based on interests, subjects taught	Creating boards, or general topic areas such as "Metal Ideas", "Woodworking Projects" or "Electricity", allows the Pinterest user the opportunity to organize pins for easier access later.
Step 4	Search for project ideas	Using the search bar, Pinners can look for projects specific to their needs, such as metals, woods, welding, autos, etc.
Step 5	Re-pin project ideas for future use	Re-pinning projects to the customized boards created in step 3 allows pinners to organize and store ideas for future reference and easy access.
Step 6	Upload personal projects for other Pinners' reference	Projects completed in your own shop can be uploaded onto Pinterest and shared with other agricultural mechanics instructors.

Results to Date

The researchers have utilized the website to pin projects that fall into several content areas within agricultural mechanics. Thus far they have created the following categories within agricultural mechanics: welding, electricity, woods, and plasma cutting. The researchers have also created categories for projects that can be constructed out of pallets, horseshoes and other miscellaneous materials. In addition to those categories, the researchers have also created a category for projects that can be constructed for free which was intended to assist teachers who are on a limited budget. This category is also an excellent resource for teachers who have students from low socio-economic backgrounds who want a project of their own. This category will also allow students to explore their creativity with projects constructed out of refurbished materials thus the students are enhancing their higher order thinking skills with the adoption of these projects. The researchers also created folders for projects that fall into other content areas such as horticulture and agricultural science. Researcher #1 has pinned 419 projects and has 41 active followers. Researcher #2 has over 25 projects pinned and has 9 followers to date. The researchers were unable to locate any functions on the website that tracked the number of people who visited our project sites but did not pin the project or followed us.

Future Plans/ Advice to Others

Safety and privacy of users should always be considered when using the internet. The teachers will have to work with administrators if firewalls prevent them from gaining access to the Pinterest website. Teachers should allot at least one hour of time during the initial visit and set up of their Pinterest page. In order to navigate quickly through the website the researchers suggest using the key word search option to focus on the areas of interest desired. The researchers also highly suggest making several folders within agricultural mechanics in order to maintain an organized wall that is easy to navigate through. A study should be conducted to assess student learning objectives that could emerge from that projects being utilized.

Costs/Resources Needed

Costs associated with this educational technique are minimal. Pinterest is available at no cost to users but requires an active email address. Teachers will need internet access to access Pinterest as well as to collect projects. Additional costs may incur if smart phone technology is utilized, as individuals would be subject to additional charges from their service providers.

References

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Falls, Jason. (2012). How Pinterest Is Becoming the Next Big Thing in Social Media for Business. *Entrepreneur*. http://www.entrepreneur.com/article/222740

Innovative Idea Poster

Preparing for the transformative learning experience: Teacher candidate summative reflection presentations

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Preparing for the transformative learning experience: Teacher candidate summative reflection presentations

Introduction

Pre-service teacher credential programs across the country have independently created and implemented their own assessment systems that include performance-based approaches, focusing not only on teaching knowledge but on the application of this knowledge in practice. (Wise, Ehrenberg, & Leibbrand, 2008; Coggshall, Max, & Bassett, 2008). These assessments are based on complex and holistic views of teaching and validated professional teaching standards, and represent authentic measurement tools that are context sensitive, longitudinal, and individualized (Darling-Hammond, 2001). Integrating reflection is a key component of this assessment. The central goal of reflective teacher education is to develop teachers' reasoning about why they employ certain instructional strategies and how they can improve their teaching to have a positive effect on students. Teachers' ability to reflect on their performance precedes the likelihood that they improve their practice and see links between theory and practice (Levin & Camp, 2002).

How it Works

To fully prepare teacher candidates to have the best possible student teaching experience, teacher education faculty at [University] implemented a final presentation for the teacher candidates. The final presentation represents the final for four core teacher preparation courses conducted in the Fall semester prior to student teaching internships. The presentation was organized by three essential questions: Who do I aspire to be as a teacher? What experiential education opportunities have I engaged in to become a better agricultural educator? How am I prepared to maximize my student teaching internship opportunity? Each essential question served as a one of the three phases of the presentation described below. The presentation has a public component where all stakeholders and future teacher candidate are invited to watch. Upon completion of the public portion of the presentation, the spectators leave the room and the teacher candidate and the teacher educators review paperwork and address any concerns. Each student teacher was captured on video during their presentation and handed a copy of the recording upon completion of their presentation to use for reflection and to document activities in their professional portfolio. The three phases are: ***Phase I – Who do I aspire to be as a teacher?*** Description: The teacher candidate will present an overview of the type of teacher they aspire to be. Teacher candidate will share their fundamental beliefs and philosophy as well as evidencing their comprehension and integration of a total agricultural education program. Examples of evidence to share: Internalized Teaching Philosophy Statement; Example of a Model Program Curriculum; Example of FFA Integration; Example of SAE Integration; Comprehensive Lab Integration; Highlight Videos of Pedagogical Abilities; and Classroom Management Expectations/Consequence/Procedure Plans. ***Phase II – What experiential education opportunities have I engaged in to become a better agricultural educator?*** Description: The teacher candidate will present relative coursework, internships, study abroad experiences, and life experiences that helped prepare them to be an agricultural educator. The key is for the candidate to draw the connections from their experiences to how it will help them succeed in the agricultural education profession. Examples of evidence could be: Identification of key courses, and or assignments in courses completed at Penn State that helped the candidate feel confident for teaching; Identifying minors, certifications, or accreditations acquired to become a better agricultural educator; Examples of curriculum or professional development workshop attended while an undergraduate student; Examples of study abroad experiences that helped prepare teacher candidate to be globally competent/multi-culturally competent; Sharing of connections between other internship and life work experiences to agricultural education; and Identifying how prepared to deal with needs of a diversity of learners in both ability and background. ***Phase III- How am I prepared to maximize my student teaching internship opportunity?*** Description The teacher candidate will show evidence of planning completed to be prepared to best serve the secondary students of the cooperating center. Examples of evidence could be: Setting the context through description of the cooperating center; Evaluation of Cooperating Center; Review of Master Calendar of Experience; Review of Course of Study for Student Teaching; Presentation of Instructional Material (lesson and unit plans) and Organization System for each class; Identification of Professional Contribution to the Community of Learners; and Identification and Reflection on focused strengths as a teacher candidate entering student teaching and identification of key areas of focused improvement during student teaching

Results to Date

2013 was the fourth year of comprehensive final teacher candidate presentations. The primary addition from year one to year two was video recording the presentation to provide reflection opportunities to teacher candidates. The primary revision from year two to year three was the creation and implementation of the public presentation component. From year three to year four, clarity in the form the three essential questions was provided. Thirteen teacher candidates successfully completed final presentations at the culmination of the 2013 fall semester. Teacher candidates expressed their expressed their confidence in feeling prepared for student teaching experience and understanding of the programmatic nature of their preparation. Future cohort groups of teacher candidates have a much clearer concept of program expectations and are seeking opportunities to add to their presentation already. A secondary benefit has resulted from the invitation to key stakeholders in the teacher preparation program that now have a better understanding of what the teacher development process is.

Future Plans/Advice to Others

Future plans are to continue the Final Presentation requirement for teacher candidates to complete the teacher preparation program. Future plans include introduction of the three essential questions of the final presentation in all teacher preparation courses including the introductory orientation course. The final presentation represents the cumulative effort of teacher candidates to ensure that they are equipped to maximize their student teaching internship as a positive agent of change in communities across [State].

Costs/Resources Needed

The resources needed to conduct the Final Presentation is a meeting room large enough to hold an audience, time of the teacher educator panel, teacher candidate, and the materials teacher candidate will utilize during presentation. Other resources needed include a camera to capture the teacher candidates presentation. Equipment capable of recording, transferring recording to a DVD-RW disk, and microphones were acquired from [University] Media Commons services at no cost. Light refreshments were offered to the teacher candidates and audience members which totaled $100.00.

References

Coggshall, J., Max, J., & Bassett, K. (2008, June). *Key issue: Using performance-based assessment to identify and support high-quality teachers.* Washington, DC: National Comprehensive Center for Teacher Quality. Retrieved February 28, 2013, from http://www.tqsource.org.

Darling-Hammond, L. (2001). Standard setting in teaching: Changes in licensing, certification, and assessment. In V. Richardson (Ed.), *Handbook of research on teaching* (4th ed., pp. 751–776).Washington, DC: American Educational Research Association.

Levin, B., & Camp, J. (2002). Reflection as the foundation for ePortfolios. *Society for Information Technology and Teacher Education International Conference 2002*(1), 572-576.

Wise, A. E., Ehrenberg, P., & Leibbrand, J. (Eds.). (2008). *It's all about student learning: Assessing teacher candidates' ability to impact P-12 students.* Washington, DC: National Council for the Accreditation of Teacher Education.

Innovative Idea Poster

Public School Partnerships for Training Beginning Hispanic Farmers & Ranchers

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Public School Partnerships to Train Beginning Hispanic Farmers and Ranchers

Need for the Innovation

Changing demographics, rapidly developing technologies, and expanding global markets are a source of new challenges but also present extension programs with opportunities to contribute to improve economic, environmental, and social conditions in the U.S. This includes the spreading of valuable information to provide communities with tools on how to face these changes (Crosby and Hamernik, 2002).

The role of extension programs is to provide training to people who are interested in improving their level of knowledge about topics that will help them to solve problems in their communities (Warner et al., 1998). One strategy to respond to the decreasing in human resources and financial capital available for extension services has been the establishment of partnerships with other federal agencies, private industry, non-profit organization, and other educational institutes. The main objective of these partnerships is to serve non-traditional audiences which include various ethnic minorities such as Hispanics (Crosby and Hamernik, 2002). Partnerships with external organizations allow extension programs to optimize resources and enhance program outcomes (White and Burnham, 1995). Furthermore, the institutions involved in the partnership can benefit from the strengthening of their commitment the communities served (Kennedy, 1999).

In the case of extension and outreach programs targeting the Hispanic community, it is important to establish partnerships with institutions that are already trusted by its members. Organizations that do not have a history of immigration raids including schools, social service organizations, churches, and markets are key to targeting the Hispanic community (Olsen and Skogrand, 2009). Among the possible options, the use of public schools facilities after regular school hours improves the use of the resources and at the same time allows the school to get involved with community outreach.

These partnerships consist of using school facilities, equipment, sharing resources, volunteer assistance, mentoring information sharing, networking, recognition and public relations thus creating a greater sense of community. By implementing this kind of partnership the impact of extension and outreach programs in reaching their target population has greater potential than working alone (Mitrofanova, 2004). The key advantage to this type of partnership is that it helps to establish stronger relationships between the Hispanic community and the public school, especially the high school agriculture teacher program and teachers. Such a relationship will hopefully lead to positive increases in Hispanic participation in secondary agriculture courses and FFA activities.

How It Works

A family-based model to provide Hispanic families with training in sustainable agricultural management practices and complementary knowledge i was developed by the Beginning Hispanic Farmer and Rancher Development Program (BHFRDP) at [University]in 2011. Two partnerships between the BHFRDP and school districts in the service area we established in 2012.

The partnership with District A involved the use of the high school's facilities one evening a week during the Spring for four weeks to deliver a series of gardening and farm welding seminars. The gardening seminars were taught in Spanish by BHFRDP personnel and involved the use of a classroom and the greenhouse. The welding seminars were taught by the agriculture teacher at the school's shop with translation provided by a BHFRDP employee. Additionally, since the training offered was family based, the school cafeteria was used to conduct children's enrichment activities. Classes on gardening and welding were offered at the same time thus the family members were able to choose which class to attend.

The partnership with District B was established in the Fall and consisted of the use of two classrooms at the elementary school, one for gardening classes and one for children's enrichment activities. The school also provided a piece of land where a community garden was established. In this partnership, the high school agriculture teacher was not involved.

Result to Date

As a result of the partnerships between the BHFRDP and the two independent school districts, it was possible to offer training to 29 adults and enrichment to 12 children. Positive connections between Hispanic families and the schools were obvious as participation increased during each series of seminars. Additionally, participants from these seminars have also participated in farm tours and specialized training outside of the service area.

Future Plans

The BHFRDP is seeking additional partnerships with other schools districts that would be willing to participate. The idea would be to diversify the seminar topics and learning experiences, emphasizing livestock, forages, and fruit production as well as the continuation of workshops on gardening and farm welding with new partners. Partnerships between providers of training for beginning farmers and socially disadvantaged farmers, including but not limited to Hispanic audiences, and public schools is a wise use of the limited resources available and should be explored in other regions.

Resources

The BHFRDP is funded by the USDA-NIFA Beginning Farmer and Rancher Development Program grant; the total budget exceeds $800,000 for a three year period. Partnership schools will receive $1000 for the use of the schools facilities, $1000 for each agriculture teacher who delivers a series of four seminars and possibly $1000 for a student organization to help with the children's enrichment activities. Funding is available to fund 3-4 more partnerships during the grant period.

References

Crosby, G. and D Hamernik 2002. Exploring new opportunities for extension.CSREES.USDA Retrieved from http://www.csrees.usda.gov/about/white_papers/pdfs/exploring.pdf

Kennedy, E. 1999.University-community partnerships: a mutually beneficial effort to aid community development and improve academic learning opportunities, applied developmental science, 3:4,197-198. Retrieved from http://www.tandfonline.com/doi/pdf/10.1207/s1532480xads0304_2

Mitrofanova, Y. 2004. Building Community-Schools Relations. Retrieved from http://lancaster.unl.edu/community/articles/communityschools.shtml

Olsen, C., and Skogrand, L. 2009. Cultural Implications and Guidelines for Extension and Family Life programming with Latino/Hispanic Audiences. The Forum for Family and Consumer Issues, 14 (1). Retrieved from http://ncsu.edu/ffci/publications/2009/v14-n1-2009-spring/olsen-skogrand.php

Warner, M, Hinrichs, C., Schneyer, J. & Joyce, L. 1998. From knowledge extended to knowledge created: Challenges for a new Extension paradigm. Journal of Extension [On-line], 36(4). Available at: http://www.joe.org/joe/1998august/rb1.html

White, B. A., & Burnham, B. 1995. The Cooperative Extension system: A facilitator of access for community-based education. Washington, DC: National Institute on Postsecondary Education, Libraries, and Lifelong Learning. (ERIC Document Reproduction Service No. ED385260)

Innovative Idea Poster

Putting It In Perspective: Using the *Teaching Perspectives Inventory* as a Teaching Tool

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Putting It In Perspective: Using the *Teaching Perspectives Inventory* as a Teaching Tool

Introduction/Need

Students' reasons for choosing to pursue a career in agricultural education can be as diverse as the industry of agriculture itself. Nonetheless, often when pre-service teachers are asked about their motivation, it seems that general themes emerge. Many students indicate they are passionate about the content area of agriculture, wish to educate the misinformed/uneducated about the importance of agriculture, or perhaps, were influenced by a parent, teacher, or FFA officer. Others mention the desire to provide youth leadership development for students involved in the FFA and make a difference in the lives of others.

However, many pre-service teachers struggle to move beyond those typical themes when initially charged with developing a statement of their teaching philosophy. Without a doubt, articulating a teaching philosophy is a difficult task for some veteran agricultural educators. Imagine facing that task as a freshman or sophomore in college… Where to begin? Perhaps, by first exploring basic "teaching perspectives" that incorporate actions, beliefs and intentions related to teaching, the task won't seem so daunting.

According to Pratt, Collins, and Selinger (2001),

> People unfamiliar with the concept of 'perspectives' sometimes confuse them with 'teaching styles' or even 'teaching methods', but perspectives are more fundamental and penetrating. It is important to note that no perspective is either good or bad, and that excellent forms of teaching can occur within each of them – as can poor teaching (p. 2).

To introduce students to the concept of teaching perspectives and provide a user-friendly resource for self-analysis and reflection, the *Teaching Perspectives Inventory* (TPI) was utilized as a teaching tool with agricultural education students enrolled in a foundational Career and Technical Education course.

How It Works

The *Teaching Perspectives Inventory* is a 45-item instrument designed to help current or future teachers identify the perspective, or "lens" through which they view teaching. Specifically, the TPI utilizes a 5-point Likert-type scale to assess an individual's actions, beliefs, and intentions related to teaching. Once completed, a personalized report is produced which identifies an individual's dominant teaching perspective(s). There are five potential perspectives, each listed and further defined below:

<u>Transmission</u>: Effective teaching requires a substantial commitment to the content or subject matter.

<u>Apprenticeship</u>: Effective teaching is a process of socializing students into new

behavioral norms and ways of working.
Developmental: Effective teaching must be planned and conducted "from the learner's point of view."
Nurturing: Effective teaching assumes that long-term, hard, persistent effort to achieve comes from the heart, not the head.
Social Reform: Effective teaching seeks to change society in substantive ways.
(Pratt and Collins, 2013)

Since 2009, the TPI has been utilized in some capacity with students enrolled in the foundational Career and Technical Education course. However, in Fall 2011, the inventory was utilized in a more extensive and structured manner. Students were asked to complete the inventory and bring a printout of their individualized results to the third class session. To encourage completion, the assignment was included on the course syllabus, a handout was provided in class, and one email reminder was sent. In class, students were then placed into small groups consisting of three to five students based upon their dominant perspective(s) identified by the TPI. Each group was provided with a list of questions to discuss. The questions allowed students to agree or disagree with aspects of the perspective as defined in the summary printout, share relevant experiences to substantiate or refute the applicability of the perspective, and explore how/why that particular perspective is/could be beneficial in agricultural education.

Results to Date/Implications

Small group discussions about the TPI helped students to open up and share prior educational experiences with one another early in the semester. As a result, it seemed easier for students to express factors that inspired or motivated them to teach. Even after the assignment concluded, informal feedback from students suggested that the information gained by completing the TPI was valuable, timely and relevant to the development of an initial teaching philosophy statement. Additionally, as students completed their early field experiences associated with the course, the TPI provided a consistent means of discussing and comparing the teaching approaches and styles of mentor teachers.

Interestingly, the majority of agricultural education students seem to possess one of two dominant perspectives: either apprenticeship or nurturing. In the Fall 2011 group of students, eight students possessed apprenticeship as the dominant perspective, eight possessed nurturing and two possessed both. A small number of students' results from 2009 and 2010 indicated an alternate dominant perspective, however this trend seems to provide for engaging discussion as to why certain perspectives may be more common among agricultural educators.

Future Plans

Course instructors intend to continue the use of the TPI. However, additional efforts will be made to incorporate and refer to the perspectives throughout the semester. Additionally, it may be beneficial or interesting to have the students complete the TPI again, as their degree programs progress. Realizing that a great deal of change, growth, and development occurs throughout the college experience, it would be interesting to see if (or how) teaching perspectives changed.

Cost/Resources Needed

No cost is associated with using the *Teaching Perspectives Inventory* as a teaching tool because the instrument is easily accessible and available free on the Internet (http://teachingperspectives.com/drupal/take-survey). Students must have technology available to complete the inventory online, either in or outside of class, and have access to a printer to print individualized results and summaries. Class time should be allotted for discussion of the various perspectives and their implications on teaching agriculture. Students should be encouraged to consider how their primary teaching perspective(s) may influence their teaching philosophy, affect teaching strategies, techniques and approaches, and ultimately, impact student learning.

References

Pratt, D. D., & Collins, J. B. (2000). The teaching perspectives inventory (TPI). *Retrieved from:* http://graduatestudenthelp.com/DLOFALDWEBSITE/academic/FacultyDevelopmentDocuments/FivePerspectivesonTeaching.pdf

Pratt, D. D, & Collins, J. B. (2013). Interpret: Review the five perspectives. Retrieved from: http://teachingperspectives.com/drupal/tpi/summary-five-perspectives#

Pratt, D. D, & Collins, J. B. (2013). Interpret: Review the five perspectives. Retrieved from: http://teachingperspectives.com/drupal/tpi/ten-simple-steps-interpreting-your-tpi-profile

Pratt, D. D., Collins, J. B., & Selinger, S. J. (2001). Development and use of the teaching perspectives inventory (TPI). In *American Educational Research Association Annual Meeting, Seattle, WA.* Retrieved from: https://facultycommons.macewan.ca/wp-content/uploads/TPI-online-resource.pdf

Innovative Idea Poster

Reaching Adult Learners through Educational Games: A Focus on Integrated Pest Management Applications

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Reaching Adult Learners through Educational Games: A Focus on Integrated Pest Management Applications

Introduction/Need for Innovation

Integrated pest management (IPM) is not a new concept in the realm of crop pest control or agriculture education. With the advent and cultural adoption of higher yielding cropping systems, new agriculture technologies, and an inflated demand for agriculture products, there is a great need for understanding and utilization of IPM strategies (Peshin & Dhawan, 2009). IPM is defined by the United States Department of Agriculture (USDA) (2012) as “the implementation of diverse methods of pest controls, paired with monitoring to reduce unnecessary pesticide applications” (par. 1). The importance of IMP education and adoption has been well documented across the United States, but adoption of IMP practices has been slow; due in part to negative farmer perceptions and lack of understanding of IMP strategies (Dingha, Salifu, & Ojumu, 2009; Malone, Herbert, Pheasant, 2004; Robertson, Zehnder, & Hammig, 2005; Tackie, Jackai, Ankumah, Wilen, Lazaneo, Parker, 2011). Giles and Walker (2009) point to the Extension Service as the primary educator of both farmers and the public of IPM methods and strategies. Extension and agriculture educators must find appropriate techniques to instill a practical understanding of IPM strategies (Peshin & Dhawan, 2009). Many tools ranging from educational posters to interactive websites have been developed to teach this complicated subject (Infante-Casella, Nitzche, Ingerson-Mahar, & Holmstrom, 2003; Resel & Arnold, 2010); however, there is still a lack of IPM knowledge and slow adoption of IPM practices. Wilen, et al. (2011) found that the general public has little knowledge of IPM. Tackie, et al. (2009) discovered that farmers lacked understanding of IPM techniques.

IPM Rummy and *Pests versus Beneficial Insects* are two innovative, interactive, educational activities developed to teach IPM content, develop IPM strategic analysis skills, and reinforce IPM information. Birkenholz (1999) emphasized the effectiveness of using interactive discussions, games, and simulations when the overall goal of the teaching method is to challenge assumptions and improve the adoption of a new practice. McKeachie (2002) noted that educational games are effective tools to promote problem solving and useful when getting the learners to challenge their own ideas and opinions. Kumar and Lightner (2007) noted that interactive games enhance the adult learning environment when the game had a direct relationship to the content, clear instructions, and encourage interaction among the students. Freitas (2006) found that when interactive games were used, students reported that the games and simulations made the material more fun, increased motivation to learn, inspired them to complete the program, encouraged interactive collaboration among learners, and overall positively affected the learning experience and retention of the information.

How it Works

The interactive, educational games, *IPM Rummy* and *Pests versus Beneficial Insects*, provide an innovative, nonthreatening opportunity for students to learn and apply IPM knowledge and strategies. Ota, DiCarlo, Burts, and Laird (2006) recommend that Extension educators utilize multiple teaching methods, including educational games, when teaching adult learners.

IPM Rummy encourages student participation, application of IPM content, and employs IPM management strategies. *IPM Rummy* is a modified rummy card game that utilized IPM specific playing cards. Each playing card contains a specific IPM control strategy. Examples include are trap crops, controlling nutrient levels, cultivations, pesticide application, biological control, and so on. The class is split into groups, a deck of IPM control strategy cards are given to each group, and a scenario of a crop affected by disease, pathogen, insect, weed, or a combination of these pests is then presented to the class. Each player evaluates his or her hand and chooses which control strategies best fits the scenario. On their turn, the player must either draw one card from the top of the discard pile or draw one card from the stack. The player must then evaluate and compare their control strategies to the scenario presented, and discard the least appropriate control strategy card. The goal is to create the best “hand” for control of the pest presented in the scenario. *IPM Rummy* encourages the transfer of learning of IPM management skills and strategies by allowing for discussion, application, and reflection.

Pest versus Beneficial Insects is a synthesis and review board game. Throughout the game board, beneficial and pest insects are placed randomly. The class is split into groups; each group receives a game board, pawns, and a dice. One their turn, each student rolls the dice and moves his/her pawn. If the pawn lands on a square marked by a picture of a pest insect, the player is sent back on the game board to a square that contains a picture of a plant damaged by the pest. The player must then identify the pest and the damage that occurs via that pest. If the pawn lands on a beneficial insect square, the player advances up the game board to another designated square. To remain on that square, the player must identify the beneficial insect and answer a trivia question about that beneficial insect. Trivia questions pertain to applicable facts about the insect; what makes it beneficial, how would a gardener or farmer acquire the insect, and so on. The winner is the first person to reach the end of the game board. *Pest versus Beneficial Insects* provides an opportunity for interactive review and reflection of insect identification and management strategies associated with IPM.

Implications

These two interactive, educational games provide opportunities for student discussion and application of the material taught in IPM workshops and classes. *IPM Rummy* can be supplemented with discussion questions that encourage deeper thought into the barriers and choices associated with IPM management. Students must choose between control strategies, simulating the inevitable challenges that producers face when applying IPM techniques such as resource limitations, time limitation, and interactions between control measures. *Pest versus Beneficial Insects* provides review opportunities for students and requires the student to make connections between the insect and possible management outcomes. Each game challenges preconceived opinions of IPM management and through interactive, competition fosters and appreciation and knowledge of IPM strategies in a non-threatening manner.

Advice for Others

Interactive games, such as the two mentioned in this paper, encourage participation from even the most disinterested students. When using educational games, instructors need to take a few factors into account: the setup of the room needs to be conducive to small group learning, directions need to be clearly presented, and a connection between games and the class content needs to be established so that students recognize the purpose of the activities. Considering those factors, the two games presented are useful tools for application, review, and synthesis of IPM content and knowledge that allows for adoption of IPM practices.

Costs/Resources

The costs associated with these educational games are marginal. Printing costs are associated with both the *IPM Rummy* strategy card deck and the *Beneficial versus Pest Insects* game board. Other materials needed are multiple dice sets and markers to serve as pawns for students.

References

Birkenholz, R. J. (1999). *Effective Adult Learning*. Danville, Illinois: Interstate Publishers.

Freitas, S. I. (2007). Using games and simulations for supporting learning. *Learning, Media, and Technology, 34*(4), 343-358. doi: 10.1080/17439880601021967

Giles, K. L., & Walker, N. R. (2009). Dissemination and impact of IPM programs in US agriculture. In P. Peshin & A. K. Dhawan (Eds.), *Integrated pest management: Dissemination and impact* (Vol. 1, pp. 481-507). doi: 10.1007/978-1-4020-8990-9

Infante-Casella, M., Nitzche, P., Ingerson-Mahar, J., & Holmstrom, K. (2003). Integrated pest management poster for farm markets. *Journal of Extension* [On-line], *41*(1) Article 1TOT5. Retrieved from http://www.joe.org/joe/2003february/tt5.php

Kumar, R., & Lightner, R. (2007). Games as an interactive classroom technique: Perceptions of corporate trainers, college instructors and students. *International Journal of Teaching and Learning in Higher Education, 19*(1), 53-63. Retrieved from http://www.isetl.org/ijtlhe/pdf/IJTLHE1224.pdf

Malone, S., Herbert, D. A., & Pheasant, S. (2004). Determining adoption of integrated pest management practices by grains farmers in Virginia. *Journal of Extension* [On-line], *42*(4) Article 4RIB6. Retrieved from http://www.joe.org/joe/2004august/rb6.php

McKeachie, W.J. (2002). *MeKeachie's teaching tips: Strategies, research, and theory for college and university teachers* (11 ed.). Massachusetts: Houghton Mifflin Company.

Ota, C., DiCarlo, C. R., Burts, D. C., & Laird, R. (2006). Training and the needs of adult learners. *Journal of Extension* [On-line], *44*(6) Article 6TOT5. Retrieved from http://www.joe.org/joe/2006december/tt5.php

Peshin, R., & Dhawan, D.K. (2009). *Integrated pest management: Innovative-development process* (Vol.1) [Springer Science Media version]. doi: 10.1007/978-1-4020-8992-3

Resel, E., & Arnold, S. (2010). Electronic integrated pest management program: An educational resource for Extension and agricultural producers. *Journal of Extension* [On-line], *48*(6) Article 6IAW2. Retrieved from http://www.joe.org/joe/2010december/iw2.php

Robertson, M. J., Zehnder, G. W., & Hammig, M. D. (2005). Adoption of integrated pest management practices by South Carolina cotton growers. *Journal of Extension* [On-line], *43*(6) Article 6RIB10. Retrieved from http://www.joe.org/joe/2005december/rb10.php

Tackie, N.O., Jackai, L. E., Ankumah, R., Dingha, B.N., Salifu, A., & Ojumu, O. (2009). Integreted pest management and protection practices by limited resource farmers. *Journal of Extension* [On-line], *47*(1) Article 1RIB6. Retrieved from http://www.joe.org/joe/2009february/rb6.php

U.S. Department of Agriculture, National Institute of Food and Agriculture. (2012). *Integrated pest management*. Retrieved from http://www.csrees.usda.gov/integratedpestmanagement.cfm

Wilen, C.A., Lazaneo, V.F., & Parker, S. (2011). Does the general public relate to the term "integrated pest management"?. *Journal of Extension* [On-line], *49*(1) Article 1RIB3. Retrieved from http://www.joe.org/joe/2011february/rb3.php

Innovative Idea Poster

Red Light, Green Light: Using the Start, Stop, Continue Method for Teacher Evaluations

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Red Light, Green Light: Using the Start, Stop, Continue Method for Teacher Evaluations

Introduction

Today's college students are mainly comprised of Generation Y, defined by Oblinger & Oblinger (2005) as individuals born between 1981-1994, who desire an interactive, engaging environment of learning (Galagan, 2010). This goes along with the idea of a constructivist teaching/learning paradigm where the central focus is the student experience (Splan, Porr, & Broyles, 2011). "Students are the ones in the classroom, ASK US!" was the slogan the Boston Student Advisory Council (BSAC) used during a campaign to let student voices be heard on teacher evaluations on the secondary level (BSAC, 2012). On the post-secondary level, students do have a voice on teacher evaluations, as they are the ones evaluating the instructors for the course. The downfall to post-secondary teacher evaluations is they are given at the end of the semester. The instructors of the courses sometimes do not see the evaluations of the course until the next semester. Therefore, if instructors want to be proactive regarding their course evaluations, as Kitchel, Robinson and Jenkins (2007) and Vaughan (1981) suggests, and revise their teaching methods it may be somewhat of a challenge. Furthermore, reflection can serve as an assessment for an instructor and allows the instructor to determine what works, doesn't work, or should be changed (Bruce & Ewing, 2012). By implementing the Start, Stop, Continue method of evaluation during the mid-point of the semester, the instructor is able to reflect on the content and pedagogy they are using in their class (Bruce & Ewing, 2012) and can make adjustments as needed before the class has concluded.

How it Works

Around the mid-point of the semester, the instructor takes approximately 15 minutes of one class period for students to reflect on the class using the Start, Stop, Continue method. Three pieces of colored paper labeled start, stop, and continue (green for start, red for stop, and yellow for continue simulating a stoplight) are hung up in the room. Students are then handed Post-it notes similar to the colors green, red and yellow. Instructions are given to the students after the Post-it notes have been passed out. On the green Post-it, students are to write what they would like the instructor to start doing, the red is for students to write what they would like the instructor to stop doing, and the yellow is for students to write what they would like the instructor to continue doing. The students are asked to write their statements related to instructional strategies, classroom management, assignments or anything generally pertaining to the class. After the student has written their reflection, they are asked to stick the Post-it note to the respective labeled, colored paper on the wall. This is anonymous as students are asked to not put their name on the Post-it note. The instructor then collects the labeled, colored paper with the Post-it notes to read and reflect upon at their convenience. With the results, the instructor can revise things pertaining to the class based upon the reflections to better serve the students. This also gives the instructor time to reflect upon and revise their teaching before teacher evaluations are given since the students in the class change each semester and the students have varying learning styles.

Results to Date

The researchers have used the Start, Stop, Continue method for the past two semesters, spring 2012 and fall 2012. The classes in which this method was used were very different in nature. One class was a communications campaigns course where students were required to create a campaign for a client and the other was a digital communications course where students learned how to utilize Adobe Illustrator and Adobe Photoshop.

For the campaigns course, some things students suggested the instructor start doing were to remind students about outside class readings and give more detailed rubrics to more clearly state the expectations of the assignments. Students suggested the instructor stop giving daily quizzes and to not go so fast through the lessons in order to take better notes. Students suggested the instructor continue in-class workdays and provide examples in class. For the digital communications course, some things students suggested the instructor start doing were in-class tutorials to help them better understand the programs' tools and going into a little more depth of some aspects of the programs for students to better understand what things are and why they're used. A majority of students suggested the instructor not stop anything, but some said to stop using Pinterest as part of the class. However, several wanted the instructor to continue showing a daily infographic, holding jazz sessions (an optional, three hour outside of class review and help session) and going over major tools at the beginning of class and then letting students work through them.

These reflections allowed the instructor to reflect upon what could be done differently or tweaked for the betterment of the students. For example, some students did not like using Pinterest in the classroom; however, the instructor was using Pinterest in the classroom as part of a research project. Instead of completely stopping the use of Pinterest, the instructor tweaked the assignment so students were given more guidance by assigning certain topics or things for the students to pin and reducing the amount of pins students were required to pin in a given time period. Even though the instructor didn't fully cancel the Pinterest assignment, there was a better morale about using Pinterest since the instructor revised the assignment and gave more guidance.

Future Plans/Advice to Others

The Start, Stop, Continue method of evaluation will be continued by the instructor and encouraged for other instructors to implement. This is a great way for the instructor to allow the students to voice their opinions about the education they are receiving as well as the teaching methods which goes along with what BSAC (2012) supports. This also follows the constructivist teaching/learning paradigm which is what students want – to interact and negotiate with their learning environment in order to create understanding (Splan et al., 2011).

Resources Needed

The researcher used three pieces of paper – green, red and yellow – as well as three different colored Post-it notes per student. The cost the instructor incurred was approximately five cents per student for the paper and Post-it notes. Time is also needed to complete this activity. Approximately 15 minutes should be set aside each time this activity is conducted to allow adequate time for the instructor to pass out the Post-its, give instructions, allow the students to reflect on the Post-it and then stick the Post-it onto the respective pieces of paper.

References

Boston Student Advisory Council (2012). We are the ones in the classrooms – ask us! Student voice in teacher evaluations. *Harvard Educational Review, 82*(1), p. 153-162.

Bruce, J. A. & Ewing, J. C. (2012). Using reflection to gain insight into the student teaching experience. *NACTA Journal, 56*(1), p. 73-78.

Galagan, P. (2010). Burp, chatter, Tweet: New sounds in the classroom. *T+D,* July 2010, 26-29.

Kitchel, T., Robinson, J. S., & Jenkins, III, C. C. (2007). College of agriculture course evaluation patterns in overall value of course and quality of teaching. *NACTA Journal, 54*(1), p. 23-30.

Oblinger, D. G., & Oblinger, J. L. (2005). Is it age or IT: First steps toward understanding the Net Generation. D. Oblinger & J. Oblinger (Eds.), *Educating the Net Generation* (pp. 2.1-2.20). Retrieved from http://net.educause.edu/ir/library/pdf/pub7101b.pdf

Splan, K., Porr, C. A. S., & Broyles, T. W. (2011). Undergraduate research in agriculture: Constructivism and the scholarship of discovery. *Journal of Agricultural Education, 52*(4), p. 56-64.

Vaughan, P. R. (1981). Teacher characteristics student evaluations. *NACTA Journal, 25*(2), p. 38-39.

Innovative Idea Poster

Rolling with Leadership

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Rolling with Leadership

Introduction – Need for Idea

The development of the next generation of leaders continues to be a focal point on college campuses across the country. The role that colleges play in this pivotal task is essential to the future success of society (Astin, Astin, & Associates, 2000). Agricultural Education has played a key role in the teaching and learning of leadership on college campus over the past years (Fritz et al., 2003; Simonsen & Birkenholz, 2010). With the continued charge to aid students in developing leadership, educators are always in search of ways to assess leadership in students while making it understandable and useful to the student. Sometimes leadership instruments prove a bit cumbersome and often lack immediate practical application to those who take them. Furthermore, they may be costly, too long, require statistical knowledge to score and are difficult to interpret. Three years ago the authors set out to develop a practical leadership assessment that could be used in a group setting (classroom, small group, training session, etc.), provide immediate feedback and useful information to participants.

Methodology – How it Works

During the duration of the project two educational tools have been developed. The first tool was the Individual Leadership Factors Inventory (ILFI). Originally, the authors developed the instrument around six key leadership factors synthesized by Northouse (2010) from a review of extant literature. Northouse identified intelligence, confidence, charisma, determination, integrity, and sociability (Northouse, 2010). In addition, the authors added leadership efficacy and decision-making efficacy based on works by Northouse (2010), Avolio (2010), and Bass (1990). After 4 pilot tests and 2 factor analyses, the resulting factors shifted slightly. The current ILFI focuses on eight key leadership factors including: decision-making, impact, empowerment efficacy, communication, empathy, integrity, determination and confidence.

The second educational tool that was developed was the Individual Leadership Factors Inventory Wheel (ILFIW). The IFLIW was modeled after Dr. Robert J. Birkenholz's American Association for Agricultural Education 2012 Distinguished Lecture. Upon completion of the ILFI, students record their own scores and calculate a mean score for each leadership factor. They are then asked to plot the averages on the ILFIW. This allows for a visual representation of their leadership. Plotting of the eight factors commonly displays a wide variety of wheel-like shapes, depending on scores. The visual allows for students to see where they may have "flats" or "bubbles" with respect to the leadership factors. The ILFIW concludes with a few questions that guide the student in evaluating the results and how this information will be used to foster leadership in the future. Use of the ILFIW allows for a rich classroom discussion and opportunities for self-reflection by the student.

Results to Date

The results of the project include a one-page 40 question instrument (ILFI) that is easy to score and a one-page supplemental graphical tool (ILFIW) to depict leadership scores in eight key leadership factors. This project has been implemented in seven land grant institutions with over 900 student participants. The ILFI and ILFIW have been utilized in leadership courses, leadership academies and teacher preparation courses. Furthermore, the tools have provided a very understandable assessment of leadership based on student feedback during the development and implementation process.

The creation and dissemination of the ILFI and ILFIW hold several important implications for the profession. First, the instruments provide a low cost, valid and reliable measure which provides students with rapid feedback. The ability to quickly assess leadership factors provides students with further insight into their personal leadership and focused areas for improvement. Second, the instrument can be used to assess both individuals and groups. Currently, one of the institutions is using the ILFI as a pre and post measure to assess students' leadership development while engaged in a year-long leadership program. The results provide valuable insight into student growth in the eight key leadership factors. Program developers are then able to modify curriculum and experiences to best meet the needs of students. Evaluation with the ILFI provides programmatic feedback which can be useful as Agricultural Education continues designing and implementing leadership education programs.

Future Plans – Advice to Others

The authors plan to continue to use the ILFI and ILFIW in classes and activities. Authors are also open to sharing the tools with other educators that are interested in using the tools with students. Practice has shown that the use of both tools takes about 45 minutes with students. That time allows for the completion of the ILFI, calculation of means, plotting of means, discussion of the factors and assembly of action steps. More time can be used if the educator wishes to delve deeper into the factors. The authors recommend that once the tools are used that educators schedule time in the future as check-points to see if students have followed through with the action steps they proposed and if the wheel is "rolling smoothly". It is also recommended that the tools not be limited to use with only students in leadership courses and activities. The practical nature of the tools allows for value for all students. As mentioned above, the tools were used with students in some teacher preparation classes. Students in those classes shared multiple thoughts of how they could see these factors playing out in their future teaching careers.

Resources Needed

The use of faculty time was the main cost in this project. The development of the ILFI and ILFIW required considerable time with the multiple pilot tests and factor analysis procedures. The actual development had limited direct costs including minimal reproduction fees for the tools, statistical program for the factor analysis of the ILFI and design program for the ILFIW. For educators interested in using the tools the resources needed would be time to become acquainted with the tools, time to implement with students and minimal reproduction costs.

References

Astin, A. W., Astin, H. S., & Associates. (2000). *Leadership reconsidered: Engaging higher education in social change.* Battle Creek, MI: W. K. Kellogg Foundation.

Avolio, B. J. (2010). Pursuing Authentic Leadership Development. In Nitin Nohria & Rakesh Khurana (Eds.). *Handbook of Leadership Theory and Practice* (pp. 739- 768). Boston, MA: Harvard Business Press.

Bass, B. M. (1990). *Bass & Stogdill's Handbook of Leadership: Theory, Research, and Managerial Applications.* 3rd ed. New York: The Free Press

Fritz, S. M., Townsend, C. D., Hoover, T., Weeks, W. G., Carter, R., & Nietfeldt, A. (2003). An analysis of leadership offerings in collegiate agricultural education departments. *North American Colleges and Teachers of Agriculture Journal, 47,* 18-22.

Northouse, P.G. (2010). *Introduction to leadership: Concepts and practice* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Simonsen, J. C., & Birkenholz, R. J. (2010). Leadership courses required in agricultural teacher education programs. *Journal of Agricultural Education, 51*(3), 114-124. doi: 10.5032/jae.2010.03114

Innovative Idea Poster

Sowing the Seeds of Social Media: Lessons Learned from Teaching Producers about Social Media Technology

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Sowing the Seeds of Social Media: Lessons Learned from Teaching Producers about Social Media Technology

Introduction

The National Research Agenda Priority Area 2 states that social science research goals should address “the use of new technologies and social networking tools for communication to selected target audiences” (Doerfert, 2011, p. 17). Agricultural producers, particularly those involved with their local Extension services, are one potential audience that should be encouraged to use social networking tools for communication and marketing. Extension educators often have opportunities to facilitate the adaption of new technologies nationwide (Seger, 2011), and may be able to help producers adopt social media use through trainings and workshops.

New technologies, including social media, have changed the way Extension interacts with the current and future clientele it serves (Seger, 2011). Social media tools provide an opportunity for individuals to seek, share, and view information from a variety of sources and are available online, usually free of charge (Kinsey, 2010). The use of these tools allows organizations to engage in timely and direct contact with consumers and constituents at a relatively lower cost and higher levels of efficiency than can be achieved with more traditional communication tools (Kaplan & Haenlein, 2010). Social media trainings provided by Extension, or other agricultural organizations, can help usher producers into the digital age. However, some considerations should be made when attempting to teach social media technologies to producers who are mostly non-digital natives. Following the conclusion of two workshops aimed at addressing this goal, the researchers learned some valuable lessons regarding teaching technology to producers.

How It Works

As part of an ongoing grant provided by the USDA’s Beginning Farmers and Ranchers program, researchers conducted workshops on using social media tools in three states: Texas, Illinois, and Georgia. These workshops were intended to teach beginning farm and ranch producers how to utilize social media tools to effectively market their farms, products and/or services. Each eight-hour workshop incorporated an array of social mediums including Facebook, Twitter, Hootsuite, and WordPress. Workshops were free and voluntary, plus included lunch for participants.

Results to Date/Implications

The researchers who conducted these social media workshops learned some valuable lessons through their experiences in teaching producers about social media technologies. The researchers encourage others interested in addressing social media trainings to learn from the lessons they learned to provide a worthwhile and beneficial learning experience for their participants.

One of the most important lessons the researchers learned was that it is imperative to ensure that participants have done their homework prior to coming to the workshops. Participants for these workshops were asked to complete a series of tasks prior to attending the workshop to get them set up on the various social media sites that would be taught. Each participant was emailed a list of instructions prior to the workshop, yet many of them had not completed these tasks by the time the workshop was conducted. Many reported these emails were deleted, had not been received, or would not open. A significant amount of time in the workshop was spent addressing these issues and helping participants complete the tasks they had been asked to do ahead of time.

Another lesson learned by the researchers was to go into these trainings with extra patience. The researchers had to recognize that they were teaching technology to non-digital natives, those who are less familiar and comfortable with online tools and environments. Due to their unfamiliarity with the social media tools being taught, the participants did not pick up on these technologies as quickly or as easily as the younger, digitally native participants. Extra time and patience was required to address the needs of the participants and to allow them to become more comfortable with the social networks.

The researchers also learned that an eight hour workshop was simply too long for these groups of participants. Following lunch, which was provided, participants had a difficult time focusing. Many wanted to review what was learned before lunch, while many others were still working on accomplishing the tasks learned during the morning sessions. Even those who had kept up with the instruction were simply overwhelmed by the amount of information they were learning and seemed to check out following lunch.

Future Plans/Advice to Others

Based on the lessons learned from these workshops, researchers suggest some considerations be made when conducting social media workshops to similar audiences. First and foremost, take steps to ensure that participants have done their homework prior to attending the training workshop so that workshop time is devoted to the lessons prepared by the researchers rather than helping participants complete the tasks they were asked to do ahead of time. A suggestion to remedy this situation is following the initial email workshop organizers can call participants prior to the workshop to check on their progress with completing the tasks asked of them.

Additionally, researchers should be prepared for an onslaught of questions from and attention needed by the participants when learning the social media tools. Extra patience is needed from the researchers from the beginning to tackle these issues. Finally, the researchers suggest offering more breaks during the workshop to reduce participant fatigue throughout the day. Two breaks in the morning and afternoon sessions may help participant stay more engaged. The researchers also suggest possibly reducing the time frame of the workshop from eight hours to five or six hours.

Costs/Resources Needed

Several resources are needed to provide social media training workshops. A facility large enough for participants with Internet and computer access will be needed to host the workshop. It is also recommended that facilities have projector equipment to facilitate instruction to the group and to show examples of effective social media sites. Catering services are needed to provide lunch for participants, and refreshments, including coffee, should be provided for session breaks.

The costs of providing workshops will vary per location. Fees may be incurred for facility rental, Internet access, computer lab use, or computer rentals. Lunch and refreshment costs should also be assessed. Some locations may provide facilities, computer use, and Internet access for use at no cost.

References

Doerfert, D.L. (Ed.) (2011). *National research agenda: American Association of Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Education and Communications.

Kaplan, A.M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of social media. *Business Horizons, 53*, 59-68. doi:10.1016/ j.bushor.2009.09.003

Kinsey, J. (2010). Five social media tools for the extension toolbox. *Journal of Extension, 48*(5). Retrieved from http://www.joe.org/joe/2010october/tt7.php

Seger, J. (2011). The new digital [st]age: Barriers to the adoption and adaption of new technologies to deliver extension programming and how to address them. *Journal of Extension, 49*(1). Retrieved from http://www.joe.org/joe/2011february/a1.php.

