Professional Paper Presentation Abstracts

A Case Study of Best Practices for Study Abroad Programs

Landry Lockett
Senior Lecturer and Academic Advisor
Department of Agricultural Leadership, Education, and Communications
Texas A&M University
2116 TAMU
Agriculture and Life Sciences Building, 600 John Kimbrough Boulevard, Room 273
College Station, TX 77843-2116
Phone: 979-458-7991
Fax: 979-845-6929
Email: l-lockett@tamu.edu

Lori Moore
Gary Wingenbach
Texas A&M University

Keywords: Study Abroad, International Experience, Service-Learning

Introduction
Research has shown students derive numerous benefits from study abroad programs (Carlson & Widman, 1988; McCabe, 1994; Kitsantas & Meyers, 2002). Programs that include purposefully led activities before, during, and after the experience lend credibility to program success and impact its long-term effects (Roberts & Jones, 2009; Rodriguez & Roberts, 2011). Rodriguez and Roberts (2011) identified several best practices for study abroad programs. The purpose of this study was to expand upon these best practices in a study abroad program at Texas A&M University.

Methodology
A case study approach was used to examine participants’ experiences of a study abroad program. Case study methodology provides a systematic process for looking at actual events, collecting and analyzing data, and reporting the results (Soy, 1997). Case studies describe “real world” situations and can lead to greater understanding of complex problems or issues.

The goals of this study abroad program were to learn and implement agricultural leadership theories and practices, using service-learning concepts, as applied in a developing country’s context. Texas A&M University partnered with an in-country nonprofit organization to conduct the program. Ten students and three faculty members stayed almost one complete month in Guatemala. They engaged in community-based, service-learning activities to learn leadership theories, adult education concepts, cross-cultural communication, and agricultural development principles.
Comparative analyses of faculty members’ field notes and conversations, using the best practices approach proposed by Rodriguez and Roberts (2011), provided the framework for presentation of the results.

Findings

“Before Experience” best practices proposed by Rodriguez and Roberts (2011) included “addressing concerns about safety, cultural considerations, travel preparation, identifying preexisting knowledge, and prefection” (p. 29). Preflection is “the process of being consciously aware of the expectations associated with the learning experience” (Jones & Bjelland, 2004, p. 963). Prior to Texas A&M University’s Guatemala program, students and faculty members met numerous times for “pre-sessions” to prepare for the study abroad experience. These sessions included guest speakers from Texas A&M University’s study abroad office and a representative from the non-profit organization (via Skype), course lectures, and country-specific cultural and logistical information. The pre-sessions created cultural awareness, created foundational course subject-matter knowledge, and eased students’ fears about travel to Guatemala. Student-initiated presentations on Guatemala’s culture and history promoted intellectual relationships, fostered student ownership of information, and increased excitement for program travel.

Rodriguez and Roberts (2011) identified “During Experience” best practices as “course structure, community involvement, extracurricular activities, and reflection” (p. 29). They noted there should be greater emphasis on experiential, rather than classroom learning. The Guatemala experience validated the importance of experiential learning. A majority of students’ time was spent in schools and villages working collaboratively with local residents. These experiences helped students practice theoretical concepts. Extracurricular tours and cultural activities were program highlights. Participants interacted with Guatemalans while learning about weaving, tortilla making, preparing family meals, and salsa dancing because of pre-established relationships through the in-country nonprofit organization.

Student reflection during study abroad enhances opportunities to synthesize information (Rodriguez & Roberts, 2011), normally achieved through journaling or group reflection sessions. Students kept reflective journals and each wrote at least one contribution for the study abroad blog. Seven group reflection sessions, led by student teams, were conducted to help them connect subject matter with practical experience in Guatemala.

“After Experience” best practices identified by Rodriguez and Roberts (2011) included “reflection and motivating students for further learning” (p. 30). Program participants were required to attend post-travel class sessions. Course and service-learning project debriefing sessions evolved when students presented their experiences in departmental seminars. Students were encouraged to continue learning through involvement with the nonprofit organization, and by incorporating Guatemala contacts and situations into current course projects and assignments. Social media outlets facilitated continued communication between program participants, faculty, nonprofit organization leaders, and friends in Guatemala.

Conclusion

The outcome of Texas A&M University’s study abroad program in Guatemala lent support to the best practices for study abroad programs (Rodriguez & Roberts, 2011). We highly recommend expanding study abroad program “Best Practices” by including supplemental activities, such as using social media interaction (helpful for maintaining familial communication when abroad); increasing contact time with host country families and community activities
(helpful for breaking cultural stereotypes, from several perspectives); and, partnering with a local university or non-profit organization (greatly reduces time needed to establish community relationships). The focus of the Guatemala program was service-learning in an international setting. Guatemalan family and community contact, though course content and service-learning projects, allowed participants to experience an unprecedented level of cultural immersion that produced life-changing experiences.

References
A Case Study on Virtual-World Technologies in the Classroom

Melanie Balinas  
Department of Agricultural Leadership, Education & Communications  
Texas A&M University  
227 AGLS, 2116 TAMU  
College Station, TX 77843  
262.352.3253  
mbalinas@tamu.edu

Orry Pratt  
Anna McGucken  
Tracy Rutherford  
Gary Wingenbach  
Texas A&M University

Keywords: Case Study, Virtual-World Technologies, Perceptions

Introduction

The use of virtual-world technologies has increased in recent years; more than 500 million people worldwide use them with a large portion of those between the ages of 10 and 15 (Lesko & Hollingsworth, 2010). Virtual-world simulation offers a learning method that is more applied than lecture-based methods, especially within the context of teaching complex tasks. Applied learning is an effective tool for teaching many disciplines and skills (Wankel & Kingsley, 2009). By applying learning into virtual worlds, learners can interact in new settings, address cultural issues, and solve problems (Lesko & Hollingsworth, 2010), thus allowing for new educational experiences. Also, learners who are engaged with virtual lessons tend to show more critical thinking skills and are more likely to incorporate different perspectives into their thinking (Wakefield, Warren, Rankin, Mills, & Gratch, 2012). These important steps are needed for learners to develop cultural and global sensitivities (Banks, 2004).

Second Life is an online virtual-world technology where participants use avatars to interact with their surroundings, other avatars or objects, and “private islands” can be created for different uses. Second Life offers applications in education as well; educators can create lesson plans and apply course content and interaction in their curricula. Second Life enables educators to create lessons based on cross-cultural settings, allowing new learning experiences for geographically-bound learners. Second Life provides heterogeneous learning environments, unlike physical classrooms that often contain learners from similar age groups, socio-economic classes, and belief systems. Second Life allows students to make comparisons between cultural systems to increase their understanding of other cultural perspectives (Ondrejka, 2008).

Purpose

The purpose of this study was to determine participants’ perceptions of virtual-world technologies in an educator-based professional development workshop. The research question was “Did participants’ comfort levels with virtual-world technologies change after using such technologies in a social sciences workshop session based on socio-cultural issues?”
Methods

The case study approach was used to conduct this study. Merriam (2002) describes a case study as one that “seeks to describe a phenomenon in depth.” Participants (N = 60) attended a professional development workshop focused on “The Role of Social Sciences in Feeding the World,” in October 2012. Texas A&M University conducted multiple sessions on the use of Web-based and virtual-world technologies and their application in the classroom.

Participants completed a series of activities leading up to the Second Life experience. The first exercise was a pen and paper critical thinking exercise and group activity, followed by “The Hungry Decisions” Web-based exercise. Participants then learned how to use Second Life technologies and its applications in raising cross-cultural awareness in high school and university classrooms.

Data were collected from 45 participants at the conclusion of the workshop through an online survey using the post-then-pre method of assessment. The post-then-pre method affords a reflective perspective that produces more accurate self-assessment of skill development by giving an opportunity for comparison by reducing respondents’ tendency to over-estimate their original skill levels (Rooh, 1999).

Results

A 75% response rate was achieved from the post-then-pre online survey. Participants’ experienced perceptions shifts from “agree” to “strongly agree” for their own and their student’s comfort levels using Web-based materials in the classroom and for the level of importance of using Web-based or virtual-world materials to better understand the difficult decisions people make in developing countries. However, the overall perception of participant’s comfort level in using virtual-world technologies such as Second Life did not shift from before, to after, the virtual-world technologies workshop session.

Recommendations/Implications

Overall, this workshop helped participants understand the importance of implementing new technologies into their classrooms. It informed them about the importance of creating new opportunities for learners to gain culturally-literate educational experiences. The session informed participants on Second Life’s applications for critical thinking and complex task lessons that students may use (Wakefield, Warren, Rankin, Mills, & Gratch, 2012). One factor that may have hindered perception shift for Second Life comfort levels in this particular workshop session was the limited amount of time participants spent in Second Life. Additional time is needed to teach educators how to use Second Life in future workshop sessions. Also, additional focus is needed to teach educators how to apply Second Life to cross-cultural situations in the classroom because research has shown that students who are exposed to more heterogeneous situations will have a better cultural perspective (Ondrejka, 2008).

References


A Framework for Analyzing “Best-Fit” Practices in Extension

Kristin Davis
Global Forum for Rural Advisory Services (GFRAS)
Eschikon 28, 8315 Lindau
SWITZERLAND
Ph. +41 (0)52 354 97 64
Fax +41 (0)52 354 97 97
Kristin.davis@g-fras.org

Steven Franzel, World Agroforestry Center

Eric Boa, CABI

Dannie Romney, CABI

Tiffin Harris, TH Consulting

Keywords: Extension practices, framework, best fit

Introduction
There are well-documented examples of high returns to investments in extension and advisory services (Alston, Chan-Kang, Marra, Pardey, & Wyatt, 2000). However, there is a large gap between knowing “what works” in extension and how to adapt successful approaches to different conditions. Extension must function effectively in diverse biophysical, socioeconomic, and institutional settings, and there is presently no clear understanding of how to design “best fit” approaches that match changing conditions and local needs (Davis & Heemskerk, 2012). We use the term “best fit” rather than “best practice” to emphasize the importance of context. A practice is usually only effective in particular contexts and more analysis is needed to determine which practices fit different contexts (Birner, et al., 2009). Extension professionals need evidence-based approaches that work best for engaging with specific types of clientele – such as women farmers, rural youth, and small-scale agribusinesses.

Purpose and Objectives
This theoretical piece proposes a framework for analysing extension practices and contexts that will enable the design and implementation of best fit approaches and effective policies. This will lead to more effective and efficient extension services.

Methods
Extension researchers and practitioners formed a working group convened by the Global Forum for Rural Advisory Services (GFRAS). The group consisted of experts from international organizations, projects, and regional extension networks. Relevant literature was reviewed and the group met face-to-face several times in facilitated discussions to discuss and debate the approach and framework in an inductive manner. The discussions built on the original analysis of extension approaches and contexts by Birner, et al. (2009). A provisional framework for selecting examples of extension approaches (cases) and analyzing them was agreed, and will be
further validated by presenting and testing it with field-level extension managers and extension agents.

**Products**

Researchers devised a structured “Framework for Case Selection and Analysis” to guide systematic analysis of the effectiveness of selected extension approaches under differing country-specific contexts.

The framework has five dimensions that attempt to describe the key aspects or characteristics of advisory services (Birner, et al., 2009). These dimensions include: a) governance structures, such as the level and source of financing, how and by whom services are provided, the degree of decentralization, and the prevalence of partnerships and linkages among actors; b) the policy environment, such as whether there are specific policies on advisory services and what these entail; c) capacity and management, including staff numbers and levels of expertise, performance appraisal systems, and organizational cultures and staff motivation; d) advisory methods, for example the use of information and communication technologies or learning centers; and e) crosscutting factors, such as gender, youth, nutrition and health, and environmental concerns.

Within each dimension, important extension topics can be assessed using case studies that provide country-level examples of how particular organizations implemented a given theme in different contexts (e.g., socioeconomic, political, organizational, agro-ecological). By comparing experiences in implementing extension approaches across different contexts, the framework can be used to draw conclusions about how and why the degree of effectiveness varies among different settings and different types of clientele.

**Educational Importance, Application, and Implications**

The framework is intended for use by a) policy makers, b) managers, c) practitioners, d) farmer organizations, and e) educators and trainers involved in extension. Extension providers (including governments, NGOs, farmer organizations, and private sector entities) and development projects will benefit from the framework as a tool for evidence-based decision making about best-fit approaches in different contexts. To the extent that such decision making rests on factual information and analyses, extension organizations that serve (or are meant to serve) resource-poor smallholder farmers will be able to do their jobs more effectively, which will in turn have positive impacts on reducing hunger and poverty. In addition, universities and colleges that provide training for extension professionals will be able to do a better job of strengthening human resource capacity.

**References**


A Snapshot of the Membership: Examining AIAEE Members’ Agricultural Paradigms

Laura A. Sanagorski
University of Florida
531 North Military Trail, West Palm Beach, FL 33415
lsanagorski@ufl.edu
Phone: 561.233.1748
Fax: 561.233.1782

Theresa Pesl Murphrey
Texas A&M University

Keywords: Sustainable Agriculture, Agricultural Paradigms, Perceptions, AIAEE membership

Introduction
Sustainable agriculture has been gaining in popularity for decades, and is demanded on a global scale (USDA, 1999). The AIAEE membership represents Extension and agricultural educators worldwide, a segment that is critical in the facilitation of sustainable agriculture (Allahyari, Chizari, & Mirdamadi, 2009). This research was framed by the theory of individual perceptions as a function of the organization. An understanding of the attitudes held by those who make up an organization is critical to understanding the entity’s stance towards their outwardly stated goals. Previous research has recognized that individuals’ values may be independent of the organizations to which they belong (Eveland, 1986; Minarovic & Mueller, 2000) and thus, it is important to understand individual paradigms. Just as understanding “global mindedness of Extension agents” (Smith, Jayaratne, Moore, Kistler, & Smith, 2010, p. 59) and understanding Extension faculty attitudes toward globalizing programs (Lewis & Gibson, 2008) are important, understanding agricultural paradigms is critical.

Purpose and Objectives
The purpose of this study was to describe AIAEE members and explore their attitudes towards conventional and alternative agricultural paradigms. The objectives that guided this study included (a) describe AIAEE members’ demographic and background characteristics, and (b) document AIAEE members’ agricultural paradigms.

Methods
The authors distributed an updated Alternative and Conventional Agricultural Paradigm (ACAP) scale to all members of the AIAEE membership, excluding themselves (n=203). In a previous study, this instrument was found to effectively discriminate between agricultural paradigms, and was found to be reliable, as indicated by a Cronbach’s alpha value of .871 (Sanagorski, 2012). The instrument consisted of 24 paired Likert-type responses designed to represent views between conventional and sustainable agricultural paradigms. This instrument generated a Sustainability Score, which could range from 24 to 120, with higher numbers indicating more sustainable paradigms. Data collection lasted 36 days and included an initial survey distribution followed by two reminder emails, as recommended by Dillman, Smyth, and Christian (2009).
Results and Conclusions

The researchers collected study data in August and September of 2012. They determined that 54 surveys were usable, for a response rate of 26.6%. Response rate is expected to be fairly low for Internet-based surveys (Archer, 2008); however, nonresponse error was controlled through a comparison between early and late respondents as recommended by Lindner, Murphy, and Briers (2001), and Miller and Smith (1983) in order to generalize findings to the study population. An independent t-test for equality of means was non-significant \( t = 0.75, p = 0.39 \), and therefore the researchers were able to extrapolate findings to the AIAEE membership (Lindner, Murphy, & Briers, 2001).

The average age of respondents was 47 years. The responding sample was composed of more men \( (n = 37, 63.8\%) \) than women; most held either Doctoral \( (n = 38, 65.5\%) \) or Master’s \( (n = 13, 22.4\%) \) degrees. Many \( (n = 37, 63.8\%) \) had attended a land grant university in the United States. A majority of the membership \( (n = 39, 67.2\%) \) indicated that they are active in facilitating sustainable agriculture in their country. More than half \( (n = 33, 56.9\%) \) of the respondents indicated themselves as supporters of both sustainable and conventional agriculture, while 39.7\% \( (n = 23) \) identified themselves as supporters of sustainable agriculture.

The Sustainability Score mean for the respondents was 73.37, which is slightly above the median value of 72 between the most sustainable (120) and most conventional (24) potential scores. The range of Sustainability Scores for all respondents was 58 to 84.

The majority of respondents \( (n = 38, 70.4\%) \) were from the United States. The authors compared Sustainability Scores between AIAEE members from the United States and those from other countries. Based on an independent t-test for equality of means, the authors concluded that there was no difference based on country \( (t = 1.11, p = 0.91) \). The final research presentation will discuss the instrumentation process in further detail and reveal the findings gleaned from this study at a greater depth.

Recommendations and Implications

The researchers determined that the AIAEE membership as a whole aligns most strongly with a Moderate agricultural paradigm, supportive of both sustainable and conventional agricultural practices, as defined by Sanagorski (2012). The baseline data collected provides a framework for future studies. Individuals involved in agricultural extension and education activities are critical change agents. It is only through an increased understanding of change agents’ perspectives about conventional and sustainable agriculture that one can truly develop effective training programs that meet the needs of the organization.

References


A Study Of Perceptions Of The Value Of Mentoring Among 4-H Extension Educators: A Phenomenological Study

Allison Bruchhaus  
5326 Dan Buller Rd.  
Elton, LA 70532  
318/880-3407  
allisonb@tigers.lsu.edu  

Joe W. Kotrlik  
Krisanna Machtmes  
Janet Fox  
Louisiana State University

Keywords: Evaluation, training, youth educators, mentoring, work environment

Introduction

New employees often experience a great degree of stress. This is especially true for beginning youth educators who are responsible for various roles and high expectations. Stress levels are so extensive that researchers have started to examine the relationship between resilience among educators and abilities to effectively reach youth and remain active in their roles as professionals (Thieman, Henry, & Kitchel, 2012).

Mentoring among youth development professionals is one way to combat significant stress levels and high turnover rates. Beginning educators are facing difficult challenges in their positions working with youth and need strong support (Foor & Cano, 2012). Mentors are in crucial positions to affect the outcome of a novice educator’s career, and there are several factors that affect mentor-novice relationships (Peiter, Terry, & Cartmell, 2005).

Mentoring is especially important for youth educators who are specialized and responsible for program development and delivery of educational programming. It is challenging for youth educators to plan, implement, and evaluate programs and educational experiences for youth in current times. The rapidly changing and intensifying context in the lives of youth requires dynamic youth educators who have opportunities for the development of professional knowledge and relationships for career enhancement.

Purpose and Objectives

The study was developed to take a thorough look into mentoring relationships for 4-H youth educators through the eyes of beginning employees and guided by the following research questions: How do Extension educators perceive the value of mentoring Extension educators in Louisiana? How do Extension educators perceive the value of formal and informal mentoring programs in Louisiana?
Methodology

A descriptive qualitative design based on Kram’s (1988) mentor role theory was used to explore and describe the perceptions of the value of mentoring for Extension 4-H youth educators. A phenomenological approach was selected to gather a profound description of the phenomena within the context being researched.

Participants were selected from across the state to capture detailed accounts from various regions with diverse demographics and educational programming. Interviews provided rich descriptions of lived experience for youth educators in the context of their work adding to the value of information gathered.

Data analysis occurred simultaneously with data collection beginning in the early stages to contribute to careful data management and appropriate presentation of participants’ accounts. The van Kaam method (Moustakas, 1994) was used for data analysis and synthesis during the study. Horizonalization was used throughout the research process while conducting interviews for greater authenticity and objectiveness.

Results/Conclusions

Interviews with seven 4-H youth educators provided an in-depth look into mentoring and details regarding tendencies to find informal mentors during early years. Personal and professional accounts provided by beginning youth educators highlighted several components that were lacking in the formal mentoring program.