Specialty Crop Growers Apprenticeship Program

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Specialty Crop Growers Apprenticeship Program

Introduction/Background/Need

Expanding access to nutritious homegrown food is important to the health of consumers, helps in job creation and also improving our rural economy. While $29 billion was estimated to be spent on food by Ohio consumers in 2011, about $26 billion (89%) of the food was sourced outside of the state (Meter, 2011). If Ohio residents purchased only 15% of the foods they eat at home directly from Ohio farmers, with no intermediary, this would result in $2.5 billion of new farm income for the state (Meter, 2011.) Recent research has described specialty crop growers, operations, and needs for Ohio and Kentucky. In Ohio and Kentucky, 70% of existing growers are over 50 years old and 80-85% of farms are operated by part-time growers with less than 15 acres and grossing less than $50,000 annually. Skilled labor was identified as the main barrier for moving to a full-time specialty crops farming business (Snyder & Bergefurd, 2012). Furthermore, the need for training strategies, educational programs, training development, and trainee achievement tracking were identified as gaps in the support of specialty crops growers and cooperative businesses in a 2011 USDA Specialty Crops Feasibility Study (Snyder et. al., 2011).

In response to the escalating demand for locally grown specialty crops, [State University] South Centers partnered with the Non-Profit Local Foods Network (NPLFN), local producers, and community growing projects to address the need to increase the number of specialty crop growers. An education and new growers support committee, consisting of member representatives from Extension, the [State] Cooperative Development Center, several food marketing and distribution businesses, and the United Food and Commercial Workers Union, was organized to discuss solutions to the need for more local specialty crop growers. The committee designed a program to educate and support new specialty crop growers as they enter the farming industry. As part of that plan, a Specialty Crop Growers Apprenticeship Program plan was submitted and approved by the [State] Apprenticeship Council for implementation. The U.S. Department of Labor issues the apprenticeship certificates. The pilot apprenticeship program began in April 2012 with classes in two areas of the state.

Program Design

The Specialty Crop Growers Apprenticeship Program consists of 144 technical classroom instruction hours and 2,000 hours of on-the-job-training (OJT). Apprentice applicants age 18 and older submit applications, are interviewed, and take a general skills knowledge assessment. Apprentices work at the farms of participating employer/sponsors and are paid an hourly rate of at least minimum wage for 30 to 40 hours per week until 2,000 OJT hours are completed. Related technical classroom training and lab work occurs four hours a week for nine months at two incubator farms.

The effort was coordinated by [State University] Extension Horticulture, Community and Cooperative Development Specialists, along with farm managers of four participating employer/sponsors. The apprenticeship program class work was conducted face-to-face and via distance learning using Adobe Connect technology. Online training included instruction in farm management and crop production by the Extension Horticulture Specialist and technical instruction in business and cooperative development was provided by the [State] Cooperative

Development Center Program Manager. The horticulture specialist provided instruction in research-based techniques of planning seasonal crop production, maintaining equipment and facilities, preparing growing medium for planting, harvesting and packing produce for delivery, government regulations compliance, and product marketing strategies. The online technical training included business and cooperative development related topics provided by the [State] Cooperative Development Center staff and other guest speakers regarding topics such as: safety requirements, recordkeeping, taxes, financing and loan options, land acquisition, business planning, cooperative formation, bylaws development, board of directors training, and cooperative purchasing. The online sessions were conducted twice monthly for nine months. On opposite weeks, on-site review and follow-up to the horticulture and business lessons was provided by the farm managers at the incubator farms. They conducted classroom and hands-on lab work and follow-up discussion with the participants. Upon completion of the coursework and accumulation of 2,000 OJT hours, each apprentice will receive a certificate of completion as a Journeyperson from the [State] Apprenticeship Council and the Bureau of Apprenticeship and Training, U.S. Department of Labor.

Results/Implications

The goal of this pilot apprenticeship program was to develop a training program to help meet the need for skilled growers and workers to produce local foods. At the completion of the first year pilot program, eight specialty crop grower apprentices have completed 144 hours of classroom instruction and are moving through the required OJT hours. Pilot program apprentices and cooperating growers have provided positive feedback. The pilot participants are on target to receive certificates of completion as Journeypersons from the state Apprenticeship Council and the Bureau of Apprenticeship and Training, U.S. Department of Labor at the conclusion of the course in 2013. The program coordinators are planning for enhancement of the program in 2014.

Future Plans/Advice

Plans are being made to expand the Specialty Crop Growers Apprenticeship Program to a two-year program requiring 4,000 OJT hours and 383 hours of related instruction. This approach will be more appropriate to provide adequate training to build a skilled work force. There is a plan to link with community colleges to provide related technical instruction. The program will become eligible for Title IV funding. Being partnered with community colleges will further allow the program to respond to community needs and control the cost of new curricula development.

Costs/Resources Needed

This pilot program was facilitated with time donated by Extension and the [State] Cooperative Development Center in cooperation with the Non-Profit Local Foods Network. In the pilot program, participants were not charged a fee to participate and received a salary from their employer/sponsor for their OJT hours. The employers/sponsors pay costs of wages and any benefits for the apprentices. Expenses included course materials (approximately $30 per trainee) and Adobe Connect service, which was provided by Extension. In addition to the instructional and volunteer management resources, the main requirement for this apprenticeship program is to have a working farm to serve as the incubator farm for related technical instruction and laboratory experiences. To conduct the classroom training, it requires a classroom that is Web-compatible for video conferencing via Adobe Connect or other online video conferencing system. Depending on your individual situation, additional costs may exist. For this particular program, site fees were not incurred due to availability of classroom space at no charge. Other costs included a larger time commitment and travel expenses for facilitator and participants of this program if the classroom training were to be conducted in a face-to-face classroom setting.

References

Meter, Ken. (2011). *Ohio's food systems - Farms at the heart of it all* (Report). Retrieved from Crossroads Resource Center website: http://www.crcworks.org/ohfood.pdf

Snyder, T., Fox, J., Welch, C., and Brown, M. (2011). *USDA specialty crops cooperatives feasibility study for Ohio Department of Agriculture* (Report). Piketon, OH: The Ohio State University South Centers.

Snyder, T. and Bergefurd, B. (2012). *Cincinnati food hub feasibility study* (Report). Piketon, OH: The Ohio State University South Centers.

Teachers <3 Remind101 and Students Do 2!: Using Remind101 as a Classroom Communication Tool

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Teachers <3 Remind101 and Students Do 2!: Using Remind101 as a Classroom Communication Tool

Introduction

Effective student-teacher communication is critical for success in any class (Dobransky & Frymier, 2004). Far too often, students and instructors communicate at a minimal level, and that can create major problems. One important element within a student-teacher relationship is out-of-class communication, and when levels of out-of-class communication increase, so will student learning (Dobransky & Frymier, 2004).

Today's students are digitally literate (Roberts, Newman & Schwartzstein, 2012). Many students carry multiple electronic devices and use various communication methods to make sure they are always connected to friends, events and information (Papp & Matulich, 2012). In fact, 99.8% of college students reportedly own one or more mobile phones (Truong, 2010). Furthermore, 97% of students report they use SMS as their main form of communication (Truong, 2010). Because students rely on using text messages as their primary communication tool and are moving away from e-mail in their personal lives (Lenhart, Campbell & Purcell, 2011), instructors may need to rethink the most reliable ways to stay in touch with their students (Kolowich, 2011).

While it is possible to manually send text messages to students, the process is cumbersome and involves the students giving the instructor their mobile phone number, which can lead to privacy issues (Nielson & Webb, 2011). An alternative approach is to select a group texting tool, which students can choose to opt-in if they wish to receive messages from the faculty member via SMS. This type of service can build the bridge between teacher to student communication, and allows them to stay connected no matter which devices(s) they are using. Remind101 is exactly that type of service: “A safe way for teachers to text message students and stay in touch with parents” (remind101, 2012). This idea can assist agricultural educators in developing “meaningful, engaged learning in all environments” (Doerfert, 2011, p. 21).

How It Works

Instructors can register for a free account at www.remind101.com (remind101, 2012). Each instructor is assigned a phone number, to which a student will text to subscribe. After registering a class, instructors are given a PDF with instructions they can print out or post on course websites. This makes for quick and easy sign up for both students and teachers. This is an opt-in service, which means that students have to enter a confirmation code to state that they do want to be contacted through remind101.

It's obvious that students are using mobile phones to communicate, but privacy concerns become an issue when instructors and professors are involved. Remind101 keeps phone numbers hidden so that the parties cannot see other's numbers (remind101, 2012). Once subscribed, remind101 will ask for the students’ name via text so the instructor can identify them by name only. Students may choose to receive messages via email if they prefer.

Remind101 also allows for pre-planned communication to occur. Instructors can go online to create messages and schedule them to go out at a later date/time (remind101, 2012). The message history shows when and to whom a message was sent. The available iPhone/Android app makes remind101 even more versatile since instructors can use any smart phone to send reminders on the go when a computer isn't available.

Results to Date

Remind101 was implemented in two agricultural communications courses and one student organization at [two southern institutions]. Registering for the remind101 class list was optional and Table 1 describes the level of participation in each of the student groups.

Table 1. *Student Participation in Remind101 Class Lists*

Group	Total Student	Remind101 Students	%
[Upper-level design course]	26	20	76.9
[Upper-level writing course]	30	25	83.3
[Student organization]	25	23	92.0

The class instructors and organization adviser used remind101 to send messages to students with reminders and announcements. Below are a few example messages sent to the students:

> [Instructor 1]: Flyer 2 peer review during class today. Bring your first draft (as complete as possible) to class and be ready to give and receive feedback.
>
> [Instructor 2]: Remember: No class. Career Fair today. 12:30-4:30 GIA. Take copies of your amazing new résumé. Research the cos. before you talk to them
>
> [Organization]: Hey guys- Don't forget to wear your polos to training today for pictures.

In an evaluation survey, students (N = 39) indicated their agreement with statements about remind101 on a Likert-type scale (1 = strongly disagree to 5 = strongly agree). Participants said they agreed they prefer using remind101 to communicate (M = 4.49, SD = .72) and they wished more instructors used the service (M = 4.62, SD = 63). When talking about remind101, one student said "It was easy to use, fast, and helped keep me on track. So far I haven't forgot about an assignment b/c of it!" Another student said "It's a nice reminder through my phone, which I have *all* the time." One student who did not opt-in to the service said, "I fear this program takes away part of the responsibility aspect of college."

Advice to Others

The following tips may help instructors who wish to use remind101:

- Instructors should post remind101 messages in other places (such as class websites) since all students may not have a phone or may choose not to opt-in to remind101.
- Instructors and students should be aware that remind101 messages are part of a one-way conversation. Students would like to respond to text messages, but cannot via remind101.
- Instructors are unable to send remind101 messages directly from the SMS application on a cell phone. Rather, an instructor must log into the remind101 website or use the iPhone/Android application.
- Instructors must keep their messages brief and stay under 140 characters, which is the message limit for non-iPhone users.
- This service is not only for homework updates or reminders. Instructors should get fun with it; try trivia contests, motivation, school spirit, or "fast facts" before tests/quizzes.

Costs/Resources Needed

Instructors can create a free account and send messages to up to 10 classes. Standard messaging rates do apply (remind101, 2012). Additionally, the iPhone/Android app is free to download. Pre-scheduled messaging makes the time commitment minimal.

References

Dobransky, N. D. & Frymier, A.B. (2004). Developing teacher-student relationships through out of class communication. *Communication Quarterly*, *52*(3), 211-24.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Kolowich, S. (2011, Jan. 6). How will students communicate? *Inside Higher Ed.* Retrieved from http://www.insidehighered.com/news/2011/01/06/college_technology_officers_consider_changing_norms_in_student_communications#ixzz27nRj4BM0

Lenhart, A., Ling, R., Campbell, S., & Purcell, K. (2010, April 20). Teens and mobile phones. *Pew Internet and American Life Project.* Retrieved from http://pewinternet.org/Reports/2010/Teens-and-Mobile-Phones.aspx

Nielsen, L. & Webb, W. (2011).*Teaching generation text: Using cell phones to enhance learning.* San Francisco, CA: Jossey-Bass.

Papp, R. & Matulich, E. (2011). Negotiating the deal: using technology to reach the Millennials. *Journal of Behavioral Studies in Business(4).* Retrieved from http://www.aabri.com/jbsb.html

Roberts, D. H., Newman, L.R., and Schwartzstein, R. M. (2012). Twelve tips for facilitating Millennials' learning. *Medical Teacher,* 34(4), 274-278. doi: 10.3109/0142159X.2011.613498 remind101 (2012). Remind101 is a safe way for teachers to text message students and keep in touch with parents. Retrieved from https://www.remind101.com/about.

Truong, K. (2010, June 17). Student smartphone use doubles; instant messaging loses favor. *Wired Campus*. Retrieved from http://chronicle.com/blogs/wiredcampus/student-smartphone-use-doubles-instant-messaging-loses-favor/24876

Innovative Idea Poster

Teaching Agricultural Literacy and Critical Thinking to College Of Agriculture Freshmen at Oklahoma State University using the Case Study and Debate Methods

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Teaching Agricultural Literacy and Critical Thinking to College Of Agriculture Freshmen at Oklahoma State University using the Case Study and Debate Methods

Introduction/Need for the Innovation

It has been projected that by 2050, the world's population will exceed 9 billion people, which is two to four billion people more than what exists now (Cohen, 2003). With this growing population trend, the ways in which humans make choices about their economics, environments, and culture will have huge and lasting effects on the world (Cohen, 2003). In particular, the decisions humans make going forward will undoubtedly have implications for how the world's food supply is sustained or depleted.

Recently, agriculture has been on the defense when responding to public criticisms and concerns regarding the industry. With fewer than two percent of the American population farming for a living (USDA, 2011), the American public is further removed from their food source than ever before. It is vitally important that agriculture has advocates who can assist in educating the public about the importance of ensuring a safe and abundant food supply. To accommodate this need, advocates need to be equipped better with skills in communication and critical thinking (Robinson & Garton, 2007). In a recent study, it was found that agriculture majors scored significantly lower on critical thinking dispositions than their non-agriculture major counterparts (Rhoades, Rickets, & Friedel, 2009). Therefore, a need for younger generations to develop their skills in agricultural literacy and critical thinking exists. Powell, Agnew, and Trexler (2008) stated that agricultural literacy allows people to think critically about the impact agriculture has on the economy and environment. Without well-prepared advocates, the general public and policy makers will continue to make uneducated decisions and value judgments that could have serious consequences to the agricultural industry and the world.

How it Works/Methodology

The team of researchers, who authored this paper, was involved in a course titled, "Advanced Teaching Methods" at Oklahoma State University in spring 2012. In the course, students are expected to use the lesson study method (LSM) as a means for identifying and solving a problem related "to teaching and learning in the 21st Century . . . (e.g., to help students think more critically, to teach students to solve problem, to make students aware of agricultural issues, etc.)" (Author, 2012, p. 4). LSM is designed to "bring together groups of teachers to discuss lessons that they have first jointly planned in great detail and then observed as they unfolded in their classrooms" (Fernandez, 2002, p. 393). Therefore, the researchers decided to teach agricultural literacy through use case studies and debates that focused on current issues involving agriculture. The research team designed their lessons for freshmen students at Oklahoma State University regarding the importance of using critical thinking to defend a particular side of a controversial topic that was affecting the agriculture industry at the current time. The research team decided to use agricultural literacy as its problem for the course in which LSM would be used.

Results to Date

Three iterations of lessons over distinct and pertinent agricultural issues were designed and conducted with three different sets of freshmen students who were majoring in agriculture at Oklahoma State University. Each iteration employed case study and debate as its preferred teaching methods. The first iteration focused on exposing undergraduate students (*n* = ~20) living in an on-campus, agriculture dormitory to the proposed child labor laws affecting Oklahoma. Each group was provided a case study, which set the context for the debate. They were assigned to different groups including Department of Labor, small family farms who hire young workers, corporate farms who hire young workers, children of migrant workers, and children hired previously by a farmer (not family). Each group was provided information about the proposed laws, and constructed a stance from their group's perspective using their own researched information. The two groups were then allowed time to determine their strategy and present their perspective through a debate with facilitation and questions from the team of instructors (i.e., researchers).

The second iteration focused on Monsanto and the intellectual rights on their genetically modified seeds to agriculture majors (*n* = ~20). Again, students were provided a case study that described a problem, this time in the context of genetically modified organisms (GMOs). Students were provided the stance they had to defend, either *pro-Monsanto* or *anti-Monsanto*. Both groups were given time to research their topic in favor of the position provided and then debated back and forth with time for rebuttal.

The final iteration topic was the use of gestation crates for swine to College of Agriculture student leaders (*n* = ~20). The case study focused on animal rights. Students were assigned to two groups: HSUS and farmers, with each on opposing sides of the issue. Students were asked to research and organize their stance and present it to a panel of "legislators" regarding the ethics of the use of gestational crates. After the presentations, both groups created a solution independently and presented it as a team.

After conducting the LSM, students had an increased awareness of three very critical issues concerning agriculture. Students were also motivated to research additional information regarding these topics. A *capstone* seminar, featuring three professors (experts) of the agricultural college, was hosted in which the three groups of students (*n* = ~60) came together and exhibited their efforts in a follow-up presentation, concerning the topics and stances they had been assigned previously. Students debated with the expert by delivering key points and defending their positions, as if speaking to someone (expert) with a particular bias opposite their own. Once the debate ended, the experts provided clues as to how students might communicate effectively and appropriately with a person who disagrees with them on agricultural issues.

Future Plans

The research team involved in this LSM believes the effort devoted to challenging undergraduate students to think about opposing sides of difficult issues is important and should be continued. Because plans of study across the country continue to dwindle in terms of total hours (Burris, Robinson, & Terry, Jr., 2005), adding courses is difficult. However, activities such as this one should be replicated due to its importance and cost effectiveness. Essentially, there was no cost to this project as the research team conducted the project as an assignment for class free of charge and students who participated were not required to pay for their learning because it was not associated with tuition or fees required of them normally. In the end, the research team learned more about using effective pedagogy regarding the use of the case study and debate teaching methods, and students were exposed to important agricultural literacy topics and critical thinking and received information on how to share their thoughts intellectually as agricultural advocates.

References

About Us. (2011, April 19). *United States Department of Agriculture*. Retrieved from www.crees.usda.gov/qlinks/extension.html

Burris, S., Robinson, J. S., & Terry, Jr., H. R. (2005). Preparation of pre-service teachers in agricultural mechanics. *Journal of Agricultural Education, 46*(3), 23–34. doi: 10.5032jae/2005.03023.

Cohen, J. E. (2003). Human population: The next half century. *Science, 302*(5648), 1172–1175. doi: 10.1126/science.1088665

Powell, D., Agnew, D., & Trexler, C. (2008). Agricultural literacy: Clarifying a vision for practical application. *Journal of Agricultural Education*, *49*(1), 85-98. doi: 10.5032/jae.2008.018598

Rhoades, E. B., Ricketts, J., & Friedel, C. (2009). Cognitive potential: How different are agriculture students. *Journal of Agricultural Education, 50*(3), 43-55. doi: 10.5032/jae.2009.034355

Robinson, J. S. (2012). *Advanced methods of teaching agriculture* (course syllabus). Department of Agricultural Education, Communications and Leadership, Oklahoma State University, Stillwater.

Robinson, J. S., & Garton, B. L. (2008). An assessment of the employability skills needed by graduates in the college of agriculture, food and natural resources at the University of Missouri. *Journal of Agricultural Education, 49*(4), 96–105. doi: 10.5032/jae.2008.04096

Innovative Idea Poster

Teaching by Tweeting: Using Social Media as a Teaching Tool in Agriculture Education

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Teaching by Tweeting: Using Social Media as a Teaching Tool in Agriculture

Introduction

Agricultural illiteracy is a growing trend in the United States today with less than two percent of the public receiving formal education in agriculture (Frick, Kahler, & Miller, 1991). Swan and Donalson (1970) point out that many misconceptions existing about farms, plants, animals, and other agricultural concepts can be changed when people are simply taught about agriculture. Unfortunately, today's education system cannot support agricultural education for every single student enrolled, especially with the lack of qualified agricultural educators (National FFA Organization, 2011).

Undergraduate students pursuing a degree in agricultural education may one day be educators. As educators, they will be working with a generation of students who have grown up in the digital age. In order to maximize learning outlets, social media will be one tool that can be utilized in education and advocacy, both fields that combat the agricultural illiteracy issue in America. According to Tapscott (2009), the upcoming generation of learners prefers to learn and work collaboratively, anticipates fast and frequent communication, and does not make a sharp distinction between work and play or their public and private spheres. "Since students can access factual data instantly online, and since the body of knowledge in any given profession now becomes obsolete quickly, education should not focus on transmitting knowledge, but on teaching students how to learn," (Tapscott, 2009, pg. 4).

In order to prepare for educating the 'Net Generation' and combat growing agricultural illiteracy, future agricultural educators need to be practiced in social media. This particular outlet will challenge undergraduate students pursuing a degree in agricultural education to communicate about agriculture concisely, quickly, and frequently. These students will be further challenged to create social media messages that will be effective and appealing to multiple learning styles.

How It Works

Agricultural illiteracy is an issue many students hope to overcome (Frick, Kahler, & Miller, 1991). Although there are several outlets for advocacy and education regarding agriculture, social media is one of the most popular means of communications today (Tapscott, 2009). Undergraduate students pursuing a degree in agricultural education developed their own Twitter handle and used this handle for advocacy and education. Students began by watching the YouTube videos "Twitter in Plain English" (Keikocrosserekeikocr, 2011) and "Twitter Search in Plain English" (Leelever, 2009) in order to understand the terminology associated with Twitter and the process of setting up an account. Once students registered their account, they followed their classmates and began tweeting twice a day, for two weeks, with facts regarding agriculture and its association with the students' everyday lives. Since Twitter is a microblog that allows its users to express thoughts and happenings, tweeting and reading tweets is a form of dialogue from a personal, trusted source of information for the user. The majority of agricultural illiteracy stems from a lack of knowledge or non-credible sources of information (Frick, Kahler & Miller, 1991). Students not only became experts in their fields, but also were seen as a trusted source where others could seek out information regarding agriculture (Daly, 2011). After completing these tasks for two weeks, students were able to see the number of followers they had reached, the impact their tweets had, and tie these statistics back to educating in a formal setting. After identifying these statistics, students created a lesson plan or a teaching tool that could be implemented or enhanced by Twitter as a platform for social interaction and as an educational tool.

Implications

In an undergraduate agricultural education course, students' study teaching methods and learning styles. Social media is an emerging teaching method despite its reputation for being completely social (Tapscott, 2009). Students engaged in Twitter in order to advocate about agriculture in 140 characters or less. This conciseness required students to provide very clear messages to a following that sees them as a credible source. This constant stream of information allowed for followers of the students to develop an almost telepathic awareness of the student advocate similar to proprioception (Thompson, 2007).
Proprioception is the body's ability to know where its limbs are (Inverarity, 2009). "Twitter and other constant-contact media create a social proprioception" (Thompson, 2007, pg. 4). The student becomes the 'body' and has the ability to know how their followers are thinking and reacting (Tapscott, 2009). This idea has many implications in agricultural education and advocacy. Because these students will one day become educators, it is important for them to understand the reactions of their students or audience. This not only develops the student as an educator, but also develops students as a social media professional, an emerging job field in agriculture (Cohen, 2012). Finally, by reviewing the analytics of their account, the students were able to see the real-world impact their advocating had.

Future Plans/ Advice to Others

The Pearson Learning Institute is designing a study to identify how higher education students can use social media to enhance the learning process (Moran, Seaman, & Tinti-Kane, 2012). Once this study has been completed, the measurement instrument will be beneficial in assessing the impact this experiential learning project has on student learning and the classroom. Also, prior to the Twitter experience students should have a classroom discussion to assess their attitudes towards using social media as a professional and educational tool rather than just a personal and social tool. Hopefully, students who believe social media can only be used as a personal tool will reassess their assumptions and find applicable ways in which social media can be a teaching tool. This can be identified in the quality of the final product or lesson plan.

Costs/ Resources Needed

This innovative instructional method requires students to have access to the Internet or a mobile device with a Twitter application. Additionally, Internet is required to watch the two videos that set the context of the social media outlet. Finally, students will need access to a computer with presentation software for their final presentation on their social media experience and conclusions. Overall, if the technology is accessible in the classroom the overall cost will be $0.00. However, if computers, phones, and software are not accessible the costs can range from $800 to $2,500 (Coley, Cradler, & Engel, 2012).

References

Cohen, R. (2012). Top technology job trends of 2012 include social media, html5, jquery, hadoop and paas. *Forbes*, Retrieved from http://www.forbes.com/sites/reuvencohen/2012/07/31/top-technology-jobs-trends-of-2012-include-social-media-html5-jquery-hadoop-paas/2/

Coley, R.J., Cradler, J. & Engel, P.K. (2012). Computers and classrooms: The status of technology in U.S. schools. *Policy Information Report*, *1*(4), 5-61.

Daly, J. (2011). *Advocacy: Championing ideas and influencing others*. New Haven: Yale University Press.

Frick, M. J., Kahler, A. A., & Miller, W. W. (1991). A definition and concepts of agricultural illiteracy. *Journal of Agricultural Education, 32,*(2), 49-57. DOI: 10.5032/jae.1991.02049

Invararity, L. (2009). *Proprioception.* Retrieved October 15, 2012 from http://physicaltherapy.about.com/od/abbreviationsandterms/g/Proprioception.htm

Keikocrosserekeikocr. (2011). *Twitter in plain English*. Retrieved October 15, 2012 from http://www.youtube.com/watch?v=TlAqXPFX9Vk

Leelever. (2009). *Twitter search in plain English*. Retrieved October 15, 2012 from http://www.youtube.com/watch?v=jGbLWQYJ6iM

Moran, M., Seaman, J., & Tinti-Kane, H. (2012). In Hester Tinti-Kane (Chair). *Blogs, Wikis, podcasts, and Facebook: How today's higher education faculty use social media*. In *Social media for teaching and learning* (pp. 1-44). Boston: Pearson Learning Solutions.

National FFA Organization. (2011). *Who we are*. Retrieved from https://www.ffa.org/about/whoweare/Pages/Statistics.aspx

Swan, M.D. & Donalson, G.W. (1970). The agricultural educator's role in helping elementary pupils learn about agriculture. The Agricultural Education Magazine, 42,(11), 282-283.

Tapscott, D. (2009). How the net generation is changing your world. *Grown up digital*. New York: Penguin Press.

Thompson, C. (2007). How Twitter creates a social sixth sense. *Wired*, *15,*(7), 115. Retrieved from http://www.wired.com/techbiz/media/magazine/15-07/st_thompson

Innovative Idea Poster

Tennessee FFA Convention Media Vault: An Agricultural Communications Service and Public Relations Project

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[State] FFA Convention Media Vault: An Agricultural Communications Service and Public Relations Project

Introduction

Few people can overlook the recent domination of social forms of media integration into society. For many youth, it is difficult for them to imagine being disconnected from information, their friends, or mobile devices themselves. In fact many students know “nothing other than a life with the internet, having been ‘born into a world woven from cabled, wired or wireless connectivity’ (Bauman, 2010, as cited in Selwny, 2011, p. 2). Fortunately, this new communication culture has incredible inherent formal and informal learning opportunities as well.
In Etienne Wenger’s social theory of learning, he studied the synthesis of human identity as the main foundational purpose of learning. His theory has four components: Practice, Meaning, Community, and Identity.

> *Practice* he defined as learning as doing — developing a shared perspective on the world that allows us to engage in social activities. *Meaning* emerges from learning as experience — developing an ability to experience the world as meaningful. *Community* refers to "the social configurations in which our enterprises are defined as worth pursuing and our participation is recognizable as competence" (p. 5). This community perspective places learning as belonging, relating to the social configurations in which we participate in shared enterprise. The *identity* perspective considers learning as becoming — the process by which we define who we are and how learning changes who we are (McAndrew, Scanlon, & Clow, 2010).

This poster presentation will detail an innovative agricultural communications service and public relations project that capitalizes on each of the contemporary learning components for the current generation of students.

How is Works?

[State] recently added the Agricultural Education major back to its curriculum. This addition has generated lots of energy and excitement for the [University], but the Agricultural and Extension Education program at [university] knew it had to look for opportunities to engage with the State Association of FFA if the program and its energy were going to continue. One way the program sought to engage with [State] FFA was via the Media Vault. The [State] FFA Convention Media Vault sponsored by [State] State University was established to capitalize on this new aforementioned learning culture.

Faculty and students developed the Media Vault website via WordPress, a free and opensource blogging tool and content management system. Prior to convention, the site offered important information about the upcoming event and its key players all under the auspices of the new Agricultural Education program at [University]. General news releases, state officer candidate photographs and bios, current state officer video welcomes and the occasional [University] promotional videos were uploaded to the vault prior to convention. In addition [University] Agricultural Education social media outlets were prominently integrated on the site (web address will be added here after blind review). Also prior to convention, an announcement was sent out to chapters across the state for the selection of “Media Vault Interns.” Twelve students from across the state were selected to participate in the vault at convention.

The activity associated with the vault increased at state convention. University representatives organized the interns to collect interviews from award winners and feature speakers. Twitter feeds and Facebook posts were monitored and responded to live in convention sessions. The vault was a newsroom-like atmosphere for three days producing story after story, post after post, and countless live learning opportunities. Perhaps the highlight was the live streaming of convention sessions that were accessible via the website and other social media feeds from anywhere in the world.

Results to Date

The Media Vault was extremely successful in its pilot year. Members’ accomplishments were the most viewed pieces, followed closely by feature pieces created by media vault interns. Social Media played a major part in the success of the media vault accounting for nearly half of the views. Live Streaming of the sessions was also patronized very well considering the connectivity issues experienced during the convention.
There were 24,160 views all time. There were 1,931 hits via Live Stream with 558 total views and 135.6 viewer hours. There were 10,515 referrals from Facebook and 2,289 referrals from the state association FFA website. The vault had 139 total posts including news releases, features, video reports, etc. There were over 40 comments from a dozen followers, and the most Popular Tags were *State Officer Candidates*, *News Release*, and *Session 4*.

Future Plans

The successful pilot year has led to a desire to continue the program. Future plans include accessing a hard line or Ethernet cord for Live Stream connection for increased consistency and quality at the state convention. It may also be more beneficial to staff the vault with collegiate FFA members rather than high school FFA members for improved quality of work and less micro management. A new format for the webpage to look less cluttered and which features session and convention highlights more easily viewed is also planned.

Costs/Resources

The primary cost of the program is time and effort by the university and its human resources.

References

McAndrew, P., Scanlon, E., & Clow, D., (2010). An open future for higher education. *Educause Quarterly*, 33(1)

Selwn, N. (2011). Social media in higher education. *The Europa World of Learning 2012*, Retrieved from http://www.educationarena.com/pdf/sample/sample-essay-selwyn.pdf

Innovative Idea Poster

The Experiential Learning Lab: A Pathway to Real World Experience

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The Agricultural Communications Experiential Learning Lab: A Pathway to Real World Experience

Introduction

The opportunity to gain real-world experience in industry while still in college is invaluable for students. A dilemma arises when students need experience to obtain jobs in today's market, but they have never had a job to obtain adequate experience needed to get the position they want. A study compiled by the USDA's National Institute of Food and Agriculture in 2010 reported that a significant increase in communications-related jobs will be seen over the next five years. An escalation of 28% in communication-based jobs, like public relations professionals and market research analysts, is foreseen in the coming years. Also, each year, more than 6,200 jobs in agriculture related to communications, education, and government operations are filled by professionals who are entering the workforce for the first time. To better equip students with the skills they need to compete, the hands-on and real-world dynamic of the Agricultural Communications Experiential Learning Lab (ELL) offers individuals a learning opportunity that will likely make them more marketable as they enter the workforce.

How it Works

The ELL is an entrepreneurial organization that capitalizes on the frequent requests by organizations who need agricultural communications students to perform small-scale, low-cost communications services. Clients are both on- and off-campus and include commodity groups, government agencies, and research, extension, and teaching programs on campus. Patterned loosely after the University of Florida's Center for Public Issues Education (as described by Goodwin et al., 2012) the ELL is based on Kolb's Experiential Learning model. The model includes active experimentation, concrete experience, reflective observation, and abstract conceptualization (1984). In the ELL, active experimentation is seen when student employees are assigned to take on jobs requiring skills they may have only studied in the classroom but need to put into action. The ELL provides the opportunity for students to work for actual clients on a cost-recovery basis, giving them the realistic, concrete experience in the industry they need. Students are given time to reflect on their work by meeting frequently with clients to get feedback and to report progress; they also meet at least weekly with the supervising faculty member, who is ultimately responsible for quality control on all projects. A key feature of student learning is the conceptualization involved in their work. Students must meet with potential clients to identify their needs, which are often "fuzzy" because of the client's lack of experience with public communications. From these meetings, students must then create a description of the work and consult with the supervising faculty to estimate the number of billable hours that will be required to complete the project, resulting in an estimate for the client, which, when signed becomes a working contract between the ELL and the client. Students are paid an hourly wage, and clients are charged based on total billable hours plus 30% indirect costs to pay for hardware, software, and other operating expenses. Other agricultural communication students have the option to work in the ELL for special problems course credit as opposed to hourly wages, which allows the ELL to accept a small number of *pro bono* jobs assisting both the student with experience and the client.

Results to Date

Currently in its second semester of existence, the Experiential Learning Lab has made successful strides on the path to success. Two paid undergraduate students are on staff working approximately 20 hours per week. Students thus far have begun filming and creating educational videos for the local USDA Natural Resources Conservation Service office. They have also developed promotional advertising and produced flyers, newsletters, a blog and a technical manual. After the first few months of operation, ELL clients include USDA Natural Resources Conservation Service, the Food Safety Consortium, and the college's equine and horticulture academic departments. During "lulls" in client projects, the students develop marketing and business development materials to be used in recruiting new clients to the ELL.

> *I am getting a lot of experience in InDesign, Photoshop, and Illustrator. Since I want to do something with graphic design, I really believe it will benefit me in the future. I see the lab as the connection providing clients with professional quality work at a lower cost while giving students like me experience to work with actual clients.*
>
> –Lindsey, agricultural communications junior and ELL employee

Difficulties with this project have been related mostly to finances. Establishing billing procedures that fit within the University's non-profit setting has been cumbersome but not impossible. Custom invoices and a university "service center" account were created to support the ELL's entrepreneurial approach.

Future Plans

The vision of the lab is to employ more students with hands-on experience in the industry by increasing the number of clients and maintaining a high standard of quality among the services provided. It is anticipated that in the future, potential clients will include the lab's services as they develop the outreach and teaching aspects of integrated grant projects. Another goal for the ELL is to begin to integrate applied research as a service for clients, including audience analyses, public relations and branding audits, much like the PIE Center at the University of Florida has done. In some cases, the PIE Center's research has been publishable, as in Goodwin et al.'s (2012) work. The ELL will strive to create exceptional work and student experience, which will lead to valuable research in the field of agricultural communications.

> *Hopefully, we will continue to grow and do more projects for more clients and employ more students giving them valuable experience in the field.*
>
> –Lindsey

Costs/Resources

A small initial startup fund was needed to provide hourly wages for student workers before work contract funds began to flow. A rate of $11.25 is charged per hour to the clients, which includes student hourly wages and a 30% overhead cost for equipment and other needs for the lab. Each student was supplied with a laptop computer, two monitors for layout and design, and a professional office space. These resources, especially a professional office space, were considered to be an important part of providing a “concrete experience” as highlighted by Kolb (1984) by the faculty supervisor.

References

Goodwin, J. N., Chiarelli, C., & Irani, T. (2012). Is perception reality? Improving agricultural messages by discovering how consumers perceive messages. *Journal of Applied Communications. 95*(3).

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Upper Saddle River, NJ: Prentice Hall.

United States Department of Agriculture National Institute of Food and Agriculture. (2010). *Employment opportunities for college graduates in food, renewable energy, and the environment.* (USDA award #2007-38837-18626). Retrieved from USDA website: http://www.abe.psu.edu/USDA_Employ_Op_2010_8_LREZ.pdf

Innovative Idea Poster

“The SAE Struggle”

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"The SAE Struggle"

Introduction

According to Official National FFA Manual, "An SAE is a "learning by doing" tool in agricultural education. All students are required to conduct an SAE which reflects their agricultural interests and career goals" (FFA Manual, 2011, p. 8). The FFA Manual outlines eight primary types of SAE programs with 38 different proficiency areas that students can select from (FFA Manual, 2011). The heart of Agricultural Education is the long, sustaining model that outlines classroom instruction, FFA, and SAE as the three integral components of a successful agricultural program. Dickerson (1984) indicated SAEs are basic to the advancement of successful secondary school agricultural education programs.

However, according to [state] 2011 data, the percentage of students with SAE's is 43% and the percentage of students that hold FFA membership is 58% among the total number of unduplicated students enrolled in 2010-2011 Agricultural Education courses, with both FFA membership and the number of SAE's declining from the previous year (Ag Ed Report, 2011). Retallick (2010) identified some limiting factors outlined from teacher focus groups that influenced the implementation of SAE's within their agricultural programs. These factors were: (a) changing demographics and societal attitudes, (b) mechanics and structure of schools, (c) resource availability, (d) the agricultural education system, and (e) image. Wilson & Moore (2007) identified barriers that limited the effectiveness of a SAE program, which were limited time, number of students in the program, lack of summer employment, lack of support from school administration and community, complicatedness of recordkeeping, limited availability of resources, and lack of familiarity with newer SAE categories. Several individuals have researched this area of study and have concluded that there is a need for SAE's to serve a more diverse population of students (Barrick et al., 1991; Graham & Birkenholz, 1999; Retallick & Martin, 2008; Roberts & Harlin, 2007; Steele, 1997; Wilson & Moore, 2007). So how does a career-minded agricultural educator, who lacks time and resources, promote, develop, and implement a sustaining SAE program for a more diverse population of students with different needs and career aspirations? Wow! What a mouthful, but that is what our research is revealing. To assist in answering this perplexing question, an agricultural educator has developed a handbook to assist stakeholders in comprehension of the vital components of an SAE.

When the educator began his first year of teaching, the SAE component was virtually nonexistent in his newfound program. He introduced the SAE component to his students through paper copies of the state integrated record book. A couple years later, he was selected as a "Teacher Turn the Key" recipient and was introduced to an FFA Handbook through a workshop at the NAAE Convention. When he returned home, he decided to integrate similar concepts into the development of a SAE handbook.

How it works!

The methodology behind the handbook was to give each student the tools, so they could have a successful SAE project. It was available to them through their classroom notebook as well as on-line through the classroom website on the school server. This allowed the students to have access to the handbook 24/7 and eliminate the excuses for not completing any aspect of the project. Each section of the handbook is covered in the first week of school with upperclassmen and used in the first semester with the freshman. Recently, the handbook has been added to the comprehensive parent/student handbook distributed to students at the beginning of the year.

The original handbook consisted of eight specific sections. Currently, the handbook is a 53 page document with 10 sections that have been revised over a five-year period to ensure accuracy and proper documentation for student, parent, and administrative stakeholders. The document outlines the benefits of an SAE (project/program), types of SAE's, proficiency areas, innovative ideas for students, how to finance the SAE, the record keeping component, how to complete the on-line record book, requirements of the SAE, rewards and incentives, and how to get started!

The handbook is a complete guide to assist students and parents in understanding the intricacies and perplexities of today's SAE. The document is well organized, structured, and written, so a student and a parent/guardian can understand and embrace the handbook. The instructor provides a timeline as well as documented deadlines to ensure accuracy among students and to stimulate proficiency applications. The document clusters information by section, so students can utilize the information as a reference and guide.

Results to date/implications

Since the chapter was charted in 1932 and prior to the introduction of the SAE Handbook, the agriculture program had produced 30 State Degrees recipients, one American Degree recipient, 36 section proficiency award winners, and zero State/National proficiency awards. The first version of the handbook was integrated into the program in 2005. Since that date, the chapter has experienced significant growth in the number and quality of SAE projects. The chapter has produced 20 State Degrees recipients, four American Degrees recipients, 56 section proficiency award winners, two State proficiency award winners, and one National proficiency award winner. Not only has the handbook increased the number of proficiency/degree recipients and improved the quality of projects, but it has also improved the relationship with community partners. Several students with placement record books have continued to work with their placement sites, during college or inspired the student to select this field as their career choice. Versions of the handbook have been distributed to numerous pre-service teachers as well as practicing teachers through workshops and informal encounters, plus it has been posted on the "NAAE Communities of Practice" website.

Future plans/advise to others

The agricultural educator suggests to other teachers not to reinvent the wheel, but to make the handbook work them and their program. Current plans include revising the handbook this summer as there has been recent changes in proficiency areas and degree applications, which will be reflected in the revisions. It will be resubmitted to the NAAE website, once the revisions have been completed.

Cost/resources needed

To have 100 copies of the handbook professionally copied and printed annually, it would cost about $100 or $1 per copy, but the agricultural educator buys a package of card stock for the front cover for $10 a package and buys 3 reams of paper at $4.50 a ream to reduce the cost per copy to .25 cents. The school copier is used in the process to assist in reducing expenses.

References

[state] Agricultural Education Report (2011). *Building human capital*.

Barrick, R. K., Hughes, M., & Baker, M. (1991). Perceptions regarding supervised experience programs: Past research and future direction. *Journal of Agricultural Education*, *32*(4), 31–36. doi:10.5032/jae.1991.04031

Dickerson, I. A. (1984). A reexamination of the basics in agricultural education. *The Journal of the American Association of Teacher Educators in Agriculture*, 25(1), 2-11.

Graham, J., & Birkenholz, R. (1999, December). *Changes in Missouri SAE programs*. Proceeding of the 26th Annual National Agricultural Education Research Conference, Orlando, FL. Retrieved from http://aaaeonline.org/uploads/allconferences/224899.proceedings.doc

National FFA Organization (2010). *The Official FFA manual*.

Retallick, M. S., & Martin, R. A. (2008). Fifteen year enrollment trends related to the three components of comprehensive agricultural education programs. *Journal of Agricultural Education*, *49*(1), *28 – 38.* doi:10.5032/jae.2008.01028

Retallick, M. S. (2010). Implementation of supervised agricultural experience programs: The agriculture teachers' perspective. *Journal of Agricultural Education*, 51(4), 59-70. doi:10.5032/jae.2010.04059

Roberts, T. G., & Harlin, J. F. (2007). The project method in agricultural education: Then and now. *Journal of Agricultural Education*, *48*(3), 46–56. doi:10.5032/jae.2007.03046

Steele, R. (1997). Analysis of the continuing decline in use of supervised agricultural experience (SAE) in New York State. *Journal of Agricultural Education*, *38*(2), 49–58. doi:10.5032/jae.1997.02049

Wilson, E. B., & Moore, G. E. (2007). Exploring the paradox of supervised agricultural experience: Programs in agricultural education. *Journal of Agricultural Education*, *48*(4), 82–92. doi:10.5032/jae.2007.04082

Innovative Idea Poster

The Sixth Sense…Developing an Agricultural Mechanics Laboratory Awareness

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The Sixth Sense…Developing an Agricultural Mechanics Laboratory Awareness

Introduction

The nature of the agricultural mechanics laboratory combined with the inexperience of secondary students and the proximity to dangerous equipment and chemicals creates the potential for injury (Dyer & Andreasen, 1999). Lawver and Fraze (1995) reported a 13.2% shop injury rate among students examined in an agricultural mechanics laboratory. More recently, Knight, Junkins, Lightfoot, Cazier, and Olson (2000) reported a shop injury rate of 7.1% among students in grades 7 through 12. Eighty-eight percent of these injuries involved shop equipment. Administrators believe laboratory equipment safety is primarily the teacher's responsibility (Gliem & Miller, 1993).

The agricultural mechanics laboratory presents unique safety challenges as a learning center within the secondary school system. The inherent risk of working in such a laboratory requires instructors to be trained to provide lessons that are both safe and engaging (Dyer & Andreasen, 1999). The ability to provide safe and engaging lessons can be enhanced by developing an agricultural mechanics laboratory sixth sense. This sixth sense, or heightened situational awareness, is the learned ability to observe situations and anticipate potential human hazards.

The development of a teacher's agricultural mechanics sixth sense is cross linked between two priorities of the *National Research Agenda* (Doerfert, 2011). Those priorities are: Priority 2 – new technologies, practices and products adoption decisions, and Priority 4 – meaningful, engaged learning in all environments. Supporting the national research agenda will provide useful information in the training of future agriculture teachers.

Procedures

The agricultural mechanics sixth sense is in actuality a combination of three already existent senses: vision, hearing, and smell. Star and Strickland (2007) concluded the use of video in pre-service teaching methods courses increases the ability to notice features of the classroom environment. Split-screen playback video ability provides pre-service teachers with the opportunity to see potentially unsafe behaviors of students in the agricultural mechanics laboratory that might have otherwise gone unnoticed. The following steps were used for enhancing pre-service agricultural mechanics teachers' sixth sense.

Vision

Step 1 Students teach a lesson.
  a. The lesson is video recorded for replay with split-screen technology.

Step 2 Students complete a preflection prior to watching the recorded lesson.

Step 3 Students review the video.

Step 4 Students complete a post-reflection and compare it to the preflection.

Hearing

Step 1 Students listen to a variety of shop noises.
  a. Noises include running equipment, opening of doors, cabinets, etc.

b. The session is video recorded for replay.

Step 2 Students identify the source of the noise and location.

Step 3 Students review the video.

Step 4 Students complete an evaluation.

a. Students identify shop noises while vision is impaired.

Smell

Step 1 Students are exposed to various smells that can occur in the shop.

a. Smells include flammable liquids/gasses, burning materials that are associated with improper uses or faulty equipment, etc.

Step 2 Students complete an evaluation.

a. Scenario based – given a situation, students must identify the anticipated smell.

b. Smell test - students identify the source of a particular smell when presented by instructor.

Results

It should be noted that results to date are purely anecdotal and based solely upon instructor observations. Students have demonstrated a heightened awareness of their surroundings, especially regarding the identification of potentially hazardous situations. They have become more active in alerting the instructors and other students to unsafe practices, behaviors, and equipment. In one instance, students identified a damaged hole saw blade prior to operation that could have resulted in a serious hand injury. Students have also developed a heightened awareness of sounds not typically associated with the laboratory activities of particular lessons, such as binding plywood while attempting to cut it on the tablesaw. Furthermore, they appear to police each other more frequently as they observe unsafe habits and/or situations.

Future Plans

At [State] University, this procedure will continue to be used in the pre-service methods of teaching agricultural mechanics course. Researchers will continue to observe student progress from the beginning of the course through the final evaluations in an attempt to gauge the enhancement of students' sixth sense in an agricultural mechanics laboratory. Recommendations include investigating the situational awareness levels of novice, intermediate, and advanced agricultural mechanics teachers.

Resources Needed

Resources required for this project are minimal and require only media equipment and installation. Media equipment included a multimedia video projector ($895.00), two network cameras ($1,336.04), multiple microphones ($485.30), and video/audio accessory equipment ($1,028.42). When combined with equipment installation ($1,662.38), the project cost was $5,407.14.

References

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Dyer, J. E., & Andreasen, R. J. (1999). Safety issues in agricultural education laboratories: A synthesis of research. *Journal of Agricultural Education, 40*(2), 46-54.

Gliem, J. A., & Miller, G. (1993). Laboratory safety in vocational education: An administrator's perspective. *Journal of Agricultural Education, 34*(3), 26-33. doi: 10.5032/jae.1993.03026

Knight, S., Junkins, E., Lightfoot, A., Cazier, C., & Olson, L. (2000). Injuries Sustained by students in Shop Class. Pediatrics, 106(1), 10-13.

Lawver, D.E. & Fraze, S.D. (1995). Factor analysis of variables related to student attitudes and perceptions concerning agricultural mechanics laboratory safety. *Proceedings of the 22nd annual NAAAE Research Meeting,* 463-472.

Star, J. R. & Strickland, S. K. (2007). Learning to observe: Using video to improve preservice mathematics teachers' ability to notice. *Journal of Math Teacher Education, 11*, 107-125. DOI 10.1007/s10857-007-9063-7

Innovative Idea Poster

Using an FFA Greenhand Night as an Early Field Experience

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Using an FFA Greenhand Night as an Early Field Experience

Introduction

The field of agricultural education is a unique teaching profession that includes components that other teachers and teacher education programs do no need to incorporate. Instead of just instruction, the complete agricultural education program focuses on incorporating classroom/laboratory instruction, FFA, and Supervised Agricultural Experience (SAE) (Phipps, Osborne, Dyer, & Ball, 2008). Each of these items is a vital component to a successful agricultural education program. In an attempt to prepare successful agriculture teachers, meaningful early field experience is needed. Meaningful early field experience for agricultural teachers should include a wide variety of experiences that help students begin to think as teachers (Guyton & Byrd, 2000; Carter & Anders, 1996). With such a complex blend of required components, preservice agriculture teachers need opportunities to experience these parts prior to student teaching.

Unfortunately, in some universities, including the University of [State], all of the early field experiences are offered outside of the agricultural education department. Preservice agriculture teachers are intermingled with all education majors university-wide. While this type of early field experience offers exposure to various instructional techniques and opportunities to work with students, the FFA and SAE components are not incorporated into the experience. Also, according to the American Association for Agricultural Education's (AAAE) National Standards for Teacher Education in Agriculture (2001), the early field experiences should, "provide preservice students with the opportunity to observe the intra-relationship among instruction, FFA, and SAEs as evidenced by reflection, journaling, and completion of a structured program of experience" (p. 6).

Program Phases

During the fall semester, all outgoing student teachers are enrolled in the methods course as they prepare for their student teaching experience. Also during this time, an FFA/SAE course is offered for juniors in agricultural education. The professors and graduate students sought to develop a sense of community between and within courses, as well as create an experience that focused on FFA to provide real experience in this component of agricultural education. An FFA Greenhand Night provided the perfect opportunity to provide an early field experience related to FFA for both outgoing student teachers and underclass preservice teachers.

A local school district that recently chartered an FFA chapter indicated that there was limited interest in joining the organization. During a conversation with the new FFA advisor, the idea of working together to put on an FFA Greenhand night for the incoming freshman surfaced as a great way to provide preservice teachers with FFA advising experience and a useful way to attract high school students into the agricultural education program. The Greenhand Night consisted of five stations, which were based on the requirements to receive the Greenhand degree, as outlined in the FFA Manual. The students enrolled in the FFA/SAE class were paired with at least one preparing student teacher, currently enrolled in the methods courses. The five groups of preservice students worked together to plan a ten-minute lesson that would be presented to a group of high school students. Questions were compiled from each station into a booklet that each high school student filled out as they rotated through the stations.

On the Greenhand Night, the high school students were split into five groups and rotated through the stations every ten minutes. Since there were five groups, each station of preservice teachers taught the same 10-minute lesson five times to different sets of students. Upon completion of each station, the high school students answered the questions previously written by each group as a way to gauge student understanding. All students that completed the stations and answered the questions were entered into a drawing for FFA prizes to help build enthusiasm.

All the students that completed the Greenhand Night were eligible to receive their Greenhand degree. To showcase the new group of Greenhands, each student dipped their hand in green paint and put their handprint on a poster. Each hand was labeled with the student's name, highlighting the new students who received their Greenhand degree. The poster was then hung in the school hallway to promote the FFA program. Upon the completion of the Greenhand Night, the preservice teachers reflected on the experience and identified areas of improvement and possible ways they would like to use the experience in the future.

Results

The FFA advisor, the high school students, and the preservice teachers enjoyed the Greenhand Night. The Greenhand Night aimed to provide preservice agriculture teachers with an early field experience as an FFA advisor. The night was structured so that the underclassmen could gain experience lesson planning from the student teachers and develop ideas on how the Greenhand Night could be implemented into their program in the future. As a result of this experience, some of the student teachers that were involved in the experience have implemented the idea at their student teaching sites. While the effects on the underclassmen cannot be seen until they are student teachers, the fact that the current student teachers chose to implement the idea into their experience supports the usefulness of early field experience that focus on FFA.

Future Advice

This was the first time a Greenhand Night was conducted by preservice teachers as an early field experience. It is recommended that more than one school is incorporated into the Greenhand Night if possible. The FFA chapter was very new and therefore, the number of students at each station was very small (3-4 students). While this was a manageable size to work with, more high school students would allow the preservice teachers a larger group of students to work with, which is closer to the actual experiences they will have as a student teacher or teacher. Also, a formal reflection piece is recommended. Although there was a group reflection, individual reflection by the preservice teachers on how they could implement at their student teaching site or future program could help develop new and creative ideas of implementing this FFA strategy.

Costs and Resources

The resources needed to conduct this early field experience were very limited. An FFA chapter that is locally located and willing to work with the preservice teachers is essential. The materials needed for the Greenhand Night were limited were as follows: green paint ($3); FFA Prizes: $50; Ink Pads ($10); Stamps ($15). The low cost and apparent usefulness of this early field experience make it a viable opportunity for students. Hopefully the preservice teachers took the basics from the early field experience and begin expanding as they enter the agricultural education profession.

References

American Association for Agricultural Education (AAAE). (2001). *National standards for teacher education in agriculture.* Retrieved February 27, 2013, from http://www.aaaeonline.org.

Carter, K., & Anders, D. (1996). Program pedagogy. In F. B. Murray (Ed.), *The teacher educator's handbook: Building a knowledge base for the preparation of teachers (*pp. 557-592). San Franciso, CA. Jossey Bass.

Guyton, E., Byrd, D. (Eds.). (2000). *Standards for field experience in teacher education* . Reston VA: Association of Teacher Educators.

Phipps, L. J., Osborne, E. W., Dyer, J. E. & Ball, A. (2008). *Handbook on agricultural education in public schools.* Clifton Park, NY: Thompson Delmar Learning.

Research Poster

The Perceived Benefits of Mentoring Programs on Stress Levels for Female Agricultural Education Teachers

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The Perceived Benefits of Mentoring Programs on Stress Levels for Female Agricultural Education Teachers

Introduction

The agriculture education profession has witnessed growth in the percent of women teachers. According to a 1987 study, women held 5.1% of agricultural education positions in the United States (Knight, 1987). In 2009, data shows that 53% of newly qualified teachers were female (Kantrovich, 2010). While the number of women inservice and preservice agricultural education teachers is increasing, a shortage still exists of qualified teachers to fill existing and future secondary agricultural education positions (Kantrovich, 2010). This is due to the fact that new and/or beginning teachers leave the profession early in their careers (Myers, Dyer, & Washburn, 2005). Many studies have focused on teacher attrition and indicated teachers are at risk of leaving the profession early in their careers (Kelsey, 2006; Myers, Dyer, & Washburn, 2005). Female teachers have a higher likelihood of leaving the profession than their male peers (Kelsey, 2006; Thompson, 1986). School systems have developed a cadre of strategies to address teacher attrition rates. One such strategy is mentoring programs. Mentors are described as individuals with experience who are committed to providing support to a mentee (Kram, 1985). Recent research has determined that a positive relationship exists between mentor/mentee if the program is implemented correctly (Foor, R. M., & Cano, J., 2012; Burris, S., Kitchel, T., Greiman, B. C., & Torres, R. M. 2006).

Theoretical Framework

Kirby and Grissmer (1993) explain four factors affecting their theory of teacher attrition including the development of human capital over time, the uncertainty and incomplete information available to new teachers about the true demands of the job, life-cycle factors, and circumstances that lead to involuntary attrition. While each factor plays an important role in teacher attrition, the factor of having incomplete information is most easily influenced at the pre-service level if specific items can be identified for attention. The uncertainty/incomplete information factor of the teacher attrition theory explains early attrition as resulting from new information gained about the true costs and benefits of a job compared to an alternative job and divides these characteristics into inspection characteristics, which can be observed prior to accepting a position, and specific characteristics, which are only experienced on the job (Kirby & Grissmer, 1993). By taking a broad look at the entire southeast, and identifying responsibilities that cause greater stress for female teachers, the researchers can target them and work to develop realistic expectations of pre-service teachers, and develop suitable support for teachers so as to decrease the negative impact of specific characteristics as defined by Kirby and Grissmer (1993).

Methodology

The purpose of this census study is to develop an understanding of the impact mentor/mentee programs have on a set of specific challenges female agricultural education teachers face throughout the Southeast (NAAE Region V). Specific research objectives are as follows: 1). Catalogue demographics of female teachers in the Southeast; and 2). Identify the perceived benefit of mentoring programs related to stress levels among female agricultural education teachers. The questionnaire was developed and modified from previous research on female agricultural education teachers by Foster (2001).

Participants were contacted via email with a link to an online questionnaire developed using the Dillman, Smyth, and Christian (2009) Tailored Design Method. Of the 505 teachers contacted, 423 had active email accounts. Follow-up prompts for participation were delivered at 2 week intervals. In all, 244 (58%) of the accessible population of female agricultural education teachers completed the questionnaire. The data associated with the research was analyzed using the Statistical Package for the Social Sciences (SSPS 14.0). For this study, non-response bias was evaluated by comparing early and late respondents through an independent samples t-test. Based on the findings, the sample data was determined to be representative of the population from which it was drawn

Results

Objective one sought to catalogue demographics of female teachers in the Southeast. Participant responses indicated 94% of respondents were white, 3% were Black, and 3% were Hispanic. Only 9% of respondents were less than 25 years old. The largest age category was 25-34 years (46%), followed by 45-54 years (20%) and 35-44% (19%). Master's degrees were held by the greatest number of participants (47%) followed by Bachelor's degrees (42%), Specialist degrees (9%) and finally, Doctorates (2%). The majority of participants were currently married or in committed relationship (75% combined).

Objective two sought to identify the perceived benefit of mentoring programs related to stress levels among female agricultural education teachers. Teachers were asked to indicate on a 5-point Likert scale how much stress each item caused where 1=very low stress and 5=very high stress. Ninety-two teachers indicated participating in a mentoring program. Of those, 57% indicated Preparing CDE teams was most stressful. This was followed by Preparing Proficiency Applications (55%), and Paperwork/Reports (56%). The least stressful item reported was Lack of Spousal Support (71%).

Forty-three teachers indicated never participating in a mentoring program. The most stressful item for this group was Preparing Proficiency Applications (70%) followed by Paperwork/Reports (56%), and Preparing CDE Teams (55%). The least stressful item reported was Lack of State Support (79%).

Conclusions and Recommendations

The researchers found the majority (54%) of the women were ages 34 or younger. In a study conducted by Chenevey, Ewing, and Whittington (2008), the researchers found older agricultural education teachers were less stressed than young agricultural education teachers. Perhaps the younger age of participants in this study affected the amount of stress levels reported. It is also worth noting that the majority of the female participants in this study were married (71%) with children (61%). Therefore, these women have several roles: wife, mother, and professional. As found in a study by Okpara, Squillance, and Erondu (2005), women face the challenge of splitting their time between professional and family responsibilities, which can significantly increase stress levels.

High stressors identified for both groups included completing paperwork and reports, preparing proficiency applications, and preparing CDE teams. It must be noted that 70% of teachers who didn't participate in a mentoring program identified preparing proficiency applications at the highest stressor compared to 55% of those who are/were involved in a mentoring program. These stressors have been identified in previous studies, which site excessive paperwork, working overtime, meeting deadlines, and not enough personal time as contributing to job stress (Torres, Lawver, and Lambert, 2009; Klassen & Chiu (2010). Increasing the number of mentoring programs across the region has the potential to reduce the high stress associated with preparing proficiency applications and other paperwork.

References

Burris, S., Kitchel, T., Greiman, B. C., & Torres, R. M. (2006). Beginning and mentor agriculture teachers' perceptions of psychological assistance, similarities, and satisfaction. *Journal of Agricultural Education, 47*(4), 64-75. Retrieved from www.jae-online.org/back-issues/17-volume-47-number-4-2006.html

Cheveney, J.L., Ewing, J.C., & Whittington, M.S. (2008). Teacher burnout and job satisfaction among agricultural education teachers. *Journal of Agricultural Education*, *49*(3), 12-22. doi: 10.5032/jae.2008.03012

Dillman, D., Smyth, J. & Christian, L. (2009). *Internet, mail and Mixed-Mode Surveys: The Tailored Design Method 3rd ed*. John Wiley & Sons, 2009 ISBN 978-0-471-69868-5

Foor, R. M., & Cano, J. (2012). Mentoring abilities and beliefs of ohio secndary agricultural education mentor teachers. *Journal of Agricultural Education*, *53*(1), 162-175. doi: 10.5032/jae.2012.01162

Foster, B. (2001). Women in agricultural education: who are you? *Paper session presented at the 28th Annual National Agricultural Education Research Conference*, New Orleans, LA.

Kantrovich, A. J. (2010). A national study of the supply and demand for teachers of agricultural education from 2007-2009. *American Association for Agricultural Education.* Retrieved from http: //aaae.okstate.edu/

Kelsey, K. D. (2006). Teacher attrition among women in secondary agricultural education. *Journal of Agricultural Education, 47*(3) 117-129. doi:10.5032/jae.2006.03117

Kirby, S.N., & Grissmer, D.W. (1993). Teacher attrition: Theory, evidence, and suggested policy options. *Paper presented at the World Bank/Harvard Institute for International Development Seminar on "Policies Affecting Learning Outcomes Through Impacts on Teachers"* held at Cambridge, MA.

Klassen, R.M. & Chiu, M.M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*(3), 741-746.

Knight, J. A. (1987). Current status of women teachers of vocational agriculture in Ohio and their perception of their place in the profession*. Paper presented to the National Agricultural Education Research Meeting*, Las Vegas, NV.

Kram, K. E. (1985). Improving the mentoring process.*Training & Development Journal, 39*(4), 40-43.

Lambert, M. D., Smith, A. R., & Ulmer, J. D. (2010). Factors influencing relational satisfaction within an agricultural education mentoring program. *Journal of Agricultural Education, 51*(1), 64-74. doi: 10.5032/jae.2010.01064

Myers, B.E., Dyer, J.E., & Washburn, S.G. (2005) Problems facing beginning agriculture teachers. *Journal of Agricultural Education, 46*(3) 47-55. doi:10.5032/jae.2005.03047

Okpara, J.O., Squillace, M., & Erondu, E. (2005). Gender differences and job satisfaction: A study of university teachers in the United States. *Gender in Management*, *20*(3/4), 177-190.

Thompson, O. E. (1986). Profile of vocational agriculture teachers: Trends in number, sex, preparation, and satisfaction of credential recipients. Retrieved from http://www.eric.ed.gov

Torres, R.M., Lawver, R.G, & Lambert, M.D. (2009). Job-related stress among secondary agricultural education teachers: A comparison study. *Journal of Agricultural Education, 50*(30), 100-111. doi: 10.5032/jae.2009.03100

Research Poster

Using the Texas SAE Builder Tool to Assess Current Interests and Students' Perceived Knowledge Concerning Supervised Agricultural Experiences

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Using the Texas SAE Builder Tool to Assess Current Interests and Students' Perceived Knowledge Concerning Supervised Agricultural Experiences

Introduction

According to Talbert, Vaughn, Croom, and Lee (2007), the supervised agricultural experience (SAE) is the part of agricultural education that allows students to practice in the workplace what they have learned in the classroom or laboratory. Home projects in agricultural education or SAEs have been around since Rufus Stimson began them at Smith's Agricultural School in 1908 to allow students to apply what they learned at school on their home farms (Moore, 1988). In 1917, the federal government recognized the need to link classroom instruction and supervised farming projects with the Smith-Hughes Act (Croom, 2008). In a study conducted by Ramsey and Edwards (2011), agricultural industry panelists reached consensus of agreement on 60 entry-level technical skills that should be learned by students participating in SAEs. The panelists thought that SAEs held more potential than other parts of agricultural education for students to acquire entry-level technical skills related to the Animal Science and Agricultural Communications pathways (Ramsey & Edwards, 2011).

Conceptual Framework

Even though many have noted the importance of SAE in agricultural education, participation is currently lacking and declining. Moore (1979) points out that the start of SAE decline started with the passing of the Vocational Education Act of 1963, attributing some of the cause to the wording of the act. In a study conducted by Dyer and Osborne (1995), it was stated that participation in SAE programs by teachers and students is lacking. Articles by others also mention that SAE participation is declining (Croom, 2008; Lewis, Rayfield, & Moore, 2012). Lewis et al. (2012) found that student SAE knowledge is lacking and they recommend more instruction in the area. This study examines data obtained from an interactive web based tool designed to help students identify a SAE of interest and increase knowledge on the subject. Aligning with the American Association for Agricultural Education's research priority 4, this study addresses the opportunity to respond in the area of researching agricultural education's learning environments that actively engage learning, resulting in high levels of achievement, life and career readiness, and professional success (Doerfert, 2011).

Methodology

The Texas SAE Builder was developed in August 2011 and released to agricultural education teachers. Goals of the webpage include helping students identify different SAE opportunities in each of the nine agricultural career pathways and measure perceived pre knowledge students had of SAEs before completing the SAE builder and perceived post knowledge after completing the SAE builder. Data from website usage was obtained, with N=2,096 unique logins. Descriptive statistics were obtained from ordinal data points with the use of SPSS, software for computing social science statistics.

Findings

Table 1 shows the responses Texas SAE Builder users had when using the online tool. Students were asked which pathway fits their interests, how much time they had to devote to an SAE, and how knowledgeable they perceived themselves before using the tool. Based on student interests, time available to devote to SAEs, and money they had to invest, students were recommended a SAE category to best fit their needs. After using the Texas SAE Builder tool, students were asked their perceived understanding of SAEs.

Table 1
Descriptive Statistics of Texas SAE Builder Responses (n=2,096)

	f	%		*f*	%
Pathway			Time to Devote to SAEs		
Animal Systems	933	44.6	Very Little Time	346	16.5
Power, Structural & Technical	349	16.7	2 Hours Per Week	583	27.8
Agribusiness Systems	193	9.2	5 Hours Per Week	561	26.8
Leadership/Business Skills	158	7.5	10 Hours Per Week	379	18.1
Plant Systems	139	6.6	20 Hours Per Week	115	5.5
Food Products & Processing	132	6.3	More Than 20 Hours Per Week	110	5.3
Natural Resource Systems	96	4.6	Perceived Previous SAE Knowledge		
Environmental Service Systems	47	2.2	Little Knowledge	1125	53.7
Biotechnology Systems	47	2.2	Knowledgeable	788	37.6
SAE Category			Very Knowledgeable	183	8.7
Exploratory	801	38.3	Perceived Post SAE Knowledge		
Placement	638	30.5	Still Confused	443	21.1
Research	205	9.8	Better Understanding of SAE	1187	56.6
Entrepreneurship	450	21.5	Understanding of SAE is High	466	22.2

Conclusions

According to the results of this study, the largest pathway of interest was Animal Systems, one of the pathways listed by Ramsey and Edwards (2011) that SAEs have the highest potential of helping students gain industry entry-level skills. The type of SAE recommended to the most students was the exploratory type, possibly indicating students do not have much time or money to invest in an SAE. The majority of the students had 10 hours or less to invest in an SAE. Concerning previous knowledge of SAEs, the majority of the students perceived that they had little knowledge. After using the SAE builder, most perceived they had a better understanding or were ready to begin a project. This suggests that students perceived the SAE Builder helped increase their understanding on the subject, something that is needed according to Lewis et al. (2012).

Implications/ Recommendations/ Impact on Profession

The SAE Builder tool may be useful for agricultural science teachers to use to introduce the topic of SAEs since students perceived it helped increase their understanding. The tool was used mostly by teachers in the state of Texas; further research should be conducted to see if similar results appear in other states. The SAE builder tool could also be used by researchers to identify which pathways have weak participation and provide a source of information on which type of SAE students choose such as entrepreneurship, placement, research, or exploratory. Further research should be conducted to determine exactly what students learn from the Texas SAE Builder. Future research could focus on demographic differences of users to determine the best options for diverse audiences.

References

Croom, D. B. (2008). The development of the integrated three–component model of agricultural education. *Journal of Agricultural Education*, *49*(1), 110–120. doi: 10.5032/jae.2008.01110

Doerfert, D. L. (Ed.) (2011). National research agenda: American Association for Agricultural Education's research priority areas for 2011–2015. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Dyer, J. E., & Osborne, E. W. (1995). Participation in supervised agricultural experience programs: A synthesis of research. *Journal of Agricultural Education, 36*(1), 6-14. doi: 10.5032/jae.1995.01006

Lewis, L. J., Rayfield, J., & Moore, L. (2012). Supervised agricultural experience: An examination of student knowledge and participation. *Journal of Agricultural Education, 53*(4), 70-84. doi: 10.5032/jae.2012.04070

Moore, G. E. (1979, April). Back to the basics in teaching agriculture - The project plan. *The Agricultural Education Magazine*, pp. 219-220.

Moore, G. E. (1988). The forgotten leader in agricultural education: Rufus W. Stimson. *Journal of the American Association of Teacher Educators in Agriculture, 29*(3), 50-58.

Ramsey, J. W., & Edwards, M. C. (2011). Entry-level technical skills that agricultural industry experts expected students to learn through their supervised agricultural experiences: A modified delphi study. *Journal of Agricultural Education, 52*(2), 82-84. doi: 10.5032/jae.2011.02082

Talbert, B. A., Vaughn, R., Croom, D. B., & Lee, J. S. (2007). Foundations of agricultural education (2nd ed.). Catlin, IL: PEP.

Research Poster

A Case Study of Ohio State University Extension's 2009 Organizational Restructuring: Perceptions from Area Leaders and Regional Directors

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A Case Study of Ohio State University Extension's 2009 Organizational Restructuring: Perceptions from Area Leaders and Regional Directors

Introduction/Need for Research

Organizations need to be prepared for change as social and economic dynamics continue to affect them. At least 10 Extension systems restructured during the decade of 2000-2010, but each system used a different approach. Ohio State University Extension (OSUE) was one state that instituted a restructuring process, implementing nine multi-county areas within three regions while maintaining a presence in all 88 counties (OSU Extension, 2009). During a restructuring process, leaders acting as change agents may be put into place to orient desired outcomes of change processes. In Ohio, nine Area Leaders (ALs) and three Regional Directors (RDs) were primarily responsible for ensuring Extension programs were provided in all 88 counties. During the initial restructuring time OSUE experienced a reduction in force and diminished public funding. Anecdotal information also indicated that staff members implemented the area structure differently (Kelbaugh, Smith, Martin, Earnest, & Marrison, 2010).

Conceptual Framework/Theoretical Framework

Organizational change theories provided the conceptual framework for this study. Green's (2007) model includes six processes with three core fundamentals of mind-set, culture, and leadership. Kotter's (1996) eight-part model is a process for leaders to use when implementing change within an organization. Collins (2001) describes the common processes used for corporations that were successful in moving from good to great. Finally, Jick (1991) describes three roles of change agents: strategists, implementers, and recipients.

Methodology

The purpose of this study was to describe insights from the nine ALs and three RDs in the OSUE system about how they initiated and implemented the Extension Education and Research Area (EERA) system and what seemed to work or did not work within their experiences. Qualitative research methodology was used to develop a case study to answer the research questions. A case study is useful for providing rich and holistic accounts of experiences that are insightful and valuable to advancing the knowledge base within a field (Merriam, 2009). Interviews are an appropriate data collection method for understanding the interpretations of individuals' worldview. Open-ended interview guides were created for data collection. Data were coded through open coding of interview transcripts and an iterative process to create categories. Trustworthiness and reliability of data were established through a researcher log, peer review of data analysis, and member checks. Full details can be found in [insert author citation].

Results/Findings

Implementing the EERA structure caused changes in staff roles, communication, and program planning and delivery. Leaders generally considered themselves to be catalysts and organizers. Staff members developed new working relationships that included specializations and more individual accountability to area-wide programming. Some county offices operated with minimal staff due to budget and staff reductions. New structures for communication with internal and external audiences used technology for sharing information and creating meeting opportunities. Meetings were also conducted for relationship building and program planning.

During the initial stages of implementing the organizational change, leaders reflected on goals and strategies they used, what seemed to be working, and challenges and barriers for both staff members and clientele. Initial strategies included working together as a team, getting the job done, and developing relationships. Learning about people's skills and abilities was a key strategy. Leaders described a variety of actions such as instituting cost recovery fees and reciprocation agreements. Available grant funding resulted in several projects across the EERAs. Resistance to participation or conforming to the changes, ambiguity about the new structure and its meaning, and changes in staffing patterns were initial challenges perceived by ALs and RDs.

After 20 months of working in the EERA structure, leaders described the experience of working in an area system, the benefits they observed for staff members and programs, and their frustrations with continued challenges. There appeared to be an increased level of commitment from staff members to ensure educational programs were conducted across counties in EERAs. Staff members also seemed to be expressing increased social connectivity, satisfaction in the ability to develop their own strengths and expertise, and appreciation for eliminating duplication of efforts. Grant funding afforded opportunities for staff training in technology and developing educational programs. Challenges with some staff non-participation in area program development and commitment to local activities were present. Educators seemed to have difficulty in balancing their work loads and managing the work flow with the new collaborations of counties in their respective areas and programs. Overall, the ALs and RDs expressed satisfaction with the changes brought about by the area system.

Conclusions

This study described the implementation of a restructuring process in OSUE, examined the progression of the change process, and captured the subsequent outcomes from the perspective of ALs and RDs. As a result of restructuring, the OSUE system evolved from singular county entities to a more collaborative county system with educators and staff members who were more team oriented, socially connected with each other, and identified with a specialization. Challenges with funding, staffing, and programming were evident from the initial process through the time the study was conducted. Uncertainty and ambiguity about the change process and the desired outcomes were expressed by the leaders in the study. They played the roles of strategist and implementer (Jick, 1991) as they developed strategies and ideas for moving the restructuring process forward. Communication was a vital component of the change process. Change processes models support the importance of communication (Green, 2007; Jick, 1991; Kotter, 1996), and this was borne out by OSUE leaders as they used a variety of means and spent an extensive amount of time in developing both internal and external communications.

Implications/Recommendations/Impact on Profession

Extension systems will need to be prepared for future organizational changes. Continued research on organizational change and culture in Extension could help administrators and staff members to understand how to balance change and culture during a major change process.

Research could be conducted to understand staffing patterns and multi-county educator work and to understand relationships between increased utilization of specializations during organizational change processes, including the effect on career paths and Extension program value. Implications for practice from this study include creating more defined communication plans or “road maps,” clarifying expectations of change agents by incorporating additional feedback tools, and reviewing policies on implementing new technology into Extension practices.

References

Collins, J. (2001). *Good to great.* New York: Harper Collins.

Green, M. (2007). *Change management masterclass: A step-by-step guide to successful change management.* London: Kogan Page.

[Insert Author Citation after peer review]

Jick, T. D. (2003). Implementing change. In T. D. Jick & M. A. Peiperl (Eds.), Managing change: Cases and concepts (2^{nd} ed., pp. 174-183). Boston, MA: McGraw Hill.

Kelbaugh, B.M., Smith, K.L., Martin, K.E., Earnest, G.W., & Marrison, D. (2010, October). *Restructuring an Extension System - Creating a sustainable future.* Poster presented at the 2010 National Outreach Scholarship Conference, Raleigh, NC.

Kotter, J. P. (1996). *Leading change.* Boston, MA: Harvard Business School Press.

Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation.* San Francisco, CA: Jossey-Bass.

Ohio State University Extension. (2009). *OSU Extension restructuring model: A plan for continued excellence.* Retrieved from http://OSU EERA full plan 3-18-09.pdf

Research Poster

Agricultural Education Teachers' Competence with SAEs

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Agricultural Education Teachers' Competence with SAEs

Introduction/Need for Research

Agricultural education programs are composed of three integral and interrelated components: classroom and laboratory instruction, supervised agricultural experience programs (experiential learning component), and leadership development. The three components of the total agricultural education program complement each other in the teaching and learning process (Dyer & Williams, 1997a). SAEs can take many forms including agricultural production, agriculture placement, agribusiness placement, career exploration, and research opportunities. Are agricultural education teachers familiar enough with SAE practices to provide students with this valuable educational component?

Conceptual Framework

The theoretical framework for this study originated from the work of Dyer and Osborne (1996). Arrington and Price (1983), Berkey and Sutphin (1984), Harris and Newcomb (1985), and Iverson (1980) indicate that teachers support the concept of SAE programs; however they have difficulty implementing programs with students. Dyer and Osborne (1995) found that teachers' attitudes toward SAEs were a key factor in student participation in SAEs. Teachers, students, parents, and employers value the supervision component of SAEs (Dyer & Williams, 1997b). Teachers in departments with strong SAE programs emphasize SAEs more than teachers in departments with weak SAE programs (Herren & Cole 1984). While agricultural knowledge and positive work attitudes are benefits of SAEs (Dyer & Williams, 1997), the number of teachers with high school SAE experience as students is declining (Dyer & Osborne, 1996). It is crucial to any SAE that both student and teacher see it as a valuable learning experience and that both are willing to put the work into the SAE program. Agricultural education teachers rated SAEs as valuable in the development of work attitudes, values and habits; technical skills; and of general benefit to the agricultural education program (Berkey & Sutphin, 1984). Parents also recognize the benefits of SAEs in the areas of work attitude, occupational development, and human relations (Rawls, 1982).

Methodology

A descriptive survey research design (Ary, Jacobs, & Sorenson, 2010) in the form of an electronic questionnaire was used to obtain data for this study. The accessible population was all agricultural education teachers in the states of [States] that could be reached by e-mail/list serve. After reviewing the research on the topic, the research instrument was developed and pilot tested. The instrument was presented to a panel of experts to establish its content and face validity. Reliability of the instrument was established as exemplary (Robinson, Shaver, & Wrightsman, 1991) using the entire data set (Spearman-Brown = .86). Dillman's Tailored Design Method (2007) was used to collect data.

Results/Findings

Respondents were presented with seven Likert statements regarding teacher competence with SAEs. Three hundred and nine respondents agreed (92.5%) that they were familiar enough with concepts of SAEs to feel comfortable teaching the topic. Three hundred and four respondents (90.4%) expressed some level of agreement with the statement that they have an adequate understanding of SAEs. When asked if they were familiar enough with SAE record keeping to feel comfortable teaching the practices, 303 respondents (89.6%) expressed some level of agreement. Two hundred and thirty-one respondents (68.5%) agreed with the statement that they had received training on how to supervise SAEs in their teacher preparation program (classes, workshops, etc.). One hundred and ninety-five respondents (57.8%) agreed they were familiar with newer types of SAEs such as the research SAE. One hundred eighty-four respondents (54.6%) agreed that they were familiar with the exploratory SAE. When asked if they regularly refer to SAEs during class period instruction, 258 respondents (76.6%) agreed or strongly agreed (see Table 1).

Table 1
Self-Evaluation of Teacher Competence with SAEs

	Strongly Disagree		Disagree		Agree		Strongly Agree	
	N	%	N	%	N	%	N	%
Familiar enough with SAEs to feel comfortable teaching the topic	7	2.1	18	5.4	152	45.5	157	47.0
Familiar enough with SAE record keeping to feel comfortable teaching practices	9	2.7	26	7.7	163	48.2	140	41.4
Received training on SAE supervision in teacher preparation program	32	9.5	74	22.0	139	41.2	92	27.3
Familiar with newer types of SAEs such as the research SAE	21	6.2	121	35.9	140	41.5	55	16.3
Familiar with newer types of SAEs such as the exploratory SAE	27	8.0	126	37.4	133	39.5	51	15.1
Adequate understanding of SAEs	7	2.1	25	7.4	194	57.7	110	32.7
Regularly refer to SAEs during class period instruction	9	2.7	70	20.8	161	47.8	97	28.8

Conclusions

Agricultural education teachers in [States] had an adequate understanding of SAEs, felt comfortable teaching the subject, and were comfortable teaching record keeping practices. Although over 90 percent of the respondents indicated they had an adequate understanding of SAE concepts, nearly 50 percent of the respondents indicated they were not familiar with newer SAE concepts such as research and exploratory SAEs. Nearly one-third of the respondents indicated they had not received training on SAE supervision as a part of their teacher preparation program.

Implications/Recommendations

At first glance the results looked great for agricultural education and teacher preparation programs. However, the results also highlighted some disturbing trends for agricultural education. Approximately one teacher in 15 did not feel comfortable teaching SAE concepts. One teacher in 10 was not comfortable teaching record keeping skills. Nearly 50 percent of the teachers were not familiar with the research and exploratory SAEs. Teacher preparation programs must evaluate the emphasis they place on SAE concepts in their teacher preparation programs.

References

Arrington, L. R., & Price, W. H. (1983). *Relationship of vocational agriculture student satisfaction to selected student, school, and program variables.* Paper presented at the Tenth Annual National Agricultural Education Research Meeting, Anaheim, CA.

Ary, D., Jacobs, L. C., & Sorensen, C. (2006). *Introduction to research in education* (8th ed.). Belmont, CA: Wadsworth Cengage Learning.

Berkey, A. L., & Sutphin, H. D. (1984). Status and Importance/support for supervised Occupational Expereince Programs (SOEP) as Perceived by New York Vocational Agriculture Teachers and Their Administrators. *Annual National Agricultural Education Research Meeting.* New Orleans, LA: ERIC Document Reproduction Service No. ED 251 653.

Dillman, D., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail, and mixed-mode surveys: The tailored design method* (3rd ed.). New York: John Wiley & Sons.

Dyer, J. E., & Osborne, E. (1996). Developing a model for supervised agricultural experience program quality: A synthesis of research. *Journal of Agricultural Education, 37*(2), 24-30.

Dyer, J. E., & Osbourne, E. W. (1995). Participation in supervised agricultural experience programs: A synthesis of research. *Journal of Agricultural Education, 36*(1) , 6-14.

Dyer, J. E., & Williams, D. L. (1997a). Supervision of supervised agricultural experience programs: A synthesis of research. *Journal of Agricultural Education, 38*(4), 59-67.

Dyer, J. E., & Williams, D. L. (1997b). Benefits of supervised agricultural expereince programs: A synthesis of research. *Journal of Agricultural Education, 38*(4), 50-58.

Harris, D., & Newcomb, L. (1985). Vocational agriculture teacher characteristics and their relationship to perceptions of SOE importance, attitudes toward supervision, and quality of supervised occupational experience program. *The Journal of the American Association of Teacher Educators in Agriculture*, *26*(2), 31-39.

Herren, R., H., & Cole, L. (1984). Attitudes of Oregon vocational agriculture teachers toward the supervised occupational experience program component of the vocational agriculture curriculum. *Journal of the American Assocation of Teacher Educators in Agriculture,25*(3), 45-51.

Iverson, M. (1980). The role of vocational agriculture in the occupational success of graduates--A southern study. *The Journal of the American Association of Teacher Educators in Agriculture 21*(2), 11-20, 47.

Rawls, W. (1982). An analysis of benefits derived from supervised occupational experience programs. *The Journal of Association of Teacher Educators in Agriculture*, *23*(1), 31-38.

Robinson J. P., Shaver P. R., & Wrightsman L. S. (1991). *Criteria for scale selection and evaluation.* New York: Academic Press.

Research Poster

Agricultural Industry Perceptions on Leadership Perceptions, Skills, and Traits

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Agricultural Industry Perceptions on Leadership Perceptions, Skills, and Traits

Introduction/Theoretical/Conceptual Framework

Leadership theorists (Gardner, 1990; Kouzes & Posner, 1990; Bolt, 1996) believe we approached the twenty-first century with a dramatic deficit in leaders. However, Bolt (1996) emphasized the deficit was really in leadership development, and not leadership itself. The IBM Global Human Capital Study (2008) supported this contention when 75% of its respondents reported the inability to develop future leaders as a critical issue for organizations today.

Leadership competencies are integral for enterprises seeking a path through a rapid escalation of global complexity (Capitalizing on Complexity, IBM, 2010). In a recent study, a sample of ninety-seven human resource managers who recruited at a California university identified leadership skills as the second most important dimension among eight dimensions of employability valued in college graduates. The authors of this study emphasized that graduates should be enterprising and employable; exhibiting leadership skills that business and industry organizations recognize (Rosenberg, Heimler, & Morote, 2012).

The purpose of this study was to identify to what degree individual leadership skills, traits, and perceptions should be emphasized in curriculum designed to prepare college graduates for today's agricultural business professions. The following objectives were used to obtain the input required to design a leadership development curriculum: 1) To what extent do agricultural employers agree with perceptions of agriculture leadership statements, 2) determine level of importance of 20 leadership skills and knowledge statements, and 3) determine level of influence that 20 individual leadership traits have when describing a leader.

Methods

The population for this study consisted of exhibitors at a College of Agriculture career day. Dillman's (2009) tailored design method was used to develop the electronic survey instrument and collect data, which were analyzed using descriptive statistics. The usable response rate was 17.82% (n = 113).

The survey instrument consisted of four sections. Part one dealt with the perceptions about leadership and included twenty statements dealing with the perceptions of agriculture leadership. A Likert-type scale measured respondents' agreement levels (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 Strongly Agree). Section two dealt with the leadership skills important when hiring new agricultural employees. The twenty leadership knowledge and skills were to be evaluated using the following scale (1 = Not Important, 2 = Somewhat Important, 3 = Important, 4 = Very Important). Section three dealt with the leadership traits, which were important when describing a leader, and were evaluated using a four point scale (1 = No Influence, 2 = Some Influence, 3 = Moderate Influence, 4 = High Influence). Section four consisted of demographic questions. The survey instrument was reviewed for face and content validity by a four member review panel which included an Executive Leadership Consultant; a Change, Communication, & Education Design Supervisor; and two AAAE Leadership SIG representatives.

Results/Findings

A diverse group of business people responded to the study (Table 1). The top five perceptions statements about leadership included: leaders are open to change (*M*=3.46), leaders are effective listeners (*M*=3.45), effective leaders are knowledgeable about their field (*M*=3.29) leaders are team players (*M*=3.24), and leaders can be trusted (*M*=3.17). On the other end of the spectrum, respondents indicated the five perception statements industry professionals most often rated lower included: students who are actively involved in athletics are leaders (*M*=2.45), leaders are in charge (*M*=2.35), once leaders go along with others (*M*=2.13), you are a leader you are always a leader (*M*=2.13), high academic success ensures strong leadership (*M*=2.10).

Table 1. Demographic Findings

Demographic Characteristics	Resulting Data	
Gender	Female 60% Male 40%	
Age	28% - 30-39 years of age	
Time with Company/Organization	Mean 9.03	Range .5 to 37 years
Educational Level	78% Bachelors degree or lower 22% Masters degree or higher	
Company/Organization Size	40% Less than 200 employees 60% More than 201 employees	
Had leadership course in High School or College	Yes 47%	No 53%
Company/Organization provided leadership training	Yes 66%	No 34%

Respondents indicated the top five leadership skills as being accountable (*M*=3.77), communicating (visual and electronic) (*M*=3.77), adaptive to change (*M*= 3.69), taking responsibility (*M*=3.69), and listening (*M*=3.60). Respondents rated five skills low on the rating scale including coaching (*M*=3.04), global dynamics (*M*=2.91), negotiating (*M*=2.90), delegating (*M*=2.90), and directing (*M*=2.78).

Respondents indicated that five leadership traits were considered most influential included positive attitude (*M*=3.78), drive (*M*=3.70), honesty (*M*=3.69), trustworthy (*M*=3.68), and self-confidence (*M*=3.63). Respondents indicated that five traits were less of an influence included courteous (*M*=3.10), creativity (*M*=3.09), futuristic (*M*=3.06), curiosity (*M*=3.03), and citizenship (*M*=2.91).

Conclusions/Implications/Recommendations

The findings of this study shed light on the leadership perceptions, skills and traits sought by agricultural industry professionals. The top perception and skill statements are consistent with the literature written on leadership by Kouzes and Posner (1990), which included five practices of exemplary leadership. Formal courses in leadership should focus on and emphasize the top leadership concepts identified in this study. Credit or noncredit educational programs should be organized based on the top leadership skills and traits identified in this study, and more leadership training needs to be conducted with students in high school and colleges to enhance their professional skills.

It is recommended continual feedback should be sought from industry professionals regarding leadership education. It is important their input is used in developing curriculum and internship programs. Additional research needs to be conducted on why coaching, global dynamics, negotiating, delegating and directing are rated as the lowest five skills.

References

Bolt, J.F. (1996). Developing three-dimensional leaders. In F. Hesselbein, M. Goldsmith & R. Beckhard (eds.) *The leader of the future*. (pp. 161-173). San Francisco:Jossey-Bass.

Dillman, D. A., Smyth, J., & Christian, L. (2009). Internet, mail, and mixed–mode surveys: The tailored design method (3rd ed.). Hoboken, NJ: Wiley & Sons.

Gardner, J.W. (1993). *On Leadership*. Free Press: New York.

Kouzes, J.M. & Posner, B.Z. (1990). *The leadership challenge.* (3rd.Ed.) San Francisco:Jossey-Bass.

Rosenberg, S., Heimler, R., & Morote, E. (2012). Basic employability skills: A triangular design approach. *Education Training*, 54(1), 7-20.

The IBM Global Human Capital Study. (2008). *Unlocking The DNA of the Adaptable Workforce*. The IBM Global Human Capital Study. Armonk, NY.

The IBM Midmarket Organizations Executive Summary. (2010). *Capitalizing on Complexity*. The IBM Insights from the Global Chief Executive Officer Study. Armonk, NY.

Research Poster

An Assessment and Analysis of Self-Consciousness of Undergraduate Students Enrolled in a Leadership in Agriculture Course

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An Assessment and Analysis of Self-Consciousness of Undergraduate Students Enrolled in a Leadership in Agriculture Course

Introduction and Theatrical Framework

Leadership development has been deemed to be one of the important objectives of undergraduate agriculture degree programs in land-grant colleges in the U.S. (Love & Yoder, 1989; Schumacher &Swan, 1993). Self-awareness, refers to the existence of self-directed attention, and has been listed as the first development target in leader development (Fenigstein, Scheier & Scheier, 1975; Day, 2000). Research indicates that self-awareness can be manipulated by situational variables, whereas, a more consistent personality disposition focusing inward, that has been named as self-consciousness; this can affect one's self-awareness performance as well as leadership skills (Duval & Wicklund, 1972; Buss & Scheier, 1976; Day,2000). This study is based on the theory of Self-Consciousness Scale (SCS) developed by Fenigstein, Scheier & Buss (1975). SCS consist three components: Private Self-Consciousness, Public Self-Consciousness and Social Anxiety. The first two components have been shown to have important implications for behaviors (Carver & Glass, 1976). The purpose of this study was to determine the extent of self-consciousness of the undergraduates in a leadership in agriculture course at [State] university. The three objectives of this study were: 1) Determine the extent of private self-consciousness of the students, 2) Determine the extent of public self-consciousness of the students, and 3) Compare the differences between male and female respondents regarding their extents of self-consciousness.

Methodology

The target population was 84 undergraduate students who enrolled in a leadership course offered by the Agricultural Education Department at [State] university. Students were required to complete a survey, which was built with parts of SCS. The survey excluded Social Anxiety items from SCS and retained the ten descriptive statements for private self-consciousness and seven statements for the public self-consciousness. Students rated themselves on a five-point likert scale: 0=Extremely Unlike Me, 1=Somewhat Unlike Me, 2=Neither Like Me Nor Unlike Me, 3=Somewhat Like Me, and 4=Extremely Like Me.
Reliability was established at Cronbach α=.75 for private self-consciousness and α=.84 for public self-consciousness (Scheier & Carver, 1985). Both private and public self-consciousness scales were considered valid as the previous scholars had verified the face validity and construct validity by 105 undergraduates (Carver & Glass, 1976). The average score of private self-consciousness and public self-consciousness, from previous study (P. Avg.), have been reported: 26 and 19 respectively (Waitley, 2010; Dollisso, 2011). The survey was delivered with Qualtrics (Version: 38924) and all the data was analyzed using SPSS.

Results and Findings

Sixty-nine out of 84 (82.1%) students responded to the survey. The first two objectives were achieved by information in Table 1. For both the private self-consciousness and public self-consciousness, most students' scores were lower than the P. Avg. There was no central tendency statistic of the students higher than the P. Avg. In addition, average scores of the students were found significantly lower than P. Avg. regarding both private and public self-consciousness. The last objective was addressed by Table 2. For the private self-consciousness, no significant difference between the average scores of the male and female students was detected, though the average scores of female students were slightly higher than the males. However, the average score of the public self-consciousness of the females was significantly higher than the male counterpart.

Table 1

Statists and tests of the subtends' self-consciousness

Component	P. Avg.	Cumulative Frequency (Percentage)		Central Tendency		T-Test		
	C	<C	≥C	Mdn	Mo	M	SD	*P*
Private	26	55(79.7%)	14(20.3%)	22	17	21.64	5.517	0.00*
Public	19	40(58%)	29(42%)	17	19	16.81	5.707	0.02*

Note. *P<.05. Simple Size, N=69. P. Avg. was the average score form past people who took this survey. T-Test was two-tailed, and test value was equal to P. Avg.

Table 2.

Statists and tests of the subtends' self-consciousness by gender

Component	Gender	Descriptive			One- Way ANOVA		
		N (Percent)	M	SD	Mean Square		P
					Between Group	Within Group	Between Groups
Private	Male	39(57%)	20.82	5.104	59.898	30.001	0.162
	Female	30(43%)	22.70	5.932			
Public	Male	39(57%)	15.59	4.972	133.915	31.054	0.042*
	Female	30(43%)	18.40	6.273			

Note.*P<.05

Conclusions and implications

The results of this study indicate that the undergraduate students owned relatively low private self-consciousness as well as low public self-consciousness. Based on the literatures (Buss & Scheier, 1976; Fenigstein, Scheier & Buss, 1975; Waitley, 2010), the students tend to be less self-reflective and less attentive to their inner thoughts, feelings, and motives; they may show less aggression to anger and have fewer chances of falling into depression because of their low private self-consciousness. On the other, owing to the low public self-consciousness, they may pay less attention to how they impress and are viewed by others, and may not tend to accept responsibility for the rejection, but this also helps them reduce the anxiety in social situations. In addition, the female students showed higher public self-consciousness than males, which indicates that the female students may be more sensitive to behaviors of others than the male students (Carver & Glass, 1976). This finding is consistent with a previous study done by Fenigstein (1974). Finally, by making the results and findings of this study available to the students, these students may become more aware of their levels of private self-consciousness and public self-consciousness. The lecturer may use this study as a teaching tool to achieve more efficient teaching and learning.