Youth educator roles require flexibility and willingness to learn about the demands of the position. An openness to learn from others who have served and learned countless lessons working with youth as educators is vital to the success of a beginning youth educator. It was concluded there is a desire among beginning youth educators to have a richer experience with a formal mentor. Several barriers were in the way of a more in-depth experience and relationship between mentors and mentees. Among these barriers are time, distance/geography, incentive/budget, personality, program area, formal/informal, and understanding.

A model was developed based on the findings of this study. The model captures essential components for an effective and efficient formal mentoring program for 4-H youth educators during the first year of assignment.

Recommendations/Implications

A focus must be placed on formal mentoring among youth educators. The demand is strong for administration, leadership, and organizations who serve the public to focus on programs that positively contribute to the professional development of their employees. External challenges from economic times and rapid deepening of complexity among social environments only increase the demand for progressive programs – especially a formal mentoring program – focusing on the development and support of beginning youth educators. The implementation of a formal mentoring program is one grounded method for employee growth.

It is important to provide an avenue for youth educators to share expectations and needs. Formal mentoring programs offer novice youth educators this opportunity for expression of anxieties, hopes, questions. Formal mentoring programs can be complex. However, the leadership of organizations must focus on decreasing the effects of the abovementioned barriers and increasing the support network offered to beginning youth educators through tailored mentoring programs.
References


Acceptance and Use of Twitter in Disseminating Agricultural Statistics to Mexican Banks

Robert Strong
Texas A&M University
2116 TAMU
College Station, TX. 77843-2116
Phone: 979-845-1139
Fax: 979-458-2698
r-strong@tamu.edu

Larry M. Dooley
Texas A&M University

Travis L. Irby
Texas A&M University

Lori Unruh Snyder
Purdue University

Keywords: Food security, Twitter, Mexican banks, agricultural loans, Ministry of Agriculture

Introduction
The role of food is a key component in Mexicans’ identity and culture (Dooley, Dooley, & Carranza, 2008). Nearly 75% of Mexican families in rural areas experience food insecurity throughout the year (Rosas et al., 2009). Wilde and Peterman (2006) reported the lack of food security has led to variable individual weight change for rural Mexicans.

Mexican banks have the responsibility to assess and disperse loans, in a timely manner, to farmers in order to assist in feeding the local community (Bátiz-Lazo & Wood, 2001). The Mexican Ministry of Agriculture provides Mexican banks agricultural statistics in order to assist banks in evaluating, processing, and distributing agricultural loans to farmers. Strong and Dooley (2012) recommended Twitter dissemination of the Ministry’s agricultural information to Mexican banks be studied in order to determine the potential role of the dissemination approach in addressing food security.

Venkatesh, Morris, Davis, and Davis (2003) developed the unified theory of acceptance and use of technology (UTAUT). The UTAUT helps to describe an individual’s perceptions of the extent a technological system may improve job performance, the system’s ease of use, the level of importance versus other systems, and the infrastructure needed to utilize the respective technological system. Stockwell (2008) indicated individual acceptance evolves at different speeds with new technology.

Purpose and Objectives
The purpose of this study was to assess the acceptance and usage of the Mexican Ministry of Agriculture’s Twitter information by Mexican banks to assist with the processing and distribution of agricultural loans. More specifically, the study sought to:

1. Describe Mexican banks degree of acceptance with the Ministry’s information on Twitter; and
2. Describe Mexican banks use of the Ministry’s information on Twitter.
Methods

This study employed a qualitative research design in order to address the research objectives. The fourteen ($N = 14$) agricultural loan administrators of the primary Mexican banks composed the population in this study. A semi-structured interview guide was utilized with participants to address the study’s objectives. Interviews took place via Skype™ with the researchers and each individual agricultural loan administrator. Data from interviews was triangulated to accomplish trustworthiness (Lincoln & Guba, 1985). The researchers implemented member checks as each participant was emailed a transcription of their remarks for confirmation. Electronically recorded data and field notes made up the audit trail in this study. The data was analyzed through the implementation of the constant comparative method. The results should not be generalized to Ministries of Agriculture and lending institutions in other countries.

Results and Conclusions

Due to space limitations of the abstract, a summary of the qualitative data is presented. All fourteen participants (100%) followed the Ministry’s Twitter feed. Twelve ($n = 12$) of the fourteen participants indicated the Ministry’s tweets assisted in acquiring agricultural statistics faster and decreased the time banks spent evaluating and processing agricultural loans. Ten ($n = 10$) participants believed the Ministry’s Twitter feed led to a greater relationship between staff at the Ministry and Mexican banks. The majority of participants ($n = 12$) indicated they followed the Ministry’s Twitter feed weekly.

The Ministry of Agriculture’s Twitter feeds of agricultural statistics were accepted and used by agricultural loan administrators. Loan administrators reported the Twitter feeds assisted in distributing the appropriate loans to farmers faster. The Ministry of Agriculture utilized Twitter to create an accessible and effortless information conduit (Venkatesh et al., 2003) for bankers using technology. The readiness of information (Stockwell, 2008) has increased the performance of loan administrators as they now can make more informed decisions regarding loans to farmers.

Recommendations, Educational Importance, Implications

The Ministry of Agriculture used Twitter to quickly disseminate commodity information to banks. Banks utilized the information to determine the approval and value of loans paid to farmers in a timely manner. Twitter can be used to let a bank know the particular value of a commodity in real time thus being able to inform not only their financial decisions but inform farmers seeking loans.

Farmers acquired loans quicker and planted crops to sell in local Mexican communities. The Ministry of Agriculture’s Twitter feeds improved performance and communication and while requiring little effort due to the ubiquitous nature of the information and the technology medium which drove use (Strong & Dooley, 2012). The acceptance of and use of Twitter to disseminate agricultural information to mitigate food security in other countries should be studied. The information could expand the knowledge base and potential collaborations for AIAEE members. Twitter provided an innovative approach in the outgoing fight to enhance food security in Mexico.
References


An Assessment of Students’ Perceptions of Knowledge on Select Crisis-Related Skills, Tasks, and Activities: A Critical Look at Second Life™ Training

Leslie D. Edgar
University of Arkansas
Department of Agricultural and Extension Education
205 Agriculture Building, Fayetteville, AR 72701
479-575-6770 / ledgar@uark.edu

Don W. Edgar
University of Arkansas

Tracy A. Rutherford
Texas A&M University

David L. Doerfert
Texas Tech University

Theresa Pesl Murphrey
Texas A&M University

Keywords: Crisis Communications, Second Life™, Pre- and Post-Assessment, Crisis Communication Knowledge and Skills, Virtual World Simulation

Introduction
Communication strategies have been determined to be important in international development (Charalambous-Snow & Ingram, 2011); however, little research has been conducted regarding crisis communication in these settings. Crisis communication management is important to the agricultural industry for a multitude of reasons that stem from agriculture’s foundational status for human existence. When issues arise preventing the success of agricultural practices, communication professionals must be prepared to manage the informational processes that facilitate decision-making and human behavior with the end goal of reducing negative impacts.

The potential for the use of technology to facilitate learning continues to expand and virtual education activities has become an important component. Leggette et al. (2012b) reported that the use of Second Life™ (SL) (a virtual environment) was able to encourage experiential learning. Although literature regarding the educational value of SL is limited, much potential exists with the technology (Leggette, Rutherford, Sudduth, & Murphrey, 2012a).

Purpose and Objectives
The purpose of this study was to assess students’ perceptions of knowledge on select crisis-related skills, tasks, and activities in order to determine the potential effectiveness of a SL simulation. Objectives included a pre- and post-assessment of the following: (1) determine graduate students’ perceptions of knowledge on select crisis communications competencies and (2) determine graduate students’ perceived expectancy performance on select SL tasks used to enhance crisis communications competencies.
Methods and Procedures

The population of the study consisted of students enrolled in a crisis communications course at Texas Tech University during fall 2011 (N = 15). Prior to curriculum being taught students completed a questionnaire regarding perceptions of knowledge on skills, tasks, and activities related to crisis communications. After completion of the course and after participating in a virtual crisis simulation using SL, students completed a post-assessment of knowledge perception on the same competency areas. Questionnaires referenced critical crisis communication topics and skills as identified in a Delphi study involving crisis communication experts throughout the U.S. and Canada (Edgar, Edgar, McGuire, Rutherford, Doerfert, & Murphrey, 2012). The instrument consisted of seven constructs including: Knowledge, Communication Skills, Contingency Plans, Supplies and Tools, Learning and Training Needs, Area of Expertise, and Personal Traits. SL Performance Expectancy was also assessed. Individual items for each construct were scaled statements ranging from either “no experience/knowledge” (1) to “expert” (6). All data for selected constructs were summated and inferential analyses were performed using SPSS 20.0. Mean differences between the pre- and post-data were calculated and resulting standard deviations and effect sizes were noted.

Results and Findings

Students’ responses after instruction completion were significantly different than before the implementation of the treatment (crisis communications course). Mean differences between pre and post perception of knowledge competencies needed in crisis communications were calculated and resulting standard deviations and effect sizes were noted. In all seven competency areas, large effects (Cohen, 1971) between mean differences were found. Participants identified their SL Performance Expectancy based on 18 specific items using a Likert-type scale that ranged from “strongly agree” to “strongly disagree”. The largest positive effect size was noted in “I intend to use Second Life in the next 12 months” (M = 3.00, SD = 1.00, d = 3.00) while the smallest effect size was “Using Second Life takes too much time from my normal assignments” (M = 0.00, SD = 1.22, d = 0.00).

Conclusions and Recommendations

A large effect size found for each of the seven crisis communications competency areas assessed indicated a significant increase in each competency between pre- and post-tests. While participants did not indicate a certain intention to use SL in the next 12 months, participants did increase in knowledge, ability, and skill level on items associated with effectively managing a crisis.

This research demonstrated virtual education as an effective tool in training communicators. Additional research should explore virtual educational platform usage at other universities and should focus on the value of virtual simulations and how technology selection and acceptance impacts learning. The value of virtual training methods for crisis communication education should be explored in relation to assessing perceptions, knowledge, and skills of participants, especially those involved in disseminating information to the public.

The significance of this study for international agricultural and extension education relates to the potential to use technology effectively to deliver crisis communication training. Arming individuals with skills in crisis communication enables effective communication in times of dire need especially in international settings. This study provides key findings to enable
agricultural and extension educators to understand the importance of crisis communication and methods to achieve related training.

References


Assessing Pluralistic Extension Systems: Bangladesh, Liberia, Rwanda and Tajikistan

Burton E. Swanson
Professor Emeritus of Rural Development and
Modernizing Extension and Advisory Services (MEAS) Project
University of Illinois at Urbana-Champaign

Keywords: Pluralistic, donor-driven, supply-chain extension systems

Introduction
This paper will outline the role and key functions of the different extension service providers in selected countries of East and West Africa, and Central and South Asia. Each country is very different, in terms of the public, private and non-governmental organizations (NGOs) that are providing advisory services to different categories of farmers (size and gender), as well as the strategies they are implementing.

Purpose and Objectives
The purpose of this paper is to outline the key strategies being carried out by these different extension and advisory service providers, the clientele being served and the sustainability of these different organizations and approaches.

Methods
The methods used in carrying out this study was first to analyze key documents that outline these different service providers in each country and then each of these service provider were visited to define and determine the strategy being followed. Then, the task was to determine the effectiveness and impact of services being provided to these different groups of farmers (small, medium and large, as well as gender) by these different service providers.

Results, Products and Conclusions
There are many differences between these four countries, in terms of the different extension and advisory service providers. First, the pluralistic extension and advisory systems in each country will be briefly summarized and then there will be a comparative analysis in each country, including both the advantages and constraints of these pluralistic extension systems. The countries to be assessed include:

- Bangladesh
- Liberia
- Rwanda
- Tajikistan

Included in this analysis will be an overview of the different donors who are attempting to strengthen the pluralistic extension systems in each country. It is obvious that the donor community follows different paths in strengthening pluralistic extension systems, but few are willing to make needed investments in public extension, which is why public extension isn’t working very effectively at the present time.

Recommendations
Pluralistic extension systems are important and essential in every developing country. Over the long-term, private sector firms will largely take over the provision of good advisory services for
the products they sell to farmers, especially medium and larger farmers. Non-governmental organizations (NGOs) are rapidly expanding in most countries, largely due to donor-funded projects that focus on “value-chain” projects. For example, USAID limits most of their projects to 4 value-chains, especially staple food crops. However, if small-scale men and women farmers are to increase their farm income, as well as improve the nutrition of their children, they will need to learn how to intensify and diversify their farming systems into specific crop and livestock products that can be sold to local, regional and even national markets. Limiting this option to 4 value-chains will only serve about 5-10% of the rural population, especially the more progressive, larger male farmers.

To serve the rural poor, both countries and donor agencies need to put more attention on strengthening the pluralistic extension system in each country, with a focus on decentralization (i.e. only specific crop and livestock products can be grown and sold in specific villages, sub-districts and districts), farmer-led (groups of men and women farmers getting organized at the village and sub-district level, so they can start articulating their concerns and interests) and market-driven (farmer access to markets depends on location, roads, type of land and the size of each farm). Each organization has its own capability, including NGO, especially in organizing producer groups; private sector firms, especially in providing good advisory services to farmers who purchasing their products, and public extension organizations that can give specific technical and market information to these different groups of small-scale men and women farmers that want to start producing these different types of high-value crop and livestock products, including giving them good market information.

References


Assessment of the Agricultural Curriculum in Nigerian Schools: Implications for Sustainable Food Production

Bosede. O. Lawal  
Institute of Agricultural Research and Training,  
Moor Plantation, Ibadan, Nigeria  
boosedelawal@gmail.com

Adedayo O. Ajayi  
Obafemi Awolowo University

Keywords: Agricultural education curricula, sustainable food production, schools

Introduction

The problem of food insecurity in most developing countries and the recognition of agriculture as central to its solution made governments to formulate policies aimed at awakening young people’s interest in agriculture and food production activities. Despite the renewed attention given to the youth, majority of young people are not pursuing livelihoods in agriculture (Leavy & Smith, 2010). Reasons for lack of interest in agriculture among the younger generation include lack of basic infrastructure, wrong perception of agriculture by youths, lack of incentives from the government and inadequate training and extension services (Akinyemiju & Torimiro, 2008; Aphunu & Atoma, 2010; Onuekwusi & Ottah, 2006).

Teaching of Agriculture in Nigerian schools started with formal education in Nigeria. Agricultural Education in schools started as Nature Study in the primary schools, and has since gone through different names such as Gardening, Rural Science and Agricultural Science (Egun, 2009). It was later introduced as a subject which is taught and examined at the secondary school level in the General Certificate of Education usually conducted by the West African Examination Council. Agricultural Science as a subject was later listed as optional at the introduction of 6-3-3-4 system of education. A student was expected to choose from a list of vocational subjects at the Senior Secondary School. However, with the incessant strike and purported failure of public schools, many private schools were established. The schools hardly make provision for teaching of agriculture as a subject in the curriculum. At the primary level, some schools included agriculture in the basic science. At the diploma, sub-degree and degree levels, many of the courses taught to students of agriculture were still as inherited from the colonial masters. This eventually called for a review of the curriculum so as to positively impact young people’s perception of agriculture as a livelihood choice.

Purpose and Objectives

The specific objectives of the study were to:
1. Trace the history of agricultural curriculum being used in Nigeria.
2. Review the content of agricultural curriculum in the primary, secondary and post-secondary education in Nigeria.
3. Identify gaps in the curricula of primary, secondary and agricultural training institutions as well as human resources dedicated to the teaching of agriculture at various levels.
4. Suggest the revision of curricula to enhance the attitude of youths towards agriculture for sustainable food production.
Methods or data sources

The education policy document of Nigeria, scheme of work in Agricultural Science as a subject at the primary, secondary and post-secondary institutions were collected and subjected to content analysis. Four rural and four urban primary, secondary and tertiary schools were targeted for the study. Key informants interview were held with the students and teachers in the schools. In addition, Colleges/University handbooks were collected and reviewed to determine the adequacy of agricultural extension course work in the agricultural training programme. Content analysis was done with the intention of assessing the relevance, effectiveness and efficiency of the curriculum.

Results and Conclusion

Evidence from the analysis revealed that the content of the curriculum at the primary level was mostly void of local inclusion. The importance of agriculture is downplayed in the primary school syllabus. In most primary schools, agriculture is offered under a broader subject called Basic Science. The curriculum lacks the practical aspect of the subject. School gardens were not established to complement classroom description. Local food crops were not given the required emphasis in the curriculum. The same was noted in the post-primary school curriculum. Most of the privately owned schools do not teach Agricultural Science as a subject but rather as topics under Basic Science. In most cases, professionally trained and qualified Agriculture teachers were not employed to teach the subject in primary and post-primary schools. The curriculum in post-secondary schools differed and had some local content element included. Although, agricultural extension component was grossly deficient as emphasis was not placed on communication, demonstration plots and group dynamics as expected. Farmers led extension methods and community-driven development were not included. When critically probed, evidence abounds that the curricula were not regularly reviewed to meet changing societal needs and keep pace with changes in the agricultural sector.

Recommendations

It is recommended that the Ministry of Education should organize curriculum development conferences and training workshops to ensure that the capacity of teachers and instructors in Agricultural Science are built such that they could inject local content into agricultural curriculum. There is also the need to employ qualified and experienced graduates to teach Agriculture in primary schools because of the vital role played by teachers in the lives of pupils. Teachers in private and government schools, should be re-trained from time to time so that they would gain more knowledge and be able to perform optimally. Establishment of school gardens where students could see and get better hands-on training to promote their interest should be made a condition for issuance of operating licenses to privately owned institutions.

References

Attitudes of Agri-science Teachers in Trinidad towards Information Communication Technologies

Marcus Ramdwar  
Instructor  
University of Trinidad and Tobago  
Centre for Biosciences, Agriculture and Food Technology  
Caroni North Bank Road, Centeno.  
Trinidad, West Indies.  
Email marcusramdwar@yahoo.com  
Tele: 1-868-784-8599

Christopher T. Stripling  
University of Tennessee-Knoxville

T. Grady Roberts  
University of Florida

Wayne Ganpat  
University of the West Indies

Introduction

Trinidad and Tobago is an island nation located in the Caribbean Region working to reach developed nation status by 2020 (UNESCO, n.d.). One component of this goal is agricultural development, which includes developing sufficient human capacity to meet current and future needs (Rivera & Alex, 2008). In Trinidad and Tobago, Ramdwar and Ganpat (2010) purported that secondary agri-science education is essential for developing skilled agriculturists. One skillset likely needed by future agriculturists involves information communication technologies (ICT). ICTs are a wide variety of technologies that allow for communicating, creating, storing, and sharing of information (Gulbahar & Guven, 2008).

Secondary agri-science education programs offer an excellent platform for developing ICT skills. However, teachers must have favorable attitudes towards these technologies (Roberts & Kitchel, 2010). Since 2010, all students entering secondary schools are given a laptop computer and schools are being prepared to facilitate ICT use. Will the use of ICTs be embraced by teachers? The current attitudes of agri-science teachers towards ICTs are not known. Such knowledge could guide teacher education programming.

Purpose/Objectives

The purpose of this study was to describe the attitudes of agri-science teachers in Trinidad towards ICTs.
Methods

This study used survey methodology to collect the data. The population was all secondary agri-science teachers in Trinidad ($N = 90$). A census of the population was attempted. Data were collected in September 2012 and 60 teachers responded, representing 50 schools. The instrument used in the current study was adapted from the work of Gulbahar and Guven (2008). It collected personal data and 18 attitudinal statements with four agreement/disagreement options.

Results and Conclusions

As depicted in Table 1, agri-science teachers have positive attitudes related to using ICTs in developing and finding educational materials. Teachers had the least positive attitudes towards connecting with students using ICTs.