References:

Buss, D. M. & Scheier, M. F. (1976). Self-consciousness, self-awareness, and self-attribution. *Journal of Research in Personality*, *10*, 463-468.

Carver, C. S. & Glass D. C. (1976). The self-consciousness scale: A discriminant validity Study. *Journal of Personality Assessment*, *40*, 169-172.

Day D. V., Zaccaro S. J. & Halpin S. M. (2004). Leader development for transforming organizations, Lawrence Erlbaum Associates, Inc.154-156.

Day, D. V. (2000) Leadership development: A review in context. *Yearly Review of Leadership, 11*, 581-613.

Dollisso, A. (2011). Personal, professional and entrepreneurial leadership in agriculture. IA: Iowa State University, McGraw-Hill Companies, Inc. 118-120.

Duval, S., & Wicklund, R. A. (1972). A theory of objective self-awareness. NY: Academic Press.

Fenigstein A., Scheier M. F.& Buss A. H. (1975). Public and private self-consciousness: assessment and theory. *Journal of Consulting and Clinical Psychology*, *43*, 522-527.

Fenigstein, A. (1974). Self-consciousness, self-awareness and rejection. Unpublished doctoral dissertation, University of Texas.

Franzoi, S. L. (1983). Self-concept differences as a function of private self-consciousness and social anxiety. *Journal of Research in Personality, 17*, 275-287.

Love, G. M. & Yoder, E. P. (1989). An assessment of undergraduate education in American colleges of agriculture. PA: Pennsylvania State University, College of Agriculture.

Qualtrics (Version: 38924). [Computer software]. UT : Qualtrics Labs, Inc., http://www.qualtrics.com

Scheier, M. S. & Carver C. (1985). The self-consciousness scale: A revised version for use with general populations. *Journal of Applied Social Psychology,15*, 687-699.

Schumacher, L. G. & Swan, M. K. (1993). Need for formal leadership training for students in a land-grant college of agriculture. *The Journal of Agricultural Education, 34*(3),1-9.

Trapnell, P.D. & Campbell, J. D. (1999) Private self-consciousness and the five-factor model of personality: distinguishing rumination from reflection. *Journal of Personality and social psychology*, 76, 284-304

Tunnell, G. (1984). The discrepancy between private and public selves: Public self-consciousness and its correlates. *Journal of Personality Assessment, 48*, 549-555.

Waitley, D. (2010). Psychology of Success: Finding meaning in work and life (5th ed.). NY :McGraw-Hill Companies, Inc,. 46-49

Research Poster

An Investigation of the Effect of Leadership Change on Organizational Climate

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An Investigation of the Effect of Leadership Change on Organizational Climate

Introduction/Need for Research

Leadership is "a process whereby an individual influences a group of individuals to achieve a common goal" (Northouse, 2013, p. 5). The style approach conceptualizes leadership as the behaviors exhibited by the leader, focusing exclusively on what they do and how they act (Northouse, 2013). Those day-to-day behaviors of the leader are "the single most significant determinant of climate" within an organization (Stringer, 2002, p. 12). Organizational climate can be described as the environment perceived by the members of the organization and can be measured indirectly through the perceptions of the organization's members (Stringer, 2002). It is a subpart of organizational culture and a direct reflection of the leader's attitude (Schein, 2010). Because climate has a direct impact on the aroused motivation of workers within the organization (Stringer, 2002) an organization's performance can be profoundly impacted when leadership stimulates a change in climate.

The *American Association for Agricultural Education's National Research Agenda* (Doerfert, 2011) speaks to the need for effective leadership to ensure "vibrant, resilient communities" (p. 12) and the development of mechanisms to evaluate leaders' capacity to exert influence and effect change. This study contributes to the knowledge base on how change in leadership may impact organizational climate and, in turn, the effectiveness of that organization. This study sought to identify changes in perceived organizational climate following a change of leadership.

"The *[organization]* is a professional organization for agriculture science teachers and supporters of agriculture education", which provides professional development for agriculture teachers and represents a unified voice for agricultural education in the state legislature (*[organization website]*, 2012). They are led by a Board of Directors representing the general membership and an Executive Director who is employed by the Association. The previous Executive Director retired following the 2011 annual conference, presenting a unique opportunity to investigate perceived changes in organizational climate in 2012 under leadership of a new Director.

Conceptual Framework

Organizational climate is described in terms of the following six dimensions (Stringer, 2002): "structure" indicates members' feeling of having clearly defined roles and responsibilities along with a sense of being well-organized; "standards" reflect members' perceived feeling of pressure to improve their performance and the degree of pride taken in a job well done; "responsibility" reveals the degree to which members feel a sense of autonomy in their work and freedom to make decisions without double checking with the leader; the "recognition" construct is reflected in whether or not members feel they are rewarded for good performance; the feeling of mutual trust and support within the group is indicated by the "support" construct; "commitment" describes members' commitment to and pride in the organization. Leadership behaviors are described utilizing the same six constructs, indicating that specific leadership behaviors can be employed to influence specific dimensions of the organizational climate (Stringer, 2002).

Methodology

This was a descriptive longitudinal study. A census of the *[organization]* Board of Directors present at the meeting conducted during the annual professional development conference was used for data collection in 2011 ($N = 51$) and again in 2012 ($N = 49$). The climate questionnaire developed by Stringer (2002) was used. Twenty-four items in Part I referred to the perceived organizational climate, resulting in four questions per climate dimension. Part II contained 18 questions regarding perceived leadership behaviors of the Executive Director, with three questions per climate construct. Items in Part I were measured in a 4-point Likert-type scale, while Part II items were measured on a 5-point Likert-type scale.

Results

Means and standard deviations were calculated for each of the climate constructs for both years. In 2011, mean scores for organizational climate ranged from 1.96 to 3.84 with “responsibility” being lowest and “commitment” being highest. Mean scores for the 2011 Director’s practices ranged from 4.21 to 4.61, also with “responsibility” being lowest and “commitment” being highest. In 2012, mean scores for organizational climate ranged from 2.23 on the construct “responsibility” to 3.76 on “commitment”. Mean scores for the 2012 Director’s practices ranged from 3.79 on the construct “responsibility” to 4.36 on “support”.

T– tests were used to determine significant differences between 2011 and 2012 on each of the twelve constructs. Regarding organizational climate, significant differences were identified between the two years on the constructs of “structure”, $t(97) = 2.66$, $p < .05$ and “responsibility” $t(97) = -2.75$, $p < .05$. In regard to the Director’s practices, significant differences were identified on five of the six constructs, with “support” being the only construct without a significant difference. Effect sizes ranged from $r = 0.21$ to $r = 0.33$, indicating a nearly medium effect (Cohen, 1988) on all constructs showing significant differences between years.

Conclusions/Implications

This longitudinal study described differences in organizational climate and leadership behaviors as perceived by the members of the *[organization]* before and after a change in leadership occurred. Members of the Board of Directors perceived differences between the former and current Executive Directors’ behaviors on five of the six climate constructs, however, they only perceived differences in the organizational climate on two of the six constructs. This provides only partial support for Stringer’s (2002) suggestion that leadership behaviors directly influence organizational climate. It may be that more time is needed following a change in leadership for members to begin perceiving a change in organization climate. Further research is recommended to determine if perceptions of the organizational climate eventually change and if that can be attributed to leadership.

References

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). New York: Academic Press.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015. Lubbock, TX: Texas Tech University*, Department of Agricultural Education and Communications.

Northouse, P. (2013). *Leadership: Theory and practice (6th ed.).* Thousand Oaks, California: Sage Publications, Inc.

Stringer, R. (2002). *Leadership and Organizational Climate.* Upper Saddle River, New Jersey: Prentice Hall.

Schein, E. (2010). *Organizational Culture and Leadership* (4th ed.). San Fransisco, CA: Jossey-Bass.

[Organization] (2012) *About the [organization]*. Retrieved from http://www.vatat.org/Home.aspx

Research Poster

Are They Competent? An Evaluation of Post-secondary Agricultural Education Students' Agricultural Mechanics Knowledge

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Are They Competent? An Evaluation of Post-secondary Agricultural Education Students' Agricultural Mechanics Knowledge

Introduction

Due to persistent demand from both the agricultural industry and students, the need exists for the continuation of agricultural mechanics education within secondary agricultural education programs (Hubert & Leising, 2000; Slusher, Robinson, & Edwards, 2011). Industry has indicated that graduates should possess basic mechanical knowledge while students desire practical, real-world experiences and learning connections that can be found within the agricultural mechanics laboratory (Parr, Edwards, & Leising, 2009; Slusher et al., 2011). Agricultural mechanics coursework remains an important part of secondary agricultural education programs (Anderson, Velez, & Anderson, 2011; Burris, Robinson, & Terry, 2005).

Research (Saucier, McKim, & Tummons, 2011) revealed that secondary agricultural education teachers should possess a basic set of agricultural mechanics knowledge and skills. Further, they are expected to be able to properly manage agricultural mechanics laboratories and guide students throughout the learning process (McKim & Saucier, 2011). Agricultural education teachers should be capable of solving complex agricultural mechanics problems and addressing students' learning needs (Burris et al., 2005). Concerns have been raised that pre-service agricultural education teachers lack the appropriate knowledge base to teach agricultural mechanics curricula (Burris et al., 2005; Pate, Warnick, & Meyers, 2012). In keeping with these concerns, the following question has arisen within one agricultural education teacher preparation program: Are pre-service agriculture teachers at [University] prepared to teach agricultural mechanics?

Purpose & Objectives

The purpose of this study was to determine pre-service agricultural education teachers' agricultural mechanics knowledge prior to teaching in a secondary classroom setting. This study was guided by the following objectives:

1) Determine selected students' knowledge of agricultural mechanics as determined by a written examination.

2) Describe demographical characteristics of the participants to determine teaching career intentions and agricultural mechanics background.

Methodology

During the fall semester of each academic year, [University] offers a course titled "Agricultural Structure and Metal Fabrication Technology" that covers a wide range of agricultural mechanics topics ([University], 2011). This course is designed specifically for agricultural education students; however, students from any major can enroll in the class. At the course's end, students should, ideally, be competent in a variety of agricultural mechanics topics. Researchers at [University] contacted the Agricultural Mechanics Career Development Event (CDE) contest superintendent in [State] and requested the written examination from the State Agricultural Mechanics CDE and its answer key. This assessment consisted of one hundred questions that addressed a variety of agricultural mechanics topics taught within secondary agricultural mechanics coursework ([State] FFA Association, 2009). Due to its previous use in a CDE, the researchers found it unnecessary to determine reliability. To help control for faulty questions or subjectivity in the answers, the researchers thoroughly assessed the CDE exam for any inappropriate questions, removing all such questions. None were found, and thus all one hundred questions were used.

A convenient sample of students enrolled within the course (N=12) participated in this study. Participants were asked to complete the examination and the aligned questionnaire during a regularly-scheduled class meeting near the middle of the semester. The exams were scored by the researchers in accordance with the exam key used during the state CDE contest. The questionnaires were also evaluated to determine students' previous agricultural mechanics backgrounds.

Results

This study was conducted during the middle of the semester after most of the course topics had been addressed during the lecture portion of the course. To address objective one, twelve (n=12) post-secondary agricultural education students completed the questionnaires and the [State] FFA Agricultural Mechanics CDE written examination. The average written exam score was 47.1% correct with scores ranging from 29% correct to 58% correct. Data collected for research objective two are provided in Table 1 below.

Table 1.
Demographics of agriculture students enrolled in the Agricultural Structure & Metal Fabrication Technology course at [University] (N=12).

Item	Response	
What is your major?	Agricultural Education: 83.3%; Horticulture: 8.3%; Undeclared: 8.3%	
What is your gender?	Male: 91.7%	Female: 8.3%

The data in Table 2 provided insight into pre-service teachers' intentions to teach as well as their experience in secondary-level agricultural mechanics courses and activities.

Table 2.
Students' intentions to pursue a teaching career and their prior agricultural mechanics backgrounds (N=12).

Item	Yes	No
Do you intend to pursue teaching as a career?	100%	0%
Did you take an agricultural mechanics course in high school?	33.3%	66.7%
Did you compete in either the Agricultural Mechanics CDE or the Agricultural Construction and Maintenance CDE?	33.3%	66.7%

Conclusions/Implications

The average participant in this study was a male majoring in Agricultural Education who had a limited agricultural mechanics background and intended to pursue a teaching career. The lack of agricultural mechanics knowledge of this population is telling. however, these results cannot be generalized to all pre-service agricultural education teachers at [University]. To better prepare future agricultural education teachers to adequately teach agricultural mechanics topics, the researchers recommend that the teacher preparation curriculum incorporate additional agricultural mechanics coursework developed by [University] agricultural education faculty. As agricultural mechanics is an important part of secondary agricultural education programs, it is vital that teachers be well-prepared in this curriculum area (Pate et al., 2012).

References

Anderson, S. M., Velez, J. J., & Anderson, R. G. (2011). Using the health beliefs model to comparatively examine the welding safety beliefs of postsecondary agriculture education students and their non-agricultural education peers. *Proceedings of the 2011 AAAE Research Conference 38,* 288-301.

[State] FFA Association. (2009, September). Agricultural mechanics career development event rules and regulations handbook. Retrieved from http://www.[state]ffa.org/Forms_Applications/Agricultural%20Mechanics%20CDE.pdf

[University]. (2011, June). Courses of instruction. In *[University] Bulletin 2011-2012*. Retrieved from http://www.[university].edu/student_info/bulletin/courses.pdf

Burris, S., Robinson, J. S., & Terry, Jr., R. (2005). Preparation of pre-service teachers in agricultural mechanics. *Journal of Agricultural Education, 46*(3), 23-34. doi: 10.5032/jae.2005.03023

Hubert, D. J., & Leising, J. (2000). Agricultural mechanics course requirements for agriculture teacher certification in the United States. *Proceedings of the April 2000 Western Region Research Conference in Agricultural Education.* Las Cruces, NM: 24-31.

McKim, B. R., & Saucier, P. R. (2011). Agricultural mechanics laboratory professional development needs of Wyoming secondary agriculture teachers. *Journal of Agricultural Education, 52*(3), 75-86. doi: 10.5032/jae.2011.03075

Parr, B. A., Edwards, M. C., & Leising, J. G. (2009). Selected effects of a curriculum integration intervention on the mathematics performance of secondary students enrolled in an agricultural power and technology course: An experimental study. *Journal of Agricultural Education, 50*(1), 57-69. doi: 10.5032/jae.2009.01057

Pate, M. L., Warnick, B. K., & Meyers, T. (2012). Determining the critical skills beginning agriculture teachers need to successfully teach welding. *Career and Technical Education Research, 37*(2), 171-184. doi: 10.5328/cter37.2.171

Saucier, P. R., McKim, B. R., & Tummons, J. D. (2011). Essential agricultural mechanics skills for beginning agricultural educators: A Delphi approach. *Proceedings from the 2011 Southern Region Conference of the American Association for Agricultural Education*. Corpus Christi, TX: 67-70.

Slusher, W. L., Robinson, J. S., & Edwards, M. C. (2011). Assessing the animal science technical skills needed by secondary agricultural education graduates for employment in the animal industries: A modified Delphi study. *Journal of Agricultural Education, 52*(2), 95-106. doi: 10.5032/jae.2011.02095

Research Poster

Assessment of Student Engagement and Discourse During Undergraduate Laboratory Instruction

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Assessment of Student Engagement and Discourse During Undergraduate Laboratory Instruction

Introduction/need for research

Research shows the activities, lessons, goals and instructional practices in most laboratory courses have not kept pace with the changes in modern science (NRC, 2003). In the college setting, laboratory experiences play a crucial role in many courses' content. But do these laboratory experiences really engage and motivate students for learning? If laboratory experiences are meant to help build content knowledge and an understanding of scientific concepts then we must be sure students are engaged and that the laboratory instructional activities provide opportunities for students to discuss scientific concepts and principles.
Most undergraduate laboratories are centered on performing confirmation labs, following established procedures and struggling to make meaningful connections, instead of designing experiments and engaging in scientific discourse as they would in modern practices of science (Rissing & Cogan, 2009). For years secondary and post-secondary schools have utilized laboratory experiences to help students build content knowledge, scientific principles and inquiry, but there is little research to help teachers guide these experiences to ensure quality student learning. This study addresses the fourth priority area of the National Research Agenda (Doerfert, 2011), which calls for research exploring "meaningful, engaged learning in all environments" (p. 9). As there is little known about student engagement and discourse during undergraduate laboratory classes and how it effects student learning of science concepts and principles, it is essential to discover the role engagement and discourse play in creating meaningful learning for students.

Conceptual Framework

The framework for this study was provided by Dunkin and Biddle's (1974) model for the study of classroom teaching. Dunkin and Biddle differentiated the study of classroom teaching into four categories of variables; presage, context, process and product. The authors' model creates a theoretical causal relationship that the presage and context variables have on the process variables, and then creates an additional causal relationship between the process variables and the product variables. For the purposes of this study, there are two sets of variables to focus on. The presage variables for the focus of this study are; instructor training and instructor experience. The process variables this study explored were student discourse and engagement in the laboratory setting.
The purpose of this study was to examine the different levels of engagement and types of discourse in a college undergraduate laboratory setting. In order to achieve this purpose, the student's engagement levels and discourse levels during an undergraduate entomology laboratory were described. The instructors training and experience was categorized and the relationship between instructors training and the levels of student engagement and discourse in the laboratory was examined.

Methodology

The sample for this study was drawn from the [University]'s Introduction to Entomology laboratory during the summer 2012 semesters. The observations were taken for two laboratory class sessions in each laboratory section sampled. The study is a descriptive study based on observations using the Laboratory Instructional Practices Inventory (LIPI) (Sadler, Puig & Trutschel, 2011) to assess the amount of engagement and discourse in the labs. The LIPI is an instrument to guide observations of a researcher in a laboratory setting. The LIPI divided engagement into 4 categories: disengagement, passive engagement, task-oriented engagement and epistemic engagement. The LIPI also provides codes to allow observers to classify what students were doing during a particular lab with the discourse scale; Ranging from "students are not talking", "students are talking about topics unrelated to the laboratory" to "students are talking about the integration of science concepts and theories" (Sadler, Puig & Trutschel, 2011). As this instrument has been utilized only for classroom assessment purposes there has been no previous calculation of reliability and validity scores.

Findings

After analyzing the engagement observations, the most frequent rating of student engagement was at the "Task-Oriented" level (57%), meaning students were actively involved in specific tasks or procedures. Passive Engagement was observed during 24% of the observation points. The highest level "Epistemic" engagement was observed the least, consisting of less than 4% of the observations. The instructor with the least amount of teaching experiences that had the highest levels of engagements over all classes.

Regarding discourse levels, no significant difference between the instructors was observed. Thirty-four percent of the observation points indicated 'No Discourse', meaning that students are were not talking. While 35% of the observations occurred at the 'Conceptual' discourse level, indicating students were talking about the basic science concepts related to the laboratory experiences. The highest level of discourse was observed only once during the data collection points (1.5%), meaning students were talking about conceptual concepts and integrating science concepts and theories into their discussion. 'Procedural' discourse occurred 22% of the time.

Conclusions and Implications

Although students were engaged at the 'Task Oriented' levels, the highest level of engagement rarely occurred indicating students were not often engaged in the higher order cognitive demands of scientific practices. Given student ambition level at a university level, the likelihood of no engagement was unlikely. Further, the epistemic engagement may be difficult for students to achieve without proper guidance. A majority of the discourse occurred at either the 'conceptual' level revealing students were talking about the basic science concepts involved with that specific laboratory. The percentage of observations indicating the 'no discourse' level implies students spent a good deal of time either listening to a lecture or working independently.

The findings of this study align with previous research (Rissing & Cogan, 2009) which found students laboratory experiences mostly engage them in task oriented procedures that allow require them to only focus on one topic at a time. There is a need for future studies examining the engagement and discourse levels that occur in university laboratory classes, to explore potential practices that could increase engagement and discourse levels to those that require students to increase their integration of science skills and concepts.

References

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015.* Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

National Research Council, (2003). *Bio 2010: Transforming undergraduate education for future research biologists*. Washington, D.C.: The National Academies Press.

Rissing, S.W. & Cogan, J.G. (2009). Can an inquiry approach improve student learning in a teaching laboratory? *CBE-Life Science Education*, 8(1), 55-61.

Sadler, T.D., Puig, A. & Trutschel, B.K. (2011). Laboratory instructional practices inventory: A tool for assessing the transformation of undergraduate laboratory instruction. *Journal of College Science Teaching*, 41(1), 25-31.

Research Poster

Becoming an Ag Teacher: Student Teachers Speak

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Becoming an Ag Teacher: Student Teachers Speak

Introduction and Conceptual/Theoretical Framework

The purpose of this phenomenological study was to describe teacher resilience of preservice high school educators. Thieman, Henry, and Kitchel (2012) reported agricultural educators who possess resilience will have the ability to meet challenges and adversity, respond in an appropriate manner, and continue to be effective professionals. One of the key components of adult resilience, in light of early adversity, seems to be access to necessary resources along with lacking developmental delays (Masten et al., 2004). Furthermore, adult response to adverse situations are directed by their experiences from youth related to; familial environment, early socioeconomic status, and genetic predisposition among others.

This study was part of a larger study investigating preservice teacher resilience. The study of resilience has a theoretical base in positive psychology which focuses on positive attributes and potential rather than negative aspects of an individual (Snyder & Lopez, 2009). Three different knowledge bases have been established regarding teacher resilience; a multidimensional approach of merged personal and environmental factors (Gu & Day, 2007), a strategic approach of adaptation (Patterson, Collins, & Abbott, 2004), and a combined approach, used for this study, that utilizes aspects of both previous resilience strategies(Castro, Kelly, & Shih, 2010). Castro, et al. (2010) identified teachers as "active agents, adopting various strategies to find balance and achievement in the face of adversity, often caused by minimal resources and challenging working conditions" (p.623).

Methodology

Creswell (2007) and Yin (2009) guided the phenomenological qualitative design in addition to the data analysis and procedures of this study. The population for the study was preservice teachers who completed their student teaching internship in April, 2011 at [University]. A sample of eight (n=8) preservice teachers enrolled in a teaching methods course (N=16) agreed to participate in an interview. One primary and one secondary researcher coded the data set from the interviews and delineated themes jointly to provide consensual validation of analysis. Data were collected at the completion of the student teaching experience through an interview and field notes.

Results/Findings

Three themes were identified and developed from the interviews held at completion of the preservice teacher's student teaching experience. The themes indicate the preservice teachers have entered into a phase of their lives where uncertainty is an undercurrent and they are actively building an identity as an educator.

Positive, essential relationships are key to success as an agricultural educator

Preservice teachers identified multiple sources of support throughout their student teaching experiences. One teacher described; "my sister and my mom [are sources of support], I always get good advice from my sister [because] she's a teacher, too." Another teacher relied upon his peers; “I’d say my main source of support [throughout student teaching] was visiting with other student teachers regularly because we were all in the same position.” Teachers struggled to solidify a definition for how their relationships look with program stakeholders, i.e. future administration, students, and parents. Generally, elements of trust and respect were highlighted,; one teacher described; “You have to have the respect from the students. I mean, I don’t feel like you get respect till you give respect. I think it’s very important.”

Teaching agriculture is a calling that requires a high level of commitment

The teachers identified myriad of influences throughout youth and early adulthood leading them to choose agricultural education, including: experiences with youth organizations (FFA and 4-H) and high school agriculture, identifying an internal calling to teach, and family member in the profession. One teacher described; “I had a really good experience in high school and I decided that I wanted to become an ag teacher. My teachers and parents encouraged me to become an ag teacher because of that.” Teachers expressed having a lack of perspective on the magnitude of the profession and commitment level required prior to the student teaching experience, “[I was not prepared for] the activity level through the day and the how there is something different every day. It’s not just a seven hour day; you’re there late a lot.”

Seeking to align vision of an ideal agricultural educator with perceived personal attributes.

The uncertainty previously described may be a result of the impossibly high standards held of what it means to be a good agriculture teacher. Reoccurring items of focus for the preservice teachers were; establishing credibility (students, community), competence as a teacher, and gaining respect from program stakeholders. “One thing that I’ve struggled with throughout student teaching and I just want to continue getting better was uh…clarity…and just givin’ directions and instructions.” Student teachers were able to assess and relate tangible skills needed to succeed by their measure as a future teacher of agriculture. One preservice teacher noted that; “I used a lot of examples from what I grew up with [on the farm] during student teaching.”

Discussion

The pressure to perform and develop as a professional during the induction phase of teaching agriculture can be difficult for preservice teachers to define. Student teachers recognized importance in the development of good relationships for support as a teacher. It is imperative for novice educators to develop positive relationships within the school environment to foster support for the struggles they face. Teacher education programs should facilitate identification of those people and expose students to context-specific relationship building skills.

Teaching agriculture requires significant commitment which can lead to doubt and uncertainty. Teacher development programs should elicit a realistic picture of job requirements, encourage development of time management skills, and capitalize on teachers’ passion for the profession they were called to. Student teachers should be guided to assume realistic expectations for their accomplishments during the first few years of teaching over a need to succeed in all aspects of the job. Furthermore, they should be exposed to a variety of high school programs and teachers through early field experiences to aid in the development of their individual educational philosophy. The reality of the first year of teaching created uncertainty and anticipation in our preservice teachers. Resilience to effectively manage this dynamic can be developed through diverse and quality experiences in the teacher preparation process, hopefully resulting in the retention of more high quality agriculture teachers (Schroeder, 2006).

References

Castro, A. J., Kelly, J., & Shih, M. (2010). Resilience strategies for new teachers in high-needs areas. *Teaching and Teacher Education*, *26*(3), 622-629. doi: 10.1016/j.tate.2009.09.010

Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches* (2nd ed.). Thousand Oaks: Sage Publications.

Gu, Q., & Day, C. (2007). Teachers resilience: A necessary condition for effectiveness. *Teaching and Teacher Education*, *23*(8), 1302-1316. doi: 10.1016/j.tate.2006.06.006

Patterson, J. H., Collins, L., & Abbott, G. (2004). A study of teacher resilience in urban schools. *Journal of Instructional Psychology*, *31*(1), 3-11.

Schroeder, L. (2006). *What high-stakes testing means for the emotional well-being of students and teachers.* Ph.D. Dissertation, Claremont Graduate University, Claremont, CA. (3192291)

Snyder, C. R., & Lopez, S. J. (2009). *Oxford handbook of positive psychology*. New York, NY: Oxford University Press.

Thieman, E. B., Ball, A. L., & Kitchel, T. J. (2012). Resilient agricultural educators: Taking stress to the next level. *Journal of Agricultural Education*, *53*(1), 81-94. doi: 10.5032/jae.2012.01081

Yin, R. K. (2009). *Case Study Research: Design and Methods* (4th ed.). Thousand Oaks, CA: SAGE Inc.

Research Poster

Conference Research Abstracts versus Papers: NC AAAE Perspective

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Conference Research Abstracts versus Papers: NC AAAE Perspective

Introduction

The use of full length research presentation proposals creates issues for a profession. In addition to the time commitments on behalf of the author and reviewer, the issue of duplicate publications is a concern. The *Publication Manual of the American Psychological Association* (2010) states that articles published in “abstracted form or in a periodical with limited circulation” (p. 13) usually excludes them from the duplicate publication criteria. Do proceedings published on an Internet site meet the limited circulation criteria? One way to eliminate this concern is to limit presentation proposals to an abstracted form. With improvement in technologies, we have seen a tremendous increase in the amount of information available to researchers. As a result, researchers have more information to review and must skim and search for information more than in the past (Hartley, 1997). An abstract encourages the researcher to cover more material in the search for information. The abstract also forces the author to be explicit about the content and present the findings in a systematic way (Hartley, 1997).

After several years of debate the North Central AAAE region elected to pilot a 2000 word abstract for their 2012 research conference. Using the same manner as previous years when full papers were submitted, the abstracts were submitted, reviewed, and managed using the AAAE Protocol (AAAE, 2010). The NC AAAE pilot provided an opportunity to gage membership preference after having experienced the abstract process.

Purpose and Objectives

The purpose of this research project was to explore the AAAE membership’s experience with submitting research abstracts for the 2012 NC AAAE Research Conference. In order to accomplish the purpose, the following research objectives were developed: 1) describe the extent to which the use of abstracts was liked; 2) describe the advantages and disadvantages associated with the use of abstracts as compared to full papers; and 3) determine the preferred type of submission for future conferences.

Methods and Procedures

To accomplish the purpose and address the research objectives of this study, a questionnaire was developed by a subcommittee of the NC AAAE Research Committee. The contents of the instrument were discussed at the NC AAAE Regional Research Committee Meeting and a list of questions was developed using Dillman’s (2009) conventions. Using Qualtrics, an electronic survey instrument was sent to all the NC AAAE membership using the regional list-serve and the 68 AAAE members who served as reviewers. Data were analyzed using SPSS and descriptive statistics were reported. The qualitative comments were coded and common themes were identified (Krueger & Casey, 2000).

Results and Findings

Fifty respondents completed the instrument and reported serving various roles (29 reviewers, 19 authors, 3 discussants, 15 attendees, and 5 non-attendees) and all AAAE regions are represented (48% NC, 30% Southern & 22% Western). Due to the anonymity of the study, non-response error couldn't be measured and the findings cannot be generalized beyond those who responded.

The extent to which respondent liked the use of abstracts varied by the role they played in the review process (Table 1). Overall, 18% of respondents dislike the use of abstracts, 42% had no preference and 40% like the use of abstracts very much.

Table 1. Extent to which respondents like the use of abstracts

Role	*N*[1]	Dislike Very Much (n, %)	Neither Like or Dislike (n, %)	Like Very Much (n, %)
Authors	19	1, 5.3	6, 31.6	12, 63.2
Reviewers	29	8, 27.6	13, 44.8	8, 27.6
Discussants	3	0, 0.0	0, 0.0	3, 100.0
Attendees	15	0, 0.0	5, 33.3	10, 66.7
Non-Attendees	5	1, 20.0	2, 40.0	2, 40.0
Total (unduplicated)	50	9, 18.0	21, 42.0	20, 40.0

[1]Note: Roles add up to more than total because respondents could select more than one role

When asked about the advantages of using abstracts, the most common response was that it took less time for the reviewer and the author. Others liked the brevity and conciseness of the abstracts and the fact that it is another skill for the profession to develop. Abstracts avoid the ethical issues associated with terminal proceedings and journal articles, increase the likeliness that some will submit knowing that it's not terminal, and provide an easier process for graduate students to learn. Finally, abstracts seem appropriate for regional conferences since they are less scrutinized than journal manuscripts.

Just as many disadvantages were reported. Respondents were concerned with validity and decision-making issues because there 1) wasn't enough information or 2) abstracts weren't developed well enough. Others reported difficulty in transitioning between abstracts and full papers. The review process was an issue to some respondents and comments included the need for a different rubric for abstracts and the need for reviewer education. Finally, a comment was made regarding how some researchers on the promotion and tenure track benefit from full papers because they are counted equal to journal articles at their institutions.

When asked to identify the preferred method for future research conferences, respondents preferred abstracts at a ratio of 2:1. All attendees and discussants, nearly all authors (94%) and just more than half (51.7%) of the reviewers preferred abstracts.

Conclusions and Recommendations

Overall, abstracts were preferred to papers by those who responded. Some issues would need to be addressed if research abstracts were to become permanent. Authors would need professional development associated with writing concise, succinct and well-developed abstracts. Similarly, professional development is need for reviewers so they feel comfortable reviewing and assessing abstracts. Finally, the rubric used to evaluate abstracts may need to be reviewed and modified.

A review of the comments indicates there is a great deal of divisiveness related to this issue; respondents were either completely in favor of either abstracts or papers. No matter the final decision, it is imperative that the entire profession support the decision. The NC AAAE region has elected to pilot the abstract for two more years.

References

AAAE (2010, May). *AAAE Protocol guidelines for conference paper selection, presentations and awards.* Retrieved from http://aaaeonline.org/uploads/thecommons/1-27-2011_217_AAAE_Research_Paper_Selection_Protocol_Guidelines_May_2010.docx

American Psychological Association. (2010). *Publication manual of the American Psychological Association.* Author: Washington, DC.

Dillman, D. A., Smyth, J. D., & Christian. L. M. (2009). *Internet, Mail and Mixed-Mode Surveys, The Tailored Design Method* (3rd ed.). John Wiley Co. Hoboken: N.J.

Hartley, J. (1997). Is it appropriate to use structured abstracts in social science journal? *Learned Publishing*, *10*(4), 313-317. Retrieved from http://www.ingentaconnect.com/content/alpsp/lp/1997/00000010/00000004/art00004

Krueger, R. A., & Casey M. A. (2000). *Focus Groups.* Thousand Oaks, CA: Sage.

McCormick, M. C. & Holmes, J. H. (1985). Publication of research presented at the pediatric meetings. *American Journal of Diseases of Children*, *139*(2), 122-126. Retrieved from http://archpedi.jamanetwork.com/issue.aspx?journalid=75&issueid=13117

Research Poster

Cooperating Teachers' Perceptions of Co-teaching in Agricultural Teacher Candidate Preparation

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Cooperating Teachers' Perceptions of Co-teaching in Agriculture Teacher Candidate Preparation

Introduction

Student teaching is the pinnacle of the preservice program. It is there teacher candidates activate collectively, the knowledge, theory and skill related to facilitating learning in the secondary environment. Candidates enter, expected to advance student progress on testing goals and manage student behavior, while experienced teachers of record step out. This practice is contrary to the documented correlation between student performance and teacher experience (Darling-Hammond, 2000). Struggle often ensues on the part of the students and candidate. Co-teaching provides a possible solution to the balance between a quality academic environment and building candidate competence (Scantlebury, Gallo-Fox, & Wassell, 2008).

Conceptual Framework

Co-teaching involves adoption of the mindset that teachers and teacher candidates share the classroom and students; actively teaching and learning together (Tobin, 2006). This concept mirrors learning within communities of practice where parties share interest and interact regularly, while learning about and working together to advance topical understandings (Wenger, McDermott, & Snyder, 2002). Placed within a teacher learning lens, *knowledge of practice* is a powerful conception, merging theoretical understandings and practical engagement through professional interaction with other teachers (Cochran-Smith and Lytle, 1999). This convergence presents the teacher as both teacher and learner. They problematize their teaching and engage with peers in the construction of new knowledge and professional advancement. Candidates have the potential to develop as professionals during student teaching, by being intentional about their roles in teaching and learning (Goodnough, Osmond, Dibbon, Glassman, & Stevens, 2009).

Merely providing space for candidates to apply university learning, cooperating teachers downplay their expertise, failing to view themselves as site-level teacher educators (Feiman-Nemser, 1998). The goal of co-teaching at [university] is to support collaborative efforts between cooperating teachers and candidates, as they facilitate student learning through co-planning and co-teaching. During candidate placement, leadership begins with the cooperating teacher. With time and support, the responsibility is transferred to the candidate. Six possible strategies are outlined to develop candidate leadership in the academic setting: One Teach, One Observe; One Teach, One Assist; Station Teaching; Parallel Teaching; Differentiated Teaching; and Team Teaching (Friend & Bursuck, 2009).

The purpose of this study was to examine the effectiveness of co-teaching for cooperating teachers in agricultural education at [university]. The objectives included: (1) identify the most frequently used strategies, (2) identify the strengths and (3) the challenges secondary agricultural education cooperating teachers perceive as related to co-teaching.

Methodology

The study population included the nine cooperating teachers working with [university] teacher candidates in agricultural education, during the winter 2013 quarter. Participants completed the co-teaching training with their teacher candidate. The two groups actively applied co-teaching to their specific teaching situations, and candidates wrote weekly reflections. The reflections were reviewed to identify the frequency of strategy use. Cooperating teachers also participated in a focus group interview about their co-teaching experiences. An expert panel of teacher education faculty reviewed the open-ended interview guide. The interview was recorded and transcribed. Data were coded and themes extracted using thematic analysis (Grbich, 2007).

Findings

Related to the first objective, the most utilized co-teaching strategy was One Teach, One Observe with 32 mentions. This strategy was used most during the first few weeks and began tapering the longer the candidates were in the setting. The remaining strategies included: One Teach, One Assist with 23 mentions; Team Teaching with 15 mentions; Station Teaching with 7 mentions; Parallel Teaching with 2 mentions and Differentiated Teaching with just 1 mention.

The second objective identified the strengths cooperating teachers perceived related to co-teaching. Cooperating teachers appreciated the familiarity of co-teaching and the goal requiring them to be more purposeful in their interaction with candidates. They felt co-teaching gave them an excuse to remain in the room, rather than leaving upon the candidate's placement. This license was believed to reduce pressure on the candidate and increase instructional quality. They believed candidates advanced more quickly in their classroom management due to sustained mentoring. They appreciated the fresh ideas and information gained from participating with candidates in planning and teaching.

The third objective identified the challenges cooperating teachers perceived as related to co-teaching. Initially, they felt candidates had difficulty launching into the role of teacher, as they became too comfortable with their roles as observer. They believe co-teaching made them feel they were sheltering the candidates from the harsh realities of the secondary environment. They also believed they were doing too much "hand holding," especially with co-planning, noting many did not require it. Lastly, cooperating teachers felt candidates were not "spreading their wings" since they continually looked to them for direction.

Conclusions

Cooperating teachers who worked with [university] teacher candidates were satisfied with the practice of implementing co-teaching into the existing secondary framework. This was evidenced by the numerous references to co-teach strategies within the weekly candidate reflections. In the interview setting, cooperating teachers shared they were not new to the idea of co-teaching, but had not previously approached it with the intentionality required. Their concern for candidate success in content delivery and classroom management, as well as meeting their individual need for growing autonomy, indicates the seriousness with which they viewed their role in shaping their candidate's professional identity.

Recommendations/Implications

The researchers recommend cooperating teachers and candidates regularly discuss the goals and outcomes of their co-teaching relationship. This action has the potential to more appropriately tailor the experience. Teacher educators can close the feedback loop by discussing co-teach progress at site visits. This carries the potential to increase the frequency, and broaden use, of co-teach strategies. Re-teaching strategies or reminders of how to shift leadership roles may be necessary. To broaden understanding, research must be conducted on the experiences teacher candidates and students have with the co-teaching approach.

References

Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: Teacher learning in communities. *Review of Research in Education, 24*, 249—305.

Darling-Hammond, L. (2000). Teacher quality and student achievement. *Education Policy and Analysis Archives, 8*(1). Retrieved from http://epaa.asu.edu/ojs/article/view/392/515

Feiman-Nemser, S. (1998). Teachers as teacher educators. *European Journal of Teacher Education*, *21*(1), 63—74.

Friend, M., & Bursuck, W. D. (2009). *Including students with special needs: A practical guide for classroom teachers* (4th ed.). Boston, MA: Allyn & Bacon.

Goodnough, K., Osmond, P., Dibbon, D., Glassman, M., & Stevens, K. (2009). Exploring a triad model of student teaching: Pre-service teacher and cooperating teacher perceptions. *Teaching and Teacher Education*, *25*, 285—296. doi:10.1016/j.tate.2008.10.003

Grbich, C. (2007). *Qualitative data analysis: An introduction*. Thousand Oaks, CA: Sage Publications.

Scantlebury, K., Gallo-Fox, J., &Wassell, B. (2008). Coteaching as a model for preservice secondary science teacher education. *Teaching and Teacher Education*, *24*, 967—981. doi:10.1016/j.tate.2007.10.008

Tobin, K. (2006). Learning to teach through coteaching and cogenerative dialogue. *Teaching Education*, *17*, 133—142. doi:10.1080/10476210600680358

Wenger, E., McDermott, R., & Snyder, W. M. (2002). *Cultivating communities of practice: A guide to managing knowledge*. Boston, MA: Harvard Business School Press.

Research Poster

Discrepancy Analysis of Secondary Agricultural Science Teacher's Ability to Teach, Ability to Perform and Knowledge Factors of Social Emotional Learning in Agricultural Educational Curriculum

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Discrepancy Analysis of Secondary Agricultural Science Teacher's Ability to Teach, Ability to Perform and Knowledge Factors of Social Emotional Learning in Agricultural Educational Curriculum

Introduction/Need for Research

According to the American Association for Agricultural Education's (AAAE) research priorities for 2011-2015, key outcomes of priority 4 are to support learners in all agricultural education learning environments to be actively and emotionally engaged in learning, leading to high levels of achievement, life and career readiness, and professional success (Doerfert, 2011). According to Doerfert (2011), a challenge to this priority is that complex skills such as effectively communicating, working in teams, and developing creative solutions to complex problems are sometimes ignored. Schools will be most successful in their educational mission when they integrate efforts to promote children's academic, social, and emotional learning (Elias et al.,1997; Payton et al., 2000; Zins et al., 2000). Researchers have found that pro-social behavior in the classroom skills are linked with positive intellectual outcomes (DiPerna & Elliott, 1999; Feshbach & Feshbach, 1987; Haynes, Ben-Avie, & Ensign, 2003; Pasi, 2001) and are predictive of performance on standardized achievement tests (Malecki & Elliott, 2002; Welsh, Park, Widaman, & O'Neil, 2001). Social-Emotional Learning (SEL) can be defined as "the process through which children enhance their ability to integrate thinking, feeling, and behaving to achieve important life tasks" (Zins, Bloodworth, Weissberg, & Walberg, 2007, p. 194). While much focus is on the technical knowledge students are learning in the agricultural education classroom, SEL components being infused into curriculum can enhance outcomes for students and engage learners to higher levels of life and career readiness and success. However, agricultural educators may have discrepancies in their knowledge, ability to teach and ability to preform SEL content needed to achieve learning objectives.

Conceptual Framework

The framework of SEL competencies is outlined by Zins et al, (2007), which categorized competencies in self-awareness, socially cognizant, responsible decision making, self-management and relationship-management skills so as to foster their academic success. The Borich Model allows for "respondents to provide data that can be weighted and ranked in order of priority so that responses can be linked to a practical decision framework for program improvement" (Borich, 1980, p. 39). The framework of Zins et al, (2007) serve to develop the research constructs while the measurement of teacher educational discrepancy followed Borich (1980), which combine to develop the conceptual framework for this research.

Methodology

A descriptive survey design was used in this study. The researchers pilot tested the survey with 15 student teachers and incorporated the constructs outlined by Zins et al, (2007). The survey also incorporated the Borich Model (1980) for needs assessment. The survey utilized 5-point Likert-type scale that captured construct importance, knowledge, ability to teach, and ability to preform. A convenience sample was taken at the 2012 {State} agricultural teachers professional development conference opening session, which provided a wide-selection of teachers present to complete the survey. {State} University student teachers handed out 450 surveys to those entering two of the four entrances and collected 380 completed surveys at completion of the opening general session. The results of this convenience sample resulted in 84 percent (n=380) completing the survey. A Cronbach's alpha (.89) determined the strength of internal consistency of the survey using ordinal data points. Data analysis was completed using descriptive statistics and calculations of discrepancy scores following methods outlined by Borich (1980), which calculated mean weighted discrepancy scores (MWDS) for each competency. Competencies were separated by construct, and then ranked from high to low using the MWDS; competencies with the highest MWDS indicated areas in need of the most improvement (Borich, 1980).

Results/Findings

Respondents represented teachers averaging 12 years of experience, occasionally teaching leadership type courses, and 8 out-of-ten were interested in new leadership curriculum they could utilize in their classroom. Respondents completed a Likert-type scale rating of SEL components outline by Zins et al, (2007) as (1) not important or none, (2) below average, (3) average, (4) above average, and (5) exceptional in the areas of importance, knowledge, ability to teach, and ability to preform. In terms of importance, all variables were mostly of above average importance to average importance. Similar results were noted in the areas mean knowledge, ability to teach, and ability to preform for constructs. There were noted differences in knowledge, ability to teach, and ability to preform.

The calculation of MWDS resulted in top ranking competency areas for discrepancy in the areas of (1) recognizing strengths, needs, and values, (2) self-motivation discipline, and (3) goal setting and organizational skills. The MWDS for the ability to teach category consisted (1) personal, moral, and ethical responsibility, (2) problem solving, and (3) self-motivation and discipline. The MWDS for ability to perform included (1) recognizing strengths, needs, and values and (2) goal setting and organizational skills. Only one negative MWDS was found in the area of spirituality.

Conclusions

Limitations exist with this in terms of extrapolating beyond the respondents of this study, but offer insight into agricultural science teachers professional development in an important and nationally recognized area for supporting students and supporting their personal growth. The findings are nearly all competencies are important, and only slight discrepancies exist in SEL components areas. The competencies of recognizing strengths, needs, and values, goal setting and organization skills, and self-motivation and discipline rise to the top with the highest and consistent ranking of need and potentially are an initial focus of in-service for teachers.

Implications/Recommendations

This baseline research offers insight into teachers in-service needs in the area of SEL competencies. Utilizing these results can promote teaching SEL competencies and encourages the development of additional resources. In addition to supporting educational development, this research may encourage additional research to more clearly identify teacher needs in order to assist students in becoming actively and emotionally engaged in learning, which relates to Doerfert's (2011) challenge for meeting the AAAE national research agenda for 2011-2015.

References

Borich, G. D. (1980). A needs assessment model for conducting follow–up studies. Journal of Teacher Education, 31(3), 39–42. doi:10.1177/002248718003100310

DiPerna, J. C., & Elliott, S. N. (1999). The development and validation of the Academic Competence Evaluation Scales. Journal of Psycho-educational Assessment, 17, 207–225.

Elias, M. J., Zins, J. E., Weissberg, R. P., Frey, K. S., Greenberg, M. T., Haynes, N. M., Kessler, R., Schwab-Stone, M. E., & Shriver, T. P. (1997). *Promoting social and emotional learning: Guidelines for educators*. Alexandria, VA: Association for Supervision and Curriculum Development.

Feshbach, N. D., & Feshbach, S. (1987). Affective processes and academic achievement. Child Development, 58, 1335–1347.

Haynes, N. M., Ben-Avie, M., & Ensign, J. (Eds.). (2003). How social and emotional developments add up: Getting results in math and science education. New York: Teachers College Press.

Malecki, C. K., & Elliott, S. N. (2002). Children's social behaviors as predictors of academic achievement: A longitudinal analysis. School Psychology Quarterly, 17(1), 1–23.

Payton, J. W., Wardlaw, D. M., Graczyk, P. A., Bloodworth, M. R., Tompsett, C. J., & Weissberg, R. P. (2000). Social and emotional learning: A framework for promoting mental health and reducing risk behavior in children and youth. Journal of School Health, 70(5), 179–185.

Pasi, R. J. (2001). Higher expectations: Promoting social emotional learning and academic achievement in your school. New York: Teachers College Press.

Sorensen, T., Tarpley, R., & Warnick, B. (2010). Inservice Needs of Utah Agriculture Teachers. *Journal of Agricultural Education* , 51 (3), 1 – 11. DOI: 10. 5032/jae.2010.03001

Welsh, M., Park, R. D., Widaman, K., & O'Neil, R. (2001). Linkages between children's social and academic competence: A longitudinal analysis. Journal of School Psychology, 39(6), 463–481.