Table 1

*Attitudes of Agri-Science Teachers Towards ICTs*

<table>
<thead>
<tr>
<th>Statements</th>
<th>SA</th>
<th>A</th>
<th>D</th>
<th>SD</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I think that using computer-based instructional technologies makes it easier to prepare course materials (assignments, handouts etc.).</td>
<td>45</td>
<td>50</td>
<td>5</td>
<td>0</td>
<td>3.4 (.6)</td>
</tr>
<tr>
<td>I think that using technology makes it easier to reach instructional resources.</td>
<td>41</td>
<td>56</td>
<td>3</td>
<td>0</td>
<td>3.4 (.6)</td>
</tr>
<tr>
<td>I am aware of the opportunities that computers offer to my profession</td>
<td>37</td>
<td>55</td>
<td>7</td>
<td>1</td>
<td>3.3 (.7)</td>
</tr>
<tr>
<td>I think that technology supported teaching makes learning more effective.</td>
<td>37</td>
<td>56</td>
<td>7</td>
<td>0</td>
<td>3.3 (.6)</td>
</tr>
<tr>
<td>I think the use of computer based instructional technologies increases the interest of students toward courses.</td>
<td>38</td>
<td>55</td>
<td>7</td>
<td>0</td>
<td>3.3 (.6)</td>
</tr>
<tr>
<td>I think the use of computer based instructional technologies increases the quality of my teaching</td>
<td>30</td>
<td>55</td>
<td>15</td>
<td>0</td>
<td>3.2 (.7)</td>
</tr>
<tr>
<td>I think I prepare materials for class faster with the use of computers.</td>
<td>42</td>
<td>40</td>
<td>16</td>
<td>2</td>
<td>3.2 (.7)</td>
</tr>
<tr>
<td>I am sufficiently computer-literate to use computers effectively in my classes</td>
<td>25</td>
<td>60</td>
<td>13</td>
<td>2</td>
<td>3.1 (.7)</td>
</tr>
<tr>
<td>Instructional technologies allow me to handle different learning preferences of my students who have different learning styles</td>
<td>25</td>
<td>56</td>
<td>19</td>
<td>0</td>
<td>3.1 (.7)</td>
</tr>
<tr>
<td>I think using instructional technologies makes me more productive as a teacher.</td>
<td>27</td>
<td>56</td>
<td>15</td>
<td>2</td>
<td>3.1 (.7)</td>
</tr>
<tr>
<td>I think technology makes effective use of class time.</td>
<td>27</td>
<td>59</td>
<td>14</td>
<td>0</td>
<td>3.1 (.6)</td>
</tr>
<tr>
<td>I am quite able to use computers in instructional environments</td>
<td>17</td>
<td>66</td>
<td>15</td>
<td>2</td>
<td>3 (.6)</td>
</tr>
<tr>
<td>I can use instructional technologies in class activities more effectively day by day.</td>
<td>15</td>
<td>58</td>
<td>25</td>
<td>2</td>
<td>2.9 (.7)</td>
</tr>
<tr>
<td>I would welcome assessments about my instructional technology use by any other professionals.</td>
<td>22</td>
<td>53</td>
<td>20</td>
<td>5</td>
<td>2.9 (.7)</td>
</tr>
<tr>
<td>I use computers as much as other resources (books,</td>
<td>25</td>
<td>41</td>
<td>32</td>
<td>2</td>
<td>2.9 (.8)</td>
</tr>
</tbody>
</table>
overhead projectors etc.) for instructional purposes  I believe that tools like e-mail, discussion forums, and online chats will make communication with my students easier.

Computers are my first-use choice over the other resources  I can answer any question my students ask about computers

<table>
<thead>
<tr>
<th>Question</th>
<th>Agreed</th>
<th>Neutral</th>
<th>Disagreed</th>
<th>Mean SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers are my first-use choice over the other resources</td>
<td>18</td>
<td>30</td>
<td>48</td>
<td>4</td>
</tr>
<tr>
<td>I can answer any question my students ask about computers</td>
<td>3</td>
<td>37</td>
<td>51</td>
<td>9</td>
</tr>
<tr>
<td>I believe that tools like e-mail, discussion forums, and online chats will make communication with my students easier.</td>
<td>15</td>
<td>61</td>
<td>24</td>
<td>0.29 (.6)</td>
</tr>
</tbody>
</table>

### Recommendations and Implications
The positive attitudes are a good entry point for further teacher development related to ICTs. Professional Development programs should focus on how ICTs could be used to increase interaction with students and how to develop content that is more acceptable for younger persons. Teachers must be prepared immediately to fully embrace ICTs and to lead students in the effective use of these technologies. Positive attitudes are not sufficient, good practices must follow. Additional research should examine the actual behaviors of teachers.

### References
Attributes Associated with Diffusing ICTs to Advance Agricultural Education at Tertiary Institutions in Developing Countries: Perceptions of Future Faculty

Patrick L. Saisi
Moi University
Mobassa, Kenya
saisi61@yahoo.com
patrick.saisi@okstate.edu

M. Craig Edwards
Oklahoma State University

Keywords: Adoption, agricultural education, higher education, information communication technologies (ICTs)

Introduction/Theoretical Framework

The Internet enables the world to access, disseminate, and use information, training, and education in and about agriculture as never before. Information Communication Technologies (ICTs) have transformed education in developed countries more than could have been imagined a generation ago, e.g., distance education (DE) to accommodate individualized learning needs (Loxley & Julien, 2004). However, important tools for transferring technologies to agricultural students and farmers in developing countries, including ICTs, are underutilized (Erbaugh, Donnermeyer, & Amujal, 2010).

This study relied on Rogers’ (2003) diffusion of innovations model for understanding the behaviors of potential adopters. As individuals contemplate new technologies, their perceptions of an innovation’s attributes stand to influence whether they adopt or reject (Rogers, 2003). Per Rogers’ model (2003) for understanding the diffusion of innovations, five attributes, as perceived by a potential adopter, hold the most sway as the innovation-decision process unfolds: relative advantage, compatibility, complexity, observability, and trialability.

Purpose & Objectives

This study sought to describe the perceptions of international graduate (IG) students from developing countries in the College of Agricultural Sciences and Natural Resources (CASNR) at Oklahoma State University on the diffusion of ICTs to advance agricultural education (AE) at colleges and universities in developing countries. (“Agricultural Education” was operationalized as learning that encompassed the different academic disciplines found in most colleges or faculties of agriculture worldwide.) Four objectives guided the study: 1) determine selected characteristics of the IG students; 2) describe IG students’ perceived levels of innovativeness regarding their use of ICTs for academic learning; 3) describe IG students’ views on attributes associated with the diffusion of ICTs to advance AE in developing countries; 4) describe relationships between IG students’ characteristics and their perceptions of attributes associated with the diffusion of ICTs.

Methods & Data Sources

This was a descriptive-correlational study. The target population included IG students from developing countries enrolled in CASNR at Oklahoma State University during the Fall
semester of 2010. The college’s administrative units provided the sampling frame (120 students); 72 or 60% responded to a survey questionnaire.

The 20 item questionnaire elicited IG students’ perceptions on Rogers’ (2003) five attribute constructs. It was modified from Li’s and Lindner’s instrument (2007) used to describe the perceptions of faculty on the use of web-based, DE at an agricultural university in China. Students rated the statements using a five-point, summated response scale: 1 = Strongly disagree, . . . 5 = Strongly agree. They also indicated their level of innovativeness regarding the use of ICTs for tertiary level learning in AE.

After a field test with IG students in another college, a few revisions were made to improve the instrument’s clarity and readability. A panel of experts ensured the instrument’s content validity. As determined post-hoc, the attribute constructs revealed Cronbach’s alphas ranging from .717 to .915. Twenty questions were also asked to describe students’ characteristics. Data were analyzed descriptively.

Results/Conclusions

A majority of participants were male, 30 years of age, and had 3.43 years of professional experience. Many were from Asia and about one-half anticipated working in tertiary institutions. About one-half had not experienced a course using ICTs, and a similar number were uncertain about whether they would recommend such a course to others. The students perceived their levels of innovativeness regarding ICTs for academic learning were between unpersuaded and persuaded (Rogers, 2003). Their perceptions overall regarding the five attribute constructs were in the range of agree. They held a neutral view of the constructs observability and trialability. As the students’ perceptions of their innovativeness regarding the use of ICTs increased, so did their ratings of agreement with the attributes, and the more likely they were to recommend ICTs to others. These relationships were moderate, positive, and statistically significant (p < .05). Further, as respondents’ perceptions of agreement with the attributes increased, their ratings for the strength of barriers regarding the use of ICTs decreased. This relationship was low, negative, and statistically significant (p < .05).

Implications/Recommendations/Educational Importance

If ICTs are to be adopted widely for teaching agriculture at tertiary institutions in developing countries, their attributes must be perceived and understood well by the faculty members expected to use such (Harder & Lindner, 2008; Li & Lindner, 2007). Faculty in the college studied should make it a priority to introduce their IG students to ICTs for the purpose of instruction as well as research and outreach. This practice could move the IG students’ neutral perceptions regarding the observability and trialability of ICTs into the agree range, and thereby increase the likelihood of adoption occurring.

References


Li, Y., & Lindner, J. (2007). Barriers to diffusion of web-based distance education at China
Agricultural University. *Journal of International Agricultural and Extension Education, 14*(1), 45-57.


Awareness and Adoption of Purdue Improved Cowpea Storage (PICS) Technology by Women Farmers in Kano, Katsina and Jigawa States, Nigeria

Mahmoud Ibrahim Daneji
Department of Agricultural Economics and Extension
Bayero University
Kano, Nigeria
Tel: +2348036342323
Email: midaneji@gmail.com

Mercy Akeredolu
Sasakawa Africa Fund for Extension Education

Shehu Alhaji Musa
Amina Aminu Idris
Bayero University

Keywords: Cowpea awareness, adoption, PICS technology, storage

Introduction
Cowpea is an important leguminous crop in Nigeria processed and consumed in various forms and use for multiple purposes. However, post-harvest insect pests of cowpea degrade the nutritional quality and economic value of the grains thereby causing serious losses to farmers (Jackai & Daoust, 1986). Alternative cowpea storage device (triple bagging technique) has been developed and popularized to the Nigerian farmers by the Purdue University in the United States through the International Institute for Tropical Agriculture (IITA) Nigeria with a view to reduce the heavy losses recorded at storage.

Purpose and Objectives
The study was undertaken with the main objective of assessing the level of awareness and adoption of the Purdue Improved Cowpea Storage (PICS) technology by women farmers in Kano, Jigawa and Katsina states of Northern Nigeria. The specific objectives were: to determine the socio-economic characteristics that influence the adoption of PICS technology by the respondents; determine the level of awareness and adoption of the technology; identify different traditional cowpea storage methods used by the respondents; assess how the technology diffuses among farmers in the study area, and describe the major constraints to the adoption of PICS technology.

Methods and/or Data Sources
Data were collected from primary source using structured and pre-tested questionnaire supported by oral interview. A total of 600 women farmers (300 in Kano, 180 in Katsina and 120 in Jigawa) were randomly selected and interviewed. The sample was drawn from the 40 demonstrated villages in the states. In addition 100 respondents (40 in Kano, 30 in Jigawa and 30 in Katsina) were also randomly selected and interviewed from 10 control (Non-PICS) villages. The elicited data were analyzed using descriptive statistics and multiple (logit) regression models.
Results, Products, and/or Conclusions

The results indicated that the age range of the respondents were between 16 and 80 with a mean age of 39 years. About 92.3% were married with a mean household size of 9 persons. Majority (86.3%) of the women had acquired some form of Islamic education. The results also indicated that the participation of women in PICS demonstration was found to be significant ($P \leq 0.01$). Also, contact with extension agents, membership of association, age; level of education, main occupation and area under cowpea production were found to significantly ($P \leq 0.1$) influenced the adoption of PICS technology. It was also revealed that the contributions of the above mentioned variables in influencing adoption were to the tune (likelihood) of 66.59%. Furthermore, the results revealed that majority (65.5%) of the women were aware of the PICS technology and participated in the village demonstration. Before the introduction of PICS technology however, 42.10% of the women stored their cowpea using insecticides and 57.9 used other storage methods. With the introduction of PICS, 28.70% of the women used PICS bags to store their cowpea. The major constraint reported by the women included poor accessibility of the PICS bags (57.7%) and low level of awareness (90.0%) at the grass root level. In conclusion, the willingness of women farmers to adopt and adapt the use of PICS technology is not in doubt. However, accessibility to the bags and low level of awareness on how to use them predominantly affected the level of adoption of the technology by the women.

Recommendations, Educational Importance, Implications, and/or Application

It is recommended that further awareness be created regarding the importance and usage of PICS technology to women groups and the accessibility of the PICS bags need to be further enhanced by extending the supply chain of PICS bags downward to communities and rural markets in the study area so that the women can access and use them to store their produce for a healthy and wealthy living.

References

Capacity-Building Needs of Farmer-Based Organizations in Mali and Nigeria

Assa Kanté
Sasakawa Africa Fund for Extension Education
Magnambougou Faso Kanu
Rue 6885, Porte 419
BPE 3541, Bamako, Mali
Tel. # (223) 73 27 12 53
FAX # (223) 20 20 58 34

Mercy Akeredolu
Sasakawa Africa Fund for Extension Education

Keywords: Capacity building; extension advisory programs; farmer-based organizations, training needs

Introduction
Farmer-Based Organizations (FBOs) have been perceived as a mechanism for improving farmers’ access to agricultural services, for realizing the scale economies of their produce, for building steady relationships with inputs suppliers or traders, for generating resources to invest in transport or processing operations, and for selling commodities. In addition, FBOs also can become more active participants in adding value to their production. For the past two decades, this view has guided the design of many programs of assistance to smallholders in Africa (Stringfellow, Coulter, Lucey, McKone, & Hussain, 1997). In the same scope, the Sasakawa Africa Association (SAA) / Sasakawa Africa Fund for Extension Education (SAFE) group, founded and supported by the Nippon Foundation of Japan, has been assisting smallholder farmers to fight against poverty and to attain food security in East and West Africa. From their field experience, they discovered that the FBOs with whom they collaborated still needed more capacity building because of their low performance (SAA, 2010). This fact was supported long before by Stringfellow et al. (1997), who indicated that, “there is growing evidence, however, that projects promoting farmer cooperation do not always lead to the emergence of viable farmer groups” (p. 2). Therefore, a need existed for program planners to analyze and understand factors that contribute to successful farmer cooperation.

In 2012, the SAA / SAFE group initiated an organizational and managerial capacity building program for farmers' organizations in Mali and Nigeria. The objective of this study was to understand the structure, mode of operation, management, level of leadership, and describe the factors affecting their viability and identify the needs for capacity building of the FBOs.

Methodology
In the first two quarters of 2012, purposeful sampling was used to select 40 FBOs in Mali and 43 in northern Nigeria. Two questionnaires were administered to FBOs’ leaders and members. Focus group interviews were conducted to get an in-depth understanding of the management and leadership issues and opportunities provided to FBOs. Additional data were collected by content analysis of selected official documents related to national FBOs’ policies, monitoring procedure of FBOs, management guide for FBOs, cooperatives’ repertoires, and other evaluation reports of FBOs. A pilot test of the instruments allowed the reformulation of some questions. SPSS (version 16) was used to analyze the quantitative data.
Results

The study revealed that the FBOs can be divided into different categories in Mali and Nigeria, including associations, cooperatives, mutual associations, unions, and microfinance institutions (Mercoiret, 1988). These organizations were, male, female, or mixed, and were involved in production, commercialization, processing, and micro-lending.

As related to the functioning of FBOs, the study showed that all investigated FBOs held general assemblies or meetings at different frequencies. Although the general meetings were held, many communication problems were perceived by the study’s participants in relation to members’ adherence to cooperative principles; members’ capacity building needs; and institutional communication with partners. Institutional formalization and leadership problems were also identified as the shortcoming for some FBOs. The study indicated that factors affecting the viability and sustainability of FBOs encompassed institutional, administrative, and financial management; definition of an optimal size in line with good management; ownership of FBOs by its members and their active participation in the socio-economic activities, existence of FBOs management bodies; gender considerations; owning working capital; socio-economic services delivery to FBOs’ members; existence of viable business plans; respect of FBOs’ objectives; and existence of training plans adapted to FBOs members’ needs.

Educational Importance

The analysis and understanding of the socio-economic structure of FBOs and the factors affecting their performance and viability are capital for planning an extension advisory program to address their needs. Assistance should consider reinforcing good communication practices with FBOs members, their partners, and all service providers.

Conclusions/Recommendations

This study described FBOs that are located in SAA intervention areas, and it showed they still need assistance to be performant and sustainable. This support should enable them to be better restructured formally, to be more autonomous, and to excel in their field of activity. The researchers recommend that the intervention of SAA be more specific and focused on communication skills development, value chain analysis, training and information provision, and evaluation to illuminate the way forward for the FBOs to excel and serve the needs of their members better.

References

Challenges Facing the Agricultural Sector in Trinidad and Tobago:
A Comparison of Stakeholder Perspectives

Austen Moore
Graduate Research Assistant/AIAEE Member
Dept. of Agricultural Education and Communications, University of Florida
P.O. Box 110540, Gainesville, FL 32611-0540
Phone: 425-420-8131 Fax: 352-392-9585
Email: austen.moore@ufl.edu

Amy Harder
Angela Valadez
Norma Samuel
University of Florida

Keywords: Agricultural challenges, food importation, labor shortages, youth in agriculture

Introduction
Expanding the agricultural sector is central to Trinidad and Tobago’s economic development strategy (Caribbean Community Secretariat [CARICOM], 2006). Currently, agriculture contributes only 0.4% of the GDP (US State Department, 2012), the sector employs just 88,000 of 1.3 million people, and farmland is merely 25% of the nation’s total area (Ministry of Agriculture, Land, and Marine Resources [MFPLMA], 2012). The majority of agricultural production is exported while food imports are increasing, creating a $4 billion deficit in 2011 (CARICOM, 2006; MFPLMA, 2012). However, strengthening the agriculture of Trinidad and Tobago first requires identifying challenges faced by individuals within the sector.

Purpose/Objectives
The purpose of this study is to explore the perspectives and beliefs of farmers, extension officers, governmental and non-governmental organization personnel, and university-based agricultural educators regarding the major challenges of the agricultural sector in Trinidad and Tobago. The objectives are: (1) to identify the limitations facing agriculture in Trinidad and Tobago, and (2) to explore how these limitations can be addressed.

Methods
This study was conducted during a 10-day study abroad experience in March 2012 designed to explore Trinidad and Tobago’s agriculture. A team of four researchers used convenience sampling, obtained informed consent, and conducted semi-structured interviews with agricultural stakeholders (n=27) at agricultural cooperatives, extension facilities, schools and universities, agricultural experiment stations, and farmers’ markets across the country (Flick, 2009). Data were gathered using a researcher-developed instrument, of which one question formed the basis of this study. Hand-written notes were taken during the interviews, responses were member-checked with respondents, and data were triangulated with representatives of the host institution, the University of the West Indies (UWI) at St. Augustine (Merriam, 1998). The constant comparative method was used to identify emergent themes (Lincoln and Guba, 1985; Merriam, 1998).
Results

Three main themes emerged from the data. First, respondents discussed the connection between oil and agriculture, noting the nation’s oil wealth had created a culture where consumers were content buying rather than producing food. In one case, a respondent described his switch to permaculture as “uncoupling himself” from oil dependence (R15). Another respondent predicted huge changes in post-oil Trinidad and worried his farm would be overrun by hungry people when the reserves were exhausted (R13).