Zins, J. E., Bloodworth, M. R., Weissberg, R. P. & Walberg, H. J. (2007). The scientific base linking social and emotional learning to school success. *Journal of Educational and Psychological Consultation, 17*(2-3), 191-210.

Zins, J. E., Elias, M. J., Greenberg, M. T., & Weissberg, R. P. (2000). Promoting social and emotional competence in children. In K. M. Minke & G. C. Bear (Eds.), Preventing school problems—promoting school success: Strategies and programs that work (pp. 71–100). Bethesda, MD: National Association of School Psychologists.

Research Poster

Diversifying Student Enrollment in Colleges of Agriculture through the Recruitment of Latino Students

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Diversifying Student Enrollment in Colleges of Agriculture through the Recruitment of Latino Students

Introduction/Need for Research

The United States is a country known for welcoming people from many different countries, races, and religions all hoping to find new opportunities and a better way of life (Millet, 2011). In the United States, the Latino population is growing rapidly and more so than any other cultural group. To meet the needs of our increasingly global society, there is a need for more Latinos to pursue higher education degrees. At (State) University, 4.3% of the incoming freshman classified themselves as being Hispanic/Latino, contributing to only 16.4% of the total student population. In the College of Agriculture and Life Sciences, there are 226 Latino students out of 5, 921 (State, 2012). This research supports priority five of the National Research Agenda explains the need for research concerning the production of effective leaders who promote positive communities as well as education and career opportunities (Doerfert, 2011).

A qualitative approach was used to provide an intensive, more in-depth understanding of the motivations and influences of Latino students, specifically those whose parents are migrant farm workers, to pursue an agricultural related career. More specifically, a phenomenological study was selected to allow the "essence" of these participants experience to be described (Creswell, 2012). The purpose of this study was to determine specific motivations and influences encouraging Latino students to pursue a degree in an agricultural related field. In order to effectively recruit and retain students from a diverse population, it is important for educators to understand those factors.

Theoretical Framework

Vroom's (1964) expectancy theory has become quite prominent in the study of motivation. This theory states a person will choose a certain behavior based on their motivations and what they believe the outcome will be (Vroom, 1964). Vroom (1964) explained a person's motivations are based on three factors: valence, instrumentality, and expectancy.

By understanding Latino student's desires and beliefs related to agricultural related degrees as well as their self-efficacy towards completing the degree program, educators may be able to improve recruitment efforts. In addition, by examing the internal and external factors that contribute to each variable within the expectancy theory, educators can identify factors that might help or hinder Latino students desire to pursue and complete an agricultural degree.

Methodology

Phenomenological research provides a deeper understanding of a phenomenon that is experienced by individuals (Creswell, 2012). Latino students enrolled in degree programs within the College of Agriculture and Life Science were identified and contacted for possible participation. For this study, a purposive sampling technique was used to meet the following criteria to select participants so the phenomenon (experiences and motivations of achieving an agriculture related degree) could be thoroughly described:

1. Participants had to classify themselves as being Latino.
2. Participants had to be enrolled in an agriculture related degree.

3. Participants had to be the child of a migrant farm worker.

Semi-structured interviews were conducted with two individuals meeting the criteria. Interview questions were designed by the researcher after a thorough literature review focusing on the motivating factors and influences associated with students' choice to pursue an agricultural degree. The interview questions were shared with the secondary investigator and suggested changes were made. The interviews were voice recorded and transcribed by the researcher. To ensure reliability of the data, participants were asked to review the transcripts. Bracketing was conducted to allow the experiences of the participants to be analyzed without bias. Data analysis was completed by horizonalization by highlighting significant statements throughout the transcriptions and assigning themes. Thirty themes emerged, and those themes were then combined into six themes, before being combined into three main themes. The organization into themes allowed the lived experiences to be better described. (Creswell, 2012)

In addition to the interviews, document analysis of open ended questions was conducted. This allowed for validation of the data through triangulation and provided additional insight into participants' motivations to pursue a college degree.

Results/Findings

Both of the Latino students interviewed in the study had positive experiences associated with agriculture. Coming from a strong agricultural background, both individuals families relied on agriculture for a way of life and as a primary source for income as their fathers were employed within the agriculture industry. The Hispanic/Latino culture considers a strong commitment to family to be of paramount importance (Griggs & Dunn, 1995; McCartney, 2008). Both participants discussed the sacrifices made by their parents so they could have a better life and attend college. Research shows students are often influenced to pursue a degree if it is their father's occupation (Jones & Larke, 2001). In addition to their parents, mentors both within the community and university setting played a significant role impacting the participant's career choice. Similarly, research conducted by Mullinix, Garcia, Lewis, and Qazi (2003) found Latinos have a positive attitude about working in agriculture.

As with most students, scholarship opportunities were a major influence and motivating factor. Latinos are more apt to partake in programs if they are affordable and don't compromise family relations or obligations (Mullinix, Garcia, Lewis, & Qazi, 2003).

Conclusions

This study supports previous research recognizing the strong influence of parents on students' choices of undergraduate majors. As a result, parents need to be educated and provided with information to allow for increased understanding of opportunities in the agricultural industry available for their children. In addition, students need to know and be mentored by supportive professors. This is not something that only applies to the Latino population but universally to all students. Also, by seeing the strong impact that scholarships play in assisting financially, universities need to continue to seek out scholarship donors that can help prepare future generations.

Implications/Recommendations/Impact on Profession

Overall, this study provided valuable insight to be used within agricultural departments to help recruit Latino students. By being aware of the motivating factors and influences, university recruiters can focus on those indicators when presenting these students with information about their university. In order to meet the demands of a globally competitive workforce, universities must focus efforts on the recruitment of a diverse student population and promote a potential positive message about careers in agriculture.

References

Borkowksi, N. (2005). *Organizational Behavior in Healthcare*. Sedbury, MA: Jones and Bartlett.

Creswell, J. (2012). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches.* Thousand Oaks, CA: Sage.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015.* Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Griggs, S. & Dunn, R. (1995). Hispanic-American students and learning style. *Emergency Librarian.* 23(2), 11-16.

Jones, W. & Larke, A. (2001). Factors influencing career choice of African Americans and Hispanic graduates of land grant colleges of agriculture. *Journal of Agricultural Education.* 42(1), 38-48.

McCartney, C. K. (2010). *Experiences of secondary Hispanic immigrant students| Their stories of challenge and triumph*. Lamar University.

Millet, J. (2011). From melting pot to salad bowl. *Understanding American Culture.* Retrieved from: http://www.culturalsavvy.com/understanding_american_culture.htm

Mullinix, K., Garcia, L., Lewis-Lorentz, A., & Qazi, J. (2003). Latino views of agriculture, careers and education: Dispelling the myths. *NACTA Journal*, *47*(4), 1-15.

(State) University Admissions: College of Agriculture and Life Sciences Student Statistic Report (2012). Retrieved from: http://www2.acs.[redacted].edu/UPA/enrollmentdata/f12enrol/index.htm

Vroom, V. (1964). *Work and motivation.* New York, NY: John Wiley and Sons.

Research Poster

Evaluation of On-Farm Food Safety Programming in Pennsylvania: Implications for Extension

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Evaluation of On-Farm Food Safety Programming in Pennsylvania: Implications for Extension

Introduction and Framework

Each year foodborne illness affects approximately 48 million people and takes the lives of thousands in the United States (Center for Disease Control and Prevention, 2012). Microbial contamination of farm produce has been identified as a source for foodborne disease outbreaks and the numbers of outbreaks related to contamination of produce have increased (Sivapalasingam, Friedman, Cohen, & Tauxe, 2004). To prevent microbial contamination of fresh produce in order to reduce foodborne disease outbreaks, the U.S. Food and Drug Administration (FDA) has proposed food safety rules for produce growers which include workers health and hygiene, quality of agricultural water, the use of domesticated animals, potential contamination by wild animals, sanitation standards for equipment, tools and buildings, and traceability/recall. These growers are increasingly required to provide evidence that they are following and can document Good Agricultural Practices (GAPs) to meet the policies of their buyers as well as federal regulations. To address this issue, Penn State Extension offered four types of training/workshops in 2012. Trainings included food safety awareness, GAP certificate training, food safety plan writing support, and mock audits. This poster focuses on the outcomes of GAP certificate trainings organized to provide participating growers the knowledge and skills they need to comply with and verify GAPs on their farms.

An evaluation framework, proposed by Rockwell and Bennett (2004) was used to carry out this evaluation. Rockwell and Bennett described the seven hierarchical steps identifying the “chain of events” explaining that practice change of program participants’ will occur after they change their knowledge, attitude, skills, and aspirations/intentions (KASA/I). This framework operates under the assumption that if participants’ possess knowledge, then they will have confidence, if they have knowledge and confidence, then they intend to adopt/implement a practice.

Methodology

The Penn State on-farm food safety programs targeted growers who sold their produce through various marketing outlets, including auctions, cooperatives, and supermarkets. In order to improve Extension’s GAP educational programming and assess the changes in participants’ knowledge, confidence, and intentions on GAPs, these workshops were evaluated using a pre- and post-test design. This method has been used to evaluate of various programs (Lippert, Plank, & Radhakrishna, 2000; Chapman-Novakofski et al., 2004; Fishel, 2008). Participant growers’ knowledge of GAPs was measured using ten knowledge-based statements (True and False) and their confidence in GAP skills was measured on a 5 point Likert-scale (1 “Not At All Confident” to 5 “Very Confident”). Both knowledge and confidence questions were assessed for content validity, readability, and appropriateness to the target audience by panel of experts consisting of faculty and educators. Overall, 330 individuals in 10 workshops received the evaluation and 263 completed it for a response rate of 79.7%. At the time of post evaluation, participants were also asked if they intended to carry out GAP-related activities on their farms: write or update a food safety plan, conduct their own food safety inspection, and prepare for a third-party audit. Descriptive statistics were used to analyze the data. Paired *t*-tests were carried out to determine knowledge gain and confidence level scores between pre and post-tests. This study was approved by Internal Review Board (IRB) at the Pennsylvania State University.

Results

Overall, workshop participants increased their knowledge scores. The overall mean score for the ten knowledge questions increased from a mean of 6.60 (before) to a mean of 8.11 (after) the workshops, an increase of 1.51. The largest increase (47.9%) occurred for the statement, *fresh fruits and vegetables are the primary cause of foodborne illnesses*. However, correct responses did not increase for all of the statements. For example, *restricting access of wild animals to fields* decreased from 73.2% (before) the workshops to 66.3% (after) the workshops. A significant difference (n = 190, t = -13.47, p <.001) in growers' overall knowledge level was found between the pre and post assessments, see Table 1. After the workshops, growers exhibited greater confidence in their GAPs skills than before the workshops. Growers' confidence in writing a food safety plan increased by 44.8%, conducting a self-food safety inspection by 36.0%, and preparing for a third-party audit by 34.3%. Results indicated a significant difference (n = 192, t = -15.70, p <.001), in growers' overall confidence level between pre and post workshops, see Table 1.

Table 1

Participant growers' Knowledge and Confidence to Carry out GAPs

	n	Pretest Mean	Post-test Mean	*SD*	Mean Difference	*t* value
Knowledge (0-10)[a]	190	6.60	8.11	1.54	-1.51	-13.47*
Confidence (3-15)[b]	192	8.33	11.25	2.58	-2.92	-15.70*

Note. *p < .001

[a]Knowledge score could range from 0 – 10.

[b]Measured on a scale '1 (not at all confident) to 5 (very confident).' Confidence score could range from a low of 3 to a high of 15 with a theoretical midpoint of 9.

The majority of the growers indicated their intention to carry out GAP related activities: write or update a food safety plan (51.8%) and conduct a food safety inspection (63.5%) on their farms. However, only one of five (20.2%) growers indicated that they intended to have a third-party audit carried out on their farms.

Conclusions/Implications

To assure a safe supply of fresh produce and reduce the incidences of outbreaks associated with fresh produce contaminations, produce growers need to learn about and implement food safety practices in their farms (Lynch, Tauxe, & Hedberg, 2009). Findings from this study have programming implications for Penn State Extension especially to improve the content related to the GAP topics that showed a decrease in correct responses. Future trainings should focus more on growers' GAPs knowledge and skills that may enhance growers' confidence in carrying out GAPs. In addition, such training should also address the challenges that growers face in implementing and verifying GAPs on their farms. This is especially true given the fact that U.S. FDA has proposed food safety rules for produce growers. Evaluations to date have focused on the short-term impacts on the participants' GAP knowledge and confidence levels. Follow-up studies are recommended to evaluate the long-term impacts: practice change of growers. Three-fourths of the growers had never before attended a farm food safety workshop, reflecting the importance of food safety and Extension's effective outreach to newer grower audiences.

References

Centers for Disease Control and Prevention (CDC). (2011). CDC and Food Safety. Retrieved February 23, 2013, from http://www.cdc.gov/foodsafety/cdc-and-food-safety.html

Chapman-Novakofski, K., DeBruine, V., Derrick, B., Karduck, J., Todd, J., & Todd, S. (2004). Using evaluation to guide program content: Diabetes education. *Journal of Extension* [On-line], *42*(3) 3IAW1. Retrieved from http://www.joe.org/joe/2004june/iw1.php

Fishel, F. (2008). Using a Pre-and Post-Test to Assess 1-Day Learning of Agricultural Producers Participating in an Educational Program. *Journal of Extension* [On-line], *46*(5) Article 5TOT3. Retrieved from http://www.joe.org/joe/2008october/tt3.php

Lippert, R. M., Plank, O., & Radhakrishna, R. (2000). Beyond perception: A pretest and posttest evaluation of a regional Internet Extension inservice training. *Journal of Extension* [On-line], *38*(2) Article 2FEA2. Retrieved from http://www.joe.org/joe/2000april/a2.php

Lynch, M. F., Tauxe, R. V., & Hedberg, C. W. (2009). The growing burden of foodborne outbreaks due to contaminated fresh produce: risks and opportunities. *Epidemiology and Infection*, *137*(3), 307-315. doi: 10.1017/S0950268808001969

Rockwell, K., & Bennett, C. (2004). Targeting outcomes of programs: A hierarchy for targeting outcomes and evaluating their achievement. *Faculty Publications: Agricultural Leadership, Education & Communication Department*. Paper 48. Retrieved from http://digitalcommons.unl.edu/aglecfacpub/48/

Sivapalasingam, S., Friedman, C. R., Cohen, L., & Tauxe, R. V. (2004). Fresh produce: a growing cause of outbreaks of foodborne illness in the United States, 1973 through 1997. *Journal of Food Protection*, *67*(10), 2342-2353. Retrieved from http://www.ingentaconnect.com/content/iafp/jfp

Research Poster

Examining Agricultural Mechanic Competencies of Former High School Agricultural Education Students

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Examining Agricultural Mechanic Competencies of Former High School Agricultural Education Students

Introduction

The agricultural mechanics curriculum has always been a cornerstone in secondary agricultural education programs across the country (Burris, Robinson, & Terry, 2005). Agricultural mechanics combines the introduction of new material with problem solving skills that prepares students for post high school agricultural pursuits. Kotrlik and Drueckhammer (1987) found that agricultural mechanics, along with supervised occupational experience programs, were the two most important components in ensuring quality programs in the future. In order for a continuation of qualified personnel, the need to examine the competencies of agricultural education students must continue. The purpose of this study was to assess the agricultural mechanic competencies of former high school agricultural education students. Specifically, the study intended to answer the following research questions: (1) What was the agricultural mechanic skill level of the students upon entering their high school agricultural program, and (2) What was the agricultural mechanic skill level of the students upon exiting their high school agricultural program?

Conceptual Framework

The conceptual framework for this study is based upon a review of literature concerning the effectiveness of agricultural mechanical courses at the secondary level. Agricultural mechanics courses provide students with an opportunity to develop new skills or refine pre-existing skills in the field of agriculture. The mechanical skills that students develop have the potential to make them more diverse and marketable in an ever changing world. The Missouri Department of Elementary and Secondary Education (2003) identified agricultural mechanics courses as the highest area of enrollment among secondary agriculture classes. Additionally, agricultural mechanics was identified as the highest rated student interest area.

Agricultural mechanics is a subject that is not limited to topic specific courses. Agricultural mechanics can be found in all facets of agriculture and can be integrated into all curriculums that are found in a high school program. Phipps (1983) expressed that agricultural mechanics is an important part of the total agricultural education program. In many courses, the time allocated for instruction in agricultural mechanics comprises 25-40% of the total instructional time (Phipps, 1980).

Methodology

The target population consisted of select agricultural mechanical courses 103 [Course title], and 330 [Course title] at [University] during fall semester 2010 (N = 25). A modified Delphi technique was used to develop the questionnaire. During the first phase, researchers identified the content standards and objectives (CSO's) for agricultural mechanic courses as listed by the [State] Department of Education. During the next phase, the CSO's were alphabetically listed and disseminated to pilot group of secondary agricultural education teachers in the state to identify which objectives were most important for student attainment through agricultural mechanic courses. During the next phase, researchers examined the responses for emerging themes. Similar responses were grouped with the most frequently selected responses used to develop a questionnaire of Likert scale items. The questionnaire was presented to a panel of experts consisting of agricultural education faculty members at [University] to establish face and content validity. The reliability coefficient (Cronbach's Alpha) for the questionnaire was .95. The competency levels were based on a 4 point Likert scale: 1-1.50 = no skills, 1.51-2.50 = minimal skills, 2.51-3.50 = basic skills, and 3.51- 4.0 = mastery skills.

Findings

Respondents indicated having minimal skills in wood working (M = 1.96, SD = .98) prior to taking agricultural mechanics courses and having minimal skills (M = 2.36, SD = 1.19) after completing the courses. Respondents also indicated having minimal skills in concrete systems (M = 1.72, SD = .94) prior to taking agricultural mechanics courses and having minimal skills (M = 1.84, SD = 1.07) after completing the courses. Additionally, respondents indicated having no skills in small engines (M = 1.44, SD = .87) prior to taking agricultural mechanics courses and having minimal skills (M = 1.76, SD = 1.01) after completing the courses.

Respondents indicated having no skills in arc welding (M = 1.40, SD = .82) prior to taking agricultural mechanics courses and having minimal skills (M = 2.04, SD = 1.06) after completing the courses. Respondents also indicated having no skills in plumbing systems (M = 1.40, SD = .75) prior to taking agricultural mechanics courses and having no skills (M = 1.40, SD = .75) after completing the courses.

Respondents indicated having no skills in welding (M = 1.32, SD = .80) prior to taking agricultural mechanics courses and having minimal skills (M = 1.52, SD = .92) after completing the courses. Respondents also indicated having no skills in electrical wiring (M = 1.32, SD = .75) prior to taking agricultural mechanics courses and had no skills (M = 1.44, SD = .82) after completing the courses.

Conclusion/Recommendations

Through the analysis of data for this study it was seen that many students are graduating high school with a very small knowledge base of agricultural mechanical competencies. This finding is of vital concern considering the fact that historically, agricultural mechanics has been one of the highest rated sectors of program recruitment and has been linked to desirable attributes as mathematical problem solving skills (Reis & Kahler, 1997; Parr, Edwards, & Leising, 2006). If agricultural mechanics is to remain a vital part of secondary programs, it is imperative for teachers to teach students these skills. Agricultural mechanical skills are useful and they can transfer into a student's career and personal life. The combination of hands on application, problem solving, and practical use of the skills gained in agricultural mechanic courses is an integral part of any secondary agricultural education program and one of the aspects that is appealing to potential students. Exposing students to these opportunities and engaging them in hands on learning could increase the appeal of an agricultural program. There are numerous jobs that are available in the agriculture sector that can be directly related to the agricultural mechanics lab. Presenting students with skills that will make them marketable and employable can be achieved through agricultural mechanic competencies.

References

Burris, S., Robinson, J., & Terry, R. (2005). Preparation of pre-service teachers in agricultural mechanics. *Journal of Agricultural Education*, *46*(3), 23-34. doi: 10.5032/jae.2005.03023

Kotrlik, J. W & Drueckhammer, D. (1987). The importance of selected external factors and programmatic components in planning vocational agriculture programs. *Journal of Agricultural Education, 28*(4), 26-31. doi:10.5032/jaatea.1987.04026

Missouri Department of Elementary and Secondary Education (2003). *Agricultural Education in Missouri*. Retrieved from http://www.dese.state.mo.us/divvoced/ag_ed_in_mo.htm

Parr, B. A., Edwards, M. C., & Leising, J. G. (2006). Effects of a math-enhanced curriculum and instructional approach on the mathematics achievement of agricultural power and technology students: An experimental study. *Journal of Agricultural Education, 47*(3), 81-93. doi: 10.5032/jae.2006.03081

Phipps, L.J. (1980). *Handbook on agricultural education in the public schools*. Danville, IL: Interstate Printers and Publishers, Inc.

Phipps, L.J. (1983). Mechanics in agriculture. Danville, IL: The Interstate.

Reis, R., & Kahler, A. A. (1997). Factors influencing enrollment in agricultural education programs as expressed by Iowa secondary agricultural education students. *Journal of Agricultural Education, 38*(2), 38-48. doi:10.5032/jae.1997.02038

Research Poster

Factors Impacting the Instructional Curriculum Choices of Missouri School-Based Agricultural Mechanics Educators

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Factors Impacting the Instructional Curriculum Choices of [STATE] School-Based Agricultural Mechanics Educators

Introduction

Instructional practices, which are implemented in the classroom and laboratory, are somewhat based on how teachers choose to teach the curriculum content with the resources allocated to them and within the schools' learning environment (Knobloch, 2008). He also found that predetermined beliefs of teachers often influence how they connect academic content in the classroom to real-life applications in the laboratory or community. Additionally, research determined that the development and performance of teachers is also influenced by the interaction of these personal and environmental factors and the situations in which they teach (Knobloch, 2001). *The National Research Agenda for Agricultural Education and Communications* suggests that teachers promote "highly effective educational programs [that] will meet the academic career and developmental needs of diverse learners in all settings and at all levels" (Doerfert, 2011, p. 24). As teacher educators, if we can understand the factors that influence teachers' decisions towards curriculum instructional choice, can we then help teachers improve in performance and ultimately aid students in academic mastery?

Theoretical Framework

To guide this study, two theories were utilized to form the theoretical framework: the theory of self-efficacy (Bandura, 1997) and the theory of planned behavior (Ajzen & Fishbein, 1980). According to Bandura (1997), self-efficacy is defined as the "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3). The theory of planned behavior (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) was developed to understand persons' behaviors over which people have incomplete volitional control. This theory suggests that investigators should not only look at beliefs, attitudes, and intentions of individuals, but also their behavior (Ajzen, 1988). As researchers, if we can understand the factors that influence a teachers' decision to instruct curriculum, professional development opportunities can be developed to aid teachers in skill and pedagogy development; thus, aid in student academic achievement by providing quality skill-based experiential learning opportunities in the classroom and the laboratory.

Methodology

The purpose of this non-experimental, quantitative study was to describe the relationships that exist among and between the summated variable of *Importance to Teach* when compared to the curriculum areas found within an agricultural education course and teacher demographics.

1. Does a relationship exist between and among the summated variable of *Importance to Teach* (personal importance, student importance, community importance, and administrative importance) when compared to the curriculum areas found within the [STATE] agricultural education course [COURSE TITLE] and the personal, professional, and program characteristics of school-based agricultural educators in [STATE] who teach the course [COURSE TITLE]?

The population for this census consisted of [STATE] school-based agricultural educators (N = 257) who taught the agricultural education course [COURSE TITLE] during the 2009-2010 academic school year. Data were collected through a researcher-designed, web-based questionnaire. Validity (face and content) of the instrument was determined through the use of a panel of experts (N = 7). A pilot study was conducted to ensure the reliability of the instrument and resulted in Cronbach's alpha coefficients that ranged from .73 to .91. Garson (2008) and Nunnelly (1978) identified .70 as the level at which a scale may be considered internally consistent, thus the constructs found within the instrument were deemed reliable. To guide the data collection process, Tailored Designed Method for Internet Surveys (Dillman, 2007) was utilized. Subjects were contacted up to five potential times through electronic mail from the researcher. Concluding data collection efforts, 203 (79%) [STATE] agricultural educators provided usable responses for this study. Data were analyzed using the Statistical Package for the Social Sciences® (SPSS) 21.0 for Windows and Microsoft Office Excel® 2010. A Simultaneous Multiple Linear Regression (SMLR) was used to describe the relationship between the summated variable of *Importance to Teach*, the curriculum areas found within the agricultural education course, and teacher demographics. Cohen's d was utilized to describe effect size.

Results

Results from the study described personal, professional, and program demographics of the teachers, the sections of the curriculum they instructed, and the relationships between the demographics of teachers and the summated variable *Importance of Teaching,* for the multiple curriculum areas. Models for each curriculum area had a negligible to small effect size (p < .05) in describing the various relationships. In summary, none of the independent variables could explain the dependent variable, teacher's importance of teaching the curriculum areas. Overall, these models had no significance to explain these relationships.

Conclusions/Implications/Recommendations

In this study, researchers sought to determine if a relationship existed between the summated influential variable *Importance of Teaching* when compared to the curriculum areas found in the course and teacher demographics. In only three curriculum areas were independent variables found to have a minimal amount of significance in explaining the dependent variable. Several implications can be extrapolated from the results of this study however. The independent variable, average number of hours spent weekly supervising student agricultural mechanics SAE projects, was a reoccurring selected teacher characteristic that was significant in explaining two of the six models for the summated variable *Importance of Teaching*, amongst all curriculum areas. Does the amount of time spent weekly supervising student agricultural mechanics SAE projects influence the importance that teachers perceive towards teaching the curriculum found in this course? Additionally, can this perceived level of importance toward teaching curriculum be influenced by previous work experience or future professional development opportunities? To better understand the phenomena of teacher importance toward curriculum choice (Ajzen, 1988; Bandura, 2007), multiple demographics, outside the realm of this study, should be investigated. Agricultural mechanics continues to be a popular course across the U.S. with a need for highly qualified and motivated teachers. As teacher educators, if we can understand the motivation of future teachers, perhaps we can better prepare them for curriculum selection and instruction?

References

Ajzen, I. (1988). *Attitude, personality, and behavior.* Chicago, IL: Dorsey Press.

Ajzen, I., & Fishbein, M. (1980). *Understanding attitudes and predicting social behavior.* Englewood Cliffs, N.J.: Prentice Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control*, New York: W.H. Freeman.

Dillman, D. A. (2007). *Mail and internet surveys: The tailored design method* (2nd ed.). John Wiley & Sons: Hoboken, NJ.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Fishbein, M. & Ajzen, I. (1975). *Belief, attitude, intention, and behavior: An introduction to theory and research*. Reading, M.A.: Addison – Wesley.

Garson, G. D. (2008, March). *Scales and Standards of Measures*. Retrieved from http://faculty.chass.ncsu.edu/garson/PA765/standard.htm#internal.

Knobloch, N.A. (2008). Factors of teacher beliefs related to integrating agriculture into elementary school classrooms. *Agriculture and Human Values*, *25*(4), 529-539. doi: 10.1007/s10460-008-9135-z

Knobloch, N. A. (2001). *The influence of peer teaching and early field experience on teaching efficacy beliefs of preservice educators in agriculture.* Paper presented at the 28th National Agricultural Education Research Conference, 119-131.

Nunnelly, J. C. (1978). *Psychometric theory* (2nd ed.). New York: McGraw Hill.

Research Poster

Hispanic Students' Experiences in a College of Agriculture: A Qualitative Study

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Hispanic Students' Experiences in a College of Agriculture: A Qualitative Study

Introduction/Need for Study

Hispanics are the fastest growing minority group in the U.S. (U.S. Census Bureau, 2011). Although the number of Hispanics in the U.S. is increasing rapidly, they are underperforming in postsecondary settings when compared to other ethnic groups (Miller & Garcia, 2004). Hispanics are underrepresented in all university departments, but they are especially few in colleges of agriculture (Bechtold & Hoover, 1997). Miller and Garcia (2004) said it is vital that institutions of higher education make recruiting and retaining Hispanic students a priority, especially those in areas with a high percentage of the quickly growing minority population. Despite a multitude of opportunities available in agriculture, "the number of individuals, particularly people of color, pursuing agricultural careers through college is declining continuously" (Jones & Larke, 2001, p. 39). The *National Research Agenda: American Association for Agricultural Education's Research Priority Areas for 2011-2015* (Doerfert, 2011) addressed this concern in Priority Area 3, which recognized the need to "recruit and retain students to study in and prepare for careers in agriculture and natural resources related fields" (p. 20). In order to do this, research is needed to better understand how colleges of agriculture can recruit Hispanic students and help them feel that they belong.

Conceptual Framework

The conceptual framework for this study was developed from a thorough review of the literature and consists of Hispanic students' barriers in postsecondary education, the concept of belongingness, the role of mentoring, and views toward agriculture. Hispanic students encounter several barriers in postsecondary education such as financial concerns, lack of preparation, cultural and family pressures, and lack of encouragement and support (Bechtold & Hoover, 1997). Additionally, Hispanics have a strong connection to their family (Hernandez, 2000), which provides a support system, but can also lead to lack of understanding and pressure to return home without finishing their college education (Tseng, 2004). A feeling of belongingness is important for Hispanic students to finish college with a degree (Gloria et al., 2005). In addition, Hispanic students have a more negative view toward agriculture than non-Hispanic students (Bechtold & Hoover, 1997), which is something colleges of agriculture must address when recruiting these students.

Methodology

The purpose of this study was to explore the experiences of Hispanic undergraduate students in the College of Agricultural Sciences and Natural Resources (CASNR) at Texas Tech University. The following research question guided the study: What are Hispanic students' perceptions of their recruitment and undergraduate college experiences in CASNR at Texas Tech? Researchers used a qualitative research design which "emphasizes the voice, experience, and student culture of the participants" (Jones, Castellanous, & Cole, 2002, p. 25). During the Fall 2011 semester, four Hispanic students majoring in the college volunteered to participate in 30-minutes, semi-structured, in-person interviews. The interviews were recorded then transcribed verbatim into separate Microsoft Word files, which were imported into NVivo 8.0. Pseudonyms were used to protect the identity of the students. Data analysis involved coding the data into emergent themes. Credibility, transferability, dependability, and confirmability measures were taken to establish trustworthiness of the study (Lincoln and Guba, 1985).

Findings

Four students (3 females and 1 male) representing three departments in the college participated in this study. All students were from [state] and three participated in FFA or 4-H prior to attending college. Three themes developed out of the interviews.

Theme: Attitudes Toward College and University - Recruitment material from the college and attending university-sponsored recruitment activities helped them decide to attend [university]. The campus visit was also key to their decision- making process. Students experienced a sense of enjoyment and belonging in the college. Anthony said: “I feel like I belong in CASNR. I didn’t know what I wanted to do besides business, but I feel special in CASNR and I feel more wanted.” Students said they felt a higher sense of belongingness in CASNR than when they attended functions and meetings targeted specifically toward Hispanic students.

Theme: Negotiating Feelings of “Otherness”- All the participants reported the need to negotiate feelings of “otherness.” For instance, they said they recognize that they are not the “typical” agriculture student. Lizzy commented, “I am not the first thing people think of when they think of an ag student.” Students also spoke of their perception of “otherness” in relation to attending Hispanic events and meetings. Selena said, “I felt like I was too white to be in it because I was in [college].” In dealing with the feeling of “otherness,” students expressed that they would be interested in having the college of agriculture start a multicultural organization.

Theme: Motivated to Succeed - Finding friends when they first came to the university helped them be successful. Lizzy said, “My first priority when I started classes was to make as many friends as I could.” All the students had someone at the university who served as a mentor, either officially or unofficially. The students said they strive for success after they graduate and are not pressured to return home immediately after completing their degree. Jade said, “I am open to go where the opportunity is.”

Conclusions and Implications

The purpose of this study was to explore the experiences of Hispanic undergraduate students in CASNR at Texas Tech. Students mentioned the importance of peer support in their transition to college (Gloria et al., 2005). The significance of mentors was clear and more should be done to develop meaningful mentoring relationships (Saunders & Serna, 2004). Students did not feel pressured to return home after graduation, which is contradictory from previous research (Tseng, 2004). Jones et al. (2002) found that the students “felt like outsiders” in organizations not connected to their ethnicity; this was opposite to the students in this study. Students did not mention any specific negative views toward agriculture (Bechtold & Hoover, 1997) and it can be assumed that since they are all majoring in a college of agriculture, they have a more positive view toward agriculture than other Hispanic college students.

Recommendations

Practitioners and researchers need to further investigate and implement methods to help Hispanic students prosper in higher education. Student organizations for minority students in colleges of agriculture should be established to further strengthen the concept of belongingness and positively impact their experience in the college. Similar research should be conducted in other colleges of agriculture to better understand the unique experiences of Hispanic college students.

References

Bechtold, R. & Hoover, T.S. (1997). Perceptions of agriculture and barriers to higher education among Hispanic and Non-Hispanic high school students in south Florida. *NACTA Journal, 41*, 4-9.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Ennis, S.R., Rios-Vargas, M., Albert, N.G. (2011, May). *The Hispanic Population: 2010.* United States Census Bureau. Retrieved from www.census.gov/prod/cen2010/briefs/c2010br-04.pdf

Gloria, A.M., Castellanos, J., Lopez, A.G., & Rosales, R. (2005). An examination of academic nonpersistence decisions of Latino undergraduates. *Hispanic Journal of Behavioral Sciences*, *27*(2), 202-223. Doi:10.1177/0739986305275098

Goodenow, C. (1993). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools, 30*(1), 79-90.

Lincoln, Y. S., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Hernandez, J.C. (2000). Understanding the retention of Latino college students. *Journal of College Student Development, 41*, 575-588.

Jones, L., Castellanous, J. & Cole, D. (2002). Examining the ethnic minority student experience at predominantly white institutions: A case study. *Journal of Hispanic Higher Education, 1*(1), 19-39.

Jones, W.A., & Larke, A. (2001). Factors influencing career choice of African American and Hispanic graduates of a land-grant college of agriculture. *Journal of Agricultural Education, 42* (1), 39-49.

Miller, L.S., & Garcia, E.E. (2004). Better informing efforts to increase Latino student success in higher education. *Education and Urban Society, 36*(2), 189-204. Doi:10.1177/0013124503261329

Saunders, M., & Serna, I. (2004). Making college happen: The college experience of first-generation Latino students. Journal of Hispanic Higher Education, 3(2), 146-163. DOI: 10.1177/1538192703262515

Tseng, V. (2004). Family interdependence and academic adjustment in college: Youths from immigrant and U.S.-born families. *Child Development, 75*, 966-983.

U.S. Census Bureau. (2011). [county, state]: State & County QuickFacts. Retrieved from http://quickfacts.census.gov/qfd/states/48/48303.html

Research Poster

“Learning to Lead” – With Your “Head” & “Heart”

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“Learning to Lead” – With Your “Head” & “Heart”

Introduction

The purpose of this study is to identify and explain why emotional intelligence (EI) skills can be instrumental in developing leadership expertise in agricultural education students. While scholars have long recognized the relevance of cognition to problem solving and leadership, the relevance of emotion has historically been discounted (P. Salovey and D. J. Sluyter, 2005). But researchers studying the brain have determined that emotion precedes or at least accompanies cognition (Dickman & Stanford-Blair, 2002; Zajonc, 1998). Strength in the ability to take in and understand affective emotional information has been labeled “EI” (P. Salovey and D. J. Sluyter, 2005). Early research on emergent leaders suggests that these individuals are skilled at taking in and understanding emotional information.

Conceptual Framework

What if there was no such thing as the difference between the “Head” and the “Heart,” these concepts would be linked so intricately that decisions would never have to be from one or the other (Stedman & Andenoro, 2007). But academia has focused the majority of its research and practice within education on the skills of critical thinking (CT). This is a skewed way of approaching leadership, emphasizing skills rather than a complex process according to Wolff, Druskat, and Pescosolido (2002) (Paul, 1990). Subsequently a Delphi by Facione (1990) suggested that there is two facets to CT: disposition and skill. Thus the construct critical thinking disposition (CTD) was formulated recognizing the consistent internal motivation to engage in problems. These factors give educators a much more holistic understanding of CT as a means of developing students’ capacity for CT through CTD’s (Tishman & Andrade, 1996).
The complementary piece of the puzzle is emotional intelligence EI: the Heart that guides relationships, understanding and empathy. EI like CT can also be broken down into two facets, understanding of emotions and of intelligence (Akers, Miller, Fraze, & Haygood, 2002) with self-awareness a core competency. Researchers would like to support the contention that the two intelligence factors are linked through the behaviors of self-awareness and self-regulation (Goleman, 1995). This does not exist though. But findings do substantiate the relationship between EI and CTD and from which a better understanding of agricultural leadership development can be drawn.

Methodology

The researcher used this literature review to develop an understanding of how EI interplays with CTD and other leadership factors including CT constructs to gain a better understanding of the competencies that can develop leadership expertise in agricultural education students. Literature review is an attempt to systematically summarize a particular phenomenon, in this case EI in relation to leadership, for the purpose of providing a current/up-to-date summary of an existing body of knowledge. In this review a number of studies were examined to bring to light relevant EI skills and their applicability to agricultural education curriculum.

Findings

Findings identify and explain why emotional intelligence (EI) skills can be instrumental in developing leadership expertise in agricultural education students. Research material from collegial sources was utilized. The longitudinal study by Wolff, Pescosolido, and Druskat (2002) involved MBA students on self-managing work teams (SMWT's). Developing a model of knowledge, skills and abilities (KSA'S) revealed that emotional, cognitive and behavioral skills work together for emergent leadership. Two other correlation studies by Stedman & Andenoro (2007 &2007) tested populations of undergraduate leadership development majors. They found positive relationships between the constructs of cognitive maturity and engagement to EI skills, and substantial relationship with overall CTD. Promoting that, "Agricultural Education, leadership programs provide a natural fit to reinforce these skill," (Akers, 2002).
Other studies targeted populations in secondary agricultural education for their findings. Educators in schools throughout Texas, New Mexico and Oklahoma were utilized by Akers, Miller, Fraze, and Haygood (2004). These agricultural teachers identified eight EI competency areas as high-level success abilities to include in they're curriculum. Two FFA studies by Ricketts (2005), and then with Rudd (2005) showed significant relationships between GPA, innovativeness a CTD and leadership training with total CT. The later attributed the extensive leadership development of FFA students to workshops, seminars and courses that promote EI. Moore and Rudd's (2005) Delphi revealed that EI skills were perceived important to land grant college extension leaders. Morgan, Rudd and Kaufman's (2004) panel of agricultural leadership experts agreed that "At the foundation of all quality leadership degree programs must be an understanding of personal leadership traits and learning how to accentuate these skills." They determined elements, such as EI, for inclusion to undergraduate agricultural leadership programs. Finally work based studies were available in compiling this study search; with Marlatt, Beesley, Doerfert, and Akers (2003) literature review examining need for emotional intelligence in agricultural curriculum through a review of existing agricultural education and business literature. They concluded that inclusion of EI competencies into agricultural education are import and that EI is important for entry and success in today's workplace also. Ayers and Stone (1999) completed a review with the theme of building the Extension workforce for the 21st century, noting importance of EI competency-based development activities.

Conclusion/Implications/Recommendations

There are limitations and generalities to this study, but providing a current account of EI developments in agriculture leadership education was offered. The research has shown how EI attributes can enhance the teaching process to develop leadership capabilities in students and success in later work life. Looking to future studies, this study encourages further integration of EI into agriculture leadership curriculum. Possibly to help instill bright and intelligent hopes through student-centered pedagogy, reflecting agriculturalists interests/aspirations, and make more certain their development in becoming tomorrow's agricultural leaders.

References

Akers, C., Miller, K., Fraze, S. D., and Haygood, J. D. (2004). A tri-state needs assessment of emotional intelligence in agricultural education. *Journal of Agricultural Education,* 45(1), 86-94.

Ayers, D. and Stone, B. (1999). Extension organization of the future: linking emotional intelligence and core competence. *Journal of Extension*, 37(6), 1-3.

Marlatt, B., Beesley, A., Doerfert, D., and Akers, C. (2003). The need for the inclusion of emotional intelligence in the agricultural education curriculum: a literature review. Proceedings of the 22nd Western Regional Agricultural Education Research Conference, Portland, Oregon, 1-14.

Moore, L. L. and Rudd, R. D. (2005). Extension leaders' self-evaluation of leadership skill areas. *Journal of Agricultural Education*, 46(1), 68-78.

Morgan, A. C., Rudd, R. D. and Kaufman, E. K. (2004). Elements of an undergraduate agricultural leadership program: a delphi study. Paper presented at the Association of Leadership Educators, Memphis, TN, 1-7.

Ricketts, J. C. (2005). The relationship between leadership development and critical thinking skills. *Journal of Leadership Education*, 4(2), 27-38.

Ricketts, J. C. and Rudd, R. D. (2005). Critical thinking skills of selected youth leaders: the efficacy of critical thinking disposition, leadership, and academic performance. *Journal of Leadership Education*, 46(1), 32-43.

Stedman, N. L. P. and Andenoro, A. C. (2007) Identification of relationships between emotional intelligence skill & critical chinking disposition in undergraduate leadership students. *Journal of Leadership Education*, 6(1), 190-208.

Stedman, N. L. P. and Andenoro, A. C. (2007). Linking emotional intelligence to critical thinking: balancing our curriculum within leadership education. Proceedings of the Association of Leadership Educators, Big Sky, MT, 1-18.

Wolff, S. B., Pescosolido, A. T., and Druskat, V. U. (2002). Emotional intelligence as the basis of leadership emergence in self-managing teams. The Leadership Quarterly. 13(5), 505-522.

Research Poster

Mechanics-related In-service needs of Agriculture Teachers: Does Teaching Experience Matter?

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Mechanics-related In-service needs of Agriculture Teachers: Does Teaching Experience Matter?

Introduction and Conceptual Framework

Literature has established the importance of sustaining agricultural mechanics instruction at the secondary level (Anderson, Velez, Anderson, 2011; Kotrlik & Drueckhammer, 1987; Reis & Kahler, 1997; Rosencrans & Martin, 1997; and Saucier, Terry, & Schumacher, 2009). The question remains however; what changes must be made in professional development and in-service programs to ensure that our teaching workforce remains highly qualified and capable of preparing the next generation of career and technical education students?

This question is further complicated by teacher preparation changes in the state of [STATE]. [STATE] University, which is home to [STATE]'s only agricultural teacher preparation program, suspended all agricultural mechanics instruction from 1992 to 2010. This nearly two-decade absence of an agricultural mechanics program has created a void of knowledge regarding the in-service needs of agriculture teachers in the state. Citing the fact that nearly half of all agricultural teachers in [STATE] have fewer than 10 years of teaching experience ([STATE] Department of Education, 2010); some professionals have suggested that agricultural mechanics in-service programs should target beginning teachers. Is this assumption correct, or does the need transcend experience level?

The purpose of this study was to identify the in-service needs of [STATE] agricultural educators in the area of agricultural mechanics, and to examine the effect of teaching experience on in-service needs. This study aligns with the American Association for Agricultural Education's National Research Agenda (Doerfert, 2011) Research Priority Area 3: Sufficient Scientific and Professional Workforce That Addresses the Challenges of the 21st Century. The following objectives were identified to guide this study: (a) describe the demographic characteristics of [STATE] secondary agricultural educators, (b) determine the discrepancy between the importance of agricultural mechanics content areas and the capability to teach agricultural mechanics content areas as perceived by secondary agricultural educators, and (c) assess the effect of teaching experience on in-service needs of [STATE] agricultural educators.

Methods

The target population of this descriptive study was in-service agricultural education instructors who are currently teaching secondary agriculture in [STATE] ($N = 242$). A researcher-modified, paper based questionnaire containing three sections, consisting of 54 skills, teacher demographics, and program demographics was distributed to each instructor ($n = 130$) who attended the [STATE] agricultural education teachers conference. Usable instruments were collected from ($n = 101$) respondents for a 77.7% response rate. Face validity was established by individuals with expertise in instrument development and agricultural mechanics. Post-hoc reliability calculations resulted in reliability coefficients for importance ($\alpha = .97$) and competency ($\alpha = .98$). Researchers used the Borich (1980) needs assessment model to quantify teacher's perceived ability to teach, and the teachers' perception of the necessity to teach, concepts within agricultural mechanics. Constructs with a higher MWDS were in higher need for in-service training relative to those constructs with a lower MWDS (Garton & Chung, 1997).

Findings

The first research objective sought to describe the demographic characteristics of [STATE] agriculture teachers. Gender differences were in line with expectations for teachers of agriculture, food, and natural resources with 67.0% male (n=69) and 33.0% female (n=34). The vast majority of teachers were employed by rural school districts (n=80, 79.2%) in single-teacher departments (n=91, 90.0%). Also worthy of note, the majority of respondents reported 10 or fewer years of teaching experience (n=54, 52.4%).

Research objective two was to determine the discrepancy between agricultural mechanics topic importance and the competence to teach agricultural mechanics topics as perceived by [STATE] secondary agriculture teachers. Professional development need is determined by the mean weighted discrepancy score (MWDS). The five items with the highest MWDS are displayed in Table 1.

Table 1
Teaching Competencies with Highest MWDS as Perceived by [STATE] High School Agriculture Instructors

Rank	Construct	MWDS	Importance Rank	Competence Rank	*n*
1	Global Positioning Systems	5.71	8	33	89
2	Electrical Safety	4.67	10	26	87
3	Computer Aided Design	4.51	39	54	80
4	GTAW (TIG) Welding	4.39	28	45	84
5	Small Engine Safety	4.02	4	12	89

As illustrated in Table 2, a significant ($p > .05$) difference was determined for Electrical Safety and Small Engine Safety. Both of these constructs had a medium effect size. All other effect sizes were small.

Table 2
In-service Needs Identified by MWDS Differentiated by Years of Teaching Experience.

	≤10 Years		>10 Years		p-	Effect	Cohen's
Construct	M	SD	M	SD	value	Size	Index
Global Positioning Sys.	5.89	4.68	5.51	4.39	.697	.08	Small
Electrical Safety	6.38	5.61	2.92	5.37	.004	.63	Medium
Computer Aided Des.	5.18	4.40	3.80	5.02	.196	.29	Small
GTAW (TIG) Welding	4.98	4.48	3.78	5.19	.260	.25	Small
Small Engine Safety	5.90	5.63	2.01	4.92	.001	.74	Medium

Conclusions and Implications

This study identified *Global Positioning Systems* as having the most need for professional development. This is in line with the results of Saucier, Tummons, Terry, and Schumacher (2010) who studied agricultural educators in Missouri (n = 383), and reported Global Positioning

Systems to be the technical competency with the highest perceived need for in-service. Similarly, in a more general study of Georgia teachers (n = 209), Peake, Duncan, and Ricketts (2007) identified curriculum integration of agriculture technology advances as the highest need for in-service. This study also contributes to the national trend indicating a need for increased emphasis on emerging agriculture technology in both professional development and teacher preparation programs. Differences may exist in the needs of inexperienced teachers for some, but not all, agricultural mechanics skills. Based on the findings of this study, researchers recommend that in-service training opportunities in [STATE] be designed for, and marketed to, teachers of all experience levels.