The need to reduce food imports by increasing domestic production was also discussed. Respondents cited high (80%) ratios of staple crops (R01) and discussed governmental plans to reduce food importation and “create a food secure nation” (R18). However, respondents suggested that the government “talks the right talk” but fails to create a climate that stimulates local production and reduces imports (R08).

Respondents also cited labor insufficiency as restricting agricultural expansion. Low agricultural wages caused skilled laborers to pursue more lucrative jobs while unskilled laborers opted for social programs that paid less but allowed more free time (R09). The Community-Based Environmental Protection and Enhancement Programme (CEPEP) was disparagingly called “Continuous Employment, Painting Every Pebble” for the work done by participants (R20). Respondents cited low interest in agriculture among youth, and how “young people didn’t see the value in food or care where it [came] from” (R13). No UWI students had registered for the agricultural extension diploma for years (R14), and a young extension officer described how he had chosen extension only due to lack of other opportunities (R22).

Recommendations

Several recommendations exist for addressing the challenges facing Trinidad and Tobago’s agricultural sector. Extension and school-based agricultural education programming could help improve public opinion on the importance of local agriculture. Extension marketing could refocus on the economic and health benefits of domestically-grown foods to make the sector more appealing and stimulate public interest in local production versus importation. School curriculum can help generate youth interest and involvement in agriculture, which was described as “the best hope for fixing Trinidad’s agricultural issues” (R10). UWI and the formal education system could also redouble efforts to recruit and financially support students in agricultural programs. These efforts, coupled with policies allowing agricultural wages to compete with social programs and other sectors, could improve opinions, increase the workforce, and ultimately develop the agricultural sector.

While the results of this study discuss only Trinidad, similarities to other Caribbean contexts may allow the findings to have larger implications to the knowledge base. Themes of competing economic sectors, food importation, and labor issues are common across the region. Replication of this study using similar data collection and analysis methods in other Caribbean nations would allow findings to be compared, further contributing to the profession and enhancing the educational value of this study.

References


Consumer Attitudes about the Fruit and Vegetable Source in Trinidad and Tobago

M’Randa R. Sandlin
Department of Agricultural Leadership, Education, and Communications
Texas A&M University
2116 TAMU
College Station, TX 77843-2116
Voice 1.979.458.2304
Facsimile 1.979.458.2698
mranda.sandlin@agne.tamu.edu

James R. Lindner
Texas A&M University

Keywords: Consumer attitudes, producer/consumer disconnect, growing methods, product origin, Trinidad and Tobago

The gap is widening between producers and consumers. With an increasingly urban consumer base and a decreasing number of producers, the exchange of information has become near obsolete (Sharp, Imerman, & Peters, 2002). Iraini, Sinclair, and O’Malley (2001) found that personal factors (i.e., culture) influence consumer acceptance and perception of agricultural innovations and systems. Understanding personal factors help producers forecast potential product markets (Iraini, Sinclair, & O’Malley, 2001). Further, it will help producers understand the expectations of the customers.

In Trinidad and Tobago, the agricultural work force made up 8% of the total labor force in 2005, most produce on less than 2.47 acres of land, and agriculture contributed approximately 0.65% to the total gross domestic product in 2006 (Lovendal, Jakobsen, & Jacque, 2007). With a booming economy and increasing inflation rates and food prices (Lovendal, Jakobsen, & Jacque, 2007), producers in Trinidad and Tobago must better understand their consumers to sustain and grow.

Purpose Statement and Objectives
This is the initial study to understand the expectations of the producers and consumers in Trinidad and Tobago. The purpose of this study was to describe consumer attitudes about their fruit and vegetable (produce) food source in Trinidad and Tobago. The objectives of this study were to describe consumer attitudes about produce: (a) origin, (b) growing methods, and (c) pricing.

Methods
An instrument was developed to measure consumer attitudes of their produce sources. As described by Trochim and Donnelly (2007), a five-point summated scale was used to indicate consumer level of agreement (1=Strongly Disagree, 2=Disagree, 3=Neither Disagree or Agree, 4=Agree, 5=Strongly Agree) with 24 statements. The instrument was reviewed by two country and language experts to ensure face and content validity and it was pilot tested to determine reliability; reliability was estimated by calculating Cronbach’s alpha (Fraenkel & Wallen, 2006). The instrument was determined to be reliable for each construct: origin (9 items; \( r=0.82 \)), growing methods (8 items; \( r=0.75 \)), and pricing (7 items; \( r=0.86 \)).
The participants in this study represented a convenience sample (Fraenkel & Wallen, 2006); they were chosen based on their presence in a market in Trinidad and Tobago and their willingness to complete a questionnaire. The questionnaire was administered in the markets; no identifying information was collected to ensure confidentiality.

**Results**

Descriptive statistics were used to determine respondents’ attitudes about the origin, growing methods, and pricing of their produce (see Table 1). A total of 289 instruments were completed.

Table 1

<table>
<thead>
<tr>
<th>Construct</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Produce growing method</td>
<td>289</td>
<td>4.07</td>
<td>.55</td>
</tr>
<tr>
<td>Produce pricing</td>
<td>289</td>
<td>3.72</td>
<td>.71</td>
</tr>
<tr>
<td>Produce origin</td>
<td>289</td>
<td>3.65</td>
<td>.58</td>
</tr>
</tbody>
</table>

*Note. N=289.*

Respondent attitudes about the origin of their produce ($M=3.65$, $SD=.58$) received neutral scores, in general, but did indicate that “buying locally grown fruits and vegetables stimulates the local economy” ($M=4.30$, $SD=.74$). The lowest score in this construct indicated that locally grown fruits and vegetables may not be more consistently available than imported ($M=3.19$, $SD=.97$).

Respondent attitudes about the methods used to grow their produce ($M=4.07$, $SD=.55$) earned the overall highest scores. Respondents indicated a preference for produce grown without chemicals ($M=4.37$, $SD=.77$); they also indicated that those grown with chemicals may be more consistently available ($M=3.87$, $SD=.85$).

In the construct about consumer attitudes about the pricing of their produce ($M=3.72$, $SD=.71$), respondents indicated a willingness to pay more for healthy ($M=4.08$, $SD=.75$) produce and they are neutral about the origin of their produce in the context of pricing ($M=3.00$, $SD=1.12$).

**Conclusions**

It can be concluded from the findings of this study that the consumers in Trinidad and Tobago are realists when assessing their produce. They agree that locally grown produce stimulate the local economy and are fresher than imported produce. They also desire their produce to be grown without chemicals, but recognize the uniformity aspect and availability benefits of the alternative. Consumers indicated that they are willing to pay more for healthy and fresh produce, but are neutral about aesthetics and origin in the context of pricing.
Recommendations and Educational Importance

The researchers recommend further studies be conducted to determine any correlation between the constructs in this study and other factors of consumer attitudes. Similar studies in like-countries should also be completed to compare the findings and create greater implications for the field.

Educational importance is embedded in Extension efforts. Extension’s educational programs may extrapolate this information to the informational and educational content they develop for farmers and consumers to bridge the information gap.

References
Defining Sustainable Agriculture Based on Input from Individuals Involved in International Agricultural and Extension Education

Laura A. Sanagorski
University of Florida
531 North Military Trail, West Palm Beach, FL 33415
lsanagorski@ufl.edu
Phone: 561.233.1748
Fax: 561.233.1782

Theresa Pesl Murphrey
Texas A&M University

Keywords: Sustainable Agriculture, Definitions of Sustainable Agriculture, AIAEE membership

Introduction
Sustainable agriculture has been offered as a solution to “global integration, economic consolidation, and environmental degradation” (Feenstra, 2002, p. 99) and has been identified as an enduring agricultural paradigm (Sanagorski, 2012). While numerous definitions exist, most include aspects of economic, environmental, and social balance, and the preservation of natural resources (Feenstra, 1997; Hanson & Hendrickson, 2009; Ikert, 1998; Rodriguez, Molnar, Fazio, Sydnor, & Lowe, 2009; USDA, 1999). Specifically, sustainable agricultural must be profitable and beneficial to the community, while protecting wildlife and natural resources. The social component suggests that this paradigm supports local jobs, fair trade, and good working conditions, while the economic component indicates the importance of profitability (Rodriguez et al., 2009; USDA, 1999).

The very act of defining sustainable agriculture has been discussed and disputed over the past two decades. Lack of a singular definition and general ambiguity of the term are frequent criticisms (Hanson & Hendrickson, 2009; Jayaratne, Martin, & DeWitt, 2001), and may even be “inhibiting cooperative progress toward long-term minimization” (Keeney, 1990, p. 281) of environmental, social, and economic effects of today's agriculture. “Sustainable agriculture is a complex, site-specific, not well understood system” (Hanson, Kauffman, & Schauer, 1995, p. 155) and because of this, “precise definitions are impossible” (Pretty, 1995, p. 1247). With this in mind, this study sought to explore AIAEE members’ definition of sustainable agriculture.

Purpose and Objectives
The purpose of this study was to explore AIAEE members’ perceptions of the definition of sustainable agriculture. The objectives that guided this research included (a) identify AIAEE members’ agreement or disagreement with a prescribed definition, and (b) document AIAEE members’ additions and comments about one specific definition.

Methods
The authors distributed an electronic survey instrument to all AIAEE members excluding themselves (n = 203). The instrument presented one definition of sustainable agriculture: “an agriculture that can evolve indefinitely toward greater human utility, greater efficiency of
resource use, and a balance with the environment that is favorable both to humans and to most other species” (Harwood, 1990, p. 4). Respondents were asked to indicate agreement with the description or to explain why they disagreed, and to offer what was missing.

Data collection included an initial survey distribution followed by two reminder emails, as recommended by Dillman, Smyth, and Christian (2009). The survey was closed after 36 days. The researchers imported data into SPSS for analysis, and coded open-ended responses so that themes could be identified.

**Results and Conclusions**

Study data were collected in August and September of 2012. A total of 54 surveys were completed adequately, for a response rate of 26.6%. Nonresponse error was controlled by comparing early and late respondents as recommended by Lindner, Murphy, and Briers (2001), and Miller and Smith (1983), in order to generalize findings to the population.

A majority of the sample (n = 48, 82.8%) agreed with the definition provided. Of the recommendations provided by the membership, the most common element that was suggested as missing was that of economics and profitability to the grower. The second most common theme was that of technology adoption. Other important points that emerged included the element of supplying enough food to support a growing population, the social element of sustainable agriculture, and the need to emphasize that this paradigm is site-specific. A few respondents indicated discomfort with the very act of defining sustainable agriculture.

**Recommendations and Implications**

The authors concluded that the majority of the AIAEE membership agreed with the prescribed definition, which stated that sustainability in agriculture should include evolution, human utility, preservation of resources, support of human and other species, and environmental balance; however, they added that profitability and technology adoption must accompany these themes. Many researchers, including the current authors, acknowledge that sustainable agriculture is fluid and site-specific, and that a clear definition may never be identified. According to the USDA (1999), a “lack of sharp definition has not lessened its authenticity” (p. 14). This study provided a view of AIAEE members’ attitudes about the definition of sustainability in regards to agriculture, and documented critical elements that should be considered in relation to sustainability. The authors agree with Ikert, who stated that “we may never have a generally accepted definition of sustainability, and perhaps, we don’t need one” (Ikert, 1998, para. 2). The authors emphasize that it is the intention of this practice, and not its definition, that it most important to those served by our membership.

**References**


Determinants of Role Performance Effectiveness among Facilitators in the Second National Fadama Development Project in Nigeria

Shimayohol Daudu
Department of Agricultural Extension and Communication
University of Agriculture, Makurdi, Nigeria
Telephone: +2348036058567
Email: shimayohol@yahoo.com

Michael C Madukwe
University of Nigeria, Nsukka, Nigeria

Keywords: Determinants, role performance effectiveness, facilitator, national fadama development project, Nigeria

Introduction

Much of the recorded failure to transform Nigeria’s agriculture can be attributed to the weak extension delivery system, and the weak linkage between research and extension (Idachaba, 2001). Many interventions through extension systems and approaches have been attempted to turn around the agricultural fortunes and fast-track agricultural productivity.

The World Bank and the African Development Bank are collaborating in funding the Second National Development Project at the total indicative project cost of US$160.56 million with the World Bank contributing US$25.37 million while the ADB is contributing an equivalence of US$35.19 million. The project is on going in 18 states of Nigeria and is expected to terminate in 2009. While the Third phase of the programme started in 2008. The sector goal of the Fadama II Development Project is to reduce poverty by improving the living condition of the rural poor, contribute to food security and increase access to rural infrastructure (World Bank, 2003).

In the Second National Development Project the facilitator is the link between the Fadama Development Project Management and beneficiaries. Facilitators relate with the beneficiary communities to implement project financed initiatives as part of the paradigm shift by the Fadama Development Project (Kolawole, 2001). Facilitators form an important component of the link between research institutes, universities, private research organizations, NGOs and Fadama Community Association (FCAs) and their constituent Fadama Users Groups (FUGs). They function as information managers for the purpose of monitoring, screening, indexing, cataloguing, packaging and storing useful information for later use and dissemination to FCAs and FUGs (Nweze, 2004). They have the responsibilities of shaping the course of the project, relating directly with the beneficiaries at the community level (Ingawa, 2004). Selection of community facilitators is done through an open bidding process (World Bank, 2003).

After three years of implementation of the project preliminary lessons learnt indicate that the quality of facilitation support to FCAs is low especially in the technical field. This poor facilitation is manifested in inadequate sensitization of the FCAs, low-level comprehension of the project approach and the associated guidelines by the FCAS and low quality of Local Development Plans, LDPs, (Fadama III Zero Draft, 2005).

One way of guaranteeing effective performance of field agents is through proper selection (Madukwe, 1989). Consequently, attention needs to be given to more directly
specifying the characteristics needed for effectiveness of facilitators and recruiting against such regimes to ensure role performance effectiveness and sustainability of the project. Therefore, considering the pivotal role the NFDP-II facilitators have to play, the effective performance of facilitators is pertinent for the success of the Second National Fadama Development Project.

**Purpose and Objective**

As a result of the not so cheery performance of the facilitators in the NFDP-II the question now relates to the selection of appropriate criteria for the effective role performance of facilitators in the Second national Fadama Development Project. Which facilitator variables discriminate between effective and ineffective facilitators? This study provides answers this question.

**Materials and Methods**

The study area is Federal Republic of Nigeria. Nigeria is situated between latitude 4°N and 13°50’ N of the equator and longitudes 13°E and 15°E of the Greenwich Meridian. A multistage random sampling technique was used in the selection of respondents comprising 118 valid facilitator responses and six community development officer respondents. Using the factor analysis procedure 66 facilitators were grouped as effective while 52 were grouped as ineffective. Using the step wise discriminant analysis techniques on these two groups, 27 proxy variables identified as representing socio-demographic variables of facilitators were captured.

**Results and Discussion**

Six variables were significant in determining if a facilitator belongs to these two groups. These are highest educational qualification ($d=-0.46$), years of experience in facilitation work ($d=-0.50$), number of in-service training attended ($d=-0.34$), empathy ($d=1.08$), honesty ($d=-0.92$) and reliability ($d=-2.07$). The result showed that these variables determine role performance effectiveness of facilitators.

**Recommendations and Implications**

It was recommended that candidates for the position of facilitator should possess a high educational qualification, at least, Higher National Diploma or University Degree in Agricultural Extension or Rural Sociology or social science, a number of years of experience in facilitation work, and must have attended many in-service trainings.

The policy implication of this finding is that a policy measure should be put in place in the organization, namely, a due process mechanism to ensure that facilitators selected meet these criteria to ensure the selection of potentially effective facilitators in the Second National Fadama Development Project in Nigeria.

**References**


Determining the Problems, Impacts and Potential Solutions for the Agricultural Industry of Belize: A Needs Assessment

Haley Porter
Texas Tech University
Department of Agricultural Education and Communications
Box 42131
Lubbock, TX 79404-2131
Phone: 806-742-2816
Fax: 806-742-2880
haley.porter@ttu.edu

Todd Brashears
Mindy Brashears
Erica Irlbeck
Shawna Newsome
Sarah Winterholler-Trojan
Alejandro Echeverry
Cynthia McKenney
Summer Loneragan
Texas Tech University

Keywords: Belize, agriculture, educational needs assessment

Introduction
Agriculture is vital to the economic well-being and continuity of Belize as it provides a domestic source of food and fiber and employment for a large majority of the population. The open, private sector-led economy of Belize centers around three main industries: agriculture, industry, and tourism/services (U.S. Commercial Service, 2012; CIA, 2012). As of 2011, agriculture accounted for 40.2% of the country’s total exports, which represents a steady decline from 2008 (43.0%), 2009 (51.8%), and 2010 (44.6%) (U.S. Commercial Service, 2012). When compared to the other main economy sectors, agriculture accounted for only 9.7% of total gross domestic product (GDP), while industry accounted for 19.8% and services accounted for 70.5% (CIA, 2012).

A review of literature identified several issues that hinder the agricultural industry of Belize from becoming more competitive in a global economy, which include a lack of accessible roads, inconsistent utilities, food safety concerns, cost of bringing products to market, lack of a modern food-testing laboratory, and plant diseases within the citrus industry (IICA, n.d.; U.S. Commercial Service, 2012; Belize Citrus Growers Association, n.d.). Therefore, it was determined that research should be conducted to identify a more explicit list of the country’s agricultural education needs.

Purpose and Objectives
There is a lack of knowledge pertaining to the educational needs of those involved in the agricultural industry in Belize. The purpose for this study was to conduct a needs assessment in order to determine the areas of research that should be focused on so that future educational
programming and collaborative work in the form of workshops, internships, and grant proposals can be created. The research was guided by the following objectives:

1. Determine what barriers prevent the agricultural industry of Belize from being more successful.
2. Determine what the agricultural industry, as a whole, needs in order to be more successful.
3. Determine what the educational needs are for the agricultural industry of Belize.

Methods

For this qualitative study, a needs assessment was conducted. A variety of needs assessment techniques were used to collect data: individual interviews, group interviews, and observations. Case study methodology was employed to answer the study’s research objectives. The researchers traveled to Belize and met with representatives from the citrus, banana, poultry, tourism, and shrimp industries, as well as with government officials from a Belizean agricultural health authority and the Inter-American Institute for Cooperation on Agriculture (IICA). The interviews were based upon a pre-determined set of questions specifically written toward each sector of the agricultural industry. All interviews were digitally recorded and observational notes were taken of the operations toured. The interviews were then transcribed into a Word document and were analyzed for common themes with the use of NVivo 10.

Results, Products, and/or Conclusions

The results revealed several major themes that spanned across the entire agricultural industry. For Research Objective 1, the barriers identified for the Belizean agriculture industry were related to government, energy, oil, boat transportation, disease, weather, illiteracy/lack of technology, and unemployment. For Research Objective 2, general agricultural needs were identified for the citrus, beef, poultry, restaurant/tourism/agritourism, banana, and shrimp industries, and also the agricultural health authority for Belize. For Research Objective 3, several agricultural education needs were identified: the need for a link with other universities, the need for more government assistance in terms of education, the need for better collaboration with the Mennonite culture, the need to focus on extension education more, and the need for a better information dissemination system.

Educational Importance, Implications, and/or Application

Since there is no current baseline study pertaining to the agricultural education needs of Belize, this research will provide the necessary baseline that will in turn allow for future research to be conducted relating to this topic. Based upon the results of this needs assessment, action can now be taken to provide education and future collaborative work so that the rural communities of Belize can gain a more stable economy and an improved quality of life.