References

Anderson, S. M., Velez, J. J., Anderson, R. G. (2011). Using the health beliefs model to comparatively examine the welding safety beliefs of postsecondary agriculture education students and their non-agricultural education peers. *Proceedings of the 2011 AAAE Research Conference 38,* 288-301.

Borich, G. D. (1980). A needs assessment model for conducting follow-up studies. The Journal of Teacher Education, 31(3), 39-42.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Garton, B. L., & Chung, N. (1997). An assessment of the inservice needs of beginning teachers of agriculture using two assessment models. *Journal of Agricultural Education*, *38*(3), 51-58. doi:10.5032/jae.1997.03051

Kotrlik, J. W., & Drueckhammer, D. (1987). The importance of selected external factors and programmatic components in planning vocational agriculture programs. *The Journal of Agricultural Education*, *28*(4), 26-31, 49. **doi: 10.5032/jaatea.1987.04026**

Lambeth, J. M., Elliot, J., & Joerger, R. (2008). The national career and technical education research agenda. *Techniques, 83*(7).

Peake, J. B., Duncan, D. W., & Ricketts, J. C. (2007). Identifying technical content training needs of Georgia agriculture teachers. *Journal of Career and Technical Education, 23*(1), 44-54.

Reis, R., Kahler, A.A. (1997). Factors influencing enrollment in agricultural education programs as expressed by [STATE] secondary agricultural education students. *Journal of Agricultural Education, 38*(2), 38-48. **doi: 10.5032/jae.1997.02038**

Rosencrans, C., Jr., & Martin, R. A. (1997). The role of agricultural mechanization in the secondary agricultural education curriculum as viewed by agricultural educators. *Proceedings of the 24th Annual National Agricultural Education Research Meeting*, 253-262.

Saucier, P. R., Terry, R., Jr., & Schumacher, L. G. (2009). Laboratory management professional development needs of Missouri agriculture educators. *Proceedings of the Southern Region of the American Association for Agricultural Education Conference,* 176 – 191.

Saucier, P. R., Tummons, J. D., Terry, R., & Schumacher, L. G. (2010). Professional development inservice needs of Missouri agricultural educators. *Proceedings of the 2010 AAAE Southern Region Conference*, 422-434. Orlando, FL.

[STATE] Department of Education (2010). FY10 [STATE] High School Agricultural Education Contract Summary. Retrieved from https://docs.google.com/a/[state].edu/viewer?a=v &pid=sites&srcid=dGVhbWFnZWQuY29tfHd3d3xneDpmZjI4Mzc4OWViMjM0M2Q

[STATE] Department of Education (2011). How the [STATE] Education System Works. Retrieved from http://educate[state].gov/index.php?option=com_content&task=view&id=277&Itemid=1

Research Poster

Moving Toward Career Readiness - Teacher and Exhibitor Perceptions of a Ninth Grade Career Exploration Fair

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Moving Toward Career Readiness - Teacher and Exhibitor Perceptions of a Ninth Grade Career Exploration Fair

Introduction/Need for Research

A difficult but important task of high school students is identifying a career path (Mei, 2008); however, many schools place greater emphasis on a college bound future (Gray & Herr, 2006). According to Wilcox (1991), selecting a career path motivates students and increases test scores in addition to preparing students for post-secondary employment or education. A variety of methods exist for helping students with career selection, including career assessment surveys, career fairs, and career counseling for students (Newell, 2004).

Metro Nashville Public Schools (MNPS) held a career exploration fair for all 9th graders in the school system. More than 5,000 freshmen high school students from 18 high schools across Nashville attended the fair, which allowed students to learn about many career opportunities under one roof (Brennan, Daly, Fitzpatrick, & Sweeney, 2004). More than 100 local businesses exhibited at the career fair to aid in preparing students for selecting career and technical education (CTE) programs of study for the remainder of high school. Throughout the day, students participated in a myriad of activities such as audio engineering, simulating blood draw on mannequins, and handling small animals. Additionally, students interviewed professionals from different career fields and identified educational and technical skill requirements needed for successful career endeavors. According to Milman and Whitney (2012), limited research on stakeholder perceptions of career fairs exists. To provide a valuable career fair experience for all participants, evaluations should be collected from all stakeholders and data should be used to make improvements for future fairs (Milman & Whitney, 2012).

The purpose of this study was to explore teacher and exhibitor perceptions of a ninth grade career exploration fair. The researchers aimed to determine the degree to which stakeholders valued the career exploration fair and examine the differences between two groups of adult stakeholders – teachers and exhibitors. The need for research concerning career readiness is evident. The 2011-2015 National Research Agenda identifies vibrant, resilient communities as a priority research area for the purpose of ensuring “engaged citizens who ensure high quality educational and career development opportunities for youth” (Doerfert, 2011, p. 10). Further, two additional research priorities identify career readiness of learners as key outcomes.

Theoretical Framework

This study was grounded in Super’s (1957) career development theory. According to Super (1957), as students grow, mature, and experience life, they form their own self-concepts. Super’s rainbow model of career development demonstrates that one’s career maturity develops alongside biographical, psychological, and socioeconomic determinates and is a lifelong process. Also contributing to career development are developmental stages from childhood to adulthood and environmental factors. Super (1957) identified the span between 15 and 24 years of age as the exploration stage of life, where persons develop and plan a tentative career goal. With this in mind, the ninth grade year of high school is a prime opportunity to engage students in career exploration, as many high school freshmen are 15 years of age.

Methodology

Participants in this study were teachers of students (n = 72) and exhibitors (n = 39) who participated in the career exploration fair. A researcher-developed Likert-type survey (Cronbach's alpha = 0.76) was employed to assess teacher and exhibitor perceptions of the career fair. All participants were provided with a link to the online survey and participation was voluntary. Descriptive statistics were used to analyze the data and an independent-samples t-test was used to compare teacher and exhibitor perceptions of the career fair.

Results/Findings

Participants ranked the pleasure of the career exploration fair on a scale of one to ten, where one was the lowest degree of displeasure and ten was the highest degree of pleasure. Overall, participants were pleased with each component of the career fair - student engagement (M = 7.86), seriousness of students (M = 7.52), student understanding (M = 5.81), student behavior (M = 7.86), enrichment by student workbooks (M = 7.54), breadth of career representation (M = 8.23), likelihood of participation in future years (M = 9.25), recommendation to colleagues (M = 8.84), communication of information (M = 8.55), and overall positive experience (M = 8.74). There was a significant difference between the scores of teachers (M = 77.36, SD = 15.35) and exhibitors (M = 85.51, SD = 9.31); $t(109) = 3.01$, $p = 0.007$.

Conclusions

Engaging stakeholders in a career fair for high school students can provide high quality educational and career development opportunities adolescents. Considering the statistically significant difference of perceptions between the two stakeholder groups in this study, teacher and exhibitor, the researchers conclude that teachers have higher expectations than exhibitors. Teachers who participated in the study were also responsible for preparing students to attend and responses may have been impacted by student feedback, rather than personal impression. Still, the researchers consider the ninth grade career exploration fair a success.

Implications/Recommendations/Impact on Profession

A variety of implications exist for the current study. Kotrlik and Harrison (1987) identified interest in the work, working conditions, salary, and personal satisfaction as leading factors that influenced career decisions of high school seniors; however, exposing students to career options early could be beneficial. According to Conroy, Scanlon, & Kelsey (1998), to be effective, career education programs should provide factual information and challenge stereotypical notions. Additionally, involving businesses from the local community can aid in the effectiveness of a career education program for high school students.

Researchers recommend further exploration of the ninth grade career fair in subsequent years. It is recommended to conduct pre and post assessments of students related to career awareness as well as collect qualitative data from all stakeholders. In doing this, the researchers could better understand how student career awareness is impacted through participation in the career exploration fair and could recognize possible differences between adult stakeholder perceptions.

References

Brennan, C., Daly, M., Fitzpatrick, E., and Sweeney, E. (2004). Tradition versus technology: Career fairs in the 21st Century. *International Journal for Educational and vocational Guidance, 4*(1), 23-41.

Conroy, C. A., Scanlon, D. C., & Kelsey, K. D. (1998). Influences on adolescent job choice: Implications for teaching career awareness in agricultural education. *Journal of Agricultural Education, 39*(2), 30-38. doi: 10.5032/jae.1998.02030

Doerfert, D. L. (Ed.) (2011). National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Gray, K., & Herr, E. (2006). *Other ways to win: Creating alternatives for high school graduates*. Thousand Oaks, CA: Corwin Press.

Kotrlik, J., & Harrison, B. (1987). Factors related to the career decisions of seniors who have taken vocational agriculture. *Journal of the American Association of Teacher Educators in Agriculture, 28*(4), 50-56. doi: 10.5032/jaatea.1987.04050

Mei, T., Wei, P., & Newmeyer, M. D. (2008). Factors influencing high school students' career aspirations. *Professional School Counseling, 11*(5), 285-295.

Milman, A., & Whitney, P. A. (2012). Predicting students' satisfaction in college-sponsored travel, tourism and hospitality career fair. Sustainable Education in Travel and Tourism. Annual Conference Proceedings of Research and Academic Papers. Volume XXIV. October 16-18, 2012. 31st Annual ISTTE Conference (International Society of Travel & Tourism Educators). Freiburg, Germany.

Newell, J. (2004). Student career planning conferences in Tulsa middle and high schools help students and parents. *Techniques, 79*(2), 60-61.

Super, D. (1957). *The psychology of career*. New York: Harper & Row.

Wilcox, J. (1991). Preparing students for the real world. *Vocational Education Journal, 66*(6), 38-40.

Research Poster

New Areas of Agriculture Teacher Efficacy Research

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New Areas of Agriculture Teacher Efficacy Research

Introduction & Purpose

The Agricultural Education profession is suffering from a chronic shortage of school-based agriculture teachers (Kantrovich, 2010). The retention of qualified agriculture teachers is a major part of the agriculture teacher shortage solution. In order for agriculture teachers to be retained in the profession they must feel confident in their ability to be a successful teacher. Confidence in their abilities is often operationalized as having a high teacher efficacy (Wolf, 2008). Agricultural Education research supports the connection between increased teacher efficacy and increased career commitment (Blackburn & Robinson, 2008; Knobloch & Whittington, 2003; Swan, 2005; Wheeler & Knobloch, 2006). A review of the current research in Agriculture Education has revealed a lack of research into agriculture teachers' efficacy towards teaching math and science. With new "shifts" in education towards the integration of math and science in all curriculums (Sanders, 2009) an understanding of agriculture teachers' efficacy towards teaching these subjects will provide a baseline for future research into the relationship between agriculture teachers' math and science teaching efficacy and career commitment.

This research focuses on the efficacy of agriculture teachers in two commonly researched areas: instructional strategies and classroom management, as well as two novel areas of agriculture teacher efficacy research: math teaching efficacy and science teaching efficacy. The goal of this research was to observe the relationship between years of teaching experience and agriculture teachers' efficacy as well as develop an understanding of agriculture teachers' efficacy towards teaching math and science.

Theoretical Framework

The theoretical framework of this study is the theory of self-efficacy (Bandura, 1986; 1997) which postulates that an individual's belief in their abilities to successfully accomplish a given task is directly related to their success in that task. The self-efficacy of a teacher (teacher efficacy) has been identified as a teacher's perception of their abilities to successfully accomplish tasks associated with teaching (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998).

Methodology

Data were collected from 154 agriculture teachers in their first five years of teaching during the 2012-2013 school year in five western states: California, Idaho, Oregon, Utah and Washington. The respondents included 41 first year teachers, 33 second year teachers, 36 third year teachers, 25 fourth year teachers and 19 fifth year teachers. Data were collected using three established efficacy instruments which were pilot tested with a group of early career agriculture teachers in a Midwestern state and were found to be reliable using an *a priori* cronbach's alpha cut off of 0.70. The data were collected using the secure internet survey provider Qualtrics and analyzed using SPSS v.20 software. Data were first checked for normality using a Kolmogoroc-Smirnov test which rejected the null hypothesis (p value = < .05) that the data were normally distributed, therefore a nonparametric Spearman's Correlation was run to examine the correlations between years of experience and efficacy.

Findings

Table 1

Correlation of Years of Teaching Experience and Agriculture Teacher Efficacy

	Classroom Management	Instructional Strategies	Ability to Teach Science	Ability to Teach Math
Years of Experience	.195	.162	.023	.092

Table 2

Agriculture Teacher Efficacy by Years of Experience

Teaching Experience	Classroom Management	Instructional Strategies	Ability to Teach Science	Ability to Teach Math
First Year	4.74	4.76	4.31	3.96
Second Year	5.00	4.82	4.25	4.00
Third Year	5.13	4.99	4.34	4.01
Fourth Year	5.23	5.05	4.33	4.13
Fifth Year	5.05	4.88	4.25	4.18

Conclusions/Implications

The positive correlation between years of teaching experience and classroom management efficacy indicates that these agriculture teachers are experiencing efficacy building experiences during teaching, a trend which was also found in their instructional strategies efficacy. Bandura (1986) postulates that efficacy can be built through four experiences: mastery (successful completion of a task), vicarious (observing someone else complete a task), social persuasion (external encouragement that you can successfully complete a task) and physiological and emotional states (the state you are in when preparing to complete a task).

The research into the new areas of efficacy, math teaching and science teaching have found that the respondents of this study are lower in their efficacy towards teaching math and science when compared to classroom management and instructional strategies. With an increased emphasis on STEM across all curriculums (Sanders, 2009) this is cause for concern. Teacher development programs as well as professional development opportunities need to focus on providing efficacy building experiences for these early career teachers in order to increase their confidence in their abilities to teach math and science. Future research should focus on the role of math and science teaching efficacy on agriculture teachers' career commitment.

References

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. (1997). *Self-efficacy: The exercise of control.* New York, NY: W.H. Freeman

Blackburn, J. J., & Robinson, J. S. (2008). Assessing teacher self-efficacy and job satisfaction of early career agriculture teachers in Kentucky. *Journal of Agricultural Education, 49*(3), 1-11. doi: 10.5032/jae.2008.03001

Kantrovich, A. J. (2010). *A national study of the supply and demand for teachers of agricultural education from 2006-2009*. American Association for Agricultural Education.

Knobloch, N. A., & Whittington, M. S. (2003). Differences in teacher efficacy related to career commitment of novice agriculture teachers. *Journal of Career and Technical Education, 20*(1), 1-11.

Sanders, M. (2009). STEM, STEM education, STEMmania. *The Technology Teacher, 68*(4). 20-26

Swan, B. G. (2005). *The relationship between the 2004 Ohio State University Agricultural Education student teachers' learning style, teacher heart, and teacher sense of efficacy.* (Unpublished doctoral dissertation). The Ohio State University, Columbus.

Tschannen-Moran, M., Woolfolk Hoy, A., & Hoy, W. K. (1998). Teacher efficacy: Its meaning and more. *Review of Education Research, 68*(2), 202-248. doi: 10.3102/00346543068002202

Wheeler, J., & Knobloch, N. A. (2006). Relationship of teacher and program variables to beginning agriculture teachers' sense of efficacy. *Proceedings of the National Agricultural Education Research Conference, Charlotte, NC, 33, 590-600.*

Wolf, K. J. (2008). *Agricultural education teacher self-efficacy: A descriptive study of beginning agricultural education teachers in Ohio.* (Unpublished doctoral dissertation). The Ohio State University, Columbus.

Research Poster

Plant Science Graduate Students' Reflection Ratings of Learner-Centered Teaching After Teaching a K-12 Audience

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Plant Science Graduate Students' Reflection Ratings of Learner-Centered Teaching After Teaching a K-12 Audience

Introduction

Educational reform of graduate programs continues to highlight national research agenda (National Research Council, 2012). Graduate students are encouraged through their programs to find meaning and understanding in regard to other published studies. It is this unrecognized emphasis on active learning by the student that is sometimes in conflict with the common teaching practice by university professors. It is critical that graduate students entering the workforce are prepared for the diverse challenges that they will face in their careers. A key outcome of the National Research Agenda is to develop "a sufficient supply of well-prepared agricultural scientists and professionals to drive sustainable growth, scientific discovery, and innovation in public, private and academic settings" (Doerfert, 2011, p. 9).

In order for graduate students to be prepared to disseminate their research for the next generation, these graduate students require an assortment of professional experiences that enable them to transfer their experiences in research facilities and classes to educate a diverse audience while employing a variety of approaches. Learner-Centered Teaching (LCT) has become a more widely used approach in university classrooms (Blumberg, 2008). The science of learning needs to be explored and utilized by future agricultural research and academic professionals to assist active learners who desire the understanding of complex subject matter (Bransford, Brown & Cocking, 2000).

Graduate students at a land-grant university participated in a class taught by a graduate teaching assistant and associate professor using LCT methods. The graduate students on research assistantships for the Agriculture and Food Research Initiative Plant Breeding and Education project were required by their grant to disseminate a concept from their research to a K-12 audience. The purpose of this study was to describe the graduate students' self-perceived abilities with Learner-Centered Teaching after a K-12 classroom teaching experience.

Theoretical Framework

Learner-centered teaching encompasses 14 psychological principles as determined by a task force for the American Psychological Association (1997). The summary domains divide the principles into five areas of prominent educational theory analysis. The social process of learning for a student is impacted by how the instructor engages with their audience or through what is termed the situation or context (Blumberg, 2008). A learner-centered teaching model organizes practical areas of focus for instructors to adapt to the role as a facilitator of learning (Weimer, 2002). Reflection plays an important role in teacher development (Scanlan, Care, & Udod, 2002), and rubrics help instructors discriminate the progress of their abilities within the learner-centered teaching criteria (Blumberg, 2008).

Methodology

At the conclusion of a K-12 teaching experience, 16 graduate students completed a two sided self-reflection rubric. The rubric consisted of descriptive ratings for Learner-Centered Teaching and PRAXIS III domains. The graduate students (9 females and 7 males) retrospectively, evaluated their pre and post teaching abilities according to the actions exhibited by their class of students within the LCT domains of “Active learning”, “Inquiry learning” and “Contextual learning”. There were five separate criteria listed for active learning, four criteria for inquiry learning and one for contextual learning. Graduate students also rated their actions according to PRAXIS III criteria established under the domains of “Planning”, “Learning and Instruction”, and “Environment”. The 14 doctoral and 2 masters graduate students rated themselves according to criteria established under the following levels of Low Evidence = (0-1) Medium Evidence = (2-3) and High Evidence = (4-5) specific to the designated content criteria. Means and standard deviation of each single criteria and collective domain areas were computed using SPSS.

Findings

Graduate students who taught using learner-centered teaching approaches in their university courses identified an increase in their ability to engage learners in their K-12 audience as evidenced by the increase in an LCT specific criteria mean from 2.23 to 3.85. Graduate students also identified their application of enabling K-12 students to use inquiry learning to solve complex problems as evidenced by the increase in a mean from 2.00 to 3.34. The variable containing a collective active learning mean increased from 2.65 to 3.63. All differences had large effect sizes; as such students rated their LCT strategies and teaching skills higher at the end of the teaching experience compared to how they retrospectively rated themselves on these domains.

Table 1

LCT and PRAXIS Performance

Domains		Pretest	Posttest	Effect size
LCT	Active Learning	2.23 (.69)	3.85 (.62)	2.47 (Large)
	Inquiry Learning	2.00 (.86)	3.34 (.73)	1.68 (Large)
	Contextual Learning	2.65 (1.26)	3.63 (1.20)	.87 (Large
Teaching	Planning	2.41 (.69)	3.89 (.50)	2.46 (Large)
	Learning & Instruction	2.61 (.68)	3.89 (.74)	1.80 (Large)
	Environment	2.89 (.59)	3.83 (.49)	1.73 (Large)

Scale: Low Evidence = (0-1) Medium Evidence = (2-3) and High Evidence = (4-5).

Conclusions

Overall, graduate students reflectively reported an increase in their abilities to implement active learning, inquiry learning and contextualized learning. Graduate students self-reported high evidence on all domains except for inquiry learning, which was rated as medium evidence. Graduate students reported they taught using active learning strategies more than inquiry and contextual learning. This finding suggests that they may feel most comfortable in using active learning as a learner-centered teaching strategy.

Implications

The instruction using LCT approaches with graduate students reflects the applied methodology of LCT by Blumberg (2008). Because students identified a greater increase in overall active learning than inquiry learning, it would be valuable to examine the challenges of implementing inquiry learning activities in similar short-term engagement classes. Engaging graduate students in K-12 outreach may increase workplace skills for both graduate and K-12 students. Lastly, future studies should investigate possible differences in how graduate students implemented LCT strategies based on their previous educational experiences.

References

APA Work Group of the Board of Educational Affairs (1997). *Learner-centered psychological principles: A framework for school reform and redesign*. Washington, DC: American Psychological Association.

Blumberg, P. (2008) Developing Learner-Centered Teachers: A Practical Guide for Faculty. San Francisco: Jossey-Bass.

Bransford,J. D., Brown, A. L., & Cocking, R. (2000). Learning: From speculation to science. In *How people learn: Brain, mind, experience, and school: Expanded edition.* (pp. 3-27). Washington, DC: National Academy Press.

Doerfert, D.L. (Ed.) (2011). National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

National Research Council. (2012). *Research Universities and the Future of America: Ten Breakthrough Actions Vital to Our Nation's Prosperity and Security: Summary*. Washington, DC: The National Academies Press.

Scanlan, J.M., Care, W.D., & Udod, S. (2002). Unraveling the unknowns of reflection in classroom teaching. *Journal of Advanced Nursing, 38,* 136-143.

Weimer, M. (2002). Learner-centered teaching. San Francisco: Jossey-Bass.

Research Poster

Practicing What We Teach: Using Advisory Councils in Post-Secondary Education

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Practicing What We Teach:
Using Advisory Councils in Post-Secondary Education

Introduction/Need for Research

One of the fundamental concepts taught in agricultural education degree programs is the establishment and frequent use of an advisory council (Phipps, Osborne, Dyer, & Ball, 2008). Many agricultural education programs are often evaluated on the basis of whether or not there is a functioning advisory council (National Council for Agricultural Education, 2009). However, there is a lack of research identifying how post-secondary agricultural education programs are putting into practice the use of advisory councils for program evaluation and improvement.

Priority 5 of the *National Research Agenda of the American Association for Agricultural Education* calls for "highly effective educational programs [that] will meet the academic, career, and developmental needs of diverse learners in all settings and at all levels" (Doerfert, 2012, p. 24). Post-secondary agricultural education programs must continually evaluate and adapt programs to meet the growing need of preparing students as they enter the professional workforce (Duncan, Ricketts, Peake & Uesseler, 2006). The purpose of this research was to seek the input of a newly created post-secondary agricultural education program advisory council about the role of advisory council members and the expectations of the [university] agricultural education program.

Conceptual Framework

Advisory councils assist agricultural education faculty in planning and evaluating the agricultural education program (Phipps et al., 2008). Continuous evaluation of the agricultural education program is essential in keeping the program current to ensure students have the skills necessary to meet ever-changing workplace and professional expectations (Doerfert, 2012). Advisory council members should be representative of agricultural education program graduates and have knowledge of the agricultural education program (Phipps et al., 2008).

Methods

The population for this study consisted of a purposive sample of the six advisory council members representing the three components within the [university] agricultural education program. The three components include school based agricultural education, extension, and industry/communications. All six advisory council members agreed to participate in the focus group interviews.

Focus group interviews rely upon group interaction for the planning of new programs and evaluating programs already in place (Glense, 2006; Krueger, 1994). The interactive feature of focus groups allows for more thorough and dynamic discussion of issues and ideas (Krueger, 1994). Two research questions were developed as a method for guiding constructive conversation to identify areas of future agricultural education program improvement. The first question, "What do you see to be your role as a member of the agricultural education program advisory council?" and the second, "What are the expectations of agricultural education program graduates?" The focus group discussions were audio-recorded and later evaluated to develop themes. Efforts to ensure trustworthiness were accomplished through the use of purposive sampling, peer debriefing, and an audit trail.

Findings/Conclusions

The focus group consisted of six members of the newly created advisory council who attended an introductory meeting at [university]. Members were invited to serve on the advisory council based upon years of service and/or involvement in their respective agricultural education professions. There were one male and one female representative from the three main component areas of the agriculture program at [university]. Two were representing school based agricultural education, two from extension, and two from industry/communications.

Members of the focus group were asked, "What do you see to be your role as a member of the agricultural education program advisory council?" The resulting discussion highlighted three main points: help guide the agricultural education program to equip students with the education and skills needed for the workplace; be an advocate for agriculture; and assist in recruiting students into agricultural professions. The roles of advisory council members should be explicitly defined by both the post-secondary agricultural education program and members of the advisory council.

In regards to the research question, "What are the expectations of agricultural education program graduates?" the focus group discussion identified four leading themes: *Education, Community, Administration, and Communication.* Concepts within the *education* theme included: having a strong emphasis in scientific and general agricultural knowledge; promoting life-long learning skills; being adaptable to changing classroom/business/service situations; and being able to educate and empower others to meet personal and professional goals. The *community* theme emphasized the importance for students to: understand the importance of rural and urban society systems; recognize the social climate of their local communities to gain support for and promote agricultural programs and services; and build relationships among the various agricultural education components (teaching, extension, and industry/communications). The *administration* theme identified the need for graduates to have the skills in: creating and using advisory committees to conduct local needs assessments; planning, delivering, and evaluating agricultural education programs; and networking with influential members of their local communities to promote the agricultural industry. Within the realm of *communication*, program graduates should be able to: identify sources of information and knowledge to assist students and clientele; communicate effectively and efficiently to diverse audiences; and follow-up with students and clientele to ensure their needs have been met. Advisory council members were easily able to articulate the expectations they hold for graduates of the agricultural education program. The expectations in each of the four categories offer areas to be incorporated in the degree program curriculum.

Implications/Recommendations

The recommendations made by the advisory council will assist [university] agricultural education program faculty and staff in evaluating course guidelines and curriculum to better meet the expectations of program graduates. The expectations espoused by the advisory council members should be further investigated and used to establish the evaluation criteria of program graduates. Similar research efforts should be conducted and reported by other similar degree programs at other post-secondary institutions.

References

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015. Lubbock, TX: Texas Tech University*, Department of Agricultural Education and Communications.

Duncan, D. W., Ricketts, J. C., Peake, J. B., & Uessler, J. (2006). Teacher preparation and in-service needs of Georgia agriculture teachers. *Journal of Agricultural Education, 47*, 24-35. doi:10.5032/jae.2006.02024

Glense, C. (2006). *Becoming qualitative researchers: An introduction* (3rd ed.). Boston, MA: Pearson Education, Inc.

Krueger, R. A. (1994). *Focus groups: A practical guide for applied research* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

National Council for Agricultural Education (2009). National quality program standards for secondary (grades 9-12) agricultural education. Alexandria VA

Phipps, L. J., Osborne, E. W., Dyer, J. E., Ball, A. (2008). *Handbook on agricultural education in public schools* (6th ed.). Clifton Park, NY: Thompson Delmar Learning.

Research Poster

Recruiting Shareholders for Community Supported Agriculture Enterprises in Texas

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Recruiting Shareholders for Community Supported Agriculture Enterprises in Texas

Introduction/Theoretical Framework

The 2011-2015 National Research Agenda Priority Area 6 encouraged developing solutions that engage citizenry and profitable agricultural enterprises in rural communities (Doerfert, 2011). Consumers have joined community supported agriculture (CSA), a direct marketing enterprise, by paying a farmer in return for a weekly share of products harvested (Brown & Miller, 2008). [State] has 70 CSAs that allow farmers to maintain their local agriculture and meet consumers' demand for local food (Local Harvest, 2011). A marketing concern for CSAs is the 60-70% retention rate of shareholders; therefore, CSA owners continually recruit new shareholders to remain viable (Oberholtzer, 2004; Strochlic & Shelley, 2004). Community-based social marketing (CBSM) is an approach that fosters sustainable behavior in agriculture (McKenzie-Mohr & Smith, 1999). As part of the CBSM approach, communication using messages, credible sources, and personal contact can capture the attention of individuals in order to initiate behavior change (McKenzie-Mohr & Smith, 1999). Messages delivered through personal contact from credible sources are more influential on forming individuals' attitudes and behaviors than mass media coverage. Word-of-mouth advertising was an important way of increasing the number of shareholders in Vermont, New York, and the Midwest (Kolodinsky & Pelch, 1997; Polimeni, Polimeni, Shirey, Trees, & Trees, 2006; Sharp, Imerman, & Peters, 2002). Furthermore, 220 shareholders in Minnesota and joined their CSA due to knowing either the CSA owner or a friend/family member in the CSA, and shareholders actively recruited new shareholders (Cone & Myhre, 2000). Sweet Peas CSA in the Midwest grew its number of shareholders through various social networks and information distributed at gathering places of consumers who had probable interest in alternative food sources (Sharp et al., 2002).

Purpose

The purpose of this study was to explore what information channels Texas CSA shareholders use to learn about food choices. Fruit and vegetable farmers living in Texas could use the knowledge gained from this study in their own community-based social marketing campaigns for recruiting new consumers to join a CSA.

Methods

The research question addressed in this study was part of a larger, descriptive collective case study that used a mixed methods design to collect and analyze quantitative and qualitative data (Creswell & Plano Clark, 2007). One construct of a researcher-developed questionnaire was used for collecting the data presented in this manuscript. The construct indicated how frequently shareholders used 12 information channels when seeking information about food choices, using a 5-point Likert scale ranging from 1 (*never*) to 5 (*always*). A panel of experts established face and content validity of the questionnaire. Researchers conducted a pilot test with shareholders of two CSAs in [state] to establish reliability of the questionnaire. Shareholders from three CSAs in Texas participated in the study. CSA 1, located near Dallas, has 50 shareholders, and CSA 2, located in a rural community in Northeast Texas has 83 shareholders, with 39 having email addresses. CSA 3 is in a rural community near San Antonio and has120 shareholders.

Following Dillman’s Tailored Design Method, the CSA owners sent the e-mails to their shareholders on behalf of the researchers. Data were collected using SurveyMonkey™. A total of 85 online surveys were returned for a response rate of 41%. The researchers ran descriptive statistics in SPSS® 18.0. The results presented in this study were cumulative of the three CSAs.

Results

As seen in Table 1, websites (M = 3.81, SD = 0.95) followed by interpersonal (M = 3.10, SD = 0.95) were sometimes used.

Table 1

Frequency of Using Communication Channels for Seeking Food Choice Information

Information Channel	**N**	**M**	**SD**
Websites	47	3.81	0.95
Interpersonal	50	3.10	0.95
E-mail	49	2.71	1.12
Events (farmers’ markets, on-farm)	50	2.38	0.99
Print publications (fliers, newsletters, brochures)	49	2.33	1.07
Social media (Facebook, MySpace, Twitter)	50	1.96	0.99
Local broadcast (television, radio)	50	1.88	1.02
Cooperative extension (agent, website, materials, events)	49	1.88	1.01
Local newspaper	49	1.86	0.98
Presentations at local organizations	49	1.73	0.81
Direct mail	49	1.53	0.82
Other	27	1.33	0.88

Note. The scale was 1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, and 5 = Always.

Conclusions

Websites and interpersonal communication were sometimes used for learning about food choices. Shareholders in Minnesota, Vermont, New York and the Midwest also joined their CSA through word-of-mouth advertising by knowing friends or family who belonged to the CSA or knowing the CSA owner. Posting membership information at events or in buildings where consumers would have interest in local could help establish and grow local food systems by increasing communication opportunities between consumers and CSA owners.

Recommendations

Findings from this study have potential implications for developing community-based social marketing practices for CSAs located in or near Texas communities. Shareholders used few of the information channels when making food choices. Further research might shed light on the information channels preferred by shareholders when searching for food choice information. Additional research is needed about what information potential shareholders want to know about joining a CSA. These new findings would help CSA owners make decisions on what information channels they use for delivering their marketing messages to potential shareholders.

References

Brown, C., & Miller, S. (2008). The impacts of local markets: A review of research on farmers markets and community supported agriculture (CSA). *American Journal of Agricultural Economics, 90*(5), 1296-1302. doi: 10.1111/j.1467-8276.2008.01220.x

Cone, C. A., & Myhre, A. (2000). Community-supported agriculture: A sustainable alternative to industrial agriculture?. *Human Organization, 59*(2), 187-197.

Creswell, J. W., & Plano Clark, V. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association of Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Education and Communications.

Local Harvest. (2011). Retrieved from http://www.localharvest.org/

Kolodinsky, J. M., & Pelch, L. L. (1997). Factors influencing the decision to join a community supported agriculture (CSA) farm. *Journal of Sustainable Agriculture, 10*(2/3), 129-141. doi: 10.1300/J064v10n02_11

McKenzie-Mohr, D., & Smith, W. (1999). *Fostering sustainable behavior: An introduction to community-based social marketing*. Gabriola Island, BC, Canada: New Society Publishers.

Oberholtzer, L. (2004). *Community supported agriculture in the Mid-Atlantic region: Results of a shareholder survey and farmer interviews*. Retrieved from Small Farm Success Project website: http://www.smallfarmsuccess.info/CSA_Report.pdf

Polimeni, J. M., Polimeni, R. I., Shirey, R. L., Trees, C. L., & Trees, W. S. (2006). The demand for community supported agriculture. *Journal of Business & Economics Research, 4*(2), 49-59.

Sharp, J., Imerman, E., & Peters, G. (2002). Community supported agriculture (CSA): Building community among farmers and non-farmers. *Journal of Extension, 40*(3). Retrieved from http://www.joe.org/joe/2002june/a3.php

Strochlic, R., & Shelley, C. (2004). *Community supported agriculture in California, Oregon, and Washington: Challenges and opportunities*. Retrieved from the California Institute for Rural Studies: http://www.ams.usda.gov/AMSv1.0/getfile?dDocName=STELDEV 3101204

Research Poster

Relating College Student Disengagement to Motivation and Values Toward their Education

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Relating College Student Disengagement to Motivation and Values Toward their Education

Introduction

The purpose of this descriptive study was to describe students' motivation for acquiring a post-secondary education and the students' perceived value toward their education. Distinguishing a student's motivating factors to gain a college education between one of fulfilling a requirement and the desire to be educated could help educators better understand why students disengage from classroom activities. "Student engagement appears to be foundational to academic achievement. It underlies accepted principles of good practice in college teaching and is an important component of a positive campus culture" (Johnson, Wardlow, & Graham, 2009). Researchers suggest student disengagement and motivation are linked to one another (Skinner & Belmont, 1993, AL-Bataineh, David, Hamann, & Wiegel, 2000), and further connect that disengaged students are not motivated to achieve.

Kuh (2003) defines student engagement as: "time and energy students devote to educationally sound activities inside and outside the classroom (p.25)." Students have differing goals, expectations, values toward, affects associated to learning, needs to be met. Buckmaster & Carroll (2009) discussed that student's sources of motivation impact their approach to educationally purposeful activities. Contextually, a student who is more extrinsically motivated for career attainment (Schab, 2011) and other factors may appear or could actually be less engaged in their academic experience (Mankin, Boone, Flores, & Willyard, 2004). Agricultural education needs a better understanding of the role motivation plays in student engagement and learning experiences (Doerfert, 2011). Thus, how do student's motivation and values toward their college education play a role in disengagement? Objectives for this study were: 1) Describe student's personal motivation toward schooling, and 2) Describe student's personal value toward their education.

Theoretical/Conceptual Framework

Schunk's (2012) Model of Motivated Learning was used as the primary framework for this study. The Model of Motivated Learning, as described by Schunk (2012) provides a practical conceptualization of learning in a motivated environment by outlining the inputs of all parties before, during, and after learning tasks are initiated. The pre-task learner qualities of the model provided the focus for the present study. Whereby, the learner brings their own goals, expectations, and values related to the course or subject matter into the learning environment. Consequently the learner's motivation relative to the specific learning environment is shaped by their qualities. Motivation in this study focused on the components of goals and expectations within the pretask section of the model. Value toward education attempted to evaluate the values component of the pretask characteristics in the model. While mostly internal factors have been outlined, external motivational attributes including degree completion and desire for future employment are believed to impact college students' decision of course engagement.

Methodology

The quantitative design of this study is descriptive in nature and consisted of a purposive sample of undergraduate students enrolled in a 2000-level leadership course taught at large Mid-western university during the spring 2012 semester. Enrollment in the course included 170 students of which 129 responded. Non-response error was not accounted for nor measured for this study. Respondents represented 22 majors across the university. Mean and standard deviations were used to describe perceptions measured by a six point Likert-type agree/disagree scale. The researchers developed a paper questionnaire inductively based upon relevant literature (Handelsman, Briggs, Sullivan, & Towler, 2005; Kuh, 2003). The instrument was evaluated for face and content validity by a panel of experts consisting of faculty and graduate students in a department of agricultural education. A pilot test of the instrument was conducted on a similar group of undergraduate students (n = 30) and produced Cronbach reliability coefficients of .86 and .77, respectively for each of the instruments' constructs.

Findings/Conclusions

Means and standard deviations for the sample and each class standing for both constructs are displayed in Table 1. Motivation in this study was measured by self-perceived student values toward educational activities and engagement in college courses as evaluated by the instrument items. The freshmen (M = 4.85, .53) and seniors' (M = 4.40, .60) mean scores deviated more from the overall mean (M = 4.59, .59) than sophomores (M = 4.59, .57) or juniors (M = 4.61, .53). The sample ultimately agreed (M = 4.59, .59) they were motivated toward their post-secondary education. However, motivation toward schooling decreased from the freshmen year onward. Many factors may have played a role in the discrepancies between senior students and freshmen for instance; senior students were one week from graduation, which could have attributed to lower relative motivation. Relative to this specific course, engaging material and purposeful activities need to be implemented. Cognitively engaging and relatable learning activities for students at each ranking and in each course are essential for students to learn at their best (Ewing & Whittington, 2009).

Table 1
Student motivation and value toward schooling (N = 129)

	Total (N = 129)	Class Mean Scores			
Construct	Mean (SD)	Freshmen M (SD) (n = 17)	Sophomore M (SD) (n = 38)	Junior M (SD) (n = 44)	Senior M (SD) (n = 30)
Motivation Toward Schooling	4.59 (.59)	4.85 (.53)	4.59 (.57)	4.61 (.53)	4.40 (.60)
Student Value Toward Their Education	4.58 (.67)	4.93 (.46)	4.54 (.63)	4.63 (.61)	4.36 (.78)

Note. Six point Likert-type Agree/Disagree Scale: 1 = strongly disagree, 2 = disagree, 3 = slightly disagree, 4 = slightly agree, 5 = agree, 6 = strongly agree.

Senior respondents also described decreased value toward their education compared to freshmen. Value toward education was related to attendance, participation, attention, and personal assessment. Freshmen (*M* = 4.93, .46) and seniors' (*M* = 4.36, .78) mean scores differed the most from the construct mean (*M* = 4.58, .67), compared to sophomores (*M* = 4.54, .63) and juniors (*M* = 4.63, .61). Again, relative to this course upperclassmen need to have demonstrated the valuable outcomes of their coursework regardless of the course level. Motivation and value need to be communicated across all courses to curb disengagement in the classroom. Further description of student's orientation to college and understanding their values toward education could help instructional design in addition to student recruitment activities in higher education.

References

AL-Bataineh, A., David, Hamann, S., & Wiegel, L. (2000). Reflections on practice: Classroom observations. (ERIC Document Reproduction Service No. ED454229), East Lansing, MI: National Center for Research of Teacher Learning, retrieved February 28, 2012, from http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/.

Buckmaster, D.R. & Carroll, N.J. (2009). Motivating students—Factors to consider: Teaching tips/notes. *NACTA Journal 53*(2). 53-55.

Doerfert, D.L. (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Ewing, J.C. & Whittington, M.S. (2009). Describing the cognitive level of professor discourse and student cognition in college of agriculture class sessions. *Journal of Agricultural Education, 50*(4), 36-49. doi:10.5032/jae.2009.04036

Johnson, D.W., Wardlow, G.W., & Graham, D.L. (2009). Academic engagement and satisfaction of undergraduate agricultural, food and life sciences students. *NACTA Journal, 53*(4). 12-17.

Kuh, G.D. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change: The Magazine of Higher Learning, 35*(2), 24-32. doi:10.1080/00091380309604090

Mankin, K.R., Boone, K.M., Flores, S., & Willyard, M.R. (2004). What agriculture student say motivates them to learn. *NACTA Journal, 48*(4). 6-11.

Schab, F. (2011). Why go to college for agriculture? *NACTA Journal, 55*(1). 82-83.

Schunk, D.H. (2012). *Learning theories: An educational perspective,* 6th ed. Boston: Pearson.

Skinner, E.A. & Belmont, M.I. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85*(4), 571-581. doi:10.1037/0022-0663.85.4.571

Research Poster

Relevance of Student Teaching Skills and Activities from the Perspective of the Student Teacher

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Relevance of Student Teaching Skills and Activities from the Perspective of the Student Teacher

Introduction/Theoretical/Conceptual Framework

Student teaching has been described as the capstone experience of the pre-service teacher education program and is critical to the process of preparing future teachers (Edgar, Roberts, & Murphy, 2011; Edwards & Briers, 2001; Kasperbauer & Roberts, 2007). The experiences acquired by the pre-service candidate during student teaching are “probably the most crucial activities involved in the development of prospective…agriculture teachers” (Schumann, 1969, p. 156). Experiential learning activities associated the student teaching experience were identified as an important component of teacher preparation programs (McLean & Camp, 2000) yet little is known about these activities. Harlin, Edwards, and Briers (2002) recommended that current practices in student teaching be examined to determine their relevance in the teacher development process. This study is grounded in experiential learning theory (Kolb, 1984) and framed conceptually by the model for developing and researching early field experiences (Smalley & Retallick, 2011) and aligns with Priority 4 of the *National Research Agenda* which identifies the challenge of “preparing and developing teachers as adaptive experts in all learning contexts” (Doerfert, 2011, p. 22). The purpose of this study was to determine the extent to which student teachers deem traditional student teaching skills and activities relevant as part of the capstone student teaching experience.

Methods

The population for this descriptive survey study consisted of all *(N=140)* fall 2012 and spring 2013 agricultural education student teachers in the North Central Region as identified by the teacher education coordinator at each institution that prepares agricultural education teachers. Student teaching skills and activities were identified and organized into seven constructs. Respondents were asked to evaluate each skill or activity within each construct on a three point Likert-type scale (1 = not at all relevant, 2 = somewhat relevant, 3= very relevant). Dillman’s (2007) tailored design method was used to develop the electronic survey instrument and collect data, which were analyzed using descriptive statistics. The usable response rate was 47.14% ($n = 66$).

Results/Findings

Planning instruction activities associated with the student teaching experience focus on collecting/reviewing documents, and reviewing agricultural education classroom procedures. According to agricultural student teachers, the most relevant planning instruction activity was to review and demonstrate proper safety procedures in the school agriscience or agricultural mechanics lab. The least relevant activity was to inventory and evaluate references and instructional aids in the school and community.

Teaching activities associated with student teaching experience focus on successful classroom teaching in a variety of settings. The most relevant teaching activity was to conduct a class discussion (*M*=2.89). The least relevant teaching activity was to prepare a bulletin board (traditional or electronic) for teaching/learning or motivation (*M*=1.96).

The *evaluation of student performance* activities focus on the methods of student evaluation used during student teaching. The skills identified as most relevant were to develop and communicate methods for evaluating student performance (*M*=2.88) and construct tests to assess student understanding, growth, and development (*M*=2.88). The least relevant activity was to review tests and other evaluation instruments with the cooperating teacher (*M*=2.71).

The activities associated with *SAE* are meant to gain a better understanding of the supervised agricultural experience. The most relevant activity was to discuss SAE with the cooperating teacher and/or administrator (*M*=2.79). The least relevant SAE experience was to teach two lessons integrating personal financial literacy into SAEs (*M*=2.32).

FFA activities are a way to provide students with leadership development and these student teaching activities are meant to gain a better understanding of FFA activities. Supervise one FFA activity other than a regular meeting was the most relevant activity (M=2.87). The least relevant FFA activity was to assist in organizing the local FFA test plot (*M*=2.07).

Developing good *school/community relations* provide visibility of an agricultural education program. The most relevant school-community relations activity was to participate in parent-teacher and/or IEP conferences (*M*=2.91). The least relevant school-community relations activity was to exchange responsibilities with a student teacher in another school for one day (*M*=1.98).

Providing education for *adult learners* is a way to promote agricultural education beyond the classroom. The most relevant adult education activities were to list procedures used by the cooperating teacher in planning, conducting, and evaluating adult education (*M*=2.11) and participate in adult education activities (*M*=2.11). The least relevant activity in adult education was to meet with an advisory committee to plan adult education activities (*M*=2.06).

Becoming involved in the *teaching profession* provides many opportunities. Activities in the teaching profession vary greatly from being part of organizations to excelling at teaching in the classroom. The most relevant activity in the teaching profession construct was to discuss with the cooperating teacher the appropriate balance between personal and professional responsibilities (*M*=2.75). The least relevant activity was to serve on a faculty/staff committee (*M*=1.98).

Conclusions/Implications/Recommendations

The findings of this study shed some light on student teacher perspective of the relevance of the student teaching activities and skills. When analyzing the seven constructs, student teachers indicated the construct of most importance during student teaching was planning instruction. The least important construct during student teaching was adult education.

The results identify the activities and skills that student teachers believe are most relevant. These results should be compared to the literature to determine the actual relevancy of the skill set. Those skills deemed not relevant should be no longer required. Those skills that are relevant in the literature should be included and stakeholders should be educated in the value and rationale for the relevancy. This study has implications for teacher education programs planning to evaluate their current programs or preparing to revamp their student teaching experience. The results from this study can be used as a benchmark for agricultural education programs across the country.

References

Doerfert, D. L. (Ed.) (2011) National research agenda: America Association for Agricultural Education's research priority areas for 2011-2015. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Edgar, D. W., Roberts, T. G., Murphy, T. H. (2011). Exploring relationships between teaching efficiency and student teacher-cooperating teacher relationships. *Journal of Agricultural Education, 52*(1), 9-18. doi: 10.5032/jae.2009.01033

Edwards, M. C., & Briers, G. E. (2001). Cooperating teachers' perceptions of important elements of the student teaching experience: a focus group approach with quantitative follow-up. *Journal of Agricultural Education, 42*(3), 30-41. doi: 10.5032/jae.2001.03030

Harlin, J. F., Edwards, M. C., & Briers, G. E. (2002). A comparison of student teachers' perception of important elements of student teaching experience before and after an 11-week field experience. *Journal of Agricultural Education, 43*(3), 72-83. doi: 10.5032/jae.2001.03030

Kasperbauer, H. J. & Roberts, T. G. (2007). Changes in student teacher perceptions of the student teacher-cooperating teacher relationship throughout the student teaching semester. *Journal of Agricultural Education, 48*(1), 31-41. doi: 10.5032/jae.2007.01031

Kolb, D. A. (1984). Experiential learning. Englewood Cliffs, NJ: Prentice–Hall.