References


Development and Validation of Liberia’s National Policy for Agricultural Extension and Advisory Services

Vickie A. Sigman
University of Illinois, Urbana-Champaign
830 Red Fern Drive
Middleton, Idaho 83644
vsigman@sigran.com

Thomas Gbokie Jr., Ministry of Agriculture, Liberia
Moses M. Zinnah, Ministry of Agriculture, Liberia
Ousman Tall, Ministry of Agriculture, Liberia

Keywords: Africa, agricultural extension, policy, reform, process

Abstract

Singly few African nations have current policies specific to their Extension and Advisory Services (EAS). This is recognized in the 2011 Nairobi Declaration—an instrument emerging from the Innovations in EAS International Conference—which calls on governments, farmers, the private and civil society sectors, donors, and other stakeholders to develop clear policies for EAS in a participatory manner (Pye-Smith, 2012). The challenge is how to efficiently and effectively respond to this call. Liberia, a post-conflict West African country now rapidly recovering from decades of mismanagement and 14 years of brutal civil war, has successfully taken on the EAS policy challenge.

Informed by policy development analytical frameworks (Cafcass, 2007; Sutcliffe & Court, 2006), the purpose of this paper is to detail the process Liberia applied to develop and validate its national-level policy on agricultural EAS, describe the results and follow-up of the process, and capture lessons learned. The paper features key actions taken and decisions deliberated to move Liberia’s policy from inception through to preparation for legislative review and onward.

Liberia’s process was led by a multi-disciplinary Ministry of Agriculture (MOA) appointed Task Force, whose first task focused on reviewing Liberia’s 2009 draft EAS policy. Backstopped by donor technical assistance, a set of learning activities followed, designed to expedite the process by leveraging lessons learned from previous extension reform and policy development efforts. This included review of global trends in EAS and of several EAS policies from African and Asian countries.

Liberia’s process was highly participatory involving a wide-array of stakeholders. Stakeholder input to the policy was gathered through individual and group interviews, e-mail surveys, and field visits with public, private, and civil society actors including producers and their organizations, agribusiness owners, extension staff, legislators, and representatives from the agricultural education, non-governmental organizations, finance, and donor communities.

Extensive dialogue among the Task Force and other stakeholders resulted in identifying the critical issues to be addressed by the policy. The policy articulates the vital characteristics of Liberia’s EAS system, envisioned as pluralistic, decentralized, demand-driven, market-oriented, and sufficiently flexible to address priority cross-cutting issues such as gender, nutrition, and natural resource management. The policy identifies EAS stakeholders and geographic coverage and discusses EAS content, approach, and methods. Particular emphasis is afforded roles and
responsibilities of various stakeholders and mechanisms to be utilized to ensure coordination and consultation among them. As a result of deliberations, the policy provides less emphasis on finance, staffing, and capacity development than on these other elements. The policy does not include an implementation strategy because the decision was made to design an implementation strategy as a separate activity embodied in a separate document.

The primary result of the policy development process was a draft policy. The draft policy was validated through a stakeholder workshop where numerous stakeholders provided additional input. Liberia’s final National Policy for Agricultural Extension and Advisory Services (MOA, 2012) receives the full support of the MOA.

Follow-up recommendations emerging from the development and validation process focus on initiating formal adoption of the policy by the Government and on developing and implementing an Outreach Campaign to create greater awareness and understanding of the policy, particularly in rural areas. Developing the policy implementation strategy, as a matter of priority, is strongly recommended as is preparing plans for and initiating implementation of selected components of the policy (e.g., designing and implementing a professional development program for extension staff).

Given the renewed interest in EAS and the acknowledged need for explicit EAS policies, Liberia’s experience contributes a practical approach to policy development and validation. Liberia’s lessons learned are of potential use to other countries intending to design EAS policies and they can inform policy capacity development efforts in the classroom and elsewhere. Key lessons from the Liberia experience center on Task Force activity, stakeholder input, and policy process phases. The importance of a high-level Task Force of committed experts—well-versed in the social, economic, and political situation of the country, who are given the mandate, time, and resources to focus on the policy process—cannot be over emphasized. Task Force learning, particularly via review of other country policies, facilitates the process and proves a valuable use of Task Force time. Allocating sufficient time and resources to obtain stakeholder input is of high priority to be carefully considered in initial planning. Discussion and understanding of all phases in the process (e.g., development and validation including agenda setting and formulation, adoption, implementation, and evaluation), is instructive for high-level planning purposes, even if the process is to be addressed phase by phase.

References
Educational Comparison: Teacher Preparation
Programs in Finland and the United States

Kristin A. Kovar
University of Missouri
125 Gentry Hall
Columbia, MO 65211
850-685-4930
kristin.kovar@mizzou.edu

Anna L. Ball, University of Missouri

Keywords: Teacher preparation, International comparative education

Introduction
Finland’s education system began attracting attention in the year 2000 when it emerged as the top-scoring nation in the Organization for Economic Co-operation and Development (OECD) on the Program for International Student Assessment (PISA). High levels of educational achievement and attainment have regarded Finland as one of the world’s leading models of educational comparison. In contrast, with an average score of 496 on the 2009 PISA, the United States’ scored considerably less than Finland’s averaged score of 544, allowing Finland to rank first in this assessment (PISA, 2009).

Many attribute Finland’s success to the effect of high quality classroom teachers (Simola, 2005). Understanding the success of Finland’s education through examining their teacher preparation programs may offer design improvements that could be beneficial in building capacity in agricultural education teacher preparation programs in the United States.

Purpose/Research Questions

The purpose of this study was to examine teacher preparation programs in Finland and the United States in order to identify successful approaches to preparing future agriculture teachers. The following research questions were developed to guide the study.

1. What aspects of Finnish teacher preparation programs contribute to the development of effective teachers?
2. What are the similarities and differences between Finnish teacher education programs and teacher preparation programs in the United States?

Methods

The impetus to this study was based on the researcher’s Scandinavian study abroad experience. Advanced searches of Google Scholar and the ERIC database were utilized to examine the literature. Only empirical studies specifically examining the components of teacher education programs in Finland, as well as scholarly articles providing a complete background of the teacher preparation process of Finland were included. Other data sources such as TIMMS, PISA, UNESCO, and Finland’s Ministry of Education and Culture website were employed for a thorough search of resources.

Due to the varied array of teacher preparation programs and educator licensure policies found across the United States, only one state, Missouri, was used for comparison. Interestingly,
Finland and Missouri are similar in population with 5.4 million people (Kaiser, 2005). Data pertaining to teacher preparation programs in Missouri were gathered from the Missouri Department of Elementary and Secondary Education’s website (DESE).

Findings

Research Question One

Structurally, the Finnish teacher education student will study educational theory, content, and subject specific pedagogy, but will also complete a master’s thesis on a topic significant in the field of educational practice (Sahlberg, 2011). It is during the pedagogical studies that future teachers learn the basics of teaching, support of varied learners, and the latest research results and methods (Niemi & Jakku-Sihvonen, 2011).

Pedagogical practice and research-based teacher education emerged as contributing to the development of effective teachers in Finland. Sahlberg describes the Teacher Training Schools where pedagogical practice occurs. Here, future teachers observe lessons by experienced teachers, practice skills observed by supervisory teachers, and deliver independent lessons to different groups of students (2011). The second distinguishing factor of Finnish teacher education programs is the involvement in research-based teacher education. According to Toom et. al. (2010), the purpose is to educate independent and reflective teachers who are capable of using research in their teaching and can be defined as pedagogically proficient thinkers.

Research Question Two

Similarities found between teacher preparation programs in Finland and Missouri included the use of pedagogical practice, academic course requirements, as well as similar pedagogical curriculum. Both Finland and the United States require future teachers to enroll in academic and pedagogical coursework.

Differences identified between teacher preparation programs in Finland and Missouri include a high level of research-based education as seen in Finland that is not a focus in Missouri programs. A further difference is the Master’s degree requirement in Finland, which is not the case in Missouri. The final difference is seen in the structure of licensure.

Recommendations

The data suggest that Finnish teacher preparation programs offer unique attributes in the development of effective teachers, with the most unique being successfully linking theory and practice. Agricultural education teacher preparation programs should consider engaging students in action research. The second step would be allowing students to execute the findings of the research through pedagogical practice.

With a strong link between the quality of the teacher and the success of the student, Finland is doing something right in building the capacity of their teachers. Whether or not the teacher is the only reason for the student success, the design and implementation of Finnish teacher preparation programs have achieved the desired results. Further research is needed regarding the connection between teacher preparation programs and student success.
References
Kaiser, R. G. (2005, August 7). In Finland’s footsteps/we’re so rich and smart, why aren’t we more like them? The Washington Post. pp. B01


**Effectiveness of Extension Program Delivery Methods as Perceived by Central Vietnamese Farmers**

**Hung Gia Hoang**  
Faculty of Extension and Rural Development.  
Hue University of Agriculture and Forestry.  
102 Phung Hung Street, Hue city, Vietnam.  
Tel: 84 54 352 3845  
Fax: 84 54 3524 923  
E-mail: hoanggiahung2003@yahoo.com

**Rama Radhakrishna**  
Department of Agricultural Economics, Sociology and Education  
The Pennsylvania State University, 102, Ferguson Building  
University Park, PA 16802, USA  
Tel: 814-863-7420  
Fax: 814-863-4753  
E-mail: brr100@psu.edu

**Key word:** Effectiveness, Extension Program Delivery Methods, Farmers, Relationships,

**Introduction**  
Extension programs such as agricultural production diversification program and beef cattle production program have been delivered to farmers by using a variety of extension methods in Central Area of Vietnam. A wide range of extension methods have been used such as on-farm demonstration, farmer-to-farmer extension, lecture, workshops, farm and home visits. Diversifying use of extension methods aims at transmitting information to farmers and helps working with them more effectively (Ban, and Hawkins, 1996). Effectiveness of extension methods as perceived by farmers in Vietnamese context, is however, not clearly understood (Truong, Rundquist, et al., 2010). Success of extension programs depends partly upon appropriateness of extension delivery methods used. It can be argued that if we know what extension methods are appropriate to specific farmers, then it possible to deliver extension programs that meet farmers’ needs and also help bring about changes - knowledge, skills, attitudes, and practices of farmers (The World Bank, 2007; Nguyễn, Nguyễn, et al., 2006; Jadalla, Abu, et al., 2011).

**Purpose and Objectives**  
The overall purpose of this study was to determine the effectiveness of extension program delivery methods as perceived by program participants in Central Vietnam. The specific objectives of the study were:  
- Describe the demographic profile of extension program participants;  
- Determine effectiveness of extension methods as perceived by program participants;  
- Determine relationships, if any, between participants’ demographic characteristics and select extension program delivery methods.
Methods and Procedures

Population and Sample

This study used a cross-sectional survey research design. The subject of this study comprised all farmers who participated in the agricultural diversification program (N= 120) conducted in Central Area of Vietnam.

Instrumentation, Data Collection and Analysis

A two-section questionnaire was developed to collect data. The first section consisted of nine extension program delivery methods measured on a five-point Likert scale which ranged from 1= strongly disagree to 5= strongly agree. The second section gathered demographic information such as age, gender, education level, etc. The questionnaire was reviewed by a panel of experts for face and content validity. The questionnaires were self-administered. A total of 80 participants completed the questionnaires (66.67%). Data were analyzed using descriptive and non-parametric tests (De Vaus, 2002).

Findings

Objective One – Demographic profile

Approximately 61% were male and 39% were female. Over 32% of participants were 45-54 years old, followed by 21% (35-44 years), 20% (55-64 years), 15% (65 years and over), and 10% (18-24 years). Most participants reported completing of high school (33.8%), followed by junior high (30%), primary school (22.5%), no school (5%), trade qualification (2.5%), and certificate/diploma (2.5%).

Objectives Two- Effectiveness of extension methods

Participants perceived that the most effective extension methods were: 1) mass media (M=4.46, SD=0.71), 2) farmer-to-farmer extension (M= 4.39, SD=0.73), 3) farmers field school (M=4.12, SD=0.86), 4) training and visit (M=3.95, SD=0.92), 5) service provider for farmers (M=3.79, SD=0.97), and 6) trial and demonstration (M=3.56, SD=0.88). In contrast, somewhat ineffective extension methods were lecture (M=3.13, SD=0.98), followed by visit farmer’s field and farmer visit to extension office (M=3.34, SD=0.91), and field workshops (M=3.44, SD=0.91).

Objective Three- Relationships

A statistically significant relationship existing between extension method of “training and visit” and participants’ age (Chi square=9.05, Phi=0.336, p=<0.05) and gender (Chi square=4.88, Phi=0.246, p=<0.05).
Conclusions and Recommendations

In general, participants perceived that methods such as mass media, farmer-to-farmer extension, farmers field school, training and visit, and service provider, as most effective for delivering information, acquiring knowledge, and skills. Participants, however, perceived that lecture and field workshops as “somewhat not effective” methods to deliver extension programs.

A higher proportion of participants (58.9%) in the age group of 35-54 years “strongly agreed” that training and visit system, as most effective method compared to other age groups. Similarly, male participants (55.4%) “agreed” that training and visit system, as more effective than female participants (44.6%).

Findings of this research should be shared with extension workers, extension educators to identify most appropriate extension methods for delivering extension program in Central Area of Vietnam.

More research should be conducted to know why some extension program delivery methods are not effective so that appropriate delivery methods can be used to improve effectiveness of extension programs.

Demographic characteristics of farmers such as age, gender should be considered when selecting Extension methods to deliver programs.

This study should be replicated in other areas of Vietnam to better understand the appropriateness of delivery methods used. Such an understanding will help to develop a national strategy for delivering Extension programs in Vietnam.

References
The Effects of Human Resource Management and Socio Demographic Characteristics on Performance of Extension Agents In Kwara State Of Nigeria

Festus Annor-Frempong
Department of Agricultural Economics and Extension
School of Agriculture
University of Cape Coast, Cape Coast, Ghana.
Tel: +233244741679
Email: papaannor@yahoo.com

Keywords: human resource management, extension personnel, job performance, capacity building and socio-economic characteristics

Introduction
Rural farmers in Nigeria depend on the agricultural extension personnel employed by Agricultural Development Projects (ADPs) for knowledge, skills and enlightenment to improve on food production. The management of extension personnel to perform their duties effectively is therefore important for improving agricultural production. Management of the extension personnel include the selection, training and rewarding of personnel aimed at achieving the goals of extension organization (Buford, Bedeian, & Lindner, 1995). An effective Human Resource Management (HRM) in extension is critical to the performance of extension personnel (Halim & Ali, 1988; Rivera, 2006). The central objective of HRM policy in extension is to ensure that the service is ran by people whose training, experience, motivation and mental state of mind are positively aligned to the needs and aspirations of the government and the people. There is a growing body of evidence supporting the association between highly committed HRM practices and various measures of organizational performance (Guest, 2011). Employee performance has also been shown to have a significant positive effect on organizational performance (Collis & Montgomery, 1995).

Purpose and Objectives
The study of HRM and performance has been done mostly in the business world in the developed countries. The purpose of the paper is to highlight the case of service organization in a developing country and to assure that an effective capacity building for extension personnel is achieved in Nigeria. The main objective of the study was to determine extent to which HRM process and background of extension personnel contribute to job performance. The specific objectives were to: describe the socio-economic characteristics and human resource (HR) background of extension agents; establish the level of job performance (knowledge and skills) of extension agents; relate the socio-economic characteristics and the HRM process (recruitment, training and reward) to job performance; and finally determine the best predictors of job performance.

Methods and/or Data Sources; or Theoretical/Philosophical Themes
The study used a survey-correlational design. A content-validated and self-administered questionnaire was used to collect data from 70 respondents selected randomly from a population of 120 extension personnel from Kwara State ADP in Nigeria. The Director of ADP rated extension personnel on 24 job performance indicators which were constructed with the personnel and the Director. Means and standard deviation were used to describe the data while Pearson
product moment correlation ($r$) was used to identify the relation between the variables. A multiple regression model was used to predict job performance from the socio-economic characteristics and HRM variables.

**Results, Products, and/or Conclusions**

The analysis of socio-economic characteristics revealed that respondents were mainly designated as extension agents and enumerators (86.8%). Moreover, they have varied experiences with an average of 6 years working experience. The personnel were youthful (mean age is 38 years) with the males outnumbering the females. The salary level of personnel was very low ranging from ₦4000 to ₦5200 per month. Job performance of extension agents was considered to be high (Mean =4.61; s.d. = 0.82 on 6-point scale). Except work specialization and academic level, there was a positive and significant relationship ($r$ ranged from 0.32 to 0.57 and $p$-values < 0.005) between job performance and current position, experience of extension agents, age and average monthly salary.

Job performance related positively and significantly ($r$ ranged from 0.26 to 0.47; and $p$-values < 0.005) with motivational factors (level of salaries, days of sick leave, praises received from supervisors, rate of promotion and physical working condition and self respect). On the other hand, job performance was not significantly ($p$-value > 0.005) related to types of training received in the last two years, job orientation and mentorship programmes. The best predictors of job performance were average monthly salary ($\beta$=0.49, t-value=2.63 and $p$-value = 0.012); annual leave ($\beta$=0.32; t-value =2.74 and p-value = 0.008); conditions of work ($\beta$=0.322, t-value=3.330 and p-value = 0.001).

**Recommendations, Educational Importance, Implications, and/or Application**

The study concludes that extension’s HR is youthful, male dominated with varied working experience. This implies that ADP should invest in training of HR since it stands to benefit agents in the long run. Any capacity building for HR should target female extension agents and improve on salaries of personnel.

Capacity building to enhance job performance should focus on background of extension agents and motivational factors. Specifically, the salary, annual leave and conditions of work should be improved and related to the job of extension personnel. The types of training for extension should be reviewed to contribute directly to the performance of extension personnel.

**References**


Engaging Women through Common Initiative Groups in Cameroon

Mary T. Rodriguez
Graduate Assistant
University of Florida
P.O. Box 110540
Gainesville, FL 32611
832-326-4490
mary.rodriguez@ufl.edu

T. Grady Roberts
University of Florida

Keywords: Gender, food security, Cameroon, agriculture, groups

Introduction

Food security is being threatened all over the world. Women are especially susceptible, particularly in developing countries. Patel (2012) stated “gender is key to food insecurity and malnourishment, because women and girls are disproportionately disempowered through current processes and politics of food’s production, consumption, and distribution” (p. 2). Agriculture is an integral part of Cameroonian family life, acting as a safeguard for the family’s food security, health, and children’s education (Fonchingong, 1999). Women play a vital role in meeting the nutritional and food needs of their families through agricultural production, access to food, and ensuring proper nutrition of family members (Okoli, 2001). Women represent up to 50 percent of the agricultural labor force in Sub-Saharan Africa (SOFA Team & Doss, 2011). Despite their contribution, women are constrained by poverty, illiteracy, lack of access to credit, capital, extension services, lack of land rights and gender discrimination (Bryson, 1981).

Purpose and Objectives

The purpose of this presentation is to illustrate one practitioner’s experience working with women’s common initiative groups to address food security. The objectives of this presentation are to examine:

- Methods to identifying group needs
- Work plan creation
- Evaluating outcomes
- Lessons learned and transferability to other projects

Methods

The data for this presentation came from the author’s experiences as an agro-forestry Peace Corps volunteer serving the North Region of Cameroon. It is presented as a case study. Merriam (1998) described a case study as an in depth description of a phenomenon within its real life context. Data were collected through participant observation. Upon identifying a group of women, the lead author designed a training program to address the needs of the group. There were 33 women in this group with whom the lead author worked for seven months. The women were from one village in the North region. The women were of two main ethnic groups: Guiziga and Mafa. The ages of the women varied from approximately 20 to 40, however exact ages were
difficult to assess due to lack of records. Specific aspects of this project are outlined in the logic model below (Figure 1).

**Conclusions**

Women learn many valuable skills working as a common initiative group. Skills developed though the trainings were: group work, communication skills, time management skills, leadership skills, and long term planning skills. Working in groups, women are able to increase their opportunities for income generation, have access to potential funding through the government, and receive recognition within their communities.

**Implications**

Empowering women to work in groups and providing them with skills for success can address many development problems such as food insecurity. Women’s roles in food structures within communities can be strengthened through leadership training and lowered gender disparities. Through capacity building, women will be further equipped to meet the agricultural needs of their families thus enabling nutritional security and access to food (Okoli, 2001). Future volunteers could use this training to further rural women’s capacity.
References


Evaluating Community Impacts of an Extension Program Targeting Limited-Resource Farmers in Dominican Republic
“A Success Story”

Cesar R. Asuaje
University of Florida / Institute of Food and Agricultural Sciences
E-Mail: crasuaje@ufl.edu

Miguel Saviroff
Pennsylvania State University

Keywords: Woman in Agriculture, Rural Development, Greenhouses

Introduction
Evaluating extension programs is a challenge for many extension professionals. Program indicators that are not clearly stated can make it difficult to evaluate qualitative or quantitative program impacts. Evaluating international programs can be even more difficult due to time constraints, language barriers, and lack of data. For international efforts, it is important to develop work plan strategies before traveling to the project country. Good preparation will help overcome local obstacles such as vague extension plans of work or insufficient data. Our survey study will present the insights, methodology, and results of an international program evaluation conducted on a project targeting limited-resource farmers in San José de Ocoa, Dominican Republic. The study addresses a rural community development project based on agricultural diversification, and focuses on the impact of establishing greenhouses as an alternative technology to improve family incomes for limited-resource farmers.

Purpose and Objectives
The purpose of this survey study is to evaluate the economic impact of a greenhouse project on family incomes of limited-resource farmers. The survey will also identify extension program success story indicators by analyzing how the community is responding to the extension program. The objectives of the survey study include: to evaluate the farming systems of limited-resource farmers involved in greenhouse production; to assess the family income of project beneficiaries; to measure the additional income provided by greenhouse production enterprises; to evaluate the financial capacity and loan management of project beneficiaries; to evaluate agriculture knowledge gained as a result of technical assistance provided by local extension agents; to evaluate the level of satisfaction among project beneficiaries with respect to the local extension service as well as technical assistance provided by international experts invited by this extension program.

Theoretical Framework and Methods
The greenhouse project of San José de Ocoa is based on the assumption that agricultural diversification will improve the family income of project beneficiaries. The establishment of greenhouses is part of the project strategy for production diversification and increased farm productivity. A farm economic analysis should demonstrate if the proposed greenhouse production is a feasible approach to sustain a long term economic impact on small farmers in San Jose de Ocoa. The survey study was designed to ascertain if greenhouse production enterprises
are producing additional net income to participating families. A questionnaire was conducted on thirty \((n = 30)\) small farmers located in nine rural areas in the valley of San José de Ocoa in Dominican Republic, and secondary data were acquired through conference calls, interviews with extension agents and project managers.

**Results and Conclusions**

Three different farming system “groups” were identified in the study based on their total available agricultural land, production yields, and gross income. All three farming system groups typically cultivate vegetables, beans, and maize in open field plots. Greenhouse crop production is primarily focused on green peppers (capsicum annuum). Farmers in group 3 and 2 had higher production yields, more land in production and better family income. Group 1 farmers were found in extreme poverty levels and with limited resources. Results of the survey indicate that all three farming system groups are earning additional income from their greenhouse operation, but with some limitations within group 1 farmers. For group 1 farmers, the study found that by reducing the number of ownership members per greenhouse and increasing the length of the loan will improve their cash flow and financial capacity. Other survey findings demonstrate that farmers improved their financial stability by paying off their agricultural loan for their greenhouses. The survey study found that of 43 agricultural loans 37% (16) were paid by woman farmers. This leadership development and good farm management skills have improved the economic and farming status of woman in this rural development project.

**Recommendations and Implications**

Developing strong partnerships with local institutions helps to successfully overcome time constraints and lack of data issues. It is important to mobilize basic data collection (production yields, equipment inventories, economic cost/return data, etc) prior to the arrival of international extension collaborators. These preliminary efforts will provide the framework to design the work strategies required to achieve successful evaluation results. Securing financial resources is an increasingly challenging prospect, thus evaluation reports should emphasize to potential donors the economic impacts enjoyed by project beneficiaries and their surrounding community. Furthermore, evaluation reports should demonstrate that recommended technologies are producing both short-term and long-term economic benefits to the target clientele. Finally, extension programs that focus on marketing dynamics are essential in order to secure adequate prices, realize profits, and ensure project sustainability.

**References**


Exploring Cultural Adaptation of College of Agricultural and Life Sciences Students on a Short-Term Study Abroad Program

Nathan W. Conner
University of Florida

310 Rolfs Hall
PO Box 110540
Gainesville, FL 32611-0540
352-273-2614 (phone)
352-392-9585 (fax)
nathan.conner@ufl.edu

T. Grady Roberts, University of Florida

Keywords: Cultural Adaptation, Short-Term Study Abroad, College of Agricultural and Life Sciences

Introduction

The Longview foundation (2008) posited that higher education must strive to expose students to globalized curricula in an effort to develop people to effectively operate in a global society. One of the most commonly used methods of globalizing undergraduate curriculum has been through the use of study abroad programs (Zhai & Scheer, 2002). Students participating in agricultural study abroad programs experience culture throughout the duration of their program (Bruening & Frick, 2004). In 2009, the National Research Council charged agricultural study abroad facilitators to incorporate cultural learning into their programs. Existing models of cultural adaptation do not adequately describe the cultural adaptation process for students studying applied science concepts on short-term study abroad programs.

Purpose and Objectives

The purpose of this study was to explore how College of Agricultural and Life Sciences students at the University of Florida reacted to the culture during a short-term study abroad program.

Methods

Seventeen students from the College of Agricultural and Life Sciences at the University of Florida participated in a seven day study abroad program in Paris, France. A qualitative case study methodology was used. Data were collected through the use of pre-travel questions, post-experience questions, reflective journaling, photographs with captions, and participant observation. All data were transcribed verbatim and subjected to open coding, axial coding, and selective coding (Corbin & Strauss, 1990). Trustworthiness was ensured through prolonged engagement, persistent observation, triangulation, the use of referential adequacy materials, member checking, thick description, and the use of a methodological journal (Dooley, 2007).
Results

Upon analysis, eight stages and 34 sub-stages of cultural adaptation emerged and are presented in the following figure.

<table>
<thead>
<tr>
<th>Initial Feelings</th>
<th>Cultural Uncertainty</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Initial concerns</td>
<td>• Cultural comparisons</td>
</tr>
<tr>
<td>• Initial excitement</td>
<td>• Focus on life in United States</td>
</tr>
<tr>
<td>• Anticipation of cultural acceptance and integration</td>
<td>• Cultural surprises</td>
</tr>
<tr>
<td>• Need for cultural growth</td>
<td>• Cultural confusion</td>
</tr>
<tr>
<td>• Need for personal growth</td>
<td>• Lack of cultural understanding</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cultural Negativity</th>
<th>Cultural Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Frustration</td>
<td>• Admiration for culture</td>
</tr>
<tr>
<td>• Cultural avoidance</td>
<td>• Cultural acceptance</td>
</tr>
<tr>
<td>• Negative experiences</td>
<td>• Cultural respect</td>
</tr>
<tr>
<td>• Regretting to attend program</td>
<td>• Cultural integration</td>
</tr>
<tr>
<td></td>
<td>• Positive experiences</td>
</tr>
<tr>
<td></td>
<td>• Overcoming language barriers</td>
</tr>
<tr>
<td></td>
<td>• Increased interest in future experiences abroad</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cultural Barriers</th>
<th>Feelings Throughout the Study Abroad Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Language barriers</td>
<td>• Excitement during the program</td>
</tr>
<tr>
<td>• Negative cultural views</td>
<td>• Negative attitude towards the United States</td>
</tr>
<tr>
<td></td>
<td>• Homesickness</td>
</tr>
<tr>
<td></td>
<td>• Feeling of safety</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group Dynamics</th>
<th>Academic and Career Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Group issues</td>
<td>• Academic focus</td>
</tr>
<tr>
<td>• Communication issues</td>
<td>• Professional growth</td>
</tr>
<tr>
<td></td>
<td>• Classroom issues</td>
</tr>
</tbody>
</table>

Figure 1. Stages and sub-stages of cultural adaptation for college of agricultural and life Sciences Students on a short-term study abroad program

A sample of the findings is presented below. Participants went into the study abroad program with preconceived feelings and cultural preconceptions. Many of the participants believed the people in Paris were going to be rude to Americans (1; 2), yet other participants experienced excitement and focused on their need to learn about Parisian culture (3; 5). Many participants experienced cultural uncertainty and spent time comparing Paris to the United States. Participant 4 expressed frustration due to businesses being closed on Sunday. She felt that business hours should mirror business hours in the United States. Participants continued to encounter frustrating moments which led to the avoidance of cultural interactions. However, some students overcame cultural barriers by attempting to speak French. Participant 6 found that...
many Parisians were willing to speak English if Americans attempted to speak French. In addition, participants focused on academic and professional development throughout the program and were affected by the dynamics of the study abroad group.

**Recommendations**

Participants experienced the various stages of cultural adaptation throughout the study abroad experience (Bruening & Frick, 2004) through a non-linear fashion and did not always achieve cultural acceptance or integration. Cultural barriers prevented some participants from experiencing all stages of cultural adaptation. Facilitators should use the suggested stages as a guide to inform students about how they may experience their study abroad program. Cultural information and opportunity for discussion prior to the experience should be incorporated into the program. This will help to alleviate any anxiety and concerns that the students may have prior to the program and to debunk any cultural misconceptions. In addition, the facilitator should continue to guide the students through cultural experiences during the program. Facilitator initiated discussion will provide time for students to reflect on their experiences and allow for cultural learning to take place. It is the responsibility of the facilitator to provide cultural experiences and to help guide the students through the experiences in a way that provides the opportunity to learn through cultural interactions.

**References**


Extension Solutions for Global Childhood Obesity

Barbara W. Linder
Family and Consumer Science/Agriculture/4-H Extension Agent
North Carolina State University
barbara_linder@ncsu.edu
112 W. Walker Ave. Asheboro, NC 27203
336-318-6000
336-318-6011 (fax)

Robert Strong
Texas A&M University

Keywords: global childhood obesity, extension programs, behavior change, schools

Introduction
Association of International Agricultural and Extension Education members have studied extension’s role in enhancing food security in a variety of countries (Acker & Gasperini, 2008; Swanson, 2006; Tobin, Bruening, Brennan, & Olson, 2012). Childhood obesity has become an increasing issue of importance in global societies. More than 42 million children under age five across the globe are suffering from obesity, with nearly 35 million of these living in developing countries (World Health Organization, [WHO] 2010). Childhood obesity affects both developed and developing countries without prejudice. In the United States approximately 17% of youth ages six to 17 are considered obese (Arnold & Schreiber, 2012). In developing regions, North Africa had the highest prevalence in terms of percentage of obese children, yet Southeast Asia has the highest number of young children facing this chronic problem (Hendrick, 2010). The study presented here sought to examine an extension approach to increase knowledge and induce behavior change on issues that influence childhood obesity.

Objectives
Food scarcity and food insecurity often makes access to nutrient rich foods challenging for children in developing countries (World Health Organization [WHO], 2009). Food scarcity and insecurity has resulted in part due to population growth, diminishing access to farmlands, adverse policies, and political unrest (J. Jayaratne, personal communication, August 29, 2012). The primary objective of a school based child nutrition program is to implement in politically sensitive and policy appropriate ways to address nutritional needs of children and their parents. From this information, the children can inform their parents of the information they received, thus creating behavioral change in their diet and the amount of physical in which children engage (North Carolina State University, 2012).

Theoretical Themes
Unhealthy environmental factors make healthy food choices increasingly difficult for children to make. The worldwide increase of technology has been a significant culprit in the obesity epidemic. Computers and electronic devices have not only replaced physical activity, but are also the sources of advertisements for food targeted to youth. Children are more sedentary and less physically active as life becomes more urbanized and automated. An increase
in calorie consumption and the modern food industry, offering pre-packaged, convenience and fast foods, have offset a child’s interest in eating nutrient rich foods (Centers for Disease Control and Prevention [CDC], 2012).

Application

In-school special interest nutritional programs are an important way in which children can be exposed to healthy eating habits and the significance of a healthy diet. North Carolina State University’s Steps to Health program provides Supplemental Nutrition Assistance Program (SNAP) education to preschoolers, kindergarteners, 2nd grade students, 3rd grade students, adults, Latino families, and older adults eligible for the food assistance program. An elementary school that has 50% or greater of their population receiving free or reduced lunch qualifies for the program. Extension agents build partnerships with qualified schools that enroll in the program. “Color Me Healthy” is the program for preschool and kindergarten aged children (4 and 5 years of age), and is also available as a “train the trainer” version for childcare providers.

The in-school programs adhere to the North Carolina Department of Education Essential Standards, and consist of 9, 45-minute sessions. Sessions include an educational activity and a taste test. The programs were delivered beginning each January through the end of the school year by county extension agents throughout North Carolina. The Steps to Health SNAP-Ed program is a partnership funded by the United States Department of Agriculture and the North Carolina Department of Health and Human Services. Evaluation results are tabulated each fall based on pre and post surveys presenting county and state behavior and knowledge change (North Carolina State University [NCSU], 2012).

Conclusions

Childhood obesity leads to adult obesity, diseases, and issues such as heart disease, stroke, high cholesterol, diabetes, and high blood pressure. Musculoskeletal disorders such as osteoarthritis and certain types of cancer can also result from early onset obesity (World Health Organization [WHO], 2010). Preventative methods provided through extension education could curtail this issue from expanding further. Trained extension professionals could provide standardized research based programs, responsive to local needs, to schools globally in partnership with their formal K-12 educational systems. Association of International Agricultural and Extension Education members could employ structured educational programs through extension systems and research centers similar to the in-school nutritional education programs developed and put into practice by North Carolina State University’s Cooperative Extension Service in countries where child nutritional guidance is needed. Implementation of these programs would be instrumental in the global fight against childhood obesity, while offering knowledge that would enable countries to achieve food security.

References


Extension Agents' Perception of the Operations of Farmers' Groups in Trinidad: Implications for Agricultural Development

Marcus N.A. Ramdwar
University of Trinidad and Tobago
Centre for Biosciences, Agriculture and Food Technology
Caroni North Bank Road, Centeno.
Trinidad West Indies.
Email marcusramdwar@yahoo.com
Tel: 1-868-784-8599

Puran Bridgemohan
The University of Trinidad and Tobago, Trinidad

Wayne G. Ganpat
The University of the West Indies, Trinidad

Keywords: extension agents, farmers, agricultural development

Introduction
Farmers’ groups in Trinidad are steadily increasing within various agricultural communities in rural Trinidad. A long tradition in extension is group promotion and group organization, and FAO’s commitment to these purposes is well known (Rivera et al., 2001). The formation of these groups has an impact on the agricultural extension agents’ approach to performing their duties. Some argue that extension can most effectively carry out its mandate, not by working directly with individual farmers but by working indirectly with and through farmers’ groups or organizations (Byrnes, 2001).

Currently, there is a high ratio of farmers to extension officers in Trinidad which computes to an average of 568 farmers to one extension officer in an environment where there exist limited support facilities with which to conduct extension work (Kissonsingh, 2005). Increased efforts to organize farmers into groups has been demanded by policy makers, however increased demands for extension agent’s service in this current scenario would likely predispose them to stress and frustration (Kutilek, Conklin & Gunderson, 2002). How extension agents’ view working with existing farmer groups has not been explored in Trinidad and needs to be understood as it has implications for their technical capacity building and service delivery approach.

Purpose/Objective
The purpose of the study was to describe extensions agent’s perception of farmers’ groups and to identify the issues related to their satisfaction with the operations of farmers’ groups in Trinidad.

Methods
This study used survey methodology to collect the data. The instrument consisted of twenty-two (22) closed ended questions using a five (5) point agreement scale. The population was agricultural extension agents in public and private agricultural institutions (N= 132). The
instrument was delivered to various agricultural institutions to participants in an attempt to obtain a census of the population. The Ministry of Food Production in Trinidad and Tobago approved this project. Ultimately, 123 extensions agents responded, representing a response rate of 93%. Data were analyzed using appropriate descriptive statistics.

Results and Conclusion

The majority (91.8%) of the respondents indicated low to moderate agreement with “Satisfaction of the operations of farmers’ groups in Trinidad”. Some 78.7% of the respondents indicated moderate to strong agreement that “it was difficult to work with farmers’ groups”. The majority of the respondents had moderate to strong agreement with the concern related to “farmers’ groups being used as political tools” (94.3%), the competition that existed within groups (94.2%), poor leadership style (96.7%), the dictatorial style of group leaders (84.6%) and the threats to land security (79.7%). There was low to moderate agreement among the respondents that government did not support and encourage farmers’ groups in Trinidad (76.5%) and similar level of agreement for the perception that farmer’s groups only existed for “existence sake” (86.2%). Data showed that extension agents had the perception that farmers’ groups were purposefully functional rather than merely existing. The issues which were significantly associated (p ≤ 0.05 level) with satisfaction with the operations of farmers’ groups were (i) the perceived threats to farmers’ land security and (ii) the need for monitoring the operations of farmers’ groups. Extension staff has serious concerns with the operations of farmers groups in Trinidad. It appears that farmers’ groups are also in need of some development intervention by authorities.

Recommendations and Implications

Extension staff will never be able to meet farmers’ educational needs given current ratio of staff to farmers and there must be increased efforts in using the group approach. The perceptions identified in this study point to the need for training of staff in several areas well as capacity development to treat with the obstacles facing extension agents with respect to engaging farmers’ groups. The extension agent’s perception of satisfaction as it relates to working with farmers’ groups has implications for the sustainable development of farmers’ groups. Training farmers in the areas of team building, monitoring and evaluation, democratic principles among others can equip them with the necessary skills to effectively create more sustainable farmers’ groups. The cooperative department of the Government which has oversight of groups should be engaged by the Extension department and a holistic plan for the development of farmers’ groups should be developed and implemented.

References


Factors Associated with Integration of Global Agricultural Issues in 4-H Programs

Sara D. Hurst
University of Florida
PO Box 110540
Gainesville, FL 32611
352-273-2093
sdhurst@ufl.edu

T. Grady Roberts
University of Florida

Keywords: 4-H, international agriculture issues, globalization of agriculture

Introduction
Educators have been discussing global education for over 40 years. As the globalization of agriculture continues to increase, employers have been demanding employees with global perspectives (Acker, 1999). In order to remain competitive in a global marketplace, agriculture students, future employees, must understand the international system of politics, institutions, and economies, and cultures other than their own (Schuh, 1989). The integration of international perspectives in a 4-H program can increase students’ understanding and cultural awareness, and help them comprehend the magnitude of these global agricultural problems (Shoulders & Myers, 2010). Future agriculture workers may often be reached through youth agriculture organizations, such as 4-H.

In 2010, 4-H had a total of 6,330,612 participants from kindergarten to post-high school, (U.S. Department of Agriculture (USDA), 2010). With such high participation, 4-H has the ability to educate thousands of youths on global agricultural issues.

Agricultural education has a responsibility to prepare students for employment in the globally aware workforce. The first step to preparing these students has been determining factors associated with extent of internationalization of educational activities. This study assessed the knowledge and attitudes of 4-H agents towards international agriculture issues in the hopes that this information could later be used to increase the amount of internationalized instruction that students receive. Additionally, the agent was asked to indicate how often they incorporated international agricultural issues into their educational activities, in order to assess the current level of integration.