McLean, R. C., & Camp, W. G. (2000). An examination of selected agricultural teacher education programs in the United States. Journal of Agricultural Education, 41(2), 25-35.

Schumann, H. B. (1969, January). The cooperating teacher's role in student teaching. *The Agricultural Education Magazine, 41*(7), 156.

Smalley, S. W. & Retallick, M. S. (2011). Purposes, activities, and documentation of early fieldexperience in agricultural teacher education: A national Delphi study. *Journal of Agricultural Education, 52*(3), 100-109. doi: 10.5032/jae.2011.03100

Research Poster

Revisiting Rogers' Theory for Understanding the Diffusion of Innovations: Students' Voices on Using Case Method to Critically Examine the Model and Their Learning Experiences

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Revisiting Rogers' Theory for Understanding the Diffusion of Innovations: Students' Voices on Using Case Method to Critically Examine the Model and Their Learning Experiences

Introduction/need for research

If the anticipated outcome of *education*, as defined most broadly, is change in human behavior supportive of or complementary to establishing, maintaining, or advancing the well-being of a society – any society – then understanding how *planned or intended change* occurs (or does not) holds importance for all educators. Some tradition exists in agricultural and extension education (AEE) to teach aspects of change theory emphasizing diffusion and adoption of innovations and innovative practices. To that end, an informal questionnaire to the subscribers of the AAAE's LISTSERV, although not conclusive, indicated that efforts were being made to teach change theory in AEE courses at some institutions. Everett Rogers' (2003) text, *Diffusion of Innovations*, was cited as an essential reference by all of the responders (9 of 9). Such a course is taught for graduate credit by one of the researchers. That course relies heavily on Rogers' (2003) posits about the adoption of innovations, human behavior, technology, and society. Reference to his work as a conceptual and/or theoretical basis also appears in AEE's published scholarship, e.g., the *Journal of Agricultural Education* and the *Journal of Extension*. In the preface to the bibliography of his last edition, Rogers (2003) stated "approximately 5,200+ diffusion publications [were] currently available" (p. 477); he also maintained that "Nine Major Diffusion Research Traditions" (p. 44) existed. Traditions such as rural sociology, education, and communication are likely to resonate with many who practice AEE.

Rogers (2003), however, should not be viewed as "myopic" or "conceited" regarding his model. To wit he posited, "when a scientist follows a theoretical paradigm, a set of intellectual blinders prevents him or her from seeing certain aspects of reality . . . . [and] every field of science, has blind spots [or 'trained incapacity']. They necessarily accompany a dominant paradigm" (Rogers, 2003, p. 106). To his credit, Rogers (2003) devoted a chapter of his book to critiquing the theory: "Contributions and Criticisms of Diffusion Research" (pp. 102 – 135); the criticisms included pro-innovation bias, individual-blame bias, recall problem, and issue of equality. His admonition could be extended to teachers of change theory who rely extensively on the model. This need motivated an action research study on students' learning experiences in the course "Methods of Technological Change" taught during a summer term of 2012 at [* University].

Conceptual framework

"John Elliott defined action research as 'the study of a social situation with a view to improving the quality of action within it'" (as cited in McKernan, 1991, p. 312). The context or *it* for such inquiry could be a course and analysis of students' learning experiences therein with the intent of improving the course. Further, McKeachie (2002) indicated the case method, as a teaching approach, was a "problem-based method" that "contextualized learning, as contrasted with learning disassociated from meaningful contexts" (p. 198). The course relied on cases presented by Rogers (2003), instructor-provided cases intended to expand students' understanding of the model, and required students to synthesize diffusion literature by developing two "interpretive case study papers" (Author, 2012, pp. 2-3). Students were expected to demonstrate an understanding of the model "with special attention paid to relevant contributions and criticisms" (Author, 2012, p. 3).

Methodology

The researchers were interested in students' views on the contemporary relevance of Rogers' model (e.g., in understanding the adoption of social media and other emerging tools of social networking). Further, students' views on the usefulness of the case method (McKeachie, 2002) for learning and critiquing Rogers' model were sought as well as other opinions they held on ways to improve the course. To achieve this, a focus group interview, which included the course's seven students, was conducted as part of the course evaluation. Focus groups are important when "consumer feedback about services and programs is desired" (Patton, 2002, p. 388). Typically, they are conducted "at the end of a program" (p. 388) to determine participants' perceptions of the program or intervention. Students' evaluations, as per [* University's] procedure and instrument for all courses, provided a measure of triangulation (Creswell, 2008), as did a review of the course's syllabus.

Results/findings

Students were asked a series of questions pertaining to the use of cases. They expressed a number of highlights of the course and suggestions for improving it. Students agreed that the cases helped them engage in the course material on a more personal level. In particular, students expressed that the cases brought about "an emotional connection to the material" that they would not have obtained otherwise. Their most frequent emotion was *discouragement*, however, "especially on something [an idea] that should have been adopted but wasn't." One student highlighted a case dealing with people in South America who did not know the importance of boiling their water, which led to the spread of germs that resulted in numerous illnesses and deaths. The student stated the case "put it in perspective that people need education." Students especially liked the way that the cases helped them learn the course content. As said one student, "[t]hey [cases] told a story, which is powerful." Another added, "[t]hey [cases] helped communicate issues clearly and effectively." Another student stated, "they [cases] served as mini history lessons," and allow people to learn from the mistakes of others. A different student added, "[t]hey [cases] have real applicability in other parts of the world."

Per suggestions, students pointed to the need to update some of the cases to more current times and issues. A student said that, "although the global perspective is important, my interest is here in [State]." As such, cases are needed that resonate with students' interests and needs. Another student agreed by stating, "I don't feel as though I have as many tools to apply the content domestically." Another student added, "[c]hange [per Rogers' cases] was applied to developing countries where change is very basic. How does change occur here where things are much more advanced?" The students' summated, evaluation ratings overall were $M = 3.86$ ($SD = .38$) for the instructor, and $M = 3.71$ ($SD = .49$) for the course. (Scale: *Very low* = 0.00 to *Very high* = 4.00.)

Conclusions

Using cases appeared to be an effective method for teaching Rogers' theory. One student summarized emphatically, "[cases] served as a great exercise in critical thinking. This is what grad school is all about!" The focus group findings supported McKeachie's (2002) positions on the value of "contextualized learning" and that presenting a problem through a case can stimulate deep meaningfulness on the part of the learner. On the other hand, although the students interviewed appreciated the relevance of Rogers' theory in a developing world context, they clamored for more examples of *domestic* or developed world cases of diffusion and its challenges. The students' relatively high quantitative ratings of the course were in concert with much of what they voiced.

Implications/recommendations/impact on profession

Boyer (1990), in his critique of the academy, stated that "[p]edagogical procedures must be carefully planned, continuously examined, and relate directly to the subject taught" (pp. 23 - 24). This study examined students' views on their learning experiences in a graduate course based largely on Rogers' model (2003) for diffusing innovations. The findings supported using the case method for teaching Rogers' theory. Therefore, it is recommended that other instructors use or continue their use of cases when teaching diffusion theory. But they should consider the contemporariness of the cases and include cases standing to resonate transparently with the socio-cultural spectrum of the students.

References

Author. (2012). Methods of technological change. (AGED 5863, course syllabus.) Department of ***, **** University, ***.

Boyer, E. L. (1990). *Scholarship reconsidered: Priorities of the professoriate*. The Carnegie Foundation for the
Advancement of Teaching. New York, NY: Jossey-Bass.

McKeachie, W. J. (2002). McKeachie's teaching tips: Strategies, research, and theory for college and
university teachers (eleventh edition). Boston, MA: Houghton Mifflin Company.

McKernan, J. (1991). Action inquiry: Studied enactment. In E. C. Short (Ed.), *Forms of Curriculum Inquiry* (pp. 309-326). Albany, NY: State University of New York Press.

Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: Free Press.

Research Poster

Safely Managing a School-based Agricultural Mechanics Laboratory: A Focus on the Continuing Education Needs of Washington Agricultural Education Teachers

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Safely Managing a School-based Agricultural Mechanics Laboratory: A Focus on the Continuing Education Needs of [STATE] Agricultural Education Teachers

Introduction

Phipps, Osborne, Dyer, and Ball (2008) noted that agricultural education laboratories are an essential component of a total secondary agricultural education program. Laboratories allow students to actively engage in scientific inquiry and application (Osborne & Dyer, 2000). However, school administrators often rely on agriculture teachers who are knowledgeable and demonstrate expertise in managing school-based agricultural mechanics laboratories to provide high-quality instruction in a safe environment for school-age students (Dyer & Andreasen, 1999; Gliem & Miller, 1993; McKim & Saucier, 2011b). Additionally, parents expect their student to receive safe and proper instruction with adequate supervision, from a qualified instructor (Dyer & Andreasen, 1999). With safety being the single most important consideration when teaching in a laboratory environment (Dyer & Andreasen, 1999), safety must be the primary responsibility of the teacher (Gliem & Miller, 1993). Hence, knowledge and skills associated with agricultural mechanics education are essential for agricultural educators who intend to provide a safe and efficient laboratory learning environment for agricultural mechanics students (Saucier, Terry, & Schumacher, 2009).

Agricultural mechanics courses continue to be a popular school-based agricultural education course offered in [STATE] ([STATE PERSONNEL], personal communication, April 18, 2012). Additionally, the *National Research Agenda*, *Research Priority Area 3* noted that professionals in the agriculture industry (e.g., school-based teachers), "be well prepared for discovery science, teaching and learning, STEM integration, and application of innovation" (Doerfert, 2011, p. 19). With the continuing popularity of these courses and the need for educators to possess the knowledge and skills related to the management of these laboratories, research was conducted to determine the professional development needs of teachers who manage an agricultural mechanics laboratory in a school-based environment.

Theoretical Framework

Bandura's (1997) theory of self-efficacy and Borich's (1980) needs assessment model guided this non-experimental, quantitative study that sought to identify and describe [STATE] teachers professional development needs. Bandura (1997) defined self-efficacy as the "beliefs in one's capabilities to organize and execute the course of action required to produce given attainments" (p. 3). Furthermore, Bandura (1986) noted that self-efficacy influences a person's choices, actions, the amount of effort they give, how long they persevere when faced with obstacles, their resilience, their thought patterns and emotional reactions, and the level of achievement they ultimately attain. Understanding the importance of competencies and teachers' self-perceived ability to perform competencies will better guide the development of professional development opportunities.

Purpose and Research Question

The purpose of this research was to identify and describe the laboratory management professional development needs of [STATE] school-based agricultural educators who manage and teach in an agricultural mechanics laboratory. This study was guided by the following research question: What are the agricultural mechanics laboratory management professional development needs of [STATE] school-based agricultural educators?

Methodology

[STATE] agricultural educators who teach courses in and manage an agricultural mechanics laboratory in the 2011-2012 academic school year (N = 105) served as the population for this study. Based on Krejcie and Morgan's (1970) recommendations regarding representative sampling, a simple-random sample (n = 83) was selected. Data were collected using multi-modal data collection procedures (Dillman, 2007); web and mail questionnaires contained 33 competency items representing eight constructs developed by McKim & Saucier (2011a). McKim and Saucier (2011a) reported the constructs to be valid, with acceptable estimates of reliability (Cronbach's $\alpha > .80$). In the first section, teachers were asked to rate the importance of and their ability to perform each competency using a five-point summated rating scale. The second section contained demographic questions.

After five points of contact (Dillman, 2007), 53 responses (63.86%) were received. A sixth point of contact was attempted with reluctant responders (n = 30), which yielded an additional 21 useable responses and a final response rate of 89.16%. According to the U.S. Office of Management and Budget's (2006) *Standards and Guidelines for Statistical Surveys Data*, analysis of nonresponse bias is only necessary when response rates are less than 80%. Therefore, nonresponse bias was not a concern. Data were analyzed using SPSS version 21.0 and a Microsoft Excel ® based mean weighted discrepancy (MWDS; McKim and Saucier, 2011c) to determine the professional develop needs of the respondents.

Findings

Results indicated that the agricultural mechanics laboratory management competencies most in need of professional development (based on highest MWDS) included, safely disposing of hazardous materials, safely handling hazardous materials, and safely storing hazardous material. The least needed professional development competencies (based on lowest MWDS) included utilizing technical manuals to order replacement/repair parts for agricultural mechanics laboratory equipment, performing routine maintenance of agricultural mechanics laboratory equipment, and installing stationary power equipment.

Conclusions, Implications, and Recommendations

Teachers indicated that they had professional development needs in each of the eight constructs and for 31 of the 33 agricultural mechanics laboratory management competencies. The most needed competencies were in the area of hazardous materials and laboratory safety. Concerns arise regarding the preparation of teachers and the continuing education of existing teachers within [STATE]. The teacher preparation curriculum should be examined to ensure that proper emphasis is assigned to agricultural mechanics laboratory management during teacher preparation and that all teachers embrace self-directed learning (Knowles, Holton III, & Swanson, 2005) so teachers understand that it is their obligation to remediate and/or expand their knowledge when needs are identified.

References

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, N.J.: Prentice Hall.

Bandura, A. (1997). Self-efficacy: The exercise of control, New York: W.H. Freeman.

Borich, G. D. (1980). A needs assessment model for conducting follow-up studies. The Journal of Teacher Education, 31(3), 39-42. doi: 10.1177/002248718003100310

Dillman, D. A. (2007). *Mail & Internet Surveys: The Tailored Design Method* (2nd ed.). Hoboken, NJ: John Wiley & Sons, Inc.

Doerfert, D.L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Dyer, J. E., & Andreasen, R. J. (1999). Safety issues in agricultural education laboratories: A synthesis of research. *Journal of Agricultural Education, 40*(2), 46-52. doi: 10.5032/jae.1999.02046

Gliem, J. A., & Miller, G. (1993). Administrators' attitudes, policies, and procedures regarding safety in vocational education laboratories. *Journal of Agricultural Education, 34*(4), 1-7. doi: 10.5032/jae.1993.04001

Knowles, M. S., Holton III, E. F., & Swanson, R. A. (2005). *The Adult Learner*. San Diego, CA: Elsevier.

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30,* 607-610.

McKim, B. R., & Saucier, P. R. (2011a, May). A multi-state factor-analytic and psychometric meta-analysis of agricultural mechanics laboratory management competencies. *Paper presented at the 2011 American Association for Agricultural Education Conference,* Coeur d'Alene, ID.

McKim, B. R., & Saucier, P. R. (2011b). Agricultural mechanics laboratory management professional development needs of Wyoming secondary agriculture teachers. *Journal of Agricultural Education*, *52*(3), doi: 10.5032/jae.2011.03075

McKim, B. R., & Saucier, P. R. (2011c). An Excel-based mean weighted discrepancy score calculator. *Journal of Extension, 49*(2).

Office of Management and Budget, Regulation and Information Policy. (2006). *Standards and Guidelines for Statistical Surveys*. (Office of Management and Budget Publication No. 67 FR 38467-38470). Retrieved from http://www.whitehouse.gov/sites/default/files/omb/inforeg/statpolicy/standards_stat_surveys.pdf

Osborne, E. W., & Dyer, J. E. (2000). Attitudes of Illinois agriscience students and their parents toward agriculture and agricultural education programs. *Journal of Agricultural Education, 41*(3), 50-59. doi: 10.5032/jae.2000.03050

Phipps, L. J., Osborne, E. W., Dyer, J. E., & Ball, A. B. (2008). *Handbook on agricultural education in public schools* (6th ed.). Clifton Park, NY: Thomson Delmar Learning

Saucier, P. R., Terry, Jr. R, & Schumacher, L. G. (2009). Laboratory management in-service needs of Missouri agriculture educators. *Paper presented at the 2009 Southern Region of the American Association for Agriculture Education Conference,* USA, 176-192.

Research Poster

State FFA Officer Training and Development Needs Assessment

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State FFA Officer Training and Development Needs Assessment

Introduction

In 2011, a task force came together to assess the National FFA State Officer Leadership Continuum. A key recommendation was to conduct a State FFA Officer Needs Assessment to identify the most critical needs for training and development of state FFA officers. The results would then be used to enhance and further develop the leadership continuum as a meaningful, engaged learning environment in alignment with Priority Four of the National Agricultural Education Research Agenda (Doerfert, 2011).

Conceptual Framework

The historical development of formal state FFA officer leadership training dates back to 1944, where Pennsylvania state FFA officers learned skills including how to use parliamentary procedure, conduct workshops, and lead group discussions at the first state officer leadership training school (Knauer, 1950). In 1959, the first national leadership training conference for state FFA officers was held in Washington, D.C. (Tenney, 1977). Presently, leadership programming provided by the National FFA is guided by the state officer developmental continuum of "awareness, interaction, and mastery" (National FFA, 2006; Van Linden & Fertman, 1998), which is grounded in Chickering's (1983) model of leadership development of adolescents. According to Hoover, Scholl, Dunigan, and Mamontova (2007), research on FFA leadership has primarily focused on post high school leadership, perceptions of FFA members and teachers about leadership, and the identification of leadership skills developed through participation in FFA; however, a search for articles with state FFA officer leadership development needs as the primary subject in the Journal of Agricultural Education yielded zero results. A regular investigation of FFA leadership programs is necessary to ensure relevancy of leadership development (Connors & Swan, 2006).

Methodology

A four-round modified Delphi technique was used to conduct this study. The Delphi method "is a widely used and accepted method for gathering data from respondents within their domain of expertise" (Hsu & Sandford, 2007). Further, this method is appropriate for building consensus among individuals and across groups and "has been used in various fields of study such as program planning, needs assessment, policy determination, and resource utilization" (Hsu & Sanford, 2007). Because respondents do not interact, influences of dominant respondents, group pressures or other external factors do not threaten the data collection or validity of the study, thus, garnering more honest feedback. The panel of experts consisted of serving state FFA officers and the state FFA staff that work with them. One state officer from each state was randomly selected from the current list of state officers. Additionally, one state staff member from each state was invited based on their work with state officers. The research team used a series of electronic communications to deliver the four iterations in an effort to reach consensus among the participants.

Results/Findings

Iteration one asked panelists to list at least five training needs of state FFA officers when interacting with FFA members; interacting with agricultural educators and staff; interacting with sponsors and/or industry representatives; serving as an ambassador for agricultural education and the agriculture industry; and, serving as a student leader. Iteration No. 1 achieved a response rate of 84% from state staff and 72% from state officers. Iteration two asked the experts to review a consolidated list of their responses and identify their choice of the top 20 needs for state officer development. After a response rate of 76% for state staff and 38% from state officers, the research team identified 38 distinct items with 80% consensus. Iteration three asked panel members to identify their top 10 items for training and development and provide justification for their ranking. After achieving a 64% response rate from state staff and 44% from state officers, the research team narrowed the list to 16 items with 80% consensus. During iteration four, panelists were asked to review the list of 16 development needs and the justification of ranking from other panelists. Each panelist was then asked to select the 10 most crucial needs for state officer development. The research team analyzed the results and identified 11 crucial needs (there was a tie for 10th place) for training and development of state FFA officers (overall response rate 47%).

Conclusions

Consensus on the needs for state FFA officer training and development was reached. The 11 identified items should serve as focus areas when enhancing and developing new materials for the State Officer Leadership Continuum. The 11 identified needs for state FFA officers were: (1) being a person of character, (2) professionalism, (3) how to interact with various audiences, (4) developing effective presentations, (5) developing consistent, (6) clear messaging relating to FFA, (7) agricultural education, and the agricultural industry, (8) conversation skills, (9) leading through positive influence, (10) applying workshop objectives to real-world situations, and (11) prepared and impromptu public speaking skills.

Implications/Recommendations/Impact on Profession

The purpose of the needs assessment was to identify the most critical needs for training and development of state FFA officers and generate a consensus among state staff and state FFA officers. The 11 critical needs are all capable of being developed in state FFA officers. National FFA staff should evaluate current programs and delivery for inclusion of identified needs and improve or include these items where gaps exist. According to the results of this study, if effective state FFA officers are to be produced, these critical needs must be addressed in their training. Interestingly, five of the 11 items identified communication as the area in most need of training. It is often assumed that state FFA officers already have communications training that lead to their election to office. However, state staff and current state FFA officers agree they need assistance in writing, oral delivery, and conversation skills. Three of the 11 critical needs further identified items that are personal growth in nature. Both expert panels agree that state FFA officers need increased training in exhibiting qualities of character, professionalism and self-sacrifice. Creating effective state FFA officers is imperative to the future of the National FFA Organization and the industry of agriculture. These young people will become the organization's future adult leaders, supporters and sponsors. They will have the potential to influence our society toward agricultural literacy and shape the direction of future agriculture initiatives. It is recommended by the research team that National FFA staff incorporate these critical needs into all programs, resources, and media associated with the state FFA officer leadership continuum.

References

Chickering, A. (1983). *Education and identity.* San Francisco: Jossey-Bass.

Connors, J. J., & Swan, B. G. (2006). A synthesis of leadership development research in agricultural education: 1988-2003. *Journal of Agricultural Education, 47*(2), 1-13. doi: 10.5032/jae.2006.02001

Doerfert, D. L. (Ed.) (2011). National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Hoover, T. S., Scholl, J. F., Dunigan, A. H., & Mamontova, N. (2007). A historical review of leadership development in the FFA and 4-H. *Journal of Agricultural Education*, *48*(3), 100-110. doi: 10.5032/jae.2007.03100

Hsu, C. C., & Sandford, B. A. (2007). The Delphi technique: Making sense of consensus. *Practical Assessment, Research & Evaluation*, *12*(10), 1-8.

Knauer, D. (1950). A recommended procedure for Future Farmers of America leadership training programs in Pennsylvania (Unpublished master's thesis). Pennsylvania State University, University Park, PA.

National FFA. (2006). *LifeKnowledge at-work newsletter*. Retrieved from http://www.ffa.org/ageducators/lifeknowledge/newsletter/lk_newsletter_0605.html

Tenney, A. (1977). *The FFA at 50*. Indianapolis, IN: National FFA.

Van Linden, J., & Fertman, C. (1998). *Youth Leadership – A guide to understanding leadership development in adolescents*. San Francisco: Jossey-Bass.

Research Poster

Strengthening the connection between leadership development programs and research using the Collegiate Leadership Development Model

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Strengthening the connection between leadership development programs and research using the Collegiate Leadership Development Model

Introduction

Research has examined the need for leadership education (Astin & Astin, 2000; Boatman, 1999; Dugan & Komives, 2007) and the role of precollegiate (Dugan & Komives, 2007; Kimbrough, 1998; Phinney, 1990; Schumacher & Swan, 1993) and collegiate experiences (Birkenholtz & Schumacher, 1994; Cooper, Healy, & Simpson, 1994; Dugan & Komives, 2007; Layfield, Radhikrisha, & Andresen, 2000) in reaching leadership outcomes. However, a review of the literature revealed that a comprehensive model for program development and research related to collegiate leadership was missing. The primary purpose of this study was to analyze the collegiate leadership development literature and develop a comprehensive framework that could be used for program development and research.

Methods

A six-step integrative inquiry process identified by Roberts (1983) was used to synthesize and interpret the findings. First, the lack of a comprehensive framework was identified as the need for the study. Second, one hundred and seventeen books and scholarly articles from a variety of sources, including the *Journal of Agricultural Education*, *Journal of Leadership Education*, *Journal of College Student Development*, and *NASPA Journal* were retrieved. Third, studies were screened and organized. Fourth, an existing model (Terenzini and Reason, 2005) was modified to match the emerging themes. Fifth, the model was developed with supporting literature. And finally, the dissemination of the model is planned.

Results

The Collegiate leadership development model was adapted from Terenzini and Reason's (2005) Comprehensive model of influences on student learning and persistence model, which expanded the inputs (I), environment (E), and outcomes (O) concepts found in the College impact model (Astin & Astin, 2000), incorporated the organizational context (i.e., structure, policies and procedures and faculty culture) and has three components (Figure 1). The first two components are precollegiate (I) and college experiences (E), which previous literature suggested contribute to leadership development in undergraduate college students. The third component, leadership development, is the outcome of the model (O) and was conceptualized using the social change model (SCM; Higher Education Research Institute, 1996).

The pre-collegiate construct includes socio-demographics (Phinney, 1990; Kezar & Moriarty, 2000) and pre-collegiate experiences (Astin & Astin, 2000; 1977; Park & Dyer, 2005) that have been linked to leadership development. The college experiences construct includes classroom experiences, curricular experiences, and extracurricular experiences all of which contribute to leadership outcomes based on previous literature (Birkenholz & Schumacher, 1994; Ewing, Bruce, & Ricketts, 2009; Layfield, Radhakrishna, & Andresen, 2000; Dugan & Komives, 2007). Finally, leadership was used as the outcome construct of the model. While many different theoretical frameworks have been used to study leadership, the Social Change Model (SCM) (HERI, 1996) was chosen as the leadership outcome because it is a widely cited model of student leadership development in higher education (Haber & Komives, 2009) and has a reliable instrument (i.e., SRLS-R2) to measure the core values.

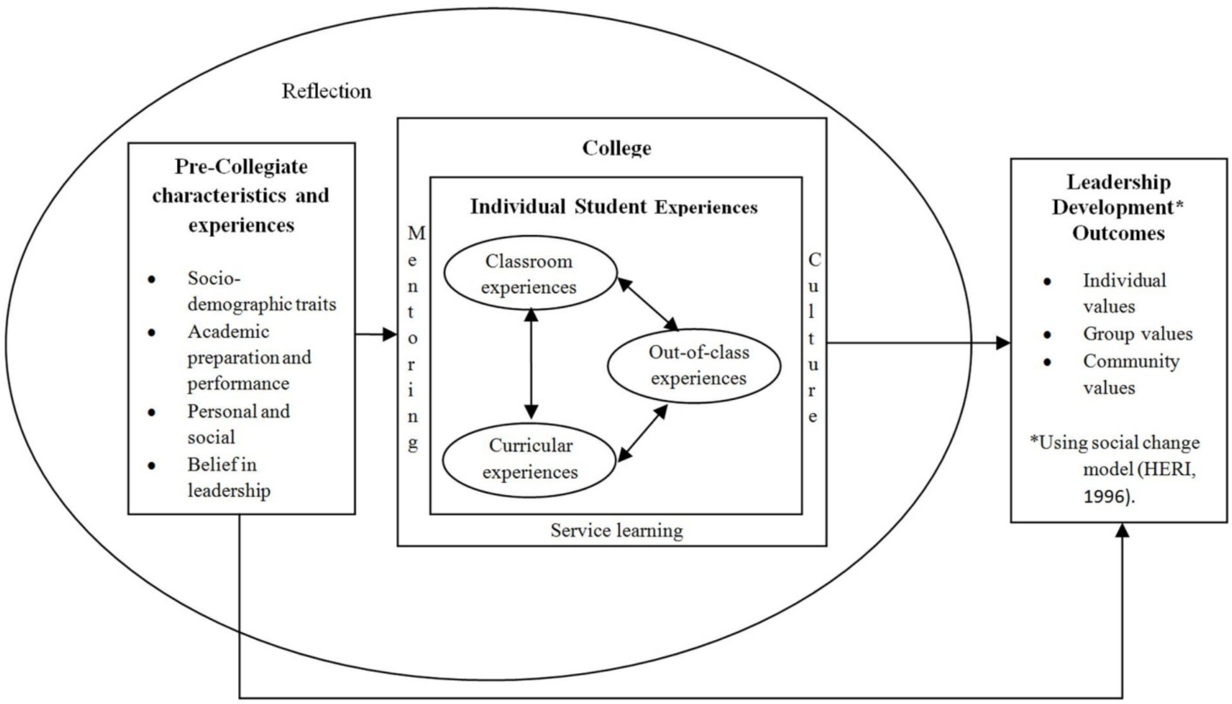

Figure 1. Collegiate leadership development model. Adapted from "First Things First: Developing Academic Competence in the First Year of College", *Research in Higher Education Volume 47 (2),* Copyright [2005] by P.T. Terenzini and R.D. Reason.

Conclusions/recommendations

The Collegiate Leadership Development Model that evolved from this study reflects the interrelationship between precollegiate characteristics and experiences and collegiate experiences, including classroom, out-of-classroom, and curricular experiences, and their influence on leadership development outcomes as measured by the Social Change Model. This model provides a conceptual framework for developing and assessing leadership outcomes across college campuses and serves as a model for conducting research related to collegiate leadership development.

The College Leadership Development Model addresses a significant gap that exists between leadership theory and practice (Dugan & Komives, 2007). To reduce this gap, institutions of higher education and perhaps the individual colleges within those institutions should adopt a conceptual framework for developing and assessing leadership outcomes that includes curricular, classroom, and extracurricular components. This model may also serve as a framework for conducting research related to collegiate leadership development.

References

Astin, A. W., & Astin, H. S. (2000). *Leadership reconsidered. Engaging higher education in social change.* Battle Creek, MI: W. K. Kellog Foundation.

Birkenholz, R. J., & Schumacher, L. G. (1994). Leadership skills of college of agriculture graduates. *Journal of AgriculturalEducation, 35*(4), 1–8.

Boatman, S. A. (1999). The leadership audit: A process to enhance the development of student leadership. *NASPA Journal, 37,* 325-336.

Cooper, D. L., Healy, M. A., & Simpson, J. (1994). Student development through involvement: Specific changes over time. *Journal of College Student Development, 35,* 98–102.

Dugan, J. P., & Komives, S.R. (2007). *Developing leadership capacity in college students: Findings from a national study.* A Report from the Multi-Institutional Study of Leadership. College Park, MD: National Clearinghouse for Leadership Programs.

Ewing, J. C., Bruce, J. A., & Ricketts, K. G. (2009). Effective leadership development for undergraduates: How important is active participation in collegiate organizations? *Journal of Leadership Education, 7,* 118–131.

Higher Education Research Institute (1996). *A social change model of leadership development* (3rd ed. Los Angelos: Higher Education Research Institute.

Kezar, A. & Moriaty, D. (2000). Expanding our understanding of student leadership development: A study exploring gender and ethnic identity. *Journal of College Student Development, 41,* 55-69.

Kimbrough, W. M. (1998). The impact of membership in black greek-letter organizations on black students' involvement in collegiate activities and their development of leadership skills. *Journal of Negro Education, 67*(2), 96–105.

Layfield, K. D., Radhakrishna, R. B., & Andreasen, R. J. (2000). Self-perceived leadership skills of students in leadership programs in agriculture courses. *Journal of Southern Agriculture Research, 50* (1), 62–68.

Park, T. D., & Dyer, J. E. (2005). Contributions of agricultural education, FFA, and 4-H to student leadership in agriculture colleges. *Journal of Agricultural Education, 46*(2), 83 – 95. Doi: 10.5032/jae.2005.02083

Phinney, J. S. (1990). Ethnic identity in adolescents and adults: Review of research. *Psychological Bulletin, 108,* 499-514.

Roberts, J. M. (1983). Quick turnaround synthesis/interpretation for practitioners. In S.A. Ward and L. J. Reed (Eds.). *Knowledge structure and use: Implications for synthesis and interpretation* (pp. 425 – 485). Philadelphia: Temple University Press.

Schumacher, L. & Swan, M. K. (1993). Need for formal leadership training for students in a land-grant college of agriculture. *Journal of Agricultural Education, 34*(3), 1-9.

Terenzini, P. T. & Reason, R. D. (2005, November). Parsing the first year of college: A conceptual framework for studying college impacts. Paper presented at the meeting of the Association for the Study of Higher Education, Philadelphia, PA.

Research Poster

Teacher Learning Outcomes at an Agriculture-based Renewable Energy Professional Development Workshop

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Teacher Learning Outcomes at an Agriculture-based Renewable Energy Professional Development Workshop

Introduction

Challenges in the energy sector are among the most pressing facing society as we move into the 21^{st} century. The Energy Independence Act of 2007 called for a large switch from fossil fuels to renewable alternatives (H.R. 6, 2007) and highlighted the need for more information in the area of renewable energy. This knowledge has caused an expansion in the markets' need for employees able to take up careers in those fields (Jennings, 2009). Many of these careers will likely require two-year degrees or other technical training. However many renewable energy technologies are relatively new and it can be difficult for high school and community college instructors to stay abreast of new knowledge in these fields. Given that the dominant land use in the Midwest is for agricultural purposes, energy production will inevitably interact with it thus creating a need for agricultural instructors to address the issue.

The purpose of this study was to explore the following two research objectives. First, describing the demographic characteristics of the renewable energy professional development workshop attendees. Secondly, to describe the mean levels of teacher efficacy on the post then pre instrument measuring teacher learning outcomes.

Theoretical Framework

Bandura's Social Cognitive Theory was used as the framework for this study with an emphasis on the self-efficacy component (Bandura, 2012). In this theory, Bandura posited that a person's perceived level of self-efficacy aids in determining eventual outcomes of the objectives to be met (Bandura, 2012). The Science Teaching Efficacy Beliefs Instrument (STEBI), which has been shown to be effective at determining perceived teaching efficacy, was used as the measuring device (Tschannen-Moran & Hoy, 2001; Woolfolk, 2007; Woolfolk-Hoy & Hoy, 2009).

Methodology

The target population of this study consisted of 18 high school and community college instructors from throughout the Midwest who attended a workshop held June 11-14, 2012 at [University] in [State]. A survey was conducted using a post then pre method (Ulmer, Velez, Witt, Thompson, Lambert & Burris, 2012). This method has been designed to reduce the impact of "response shift bias" as described by Colosi and Dunifon (2006). At the end of the workshop the instructors were asked to respond twice to each question. This method of questioning measured the instructors' perception of how much the workshop had affected their self-efficacy regarding energy education. To address the question of teaching self-efficacy improvement an instrument based on the STEBI was administered.

The instrument consisted of 25 questions designed to elucidate two elements of self-efficacy described as outcome and self-efficacy expectations (Bandura, 2012). Thirteen of the questions were designed to measure teachers Personal Science Teaching Efficacy (PSTE) using statements about themselves which they ranked. The remaining 12 questions assessed the Science Teaching Outcome Expectancy scale (STOE) which recorded the participants' expectations of future teaching abilities.

Results

The first research objective was to describe demographic characteristics of workshop attendees. The majority of participants had a current teaching license (n=14, 87.5%), all of whom had earned the license through traditional certification routes (n=14, 100%). Participants' teaching experience ranged from one to 30 years. Table 1 contains a summary of remaining demographic characteristics that may be relevant to interpreting the results.

Table 1
Summary of Participants' Demographic Characteristics

	f	%
Subject Area Taught		
Agriculture	8	50.0
Science	5	31.3
Both Agriculture & Science	3	18.8
Energy Industry Experience		
Yes	4	25.0
No	12	75.0
Highest Degree Earned		
BA/BS	6	37.5
MA/MS	9	56.3
PhD/EdD	1	6.3
Teaching Level		
Junior High	8	50.0
High School	14	87.5
Community College	4	25.0

Note. Not all response categories equal 18 due to item non-response and non-mutually exclusive categories.

Research objective two sought to describe the mean levels of teacher efficacy within the STEBI construct (Table 2).

Table 2
Mean PSTE and STOE values for workshop participants

	Pre (n=18)		Post (n=18)	
STEBI Construct	M	SD	M	SD
PSTE	3.02	1.08	3.03	1.42
STOE	3.40	0.99	3.54	1.19

Conclusions and Implications

Results from this study generated several questions. Why were the pre and post results so similar? Perhaps the instructors who chose to enroll in the workshop already had a high level of foundational knowledge. What differences might be found analyzing data from the individual questions? Were there certain parts of the workshop that were more effective than others? Although marginal differences in the results were recorded, a follow-up post, post survey will be put into the field in March, 2013.

References

Bandura, A. (2012). On the functional properties of perceived self-efficacy revisited. Journal of Management, 38(1), 9-44. doi: 10.1177/0149206311410606

Colosi, L. & Dunifon, R. (2006). What's the difference? Post then pre" & "pre then post". Cornell Cooperative Extension.

H.R. Res. 6, 110th Cong. Energy Independence and Security Act of 2007. Available online at http://www.govtrack.us/congress/bills/110/hr6

Jennings, P. (2009). New directions in renewable energy education. Renewable Energy,34, 435-439. doi: 10.1016/j.renene.2008.05.005

Tschannen-Moran, M. and A.W. Hoy. 2001. Teacher efficacy: Capturing an elusive construct. Teaching and Teacher Education 17, 783-805. doi: 10.1016/S0742-051X(01)00036-1

Ulmer, J. D., Velez, J. J., Witt, P. A., Thompson, G. W., Lambert, M. D., & Burris, S. (2012). The case curriculum and science teaching efficacy: a one year follow-up study. Proceedings of the American Association for Agricultural Education Research Conference, 39, 1.

Woolfolk, A. 2007. Educational psychology: Instructor's copy. Boston, MA: Allyn and Bacon.

Woolfolk-Hoy, A.E. and Hoy, W. K. (2009). Instructional leadership: A research-based guide to learning in schools. Boston, MA: Allyn and Bacon.

Research Poster

The Impact of 4-H and FFA on College Students' Decision to Major in Agriculture at a Land Grant University

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The Impact of 4-H and FFA on College Students' Decision to Major in Agriculture at a Land Grant University

Introduction/Need for Research

To be able to encourage individuals to attend agricultural colleges and perpetuate this thriving industry, one must first understand what motivates individuals to attend agricultural colleges. The decision-making process a student uses when deciding to attend an agricultural college is similar to any other type of college. Chapman (1981) produced a model of student college choice illustrating the process students enter into when deciding on a college. In addressing external characteristics, he discusses three external factors: significant persons, fixed college characteristics, and college efforts to communicate with students. For the purpose of this research, prior agricultural experiences were considered when examining student college choice.

Prior agricultural experiences are defined as experiences that exposed individuals to agriculture prior to enrollment in an agriculture college. Two dominant examples of prior agricultural experiences include the 4-H Youth Development Organization and the National FFA Organization.

Previous research has shown that prior agricultural experiences play a significant role in the decision-making process students undertake when determining whether to attend an agricultural college (Christmas, 1989; Donnermeyer & Kreps, 1994; Esters & Bowen, 2005; and Wildman &Torres, 2001). However, little research has been conducted recently that addresses the role 4-H and FFA experiences have on enrollment in colleges of agriculture. Therefore, the researcher conducted a study of college freshmen majoring in agriculture at the University of [State] to determine whether 4-H and FFA influenced their decision to attend the university and major in agriculture.

The implications of deciphering the impact prior agricultural experiences have on an individual's decision to enroll in agriculture are two-fold. First, by defining the connection between prior agricultural experiences, such as 4-H and FFA, and enrollment numbers in a college of agriculture, recruitment strategies can be developed that address the needs of those with involvement in such organizations. Second, this adjustment in recruitment strategy can potentially lead to higher college of agriculture graduation rates.

Theoretical Framework

The theoretical framework for this study is rooted in the works of the Social Learning Theory of Career Decision-Making. This theory addresses how educational and occupational decisions are made. More specifically, the Social Learning Theory of Career Decision-Making is divided into four areas that influence career decisions. These areas include: (1) genetic endowments and special abilities, (2) environmental conditions and events, (3) instrumental and associative learning experiences, and (4) task approach skills (Krumboltz & Mitchell, 1990). This theory provides the most appropriate basis when determining a students' interest in pursuing higher education which is often the first step in pursuing a particular career path.

Methodology

This study was a mixed-methods analysis of how prior agricultural experiences impact enrollment in the College of Agricultural and Environmental Sciences at the University of [State]. For the purpose of this study, students were included in the purposive sample if they were first semester freshmen with less than 30 college credit hours. Data were collected using an online instrument adapted from a study by Ester and Bowen (2005). The instrument contained both quantitative and qualitative items and followed the procedures recommended by Dillman (2000). The instrument was distributed to 355 freshmen and a 30% response rate (n = 105) was achieved. An analysis of data gleaned from early and late respondents warranted no significant differences and results were deemed representative of the entire population sample (Linder, Murphy, & Briers, 2001).

Results/Findings

Eighty-four percent of the participants were female. The majority of the individuals were white (81.6%), 6.8% were African-American, 3.9% were Asian/Pacific Islander, 2.9% Hispanic (non-white), 1% biracial, 1% Native American Indian, and 2.9% indicated other. Ninety-one percent indicated having a high school GPA of 3.51 or higher prior to enrolling in the college of agriculture. Sixty-four percent live in an urban community, 29% were from a rural community and 7% from a farm. Using a Likert scale of five options, with zero implying no influence and four implying very high influence, participants were asked to indicate the influence of varying individuals and/or experiences on their decision to attend the college of agriculture. Of the individuals who indicated prior participation in the 4-H organization, the most prominent influencer was their family member. 4-H camp experiences ranked second and 4-H Alumni experience was third most influential. Of the individuals who indicated prior participation in the FFA organization, the most prominent influencer was their agricultural teacher receiving 47% high to very high influence. A family member ranked second and a friend was third most influential in their decision to enroll in the college of agriculture. Guidance counselors proved to be the least motivating factor for FFA participants while 4-H camp counselors were the least motivating factor for 4-H participants.

Conclusions/Recommendations

Ultimately, the influence of the family seems to be the overlapping trend between these two organizations in terms of college choice. Recruitment strategies need to be developed that harness this influence for these groups of individuals. The 4-H agent's lack of presence in a 4-H'ers decision to attend a college of agriculture is one of top priority. These individuals are a 4-H'ers main contact in terms of managing their 4-H participation and they attend 4-H camp where extended interaction between agent and 4-H'er is promoted. Recruitment information should be provided to 4-H agents and encouraged during professional development trainings. They have the potential to influence college decisions in the same way a college ambassador recruits campus visitors. With 4-H agents trained in college recruitment, the role of 4-H camp counselors could also become stronger as camp counselors are often trained by these agents. Next, this data shows that guidance counselors are not harnessing their potential in providing agricultural students with the necessary information regarding agricultural colleges. Donnermeyer & Kreps

(1994) found similar results. A gap should not exist between students and their guidance counselor. These professionals should be trained to address the needs of all students and promote a higher education route that suits their interests--such as FFA members and a pursuit of agriculture on a higher education level. Finally, further research should be conducted to better understand what the high school agriscience teachers are doing to influence students to attend an agricultural college. Results from this research could be used to further enhance the relationship between students and their guidance counselors.

References

Chapman, D. W. (1981). A model of student college choice. *The Journal of Higher Education*, *52*(5), Retrieved from http://www.jstor.org/stable/1981837

Christmas, O. L. (1989). *Why enroll? student enrollment strategy in the college of agriculture and home economics*. Informally published manuscript, New Mexico State University. Available from ERIC. Retrieved from http://www.eric.ed.gov/ERICWebPortal/search/detailmini.jsp_nfpb=true&_&ERICExtSearch_SearchValue_0=ED314608&ERICExtSearch_SearchType_0=no&accno=ED314608

Dillman, D.A. (2000). *Mail and Internet surveys: the tailored design methods*. Second edition. New York: John Wiley & Sons, Inc.

Donnermeyer, J. F., & Kreps, G. M. (1994). Assessing college of agriculture freshmen. *NACTA Journal*, Retrieved from http://www.nactateachers.org/attachments/article/783/Donnermeyer_NACTA_Journal_March_1994-12.pdf

Esters, L. T., & Bowen, B. E. (2005). Factors influencing career choices of urban agricultural education students. *Journal of Agricultural Education*, *46*(2), 24-35. Retrieved from http://www.jae-online.org/attachments/article/271/Esters & Bowen_Vol46_2_24-35.pdf

Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research.*Journal of Agricultural Education*, *42*(4), 43-53. Retrieved from http://pubs.aged.tamu.edu/jae/pdf/Vol42/42-04-43.pdf

Mitchell, L. K., & Krumboltz, J. D. (1990). Social learning approach to career decision making: Krumboltz’s theory. In Brown, D., Brooks, L., & Associates. Career choice and development: Applying contemporary theories to practice. (2nd ed.). San Francisco, CA: Jossey-Bass Publishers.

Wildman, M., & Torres, R. M. (2001). Factors identified when selecting a major in agriculture. *Journal of Agricultural Education*, *42*(2), 46-55. Retrieved from http://bern.library.nenu.edu.cn/upload/soft/0-a/42-02-46.pdf

Research Poster

The Impact of a Course in Agricultural Laboratories on Preservice Teachers' Level of Comfort in Laboratory Settings

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The Impact of a Course in Agricultural Laboratories on Preservice Teachers' Level of Comfort in Laboratory Settings

Introduction/Theoretical Framework

Learning is defined as "the creation of knowledge through a conscious and reflective transformation of experience" (Phipps, Osborne, Dyer, & Ball, 2008, p. 533). In agricultural education, laboratories are a vital component of the teaching-learning program for education (Newcomb, McCracken, Warmbrod, & Whittington, 2004). In order to maximize student learning in these settings, agriculture teachers must be able to teach effectively outside of the traditional classroom. Several universities offer courses in laboratory teaching; therefore, it is important to determine the effect of these courses. The purpose of this study was to describe the impact of a preservice teacher education course focusing on teaching methods in agricultural laboratories on students' level of comfort in and perceptions in preparation for teaching.

Methodology

This study was guided by the theory of situated learning. Situated learning in agricultural laboratories can give preservice teachers an opportunity to become better equipped to teach secondary school students the skills and practices necessary for working in those laboratories (Anderson, Reder, & Simon, 1996). A descriptive survey design was utilized to understand the impact a situated learning course using agricultural laboratories had on preservice teachers' level of comfort in specific agricultural laboratories. The population was preservice teachers at [University] enrolled in the Laboratory Practices in Teaching Agricultural Education course (N = 15). The course objective was to provide students with experiences in agricultural laboratories through engaged time with technical and pedagogical content. Technical areas included: agriscience, biotechnology, environmental, welding, wood construction, electricity, nursery, food science, meat science, technology, land laboratory, dairy production, and veterinary techniques.

Students supplied their information before the class began and after the class had concluded via an electronic survey which was compiled by the researchers through adaptation of previously developed surveys (Myers, Thoron, & Thompson, 2009; Shoulders & Myers, 2012). The survey included a five-point Likert-type scale that asked students to indicate their level of comfort regarding teaching in 16 specific laboratory settings. Item choices ranged from "very uncomfortable" to "very comfortable". Students also responded to items regarding their perceptions regarding the use of agricultural laboratories during early field experiences.

Eleven (73.3%) and nine (60%) students completed the pretest and posttest, respectively. Only students whom completed both the pretest and posttest were included in the findings. Efforts to increase response rates on both surveys included multiple electronic contacts followed by face-to-face contacts. Seven students supplied completed pretests and posttests, leading to an overall response rate of 46.7%. Therefore, these results may be generalized beyond the participants.