Purpose and Objectives
The purpose of this study was to ascertain the current level of international agricultural issues integration and the attitudes and beliefs held by 4-H agents in the U.S. regarding the integration of international perspectives into their educational activities. The objectives of this study were to determine the:

• Extent of internationalization nonformal agricultural programs;
• Perceptions 4-H agents towards international agricultural issues;
• Knowledge of 4-H agents of international agriculture issues;
• Relationship between agents perceptions and selected demographics;
• Relationship between extent of integration of international agricultural issues and selected demographics;
• Relationship between extent of integration of international agricultural concepts and agents’ knowledge of international agricultural issues; and
• Relationship between extent of integration of international agricultural concepts and educators’ perceptions.

Methods
The variables of interest in this study included agent knowledge, attitudes, and beliefs regarding global agricultural issues. The research method was a non-experimental quantitative design using descriptive survey methodology. The survey was modified from Wingenbach et al.’s (2003) International Agricultural Awareness and Understanding Survey, reviewed by a panel of experts, and pilot tested. Section one of the survey used 20 multiple choice questions to assess agent knowledge about global agricultural issues. Section two was made up of 36 six-point Likert scale items designed to measure attitudes about global agricultural issues. Section three used 20 six-point Likert scale items to assess beliefs about global agricultural issues. Section four collected demographic data about the agent. The instrument was distributed through the website Qualtrics. To collect data, 1000 4-H agents were randomly sampled from the 2769 agents in the NAE4-HA database and contacted using the email they had on file. A prenotice email was sent from the researcher’s personal email address, in order to alert agents that future emails would be sent by Qualtrics.

Results
Scores for participants who attempted all questions on the knowledge section ranged from a high score of 15 of 20 questions correct, to a low of one question correct. The average score for section one was 43%, or 8.6 questions correct. The average score overall for attitudes towards global agricultural issues, measured in section two, on a scale of one (strongly disagree) to six (strongly agree), was 5.11, with a standard deviation of 0.434. For section three, which measured agent beliefs regarding global agricultural issues on a scale of one (strongly disagree) to six (strongly agree), the average was 4.75, with a standard deviation of 0.495. The Cronbach’s alpha for section two was 0.926, and 0.834 for section three.

Implications
Knowledge of international issues knowledge has been found to increase feelings of relevance, and personal relevance increased the motivation to “expand knowledge and increase participation” (Navarro, p. 40, 2005). Despite the low average knowledge scores for 4-H agents, they had positive attitudes and beliefs regarding global agricultural issues. However, qualitative data asking how often agents integrate global issues into their work with youth demonstrated the need for increased agent knowledge and availability of curricula. In order to prepare youth in 4-H for careers in agriculture, more must be done to educate agents an assist them with finding appropriate resources.

References


Factors Influencing the Attitude of High School Agricultural Science Students Towards Agricultural Education and Training, the Case of KwaZulu-Natal Province, South Africa

Tsion Tesfaye Kidane  
Postgraduate Student at Agricultural Extension and Rural Resource Management  
University of KwaZulu-Natal  
P/B X01, Scottsville, Pietermaritzburg, South Africa  
South Africa  
Email: 211546496@stu.ukzn.ac.za

Steven Worth  
Senior Lecturer Agricultural Extension and Rural Resource Management  
University of KwaZulu-Natal  
P/B X01, Scottsville, Pietermaritzburg, South Africa  
South Africa  
Email: worths@ukzn.ac.za

Introduction  
Agricultural Education and Training (AET) plays a major role in agricultural development by producing an efficient, skilled workforce that can strengthen primary production, agro-processing, research and policy-making processes (Department of Agriculture, 2005). Effective implementation of AET at high school level, therefore, will contribute significantly to building the future human resources required in the agricultural and related development sectors (Vandenbosch, 2006). In South Africa, agriculture as a high school subject has one of the highest failure rates, and declining numbers are registering to study agriculture at tertiary level (Naido, 2011). Among the many potential causes of this, one contributing factor is that there is insufficient information on the perceptions of current pupils in the South African high school system about their agricultural education.

Purpose and Objectives  
This study investigated what factors influence the attitude of high school students towards AET. More specifically, the study sought to determine whether the identified factors would have a positive or negative effect on student attitudes. Knowing and understanding what influences student perspectives regarding AET would assist AET planners and educators develop and deliver AET programs that improve the image of agriculture as a career and encourage higher registration numbers at tertiary level.

Methods and Data Sources  
To isolate those parameters impacting student attitudes towards AET offered by South Africa’s high school sector, the research was organized in nested concurrent mixed sampling designs. The study area was KwaZulu-Natal, one of South Africa’s nine provinces. Four rural, four urban, and two dedicated agricultural schools were purposively selected (Johnson & Christensen, 2012). The sample population was identified using probability sampling. The sample population was 375 pupils from the selected high schools distributed equally across the selected schools. A survey was conducted using a pre-tested, structured interview schedule and questionnaires with both structured and unstructured questions. The collected data was coded,
described and interpreted for analysis using descriptive statistics and the Tobit model. Tobit was employed to estimate linear relationships between variables. For dependant variables the relevancy test was conducted using Cronbach's alpha. The reliability coefficient result was found to be 0.8. Relevancy coefficients of the independent variables were selected based on relevancy determined through a panel of experts.

Results

The results showed that family size, student racial background, and discussion with other people about AET had a significant and positive (P ≤ 0.01) effect on students’ attitudes towards AET. The student family access to farming land had a significant and positive (P ≤ 0.1) effect on students’ attitudes towards AET.

Conversely, the absence of discussion about agriculture with other informants and absence of family access to farming land both had a significant and negative (P ≤ 0.01) effect on the attitude of students towards AET. Unexpectedly, having a mother with high school education also had a significant and negative (P ≤ 0.05) effect on the attitude of students towards AET. Also, students’ family monthly income had a significant and negative (P ≤ 0.01) effect on the attitude of students towards AET.

Recommendations and Educational Implications

The findings suggest that the various bodies responsible for the governance of AET should create community and student awareness of agriculture and its importance using different means. This will support creating community awareness of the importance of AET and its job prospects considered in both the local and global context. It is also recommended that responsible parties should ensure access to farming land for all to develop the interest of school pupils in agriculture. Early detection of factors that could influence the success of the AET will help the agricultural training system to function effectively and this would enable the system to produce trained manpower at different levels and functional requirements.

References


From Output-based to Process-based Monitoring of Agricultural Extension Project: Lessons from Bangladesh

Ataharul Huq Chowdhury
School of Environmental Design and Rural Development
Ontario Agricultural College
University of Guelph
50 Stone Road East
Guelph, Ontario, Canada
N1G 2W1
tel. 519-824-4120 x56785
chowdhu@uoguelph.ca

Helen Hambly Odame
University of Guelph

Keywords: Monitoring, Extension System, Innovation, Project, Bangladesh

Introduction

In the 21st century, the rapidly changing agricultural development milieu is confronting numerous challenges associated with social, economic and environmental performance, as well as growing concerns about collaborative learning and knowledge management processes. The classical concept of agricultural innovation as a process of diffusion or getting access to new ideas and tangible products is changing. The classic concept of innovation does not suffice to interpret extant agricultural development contexts since the drivers, conditions and processes of development are dependent on heterogeneous actors operating across different scales, rules, perceptions, identities and social relationships that govern their interdependencies as well as unintended and unforeseen interactions (Hall, 2006; Pant & Hambly Odame, 2006; Leeuwis & Aarts, 2011). Agricultural innovation is increasingly a dynamic, multi-stakeholder approach that summons ideas, and resources from both public and private domains, and engages formal and informal institutions and knowledge circulation processes. The nonlinearity of innovation in today’s world places specific demands on monitoring arrangements that go beyond product or output tracking towards the analysis of organizational networks, performance and dynamic and unexpected outcomes that act as inputs for adapting an intervention within a specific context (A. Hall, Dorai, & Kammili, 2012). Many low-income countries have long been attempting agricultural reform initiatives that allow reflexive and learning-oriented change processes that support both technical and institutional innovation. Yet, changes to agricultural extension services have been difficult, especially for public sector organizations, which are often struggling to retain any existing competencies while navigating the bigger structural shifts occurring within the innovation system that often bring new players and rules to the field of extension (Sulaiman & Hall, 2005; Spielman, Ekboir, Davis, & Ochieng, 2008).

Bangladesh has a strong public service extension system that is built on its legacy of the Training & Visit (T&V) System. Several reforms initiatives were tried out in 1990s to transform the roles of public-sector extension organization in the new landscape of interactive agricultural development. This implicates for the public extension organization such as, the Department of Agricultural Extension (DAE) which is responsible for implementing the crop extension services in Bangladesh. DAE is challenged with monitoring how effectively its actions provoke capacity
development including networking among relevant stakeholders and negotiating changes to established roles within the extension. Scholars are critical about the capacity of public extension organization in reinventing their roles in the new landscape of agricultural innovation (Islam, Gray, Reid, Kelly, & Kemp, 2011).

**Purpose/Objective**

The paper intends to analyze how the public sector extension organization shifts its roles in monitoring extension project towards facilitating technical and institutional innovations.

**Methods**

Using a case study approach, and mixed-methods (key informant interview, focus group discussion, participant observations and secondary sources) the data were collected from different stakeholders (project partners, farmer group members, nursery owners, input dealers, and commission agents) of the North-west Crop Diversification Project (NCDP) in Bangladesh. The DAE implemented the project between 2001 and 2008 with partnership of several Non Government Organizations (NGOs) and public-sector agricultural research and development organizations. The field research was conducted between August and December, 2006 in Bogra – a north-western district located about 220 km away from the capital Dhaka.

**Results**

The results indicate that the public extension organization focused on tracking tangible impacts. There was less attention, motivation and incentives for the front line of extension agents and project partners to learn how to identify and make necessary adaptations to institutional arrangements or processes. There was rigidity and reluctance to admit mistakes and confront reasons for failures. The project management emphasized generic impacts and considered the failures as ‘exceptions’. The monitoring system was best characterized as a paternalistic process which allowed little scope for joint learning and reflection. There is scant evidence that management facilitated relation-dynamics that would account for innovation in terms of improved human/institutional practices (both clients and extension agents) and technological changes.

**Recommendations/Implications**

The study implies that the intention to learn is shaped by context factors and it is difficult to ensure learning in a project context that accentuates anything except outputs. The paper urges for an evolutionary process of capacity development for implementing learning-based performance management approaches and pro-appreciative inquiry rationale for consideration by extension practitioners (Ngomane, 2010) in order to make a shift from output-based to process-oriented monitoring approaches in a project context.

**References**


Future IPM Trends in Trinidad and Tobago: A Qualitative Study of Farmers’ Perspectives

J. Thomas Wynn
Department of Agricultural Leadership, Education, and Communications
Texas A&M University
2116 TAMU
College Station, TX. 77843
Phone: 979-845-1139

Ricky H. Coppedge
Robert Strong
Texas A&M University

Keywords: diffusion of innovations, integrated pest management, small scale farmers’ perceptions

Introduction
Developing countries are sensitive to changes in agriculture as the historic food import/export practices become less reliable (Fritschel, 2003; Swanson, 2006) and jeopardize food security. One approach to solving the problem of food security has been utilizing technology to enhance sustainable production practices (Erbaugh, Donnermeyer, & Kyamanywa, 2002). A technology that can promote improved sustainable agriculture is Integrated Pest Management (IPM). Erbaugh, Kibwika, and Donnermeyer (2007) suggested that farmers’ perceptions of IPM practices should be routinely studied in order to better understand educational and training needs for farmers.

Theoretical Framework
Rogers (2003) proposed a diffusion of innovations framework that outlines a process through which concepts are disseminated over time to members of a social system. Within this framework innovations are evaluated based on the innovation’s, the communication channels used, the time elapsed since the innovation’s introduction; and the social setting in which the innovation is being diffused (Rogers, 2003). Rogers (2003) suggested that opinion leadership played an important role in social settings. Rogers’ framework is useful in comparing the costs and benefits of adoption versus non-adoption and thus the overall likelihood of adoption (Chigona & Licker, 2008). Regarding technology transfer in Trinidad and Tobago, Rogers’ framework provided a context within which IPM adoption could be evaluated. IPM adoption is defined as a decision to utilize an IPM practices (Rogers, 2003).

Purpose and Objectives
The purpose of this study was to evaluate the adoption of IPM practices by farmers in Trinidad and Tobago. Specifically, the objectives of this study were to:
1. Identify farmers who were practicing IPM;
2. Describe IPM practices used by farmers at the production level; and
3. Identify farmers’ perceptions of future trends in IPM.
Methods

A qualitative research design method was used for this study. The study consisted of nineteen farmers \((N = 19)\) from Trinidad and Tobago. Farmers were selected using a purposive sampling technique parallel with the study’s objectives. The sample was selected based on recommendations from local professionals. A semi-structured interview method was employed in this study. Interviews were conducted in the spring of 2012, at each individual’s farm, and lasted approximately thirty minutes each. Data was recorded using researcher field notes and verified with respondents using member checks and triangulation.

Results

Farmers’ in this study were found to use economic viability and progressive ideology as motivators for adopting IPM, which were the dominant constructs that emerged from the first objective of the study. Economics and progressivism suggested that farmers were concerned about profits and also had a desire to improve farm productivity using new ideas. Farmers’ use of mixed control methods, pest management practices, and tradition were the themes produced from the study’s second objective. By using traditional methods of control in conjunction with new techniques farmers were able to maximize pest control while maintaining their cultural practices. A holistic approach to crop production and economic influences were the topics generated from the third objective. Holistic attitudes demonstrated farmers’ desire to preserve and improve the land while farmer emphasis on economics underscored a need to remain profitable.

Conclusions

The data indicated that farmers in Trinidad and Tobago are conscious about preserving and improving farmland in the community while remaining economically productive. Pest control has traditionally been difficult and as a result farmers have begun adopting newer techniques to minimize pest damage. Farmers’ perceptions indicated that chemical control was less desirable due to consumer needs. Consequently progressive farmers have an increased adoption rate of IPM. The data suggests that opinion leaders play an important role in IPM adoption within Trinidad and Tobago as existing communication avenues are considered unreliable by farmers.

Recommendations and Implications

This study built upon the recommendations of Erbaugh et al. (2007) to further study farmer perception of IPM. Farmers’ reliance on economics and progressivism in this study expanded Rogers’ (2003) findings regarding the characteristics of an innovation, implying that a strong relative advantage can leverage diffusion. The data also supported the findings of Rogers (2003) and Chigona and Licker (2008) that opinion leadership represents the primary dissemination function within a social setting.

Diffusion practitioners are recommended to develop a structured educational system to provide continuity within the field. Hybrid crop development is also recommended for practitioners to improve effectiveness. A standardized accountability system to preserve a holistic approach may enhance the adoption rate of IPM.

Future research in this area should focus on communication barriers between farmers and existing information sources to identify effective information distribution channels. Research should also seek to quantify longer term impacts of IPM in Trinidad and Tobago.
References


Globalizing Curriculum from the Perspective of Secondary Educators

Kristina G. Ricketts
713 Garrigus Building
Community & Leadership Development
University of Kentucky
Lexington, KY 40546
k.ricketts@uky.edu
Ph: 859.257.3767
Fax: 859.257.1164

John Hill
Graduate Assistant
University of Kentucky

Keiko Tanaka (田中敬子)
University of Kentucky

Carol D. Hanley
University of Kentucky

Keywords: Faculty development, Internationalization, Globalizing education, Qualitative

Introduction

It has long been said that today’s college graduates need to be prepared to work in an increasingly global society (Bruening & Shao, 2005; Irani, Place & Friedel, 2006; NASULGC, 2004; Snyder, Lamm, Brendemuhl, Irani, Roberts, Rodriquez, & Navarro, 2011). However, it is just as salient that today’s high school students also have a global perspective. Exposing today’s students to global issues at the secondary level will assist in providing fundamental knowledge necessary to excel in both college and future careers. One primary way for high school students to begin developing a global perspective is through exposure in formal and non-formal situations.

Educators are instrumental in the internationalization of their own curriculum. While there is a significant amount of research concerning globalizing courses in higher education, there is limited research similarly regarding secondary teachers. Still, it is useful to consider the influences on educators within higher education. Bull (1996) found that faculty members who participated in international travel integrated more internationalization into their courses. It has also been suggested that faculty experience abroad will enrich their cultural sensitivity and understanding (Fung & Filippo, 2002; Gouldthorpe, Harder, Stedman & Roberts, 2012). Clearly, faculty participation in international educational experiences has significant potential for both faculty development as well as for development of their students.

At the University of Kentucky, efforts to assist secondary educators in internationalizing their curriculum have been occurring in the College of Agriculture. As educators go through the curricula development process, it is expected they would also experience their own learning and skill development. For this reason, this study was informed by Mezirow’s (1991) principles of
transformative learning, which describes learning as a process that is at times dynamic, disorienting, personally meaningful, critically reflective, iterative and integrative for the individual.

**Purpose & Objectives**

The purpose of this study was to highlight the thoughts, feelings and reflections of those educators engaged in developing class curricula and activities with an international focus, with the intent of enhancing agriculture education at the secondary level. The guiding research question for this qualitative study was:

*RQ1: What were the educators’ thoughts and attitudes relating to the process of globalizing their own formal and non-formal curriculum?*

**Methods**

Participants in this qualitative research study were six high school and Extension educators selected to participate in the *Globalizing Agricultural Education: Sustainable Agriculture, Food, and Rural Development* project. Individual, structured phone interviews were undertaken to answer specific questions designed to address the guiding research question. After transcription, the researchers conducted a detailed contextual and thematic document analysis on participant reflections. In an effort to ensure research validity and reliability, both researchers worked independently, thus allowing for a triangulation of all data.

**Results**

Data indicated study participant attitudes toward globalizing education were relatively progressive. A majority of educators revealed being motivated by a desire to make global issues relevant for their students; furthermore, they believed integrating international aspects into their curriculum would increase student awareness of global issues and enhance the overall learning process. Many respondents expressed concern about how to successfully implement a globalized curriculum within the time constraints of their classrooms and developing effective activities with an international focus.

All participants shared concerns as well as enthusiasm in regards to the upcoming professional development trip to Indonesia. Specific concerns expressed included: getting sick, managing the language barrier, offending the host culture, and dreading the long flight. Data revealed that all respondents would be traveling to Indonesia for the first time. Alternately, respondents also expressed their enthusiasm for meeting local people and experiencing the natural environment.

Prior to departure, respondents were involved in a workshop highlighting how to globalize curriculum and preparing them for international travel. While it was indicated the workshop was helpful, participants shared that developing globally focused lesson plans were difficult, but learned how to share international experiences in the classroom. Overall, respondents emphasized an importance of developing a cohort with whom they could collaborate about their ideas, attitudes, and beliefs.

**Conclusions & Implications**

Overall, professional development for secondary educators should continue within the arena of internationalizing curricula. At the high school level, it is apparent there is a lack of internationally-focused curricula, both in formal and non-formal situations. Still, there is a desire
by educators to learn and acquire the skills needed to globalize their classrooms. It is especially important to recognize this is also a learning process for the educators, and to provide appropriate structures (including a cohort) to help ensure success.

References


Impact Analysis and Evaluation of a Capacity Building Project in Peru: Increasing the Teaching and Research Competencies of Selected Faculty

Christopher Bielecki
Department of Agricultural Leadership, Education, and Communications
Texas A&M University
227 AGLS, 2116 TAMU
College Station, TX 77843
Chris.Bielecki@ag.tamu.edu

Carmen Velezmofo Sanchez
Universidad Nacional Agraria-La Molina

Maria Navarro
University of Georgia

Leonardo Lombardini
Gary Briers
Gary Wingenbach
Texas A&M University

Keywords: Capacity building, Peru, impact, evaluation, competencies

Introduction
According to the United Nations, building a country’s capacity “encompasses the country’s human, scientific, technological, organisational, institutional, and resource capabilities” (United Nations Environment Programme, 2002). University faculty are increasingly expected to enhance their teaching and research abilities to compete for students on an international scale. This competition is becoming especially important for universities in developing nations, as their most capable faculty and students choose U.S. and European institutions (Altbach & Knight, 2007; Marginson, 2006). Grindle and Hilderbrand’s (1995) study of public institution capacity building projects in six developing nations stressed the need to improve communication, management skills, and build organizational cultures.