Results

The study's first objective was to determine the change in level of preservice teachers' comfort, before and after the course, on teaching in 16 different laboratory settings. Respondents displayed an increase in level of comfort from pretest to posttest in teaching in the apiary (pre *M* = 2.00, *SD* = 1.73, post *M* = 2.71, *SD* = 1.50), food science laboratory (pre *M* = 3.29, *SD* = 1.38, post *M* = 4.57, *SD* = 0.53), garden (pre *M* = 3.86, *SD* = 1.07, post *M* = 4.43, *SD* = 0.79), landscaping area (pre *M* = 2.86, *SD* = 1.46, post *M* = 3.00, *SD* = 1.15), livestock/equine facility (pre *M* = 3.57, *SD* = 1.18, post *M* = 3.86, *SD* = 1.68), meats laboratory (pre *M* = 2.86, *SD* = 1.57, post *M* = 3.57, *SD* = 1.51), and mechanics/carpentry/welding facility (pre *M* = 2.57, *SD* = 1.62, post *M* = 3.43, *SD* = 1.40). Respondents displayed a decrease in level of comfort when teaching in the aquaculture tank/pond (pre *M* = 3.00, *SD* = 1.73, post *M* = 2.71, *SD* = 1.50), field crops (pre *M* = 3.43, *SD* = 1.51, post *M* = 2.86, *SD* = 1.57), forestry plot (pre *M* = 3.29, *SD* = 1.50, post *M* = 3.00, *SD* = 1.73), greenhouse (pre *M* = 3.86, *SD* = 1.07, post *M* = 3.71, *SD* = 1.60), nursery/orchard/grove (pre *M* = 3.29, *SD* = 1.60, post *M* = 3.14, *SD* = 1.35), small animal/veterinary laboratory (pre *M* = 4.29, *SD* = 1.50, post *M* = 3.57, *SD* = 1.51), turf grass management area (pre *M* = 2.71, *SD* = 1.38, post *M* = 2.29, *SD* = 1.11), vineyard (pre *M* = 2.86, *SD* = 1.57, post *M* = 2.43, *SD* = 1.27).

The study's second objective was to determine the change in preservice teachers' perceptions, pre and post laboratory course, of teacher preparation for teaching in laboratories. Respondents' perceptions reflected increased agreement after the laboratory course for the statements, "When placing student teachers, teacher preparation programs should expect cooperating teachers to model teaching in agricultural laboratories", (pre *M* = 4.71, *SD* = 1.73, post *M* = 4.86, *SD* = 0.38) and, "Teacher preparation programs should require that students conduct their early field experience program prior to student teaching with a teacher who integrates agricultural laboratories into instruction" (pre *M* = 4.43, *SD* = 1.73, post *M* = 4.71, 0.49). Also, preservice teachers' responses indicated increased levels of agreement toward the statement, "I feel prepared to teach in agricultural laboratories (pre *M* = 3.29, *SD* = 1.11, post *M* = 4.14, *SD* = 0.69)" increased after the laboratory course from neither agree nor disagree towards agree.

Conclusions/Implications/Recommendations

Situated learning was the theory that guided this study. The results conclude that the theory of situated learning is not always supported by the findings. Results from objective one showed that preservice teachers' perceptions shifted from "neither agree nor disagree" towards "agree" for the choice, "I feel prepared to teach in agricultural laboratories (pre *M* = 3.29, *SD* = 1.11, post *M* = 4.14, *SD* = 0.69)." Although preservice teachers felt more prepared to teach in the laboratories in general, the results of objective one indicate there was no direct connection between facilities they visited in the laboratories class and those they felt more or less comfortable about. For example, students visited facilities related to eight specific laboratory settings and their level of comfort decreased in three. Also, students did not visit facilities related to eight of the laboratory settings and their level of comfort increased for three. The theory of situated learning discusses that much of what is learned is specific to the environment in which it is learned; however, based on the results, guided experience in specific facilities did not always positively impact preservice teachers' level of comfort in these laboratories.

Based on the results of this study, it would be beneficial for further research to be conducted. Experimental studies examining the impact of exposure to specific agricultural laboratories on preservice teachers' level of comfort teaching in a variety of laboratories may help discover the similarities and differences of teaching in multiple laboratories. Further exploration that exposure has on students may be beneficial to aid teacher educators in preparing agricultural education teachers for laboratory-based instruction.

References

Anderson, J. R., Reder, L. M., & Simon, H. A. (1996). Situated learning and education. *Educational Researcher, 25*(4), 5-11.

Myers, B. E., Thoron, A. C., & Thompson, G. W. (2009). Perceptions of the National Agriscience Teacher Ambassador Academy toward integrating science into school-based agricultural education curriculum. *Journal of Agricultural Education, 50*(4), 120-133. doi:10.5032/jae.2009.04120

Newcomb, L. H., McCracken, J. D., Warmbrod, J. R., & Whittington, M. S. (2004). *Methods of teaching agriculture* (3rd ed.). Upper Saddle River, NJ: Pearson-Prentice Hall.

Phipps, L. J., Osborne, E. W., Dyer, J. E., & Ball, A. (2008). *Handbook on agricultural education in public schools.* Clifton Park, NY: Thompson Delmar Learning.

Shoulders, C. W., & Myers, B. E. (2012). Teachers' use of agricultural laboratories in secondary agricultural education. *Journal of Agricultural Education, 5*(2), 124-138. doi:10.5032/jae.2012.02124

Research Poster

The Impact of Work-Related Stress on the Job Performance of Texas Agriculture Science Teachers

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The Impact of Work-Related Stress on the Job Performance of [STATE] Agriculture Teachers

Introduction

Stress is a growing concern in today's society (Torres, Lawver, & Lambert, 2009). While school-based agriculture teachers are not in a state of overall distress, on average, they are approaching the threshold of bad stress, and no doubt some teachers have already reached that threshold (Torres, Lambert & Lawver, 2010). According to Olpin and Hesson (2009), stress can be dichotomized into good and bad stress, where bad stress may lean to physical and mental exhaustion, illness, and ultimately breakdown or complete state of job burnout (Torres, Lambert & Lawver, 2010). Agriculture education teachers work well beyond a regular 40-hour work week (Torres, Lambert & Lawver, 2010). Furthermore, job stress can be attributed to several factors including excessive paperwork, classroom management, meeting deadlines, and Supervised Agricultural Experiences (SAEs) (Torres, Lawver & Lambert, 2009; Lambert, Lawver & Torres, 2010). In addition, Myers, Washburn, and Dryer (2005) stated over 81% of panel members agreed organizing an effective advisory committee, organizing and planning FFA chapter events and activities, management of student discipline in the classroom, and recruiting alumni members were major problems facing beginning teachers. Therefore, time management techniques such as delegating tasks to school volunteers or prioritizing could assist teachers in their use of time and possibly reduce stress (Torres, Lambert, & Lawver, 2010). Furthermore, Chenevey, Ewing, and Whittington (2008), found that 51.6% of agriculture education teachers experienced high levels of burnout. By adequately preparing teachers, at the pre-service and entry levels, to handle the potential problems of agriculture education teachers, the profession can increase job satisfaction and reduce teacher attrition (Boone & Boone, 2007; Boone & Boone, 2009). To ensure long term sustainability for agricultural education programs, it is imperative for teacher educators to develop creative and effective methods for educating new and existing teachers about stress management (Roberts & Dyer, 2004). The *National Research Agenda*, Research Priority Area 3, found that professionals in the agriculture industry, i.e., school-based teachers, should be "well prepared for discovery science, teaching and learning, STEM integration, and application of innovation for…academic settings" (Doerfert, 2011, p. 19). To better prepare teachers to handle the work-related stress of careers in public education, knowledge about the needs of teachers in regards to stress management are paramount. These needs can then be focused to provide teachers with adequate pre-service and continuing education opportunities (Hubert & Leising, 2000).

Theoretical Framework

To guide this non-experimental, quantitative study, the researchers utilized Bandura's (1997) social cognitive theory. According to Bandura (1997), "social cognitive theory views stress reactions primarily in terms of a low sense of efficacy to exercise control over aversive threats and taxing environmental demands" (p. 262). Stress indicators can take different forms and react negatively to humans physical and psychological actions. Evidence indicates exposure to uncontrollable stressors is correlated with illness and can impair immune function, whereas a positive mood can enhance it. By understanding stress levels, or a person' social cognitive views, researchers can better develop continuing education methods to address and prevent negative health symptoms.

Methodology

[STATE] agricultural educators 2011-2012 academic school year (*N*=1,708) served as the population for this study. A random sample size of 314 teachers was determined to be appropriate to represent the population (Krejcie & Morgan, 1970) and were selected using a random number generator. To collect data, the researchers used a web-based instrument that contained 41 competencies on a six point summated rating scale developed by the researchers. To ensure face and content validity, a panel of experts (n = 7) was used to review the instrument. Concluding the implementation of suggestions from the panel of experts, a pilot test (n = 30) was conducted to ensure the reliability of the instrument. Acceptable levels of reliability were established for each scale of measurement (Cronbach's α >.80).

Data collection was guided by Dillman's Tailored Design Method (2009). After five points of contact (Dillman, 2009), 106 responses (33.75%) were received. Non-response error was a relevant concern; therefore, procedures for handling non-respondents were followed as outlined as *Method 3* in Lindner, Murphy, and Biers (2001). Non-respondents (n = 30) were contacted and usable data was collected. When results from non-respondents were compared to the respondent population, external validity did not threaten the generalizability of the findings (Lindner et al.). The final response rate for the study was 43.31%. Data was interpreted and analyzed using suggestions from Field (2009).

Results

As a result of the study, respondents indicated that they experienced high levels of work related stress from *managing paperwork* (M = 4.70; SD = 1.21), *motivating students* (M = 4.57; SD = 1.17), and from *excessive paperwork* (M = 4.49; SD = 1.32). The least indicated levels of work related stress from teaching agricultural science courses were from increasing *community support* (M = 3.35; SD = 1.37), making *on the spot decisions* (M = 3.36; SD = 1.21), and from *developing a new course of instruction* (M = 3.44; SD = 1.34).

Additionally, the study indicated that teachers experienced high levels of stress from FFA activities such as: *managing county livestock shows* (M = 4.68; SD = 1.18), *FFA fundraising* (M = 4.59; SD = 1.14), and from *advising an FFA chapter* (M = 4.40; SD = 1.10). Teachers experienced the least amount of FFA related stress was from *attending National FFA Convention* (M = 2.91; SD = 1.44), *supervising research projects* (SAE) (M = 3.28; SD = 1.39), and from *organizing an effective alumni chapter* (M = 3.35; SD = 1.60).

Conclusions/Implications/Recommendations

Teachers indicated that they experience some degree of stress throughout each work and FFA related activity. However, the highest level of stress came from managing county livestock shows. Based on the results of the study, implicative questions arose concerning the preparation of new teachers and the continuing education of existing teachers within the state concerning work-related stress management. The curriculum taught in the multiple teacher preparation programs in [STATE] should be examined to ensure that the appropriate emphasis is placed on managing work-related stressors (teaching & FFA) during pre-service teacher preparation.

Furthermore, professional development opportunities should be developed and offered to existing teachers in work friendly methods (on-line webinars) and during area and state professional development conferences.

References

Bandura, A. (1997). *Self-efficacy: The exercise of control*, New York: W.H. Freeman.

Boone, H. N., Jr., & Boone, D. A. (2007). Problems faced by high school agricultural education teachers. *Journal of Agricultural Education, 48*(2), 36-45. doi:10.5032/jae.2007.

Boone, H. N., Jr., & Boone, D. A. (2009). An assessment of problems faced by high school agricultural education teachers. *Journal of Agricultural Education, 50*(1), 21-32. doi: 10.5032/jae.2009.

Chenevey, J. L., Ewing, J. C., & Whittington, M. S. (2008). Teacher burnout and job satisfaction among agricultural education teachers. *Journal of Agricultural Education, 49*(3), 12-22. doi: 10.5032/jae.2008.0312

Dillman, D. A. (2009). *Mail & Internet Surveys: The Tailored Design Method* (3rd ed.). Hoboken, NJ: John Wiley & Sons, Inc.

Field, A. P. (2009). *Discovering statistics using SPSS* (Third ed.). London: SAGE Publications Inc.

Hubert, D. J., & Leising, J. (2000). An assessment of agricultural mechanics course requirements in agriculture teacher education programs in the United States. *Journal of Southern Agricultural Education Research, 50*(1), 24-31.

Krejcie, R.V., & Morgan, D.W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*. *30*; 607-610. doi: 10.1177/001316447003000308

Lambert, M.D., Lawver, R.G., Torres, R.M. (2010). Secondary agricultural education teachers in North Carolina: Forecasting underlying work-related job-stress levels. *Journal of Southern Agricultural Education Research, 60*, 52-66 Retrieved from: http://www.jsaer.org/pdf/Vol60/2010-60-005.pdf

Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education, 42*(4), 43-52. doi: 10.5032/jae.2001.04043

Myers, B. E., Washburn, S. G., & Dyer, J. E. (2005). Problems facing beginning agriculture teachers. *Journal of Agricultural Education, 46*(3), 47-55. doi: 10.5032/jae.2005.03047

Olpin, M. & Hesson, M. (2009). Stress management for life: A research based experimental approach, second edition. Belmont, CA: Cengage Learning ©

Roberts, T.G., Dyer, J.E. (2004). Characteristics of effective agriculture teachers. *Journal of Agricultural Education, 45*(4), 82-95. Retrieved from: http://www.jae-online.org/attachments/article/288/45-04-082.pdf

Torres, R. M., Lambert, M. D., & Lawver, R. G. (2010). Predicting secondary agriculture teachers' job stress from selected personal, family, and work-related characteristics. *Career and Technical Education Research, 35*(2), 65-79. doi: 10.5328/cter35.206

Torres, R. M., Lawver, R. G., & Lambert, M. D. (2009). Job-related stress among secondary agricultural education teachers: A comparison study. *Journal of Agricultural Education, 50*(3), 100-111. doi: 10.5032/jae.2009

Research Poster

The Situated Cognition Approach to Supervised Agricultural Experiences

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The Situated Cognition Approach to Supervised Agricultural Experiences

Introduction

Supervised agricultural experience (SAE) programs provide agricultural education students with a real-world and career-oriented application for concepts taught through classroom and/or laboratory instruction (Barrick, Hughes, & Baker, 1991; Barrick et. al, 2011; Phipps, Osborne, Dyer, & Ball, 2008; Stimson, 1915). In a technical report on the state of SAE, Barrick et al. (2011) defined SAE as "a planned and supervised program of experience-based learning activities that extend school-based instruction and enhance knowledge, skills and awareness in agriculture and natural resources" (p 9). Further, the report stated that SAE programs should be considered an essential and integral component of the school-based agricultural education (SBAE) program. Hence, a need has been established for the agricultural education profession to expand and revitalize SAE programs within SBAE (Barrick et al., 2011).

Research has shown a direct connection between SAE and experiential learning (Roberts, 2006; Terry & Briers, 2010). However, the revitalization of SAE has been called for over the past 10 years (Camp, Clarke, & Fallon, 2000; Moore, 2006). In response, Martin and Henry (2011) called for the further examination of proven teaching and learning theories, beyond experiential learning, to guide the implementation of SAE in SBAE. As a response, this proposal of situated cognition as a foundational frame for SAE has merit to benefit the profession.

Theoretical Framework

Situated cognition is recognized as a learning theory that develops student knowledge and skill through student interaction, with animate and inanimate objects, and hands-on teaching methods (Lave & Wenger, 1991). Further, Collins (1989) defined situated cognition as "the notion of learning knowledge and skills in contexts that reflect the way they will be used in real life" (p 2). Collins added that situated cognition provided four benefits to students: 1) knowledge application; 2) invention of knowledge; 3) implication of knowledge; and 4) construction of appropriate industry-related knowledge. However, Brown, Collins, and Duguid (1989) argued that the education system denied students' the opportunity to engage in industry-relevant learning. Through SBAE, SAE programs provide opportunities for agricultural students to engage in industry-relevant learning.

Methodology

This study utilized the qualitative method of content analysis. First, articles regarding the utilization of SAE programs in SBAE and the utilization of situated cognition in the classroom were collected. Second, the acquired articles were then analyzed through content analysis techniques to examine the connections between SAE programs and situated cognition.

Results/Findings

Through SBAE, SAE programs provide agricultural students the opportunity to engage in learning that is situated within the agricultural workforce and utilizes industry-relevant skills. SAE promotes student development in applicable workforce skill development, while influencing and developing a student's career choice. Further, SAE encourages students to apply and develop knowledge through their interactions with teachers, parents, community members, and the individualized project. Students are then required to make financial and impactful choices, through application of knowledge that will impact the project outcome (Phipps et al., 2008). Therefore, SAE incorporates each of the four benefits of situated cognition stated by Collins (1989).

Lave and Wenger (1991) presented four key instructional factors that must be followed when utilizing the theory of situated cognition during instruction: authentic information, learning in the appropriate social and physical environment, hands-on learning, and interaction and collaboration. First, information must be presented in an authentic manner for students to appropriately learn, apply, and transfer knowledge. Situated cognition promotes industry skill development to be taught through a contextual application (Brown, Collins, & Duguid, 1989). Similarly, SAE requires students to engage in learning activities in authentic real-world applications (Martin & Henry, 2011). Further, classroom and laboratory instruction is transferred and applied to each SAE program (Phipps et al., 2008).

Second, learning should be taught in social and physical environments that are relevant, useful, and transferable to real-world application (Lave & Wenger, 1991). Within SBAE, a variety of teaching methods are utilized that encourage social and collaborative learning (Martin & Henry, 2011). Furthermore, many agricultural education programs have access to a land laboratory where physical application of relevant and useful knowledge can be applied to actual practice. This practical application is then transferred to a student's SAE program and tested within a real-world application (home farms or industry) (Phipps et al., 2008).

Third, learning should be hands-on allowing the student to individually construct or socially co-construct knowledge. SAE programs are innately hands-on projects that students conduct outside of classroom instruction. Furthermore, SAE programs are based in skill and knowledge development to assist in students in developing career interests (Phipps et al., 2008).

Fourth, student learning should include interaction and collaboration with others (peers, teachers, community members, or industry representatives). Students are encouraged to enlist the support and advice of industry representatives, parents, and community members to further learn and apply knowledge within a SAE program. Therefore, it is evident that SAE embodies the foundational tenants of situated cognition.

Conclusions

Based on the fundamental tenets of situated cognition, SAE is firmly embedded in the theoretical frames, enabling situated cognition to provide a theoretical base for the development and implementation of SAE in SBAE. There are several connections between situated cognition and SAE program development and implementation such as: hands-on learning, individual and social construction of knowledge, and application of industry-relevant skills. Situated cognition provides agricultural education with a broadly accepted and tested learning theory to utilize when conducting empirical studies on SAE. Finally, situated cognition will provide innovation for the change and revitalization of SAE programs in SBAE.

Implications/Recommendations

Agriculture education faculty should note that a need exists for further research that examines situated cognition as a guiding theory of SAE. Further, investigations determining how success is defined through SAE programs are needed to improve SAE's impact. Acceptance by the profession would require the development of the following: 1) identified competencies for teacher education; 2) a model that represents SAE's role in SBAE; and 3) a model that guides the development and implementation of SAE in SBAE programs.

References

Barrick, R. K., Hughes, M., & Baker, M. (1991). Perceptions regarding supervised experience programs: Past research and future direction. *Journal of Agricultural Education, 32*(4), 31-36. doi:10.5032/jae.1991.04031

Barrick, R. K., Whitson, R., Staats, J., Gruis, D., Hastings, H., Neyhart, J., Davenport, B., Cano, J., Foor, R., Retallick, M. S., & Estepp, C. (2011). *Report of the experiential learning planning committee for The National Council for Agricultural Education.*

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, *18*(1), 32-42. Retrieved from http://www/jstor.org/stable/1176008

Camp, W. G., Clarke, A., & Fallon, M. (2000). Revisiting supervised agricultural experience. *Journal of Agricultural Education, 41*(3), 13-22. doi: 10.5032/jae.2000.03013

Collins, A. (1989). *Cognitive apprenticeship and instructional technology* (Technical Report No. 474). Champaign, IL: University of Illinois at Urbana-Champaign.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation.* New York, NY: Cambridge University Press.

Martin, M. J., & Henry, A. (2011). Supervised agricultural experiences and learning theories: Evaluating the experience through a cognitive constructivist lens. *Proceedings of the North Central meeting of the American Association of Agricultural Education Research Conference*,213 - 229.

Moore, G. (2006). Who is driving the pickup truck? A call of professional leadership. *Journal of Agricultural Education*, *47*(1), 1-5. doi: 10.5032/jae.2006.01001

Phipps, L. J, Osborne, E. W., Dyer, J. E., & Ball, A. (2008). *Handbook on agricultural education in public schools* (6th ed.). Clift Park, NY: Thomson Delmar.

Roberts, T. G. (2006). A philosophical examination of experiential learning theory for agricultural educators. *Journal of Agricultural Education, 47*(1), 17-29. doi: 10.5032/jae.2006.01017

Stimson, R. W. (1915). The Massachusetts home project plan for vocational agricultural education. *The School Review*, *23*(7), 474-478. Retrieved from http://www.jstor.org/stable/1076877

Terry, R. Jr., & Briers, G. E. (2010). Roles of the secondary agriculture teacher. In R. M. Torres, T. Kitchel, & A. L. Ball (Eds.), *Preparing and advancing teachings in agricultural education* (pp 87-98). Columbus, OH: Curriculum Materials Service, The Ohio State University.

Research Poster

Transfer Student Experiences in a Department of Agricultural Education

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Transfer Student Experiences in a Department of Agricultural Education

Introduction and Theoretical Framework

The purpose of this case study was to describe how college of agriculture academic staff purported to integrate transfer students and how transfer students perceived their integration. This study's framework, Tinto's (1987, 1993) model of student departure, posited that students undergo integrative experiences in both the academic and social settings when entering into college. Tinto's model provides an appropriate framework for studying the process transfer students undergo while integrating into their receiving institution's academic and social culture and their retention within the institution (Pascarella & Terenzini, 1991).

The research within agricultural education regarding transfer students is limited to quantitative and descriptive studies. A few of these studies (Johnson, 1992; Johnson, Taylor, & Owens, 1994; Rocca & Washburn, 2005) compared transfer students to non-transfer students and analyzed student academic information. Combining the perspectives on the transfer process could provide insight into how the students actually perceive transfer activities (Townsend & Wilson, 2006) and identify strategies for student success. The community college population and transfers to public institutions have each increased over 21% in [State] since 2007 (MDHE, 2012). If the number of transfer students continues to increase, so too will the needs and services of this student population on campuses. Agriculture professionals in higher education need to continue to address methods and best practices to retain and graduate new agriculture professionals (Doerfert, 2011). The following research questions guided the data collection and analysis: 1) What do admissions staff and academic advisors identify doing for transfer students? 2) How do transfer students integrate into their academic and social environments?

Methods

This qualitative study relied upon descriptive interviews under an instrumental case study design to describe a specific issue (Creswell, 2013). Individuals from three interacting populations were included in this study; one faculty advisor, one college admissions director, and two undergraduate transfer students. Qualitative data were collected from two sources including: one interview and interview field notes. Semi-structured interviews used questions developed by Townsend and Wilson (2006) and researcher-developed questions from the model of student departure (Tinto, 1987, 1993). Interviews were transcribed, coded, and collapsed into emergent themes by the researcher. The researcher drew upon prior experiences as a former undergraduate transfer student when designing the interviews and reflections on transfer students' experiences. Conclusions and inferences were based upon relevant literature but did not employ triangulation of data as recommended to establish trustworthiness of data (Creswell, 2013). Therefore, caution should be used in extrapolating the results of this study.

Results/Findings

Two themes emerged from the interviews with the admissions director and the academic advisor. The student interviews herein produced three themes to describe their transition experiences.

Admin--Other focuses

Admissions departments within colleges across most universities focus efforts on new first semester freshmen when it comes to recruitment. Anne described, “The focus of this [admissions] office is not on transfer students, as far as getting a visit [a transfer student] is treated no differently than a high school student.” Alan described that mostly there isn’t a lot that can be done for transfer students except for reviewing their transcripts. “They’re probably not treated much differently. We still try to interact with them…to make that transition seem welcoming.”

Admin--Transfer students act and react differently

Townsend and Wilson (2006) recommended that programs institute activities to help transfer student integration, but recognized that transfer students choose not to utilize these services. Anne outlined a program developed for transfer students named “Coffee Talk” to get a picture of how students were transitioning. “Only two showed up the first time…and the next month, only one repeated attendance.” Alan noted transfer students are different from their traditional student peers; “sometimes we will see those students placing their time and values a little different than some of the traditional students we have.” In contrast to new freshmen, Anne stated; “I suppose [transfer students] seek the information on their own without needing us.”

Students--Quality advising relationships are essential for a sense of integration

Advising relationships were pointed out as one of the most influential factors in their college persistence. Tom described: “the most beneficial and useful information was what I got from [my advisor]. Elyse echoed his sentiments: “[My advisor] was really willing to look at the classes I took at [Community College] and see what fit into my plan. The faculty…do a really great job of motivating you…and that means a lot.”

Students--Attention to transfer student needs are missing in university welcome activities

Transfer students’ needs differ from first time college students. They bring with them at least a working knowledge of the academic system in addition to the services which best suit them that institutions provide. “I came to summer welcome … I went on a tour, and that was about it. They told me I didn’t need to [attend workshops] because I wasn’t new to school.” Another student noted: “when you’re a freshman they make you know your plan and I kind of feel like I missed out on that, people just assumed that I knew what the next step is.”

Students--Expectations of the university were exceeded because of the positive environment

Transfer students come to their new institution with trepidation around the size of the new environment, the quality of relationships, the difficulty of new courses, and the potential for different student expectations. “I knew that Mizzou was going to be more challenging and it promotes higher level thinking [than my community college did].” Another student stated: “I’m not a number like most people think of Mizzou. My teachers at CC didn’t know me…and that just really sets MU apart from my CC.”

Discussion, Conclusions, and Implications

The themes indicate transfer students often fall beneath the radar in regard to the focus of resources and retention efforts. Transfer student programming should be addressed. Transfer students should have an integration guide or series of programs made available. Townsend (2008) noted that transfer students’ adjustment time may be shorter than a true first-year student, but still need assistance from their new institution. Another conclusion evident from these student’s experiences is that deliberate advising relationships are integral to an at-ease feeling. Transfer students need someone who will help them make decisions about classes and to be honest with the expectations of the program. Although transfer students are seasoned college students compared to true freshmen, they do need the help and attention of college staff to ensure a smooth transition and retention to degree completion (Rocca & Washburn, 2005; Townsend, 1995). Further study of the transfer student population within the [University] and the [College] should be conducted to determine if other transfer students have similar experiences to the present study. Additional interviews with students from common agriculture majors, such as animal sciences and agricultural economics should be included to gain a broader perspective.

References

Creswell, J.W. (2013). *Qualitative inquiry & research design: Choosing among five approaches*. Thousand Oaks, CA: Sage.

Doerfert, D. L. (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015.* Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Johnson, D.M. (1992). A comparison of transfer and nontransfer agriculture and home economics undergraduate students: Academic aptitude, achievement, and degree persistence. *Journal of Agricultural Education, 33*(3), 8-15.

Johnson, D.M., Taylor, W.N., & Owens, T.L. (1994). Relationship between selected student characteristics and community college agriculture program enrollment. *Journal of Agricultural Education, 35*(1), 31-35.

Missouri Department of Higher Education. (2012). *Enrollment report for missouri comprehensive public & independent institutions*. Retrieved on January 18, 2013 from: http://www.dhe.mo.gov/data/.

Pascarella, E.T. & Terenzini, P.T. (1991). *How college affects students, findings and insights from twenty years of research.* San Francisco, CA: Jossey-Bass.

Rocca, S.J. & Washburn, S.G. (2005). Factors influencing college choice of high school and transfer matriculants into a college of agriculture. *NACTA Journal, 49*(1), 32-38.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition.* Chicago, IL: University of Chicago Press.

Tinto, V. (1993). ***Leaving college: Rethinking the causes and cures of student attrition.*** Chicago, IL: University of Chicago Press.

Townsend, B.K. (1995). Community college transfer students: A case study of survival. *Review of Higher Education, 18*(2), 175-193.

Townsend, B.K. (2008). "Feeling like a freshman again": The transfer student transition. *New Directions for Higher Education, 144*(4). 69-77.

Townsend, B.K. & Wilson, K. (2006). A hand hold for a little bit: Factors facilitating the success of community college transfer students to a large research university. *Journal of College Student Development, 47*(4), 439-456.

Research Poster

Trends in Ethnicity Demographics of California Secondary Agricultural Education Students

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Trends in Ethnicity Demographics of California Secondary Agricultural Education Students

Introduction

The United States is rapidly becoming a more diverse society. The US Census (2011) estimates that people of Hispanic-origin will account for approximately 60% of our nation's total population growth from 2030 to 2050. In our nation's schools, Hispanic students accounted for 60% of the growth in public schools between 1990 and 2006 (Fry & Gonzales, 2008). California has already begun to experience the changes that are still many years in the distance for our country at large, just as policy makers continue to argue that the state's public schools are not addressing the needs of the non-White population (Spiess, 2008). Moreover, all non-Hispanic race groups combined make up less than half of the student population in California (CBEDS, 2013). Given this data, we argue the importance of investigating how well the trends in student demographics in California Agricultural Education reflect the overall student population in the state; most arguably, the Hispanic population.

Conceptual Framework

The American Association for Agricultural Education national research agenda, priority three, calls for a sufficient supply of agricultural scientists that will meet the needs of the 21st century, while priority six calls for vibrant and resilient communities (Doerfert, 2011). Neither of these lofty goals can be addressed if we fail to include a persistent and meaningful line of research that investigates the needs of underrepresented groups in Ag Ed. Currently, the National FFA and Ag Ed demographics do not reflect that of our nation's public schools (Grady et al., 2009). Based upon the national and state demographic trends, our research seeks to identify the trends specific to Hispanic students in our profession. If we fail to address this growing student population, it will likely become more and more difficult to address the priorities listed above.

Methodology

Given the interest in addressing the current trends of Hispanic students in Agricultural Education, California was chosen as a unique population to study for three primary reasons: 1) the state has a large number of students enrolled in Agricultural Education, currently over 65,000; 2) the state compiles annual and comprehensive demographics of programs, teachers, and students through the R-2 reporting system and statewide data through the CBEDS/Dataquest site, and; 3) the state is one of a handful of states experiencing a large growth of Hispanic students relative to the overall nation (Roberts et al., 2009). The researchers obtained access to the California Department of Education's database of student demographics in Agricultural Education, managed by the Agricultural Education unit, and downloaded state-wide data through the CBEDS website from 2002 to 2012.

The Hispanic or non-Hispanic data were analyzed year by year. Charts were developed in order to compare the trends of agriculture enrollment versus statewide students at large, though there are several key factors that should be noted. First of all, the Agricultural Education data are self-reported by each program, though the state's agricultural education staff conduct annual audits and periodic visits of each program to ensure accurate reporting (Spiess, 2008). Secondly, the federal government changed the Hispanic classification, no longer considering it as a race but an ethnicity, and though the R-2 report began accounting for this change in 2007, the data can only be compared over the ten-year period by disaggregating the student data as Hispanic versus non-Hispanic. The data were compared in percentages, as the total number of students tended to vary slightly year by year, with just over 56,000 students in 2002 to over 73,500 in 2012, a 31% increase in total membership over the ten-year period of the study. Finally, it should also be noted that other races/ethnicities such as Asian, Native American, and African American, included in the non-Hispanic data, only account for 8% of the data set in 2002 and 12 of the category in 2012. Though future studies should target each of these groups, this study only targeted the Hispanic population.

Results

Data for the ten-year time period observed in this study reveal an observable increase in Hispanic students when compared to non-Hispanic students. In 2002, Hispanic students accounted for 34% (f = 19,014) of Ag Ed enrollment. By the year 2012, Hispanic student enrollment had increased to just under 50% (f = 36,705) of total Ag Ed enrollment in California (R-2 Data, 2012). In the same time period, the enrollment of Hispanic students in all of California's public schools jumped from 44% (f = 2,717,602) in 2002 to 52% (f = 3,236,942). In 2010, there were more Hispanics than non-Hispanics enrolled in California's public schools, the first time that this had been observed in the ten-year study period. Only two years later in 2012, Hispanic student enrollment in Ag Ed surpassed non-Hispanic enrollment for the first time (R-2 Data, 2012). Though National FFA enrollment does not encompass all students in Ag Ed, the number of Hispanic/Latino students is only 15% (National FFA, 2013).

Conclusion/Implications/ Recommendations

The study shows the student demographics of Hispanics versus non-Hispanics in California statistically mirror each other, with less than a 2% difference between Ag Ed students and public school students at large. Over the ten-year period of the study, the growth rate in Agricultural Education among Hispanic students took place more rapidly than the overall growth statewide, catching up to the state enrollment percentages in 2012. These results show that the goal of statewide parity among Hispanic students in and outside of Ag Ed has been achieved. This still, however, presents us with more questions. Though the statewide data look promising, what do individual schools and regions of the state look like? How do these trends correlate to the national student enrollment trends in and outside of Ag Education? Are these trends unique or do they closely mirror states with similar student demographics?

The researchers recommend further study within and outside of California to begin to answer these important questions. The data do not show what caused the rapid acceleration of Hispanic enrollment in Ag Ed in California; nor can we predict or forecast if this trend will continue at its current rate. We must continue to investigate how our programs serve Hispanic students, and what role culture may play in the way programs are run and how successful students are. As California is a 100% membership state, we cannot determine the engagement level of these Hispanic students. Further studies are needed.

Finally, the researchers found it difficult to make claims outside of the state in the study, as data are not widely available on a national level. The National FFA provides the demographics of its membership on its website; however, not every state has 100% or affiliated membership programs, making it difficult to make claims about national Ag Ed trends and level of involvement. Hopefully, this study will provide other states the opportunity to investigate their own demographic trends with regard to the growing Hispanic population, and that successful strategies for meeting the needs of this growing demographic can be shared freely.

References

Doerfert, D. L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

California Department of Education, (2013). *CBEDS data*. Retrieved January 6, 2013, from http://dq.cde.ca.gov/dataquest/

Fry, R. & Gonzales, F. (2008). *One-in-five and growing fast: A profile of Hispanic public school students*. Washington, DC: Pew Hispanic Center. Retrieved January 10, 2013, from http://pewhispanic.org/reports.

Grady, R. T., Hall, J. L., Briers, G. E., Gill, E., Shinn, G., C., & Jaure, P. (2009). Engaging Hispanic students in agricultural education and the FFA: A 3-year case study. *Journal of Agricultural Education*, *50*(3), 69-80. doi: 10.5032/jae.2009.03069

National FFA, (2013). Who We Are – Statistics. Retrieved February 19, 2013, from https://www.ffa.org/about/whoweare/Pages/Statistics.aspx

R-2 Data, (2012). California Department of Education, Agricultural Education Unit. Retrieved December 15, 2012, from http://www.calaged.org/r2

Spiess, M. (2008). FFA diversity – Establishing benchmarks and tracking developing trends. *Proceedings of the 35th Annual National Agricultural Education Research Conference, 35*, 1014-1016.

US Census. (2011). *Population Profile of the United States*. Retrieved February 10, 2013, from http://census.gov/population/www/op-profile/natproj.html

Research Poster

Utilizing Twitter as a Communication Tool for Expressing Concerns of Agricultural Education Student Teachers

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Utilizing Twitter as a Communication Tool for Expressing Concerns of Agricultural Education Student Teachers

Introduction and Conceptual Framework

Student teaching is an important stage in the development of pre-service agricultural education candidates. Student teaching has been described as a crucial capstone experience where many student teachers develop concerns for themselves and for their students (Edgar, Roberts, & Murphy 2011). Communicating these concerns with their peers can help to alleviate problems that student teachers may face. A form of communication popular among college aged students is the social media application Twitter, a microblogging service which allows users to send 140 character messages called tweets (McFedries, 2009). Student teachers used Twitter to communicate and express their concerns of teaching as well as receive feedback from peers and university faculty. By allowing students to participate in an electronic dialogue, they created a community of practice where ongoing support was provided to each other during the student teaching experience (Whipp, 2003). This study was developed based upon the work previously reported by Fuller and Case (1974) and modified by Fritz and Miller (2003). The purpose of this study was to determine the concerns exposed by agricultural education majors during their capstone student teaching experience. The objectives of the study were to; 1) determine the concerns of student teachers, 2) determine if the teaching concerns varied by gender, and 3) categorize other communication activities used by student teachers.

Methodology

The population consisted of agricultural education students from [STATE] University (N=18) who participated in an electronic community of practice. A Twitter group was specifically created for the participants of this study. During the 14-week capstone experience, the student teachers were encouraged to communicate with each other by tweeting weekly. Upon completion of the semester the tweets were collected and coded using the protocol developed by Fuller and Case (1974) and modified by Fritz and Miller (2003). Codes were characterized as teaching or non-teaching concerns. Teaching concerns were then classified in five categories identified in Table 1. Reliability was established at .96 by coding the postings twice at a 4-week interval. An intrarater reliability code of zero indicated no reliability while a code of 1.0 indicates a perfect reliability (Wier, 2005). Frequencies and percentages were calculated and analyzed using Microsoft Excel.

Table 1

Tweet Category Concerns

Concern	Category Concern
0	Non-Teaching Concern
1	Self-Adequacy Concerns
2	Teaching Concerns
3	Teaching Impact
4	Responding to a questions or giving advice
5	Sharing lesson plans or ideas

Results

Of the 18 participants, 13 (72%) were female and 5 (28%) were male. Teaching concerns were identified from tweets that were directly related to the student teacher's experience. Non-teaching concerns were identified from tweets that were not related to teaching. One thousand three hundred and three tweets were categorized as teaching or non-teaching concerns and are displayed in Table 2.

Self-adequacy concern tweets described apprehension student teachers had about themselves as a teacher; teaching tasks concern tweets illustrated student trepidation related to the fears or tasks involved with teaching; and teaching impact tweets dealt with the impact of teaching on the pupils. Teaching tweets that did not fall into the teaching category were coded as other communication. Other communication was classified as giving advice to other students or sharing lesson plan ideas.

Table 2

Frequencies and Percentages of Student Teacher Concern Tweets by Gender

	Female Tweets		Male Tweets	
Concern	*f*	%	*f*	%
Non-Teaching	222	23.4	103	29.0
Teaching	726	76.6	252	71.0
Teaching Category				
Self-Adequacy	373	66.4	134	70.5
Teaching Task	99	17.6	26	13.7
Teaching Impact	90	16.0	30	15.8
Other				
Responding of Giving Advice	130	79.3	45	72.6
Sharing Lesson Plan Ideas	34	20.4	17	27.4

Note. Percentages may not equal 100 percent due to rounding.

Conclusions and Implications

The findings from this study elucidate concerns of pre-service agricultural education students during the student teaching experience. When communicating with their peers via a professional community of practice using Twitter, male student teachers shared more concerns with non-teaching tasks than did their female counterparts. However, female student teachers were more focused on teaching concerns than male student teachers. This finding is consistent with that of Fritz and Miller (2003). Anxiety regarding self-adequacy was the most frequently identified apprehension for both genders and supports the findings of Fritz and Miller (2003). When considering these findings, it can be concluded that student teachers are willing to share their concerns regarding their student teaching experience. Supervisors of these pre-service teachers can utilize these concerns to assist in formative supervision activities. Additionally, it should be noted that female and male student teachers communicate for different reasons. Barker and Zifcak (1999) contend that men communicate to solve problems while women communicate to connect with people. Further research is recommended to determine if these communication differences by gender impact success in student teaching.

References

Barker, R., & Zifcak, L. (1999). Communication and gender in workplace 2000: creating a contextually-based integrated paradigm. *Journal of Technical Writing and Communication*, *29*(4), 355-347.

Edgar, D. W., Roberts, T. G., Murphy, T.H. (2011). Exploring relationships between teaching efficiency and student teacher-cooperating teacher relationships. *Journal of Agricultural Education*, *52*(1), 9-18. doi 10.5032/jae.2009.01033

Fritz, C. A., & Miller, G. S. (2003). Concerns expressed by student teachers in agriculture. *Journal of Agricultural Education*, *44*(3), 47-53. doi 10.5032/jae.2011.01009

Fuller, F. F., Parsons, J. S., & Watkins, J. E. (1974, April). *Concerns of Teachers: Research and reconceptualization.* Paper presented at the Annual Meeting of the American Education Association, Chicago, IL

McFedries, P. (2009). Twitter: Tips, tricks, and tweets. Indianapolis, IN: Wiley Publishing, Inc.

Wier, J. (2005). Quantifying test-retest reliability using the intraclass correlation coefficient and the SEM. *Journal of Strength and Conditioning Research*, 19(1), 232. Retrieved from http://www.uta.edu/faculty/jcramer/KINE5300/Weir 2005 JSCR reliability.pdf

Whip, J. L. (2003). Scaffolding critical reflection in online discussion: Helping prospective teachers think deeply about field experiences in urban schools, *Journal of Teacher Education*, *54*(4), 321-333. doi 10.1177/002248710325510

Research Poster

Where you go, I go: The Effects of Vicarious Experience on High School Agricultural Education Students' Perceptions of International Agriculture

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Where you go, I go:
The Effects of Vicarious Experience on High School Agricultural Education Students' Perceptions of International Agriculture

Introduction

Students are being encouraged to prepare to enter a more internationalized job market as awareness of globalization increases. If agriculture students are to be competitive in the internationalized job market, they must understand the role that globalization plays in the agriculture industry (Ibezim & McCracken, 1994). Studies have indicated deficient knowledge of high school and college undergraduate students regarding international issues, agricultural policies, people and cultures (Connors, 2004; Sharp & Roberts, 2011; Wingenbach, et al., 2003). A need for the development of high school international agriculture curriculum to address this deficiency has been identified (Sharp & Roberts, 2011). Understanding students' current perceptions of international agriculture is an important first step in the development of this curriculum.

The American Association for Agricultural Education recognizes the global nature of our economy and articulates research priorities toward ensuring an adequate quality workforce, continuing to develop and improve learning across a variety of environments, and continuing to provide and support quality agricultural education programs (Doerfert, 2011). Specifically, the research agenda encourages "highly effective" educational programming and "accurate data that describes the quality and impact" of those efforts (Doerfert, 2011, p. 10).

The purpose of this study was to determine the effect of curriculum integrated with vicarious international experience on students' perceptions of international agriculture. Specific research objectives were: 1) determine students' perceptions of international agriculture before experiencing internationally integrated curriculum 2) determine students' perceptions of international agriculture after experiencing internationally integrated curriculum, 3) describe any significant changes in students' perceptions of international agriculture.

Conceptual Framework

This study was guided by research conducted by Sharp and Roberts (2011). In the previous study, curricula related to agriculture in Latin America was developed and delivered. Students were administered three instruments including a knowledge test, an attitude questionnaire and an evaluation of the curriculum. Sharp and Roberts (2011) identified some knowledge gain from pre-test to post-test, a generally neutral attitude of students toward international agriculture and a fairly positive opinion of the curriculum. This study utilized only the attitude questionnaire.

Methods

A high school agricultural educator in [*state*] participated in an international professional development experience in Tbilisi, Georgia. He used his experience to develop internationally integrated curriculum. The curriculum was implemented in a secondary agriculture education course. In accordance with Institutional Review Board (IRB) approved protocol, data were collected as part of the normal classroom activity and instruments were de-indentified by the agriculture teacher before being forwarded to the researchers for analysis. A census of the students present in the class was used for pre- and post-curriculum delivery data collection. An attitude survey modified by Sharp and Roberts (2011) was used to assess students' perceptions of international agriculture and its relevance to them. Ten questions were measured using a five point Likert-type scale (1 = *strongly disagree*, 5 = *strongly agree*). A summated score was calculated for each participant, with a possible range of five to 50. A paired samples t-test was used to identify differences between the pre- and post-curriculum delivery scores.

Results and Conclusions

Twenty two questionnaires were completed during each data collection. On the first administration, item mean scores ranged from 2.86 (SD = .94) regarding the statement "I am prepared to enter into a global workforce", to 4.36 (SD = .66) regarding the statement "I believe world events will have an impact on American agriculture." The summated score mean for the pre-assessment was 37.64 (SD = 4.23). On the post-delivery administration, students' item mean scores ranged from 3.91 (SD = .60) to 4.74 (SD = .45). Again, the lowest mean score was the students' perceived preparedness to enter a global workforce; while the highest mean score was students' perception that world events impacted American agriculture. The mean of the summated scores on the post-assessment was 44.14 (SD = 2.05).

A paired samples t-test indicated a significant difference in the pre- and post-curriculum delivery summated scores. As indicated by the mean scores, the post-delivery summated scores were significantly higher than the pre-delivery summated scores, $t(21) = -10.04$, $p < .01$. A Pearson coefficient indicated a large effect size, $r = 0.91$. This suggests that students' perceptions of international agriculture were positively impacted by the internationally integrated curriculum.

Implications and Recommendations

While none of the individual item means on the pre-assessment indicated students' disagreement with the statements, there was some movement of all item means toward "strongly agree" on the post-assessment. This suggests that even one integrated lesson may further convince students of the importance of international agriculture and its relevance to them.

Results indicate that high school curriculum integrated with vicarious international experience can positively impact students' perceptions of international agriculture. This supports recommendations from previous research that development of international agriculture curricula be encouraged and increased (Radhakrishna, Leite, & Domer, 2003; Sharp and Roberts, 2011).

The integrated curriculum in this study was developed as a result of an international professional development opportunity experienced by a high school agriculture instructor. A prudent way to encourage and increase the development of internationally integrated curriculum may be to provide international experiences for instructors which they can utilize in lesson development.

It should be recognized that time constraints limited this study to analysis of the effects of one integrated lesson on students' perceptions. The actual knowledge gain of the students was not tested. Additional research should be conducted on student knowledge of international agriculture. It is unknown whether or not students' positive gain in perceptions of international agriculture was sustained; therefore, research is needed to determine the sustainability of an increase in students' perceptions regarding international agriculture.

References

Connors, J. (2004). FFA Costa Rican travel seminar participants' international agriculture knowledge and perceptions. *Journal of International Agricultural and Extension Education,* 11(1), 71-79.

Doerfert, D.L. (Ed.) (2011). *National research agenda: American Association for Agricultural Education's research priority areas for 2011-2015*. Lubbock, TX: Texas Tech University, Department of Agricultural Education and Communications.

Radhakrishna, R.B., Leite, F.C., & Domer, S.L. (2003). An analysis of high school students' attitudes and beliefs toward international agricultural concepts. *Proceedings of the 19th Annual Association of International Agricultural and Extension Education Conference.*

Sharp, K. & Roberts, T.G. (2011, February). Developing and Testing An Integrated Global Curriculum for an Introductory High School Agricultural Education Class. Paper presented at Southern Region Conference of the American Association for Agricultural Education, Corpus Christi, TX. Retrieved from http://aaaeonline.org/uploads/allconferences/2-4-2011_571_SR_AAAE_Conference_Proceedings_2011.pdfU.S.

Wingenbach, G., Boyd, B., Linder, J. Dick, S., Arispe, S., & Haba, S. (2003). Students' knowledge and attitudes about international agricultural issues. *Journal of International Agricultural and Extension Education*, 10(3), 25-35.