Purpose
The impact analysis and evaluation’s purpose was to examine participants’ perceptions of how the capacity building project impacted their teaching and research competencies.

Methods
In support of the U.S. Peru Trade Promotion Agreement, the Universidad Nacional Agraria La Molina (UNALM) received training by faculty from U.S. universities to improve faculty research and teaching competencies. UNALM, located in the capital city of Lima, is recognized as Peru’s most prestigious agricultural public university. One of the intermediate objectives of the project was for UNALM faculty and staff to acquire critical knowledge, update technical skills, and engage in collaboration endeavors. Participants were placed in a teaching or research cohort through the advice of UNALM administrators. Project leaders used Borich’s
Needs assessment methodology to plan follow-up training addressing the 10 most important teaching competencies and 20 of the most important research competencies. Project leaders used pre and post assessments, face-to-face workshops, asynchronous and synchronous on-line activities, and an active webpage repository to engage the participants.

This qualitative study was conducted at the conclusion of the two year project. Participants were given the opportunity to share their perceptions of how the project impacted them through a project evaluation. The evaluation instrument consisted of six open-ended questions asking participants about the perceived impacts the project had on their teaching and research practices, how the project changed university policy and practice, what the participants would like to see UNALM’s legacy be in 2025, and a section to submit general comments. The constant comparative method was used to analyze and interpret data through open, axial, and selective coding procedures (Corbin & Strauss, 2007; Glaser & Strauss, 1967).

**Results**

Seven themes were identified as being central to the project evaluation and the participants’ perceived impact. Three were negatively focused themes. First, participants were concerned that the UNALM administration would not support them in implementing the skills and knowledge they had developed during the capacity building workshops. Second, participants frequently mentioned lacking technological and financial resources that would further limit their ability to practice the skills and knowledge they recently acquired. When evaluating the project, the participants reported a lack of perceived planning and organization on the part of the facilitators.

There were four positively focused themes. Participants reported an increase in research and teaching skills and abilities. Participants described perceived increases in feelings of collaboration, trust, and motivation towards faculty outside of their department. They conveyed increased motivation to conduct, or improve upon, their teaching and research capacities. Finally, participants’ foci of designing student-centered, active-learning classrooms were elevated in this project.

**Discussion and Recommendations**

Among the skills and knowledge they acquired, participants noted they gained the ability to make better tests, use virtual online learning, portfolios, Endnote®, apply the clinical case study technique, and how to write scientific articles for publication. The large number of responses listing newly acquired (or strengthened) skills and abilities provides evidence that project personnel achieved the intermediate objective of the project.

Participants’ report of increased skills in communication, trust, and collaboration with faculties of different departments should not be underemphasized. Several studies of agricultural higher education programs in Africa have documented the benefits of intra- and inter-institution networking (Erbaugh, Crawford, & Adipala, 2009; Patel & Woomer, 2000; Spielman, Ekboir, Davis, & Ochieng, 2008). Furthermore, Eicher (1999, p. 5; 2004, p. 6) argued for taking the systems approach to improve a nation’s “agricultural knowledge triangle” of research, extension, and agricultural higher education. As such, successive capacity building projects in Peru, and in other nations, should strive to emphasize collaboration, communication, and trust. A follow-up evaluation should be conducted with UNALM participants to capture if, and how, their newly acquired skills and abilities affected their institution’s reputation as Peru’s teaching and research facility in the agricultural sciences.
References


Implementing New Techniques to Deliver Extension Information: 
A Content Management System Approach

Pete Vergot III
University of Florida IFAS Extension,  
155 Research Road, Quincy, Florida, 32351, USA,  
Telephone: (850) 875-7137, Fax: (850) 875-7189,  
Email: pvergot@ufl.edu

Judy Ludlow, UF/IFAS Extension  
Doug Mayo, UF/IFAS Extension

Keywords: Extension Information, Content Management System

Introduction
Extension information delivery and channels of information are constantly changing. Private industry information delivery has evolved from primarily advertising to one of news laced with advertising being delivered daily to clientele. University of Florida/IFAS (UF/IFAS) Extension county extension faculty in the Florida Panhandle have pioneered use of information technology to deliver educational information (Vergot, Cherry, Friday, & Stevenson, 2010) to their clientele. They have won numerous national awards for their innovative delivery methods of web based newsletters, and creation of a Subscription Management System (Vergot, Friday, & Xin, 2011) which supports multiple digital platforms. To meet the challenge of private industry’s use of digital channels of information, UF/IFAS Extension changed their basically “static” web based delivery to a “Content Management System” (CMS) approach. This new digital delivery system allows for web based interactive discussion and integrates with social media to provide immediate information access and feedback (Vergot, 2010). These digital “conversations” enhance service to Extension clientele globally.

Purpose and Objectives
The purpose of this project was to meet the ever changing demands from Extension clientele to get information when they want it, how they want it, and as close to the time of knowledge discovery as possible. The objectives were to develop a process of information exchange enabling Extension agents to use new digital channels of delivery that allows for near real time distribution of peer reviewed information. In addition, the new channels must allow for web based interactive discussion and integrate with social media to provide immediate access and feedback to address Extension clientele needs.

Methods
Working with the District Information Technology (IT) specialists, Extension faculty converted all 16 Extension District’s county websites to WordPress (a CMS) to publish newsletters, agricultural content, blogs, and current events using both traditional and mobile technologies (Blackberry, iOS, and Android devices) and to integrate with social media to provide immediate information access and feedback to better serve Extension clientele.

WordPress was selected as the new content management system as it has the desired criteria to meet our project outcomes. This new channel of information:
• Provided a CMS that was easier to use than the old web authoring systems of Adobe Contribute, and FrontPage,
• Developed a way to quickly publish pictures and brief updates using mobile technologies,
• Provided for tight integration with social medias such as Facebook, YouTube and Twitter,
• Provided for the ability to get feedback and interaction with our clientele on our websites
• Allowed for Extension faculty to be able to blog from their current websites.

Results, Products, and Conclusions

UF/IFAS County Extension agriculture faculty and specialists post educational articles related to agriculture production and land management. From January 2012 to present, a total of 108 email messages were delivered reaching 135,684 clientele from the Panhandle Ag WordPress website. County Extension faculty have posted 216 articles since January of 2012, initiating 180 online conversations, and 4,604 reads from clientele since May of 2012. Panhandle Ag social media sites were developed and are gaining interest with 61 “Likes” in Facebook, 37 followers in Twitter and eight subscribers in YouTube.

WordPress provided a powerful, highly customizable and cost-free interactive web based delivery system. There are WordPress “apps” (applications software for mobile devices) available for all major mobile technologies including Blackberry, iPhone, iPad, and Android devices. These apps allow Extension agents to use their mobile devices to quickly update their website as a whole or to add pictures or issues that they encounter in the field while serving clients. WordPress allows for integration with Facebook and Twitter accounts using the built-in Rich Site Summary (RSS) feeds, allowing the information to be published once and viewed on different digital platforms.

Feedback and interaction with Extension clientele is accomplished using the WordPress, Facebook, and Twitter comment features. Extension clients can ask questions and quickly receive feedback on articles, pictures, and blogs that our agents post. Finally, WordPress’ primary function as a blogging software provides the ideal avenue for our agents to continuously provide fresh and targeted information for our clients.

Recommendations, Implications, and Applications

Implications of this CMS for International Agricultural Extension include the capability to use globally available digital platforms upon which to share information between Extension faculty and between Extension faculty and clientele internationally.

To remain relevant in this information saturated world, this CMS approach and its various platforms encourage “digital” conversations. It is another tool for Extension faculty to build “relationships” based on providing research based and relevant information to clientele.

References

Vergot III, P. (2010). Using social networks for innovative cooperation and collaboration. Workshop presented at the 26th Annual Conference of the Association for International Agricultural and Extension Education (AIAEE), Saskatoon, Canada.

The Influence of Selected Socio-Cultural Practices on Agricultural Development in Benue State, Nigeria

Adolphus Angol Naswem  
Department of Agricultural Extension and Communication,  
University of Agriculture, Makurdi,  
Benue State, Nigeria.  
angolnaswem@gmail.com

Egri P. Ejembi  
University of Agriculture, Makurdi,  
Benue State, Nigeria.

Keywords: Agricultural development, socio-cultural factors, funerary practices, alcohol consumption, polygyny, socio-sensitive extension.

Introduction

The study was carried out to determine the influence of selected socio-cultural practices on agricultural development (conceptualized as expansion in the yield of crops and livestock that results in the well-being of farm families) in Benue State. It is true that in the short term increased production might lead to positive impacts on poverty (Adebayo & Okuneye, 2005). However, certain social dynamics within the society work to mitigate any gains that may result from application of improved technology, and defeat the goals of sustainability. The sustainable adoption of any technology will depend on what happens to the surplus generated by its initial adoption. In many cases, such adoption may have been facilitated by loans, which must be repaid. The surplus should be able to fund loan repayment and at the same time guarantee the purchase of inputs for further production in order to expand the enterprise.

The technocentric orientation of extension efforts fail to capture socio-cultural practices that may affect the outcomes of those efforts in very significant ways. The selected socio-cultural practices included burial rites, alcohol consumption and polygyny. Burial rites in the study area which has one of the highest poverty rates have become very expensive in recent times (Mnda, 2004; Tokula, 2006)

Purpose and Objectives

1. The major objective of this study was to determine the influence of selected social factors on agricultural enterprises in Benue state. The specific objectives of this study included to:
2. Characterize burial rites, alcohol consumption and polygyny among farmers in Benue state.
3. Determine the influence of burial rites, alcohol consumption and polygyny on the use of fertilizers, herbicides and pesticides.
4. Determine the influence of burial rites, alcohol consumption and polygyny on food security of farmers.
5. Determine the influence of burial rites, alcohol consumption and polygyny on indebtedness of farmers.
The hypotheses tested included:
1. Farmers’ use of inputs (fertilizers) is not significantly related to selected social practices: burial rites, alcohol consumption and polygyny.
2. Food security is not significantly related to selected social practices: burial rites, alcohol consumption and polygyny.
3. Indebtedness is not significantly related to selected social practices: burial rites, alcohol consumption and polygyny.

Methods

Descriptive statistics were used to describe the socio-economic characteristics of the respondents and to characterize the socio-cultural practices. Focus Group Discussions were also used to characterize the socio-cultural practices. Chi-square analysis and logit analysis were used to test the relationship between socio-cultural variables and selected development variables.

Results

The results showed that burial rites had changed drastically from what used to obtain in pre-colonial times, and the elite was at the vanguard of this change. The mean expenditure on burials in Benue State was N21,650.40. Majority of the respondents had to either borrow money or sell their produce in order to bury relatives. Up to 55.5% of respondents consumed alcohol, with burukutu and beer being the preferred drinks. Fifty-eight percent of the respondents drank occasionally; 55.7% drank between 2-3 drinks per sitting. Polygyny, as a marriage type, was found to be on the decline as there was no incidence of the practice in the 15-24 age group, and the quest for more children continued to be the most important reason for the practice. Results of tested hypotheses indicated a significant relationship between burial rites and use of fertilizers. chi-square ($\chi^2 = 5.536, df = 1, p = 0.019$); logit analysis also showed burial rites had significant influence on fertilizer use (Sig. = .011, Exp. (B) = 2.962). The results of the Chi-square test ($\chi^2 = 3.939, df = 1, p = 0.047$) indicated that alcohol consumption influenced food security. The logit analysis, however, did not confirm this. Chi-square also revealed significant influence of burial rites on indebtedness ($\chi^2 = 9.464, df = 1, p = 0.002$); logit analysis confirmed this (Sig. = .007, Exp. (B) = 2.774).

Conclusion and Recommendation

It was concluded that in a transitional society like Benue State caught up between tradition and modernity, socio-cultural change has a tendency to take dysfunctional forms. This makes it imperative that social engineering strategies be employed to direct change along desirable paths. This requires appropriate sociological training for extension agents to enable them identify and deal with social factors that may be dysfunctional to extension efforts. It was recommended that special taxes be instituted for expensive tombs and caskets and legislation be made to restrict access to chemicals used for embalmment, and to discourage the proliferation of funeral homes. It was also recommended that community sports be developed for rural communities to compete with burial ceremonies, which have become some sort of entertaining break from the drudgery of rural life.


References
International Service-learning: A Case Study in Chajul, Guatemala

Caroline Black
Graduate Research Assistant
Department of Agricultural Leadership, Education & Communications
Texas A&M University
271 AGLS, 2116 TAMU
College Station, TX 77843
979-862-3015
Fax: 979-845-2970
caroline.black@agnet.tamu.edu

Lori Moore
Gary Wingenbach
Tracy Rutherford
Texas A&M University

Keywords: international service-learning, study abroad, critical reflection, relationships

Introduction
Service-learning courses in higher education have increased over the past two decades (Bringle & Hatcher, 2011). These experiences can provide “a rich text from which academic lessons are learned through the interplay between theory and practice” (Bringle, Phillips, & Hudson, 2004, p. 5). One unique area for educators to implement service-learning is through an international service-learning project, while students participate in a study abroad program (Woolf, 2008) or internship (Authors, 2012).

More students are studying abroad today than ever before (Chow & Bhandari, 2011). The combination of service-learning and study abroad adds value to each (Bringle & Hatcher, 2011; Honnet & Poulsen, 1989). This partnership helps engage students in a different culture, challenging and diverse settings that test the application of course content in new situations, contribute to the community of the host country, and expose them to new, unfamiliar issues and ideas (Bringle & Hatcher, 2011; Bringle et al., 2004).

Texas A&M University emphasizes the need for international educational experiences to enhance the student experience through critical thinking, community interaction, and social/global awareness (Author, 2010; Woolf, 2008). An international service-learning project can encourage students to expand their knowledge base and grasp “learning as a lifelong process” (Hickcox, 2002, p. 124).

Purpose
The purpose of this study was to investigate a unique international service-learning experience created between two non-government organizations and a college of agriculture.

An international service-learning study abroad program was developed at Texas A&M University. The program was developed using components of Ash, and Clayton’s (2009) service-learning model, which emphasizes that service-learning happens through a combination of academics, relevant service and critical reflection.
This study used qualitative research methods to analyze data from a case study. Merriam (2009) defined case study to be “an in-depth description and analysis of a bounded system” (p. 40). Guba & Lincoln (1981) suggested that case study is the best form of qualitative research because it provides “information to produce judgment. Judging is the final and ultimate act of evaluation” (p. 375).

Students were required to take two courses (Survey of Leadership Theory and Leading and Training Adults) to participate in the program. Nine undergraduates and one graduate student participated in the service learning experience during June 2012. Three professors from Texas A&M University were joined by two cross-cultural leaders from a non-government organization (NGO).

Data were collected via observations and written artifacts completed during and after the service-learning experience program. Observations were made by three participant observers. The written artifacts used in this study included a field log documenting all activities for the service-learning project, and a reflection paper, written after the project was completed. The paper’s topic was to describe 3-5 most fundamental and powerful concepts learned from the project.

Written artifacts were analyzed using inductive data analysis that includes two sub processes: coding and categorizing (Lincoln & Guba, 1985). Trustworthiness of the research was established through a prolonged engagement with participants during the trip (Klenke, 2008; Lincoln & Guba, 1985), peer debriefing (Klenke, 2008), and member checking (Klenke, 2008; Manning, 1997), to confirm accuracy of findings.

After analyzing service-learning field logs and reflection papers, several fundamental and powerful concepts were revealed, resulting in five major themes: adaptation, culture, collaboration, communication, and value of knowledge.

Students experienced adaptation through openness, flexibility, and improvising to meet the needs of the cohort, community and service-learning project. The international service-learning program enabled students to experience a culture other than their own. Partnerships with NGOs provided students with unique hands-on experiences similar to those found by Authors (2012) and collaboration with rural community members through the service-learning projects. Communication was identified as a language barrier, as described in students’ field logs and reflections. Students’ value of knowledge was noted as the importance of foundational knowledge, which could be actively implemented into the service-learning project.

The results are useful for informing policies and practices of international service-learning and study abroad programs. Students recognized the benefit of conversations with Chajul agricultural experts for their project. Localized communication strategies should be maintained in future programs. Students recognized the value of applying academic knowledge to practical projects, thus creating a true service-learning experience (Ash et al., 2009; Bringle & Hatcher, 2009).

This study accounted for one case that occurred during a 25-day study abroad program with one group of students; therefore, the findings cannot be generalized beyond the cohort. Future research should investigate students’ perceptions of Texas A&M University’s
collaboration with NGOs to advance the practice of international service-learning and study abroad programs.

References


Investigating Women’s Perspectives on Agricultural Extension

Amanda Crump
University of California, Davis
138 Oak Avenue
Woodland, CA 95695
(530) 574-6031 (voice)
(530) 752-7182 (fax)
acrump@ucdavis.edu (email)

Keywords: agricultural extension, educators, feminist theory, interviews

Introduction
Women are participating in agricultural extension on both ends of the information continuum—as farmers and as extension educators. Currently, the University of California agricultural faculty workforce consists of only 24.7% women (University of California Office of the President, 2009), many of whom are not involved in agricultural crop production but work in areas such as child development and nutrition. In the 33 years since women began working in agricultural extension in California, there has been little research that highlights female extension educators and attempts to understand their unique contribution to agricultural extension. Similarly, little research has been conducted with female extension educators in developing countries. I begin the investigation by interviewing women in extension education. This study serves as a springboard for further international extension education research centered on social justice and socio-cultural learning.

Purpose and Objectives
This study explores female views on extension education. Currently, other studies have identified acceptance by male peers, family/workplace balance, and administrator acceptance as the top barriers facing women in agricultural extension education (Foster, 2001; Seevers & Foster, 2003). Building on those findings, my primary research questions are:

- Do these women employ unique strategies to successfully work in agricultural extension?
- What informs their work in this male-dominated field?
- How do they view themselves and their success in agricultural extension?

Theoretical and Methodological Framework
Recent feminist theory has been shaped by minority feminist writings (Hooks, 2007; Lorde, 2003; Rich, 2007). These theorists encourage us to look beyond “white, well-to-do housewife” feminism and consider women with differing standpoints - those with different racial and ethnic backgrounds and others who face disability or class struggles. While fully realizing that the women of this study are white and highly educated, I believe that there are lessons that can be drawn from the multicultural and standpoint theorists that are important to women working in agriculture as agriculture in the United States is still viewed as men’s work and most extension educators are men.

It is also important to take a critical look at women as scientists. Shiva (2008) urges us to rethink science and to consider feminist study from a different view. It is important to rethink science in a more inclusive way and to include the voice of women in our work. Fergusen (1994)
highlights that while women are heavily involved in agriculture and while they have instinctual ties to sustainable development, their voices are seldom heard. Through interview, I shed light on science through ten women’s voices.

Interviews were conducted in 2012 with ten women. Our fifty- to sixty-minute interviews were open-ended (Weiss, 1995) which allowed the women to speak in an unconstrained way while allowing me to adjust the questions as needed as our conversation progressed. The interviewees were solicited from all women working in extension education in agricultural crops in California. The final ten interviewees were selected from the respondent pool to ensure a variety of ages and experience. Interviews were conducted in quiet settings, recorded with handheld recorders, transferred to computer, and transcribed. I coded the transcripts through an open coding scheme followed by narrowing of the broadly coded themes (Strauss, 1987). After reviewing the marked sections of the transcript, I regrouped the sections into smaller themes (Weiss, 1995).

Result, Conclusions, and Recommendations

After analyzing the interviews, I found four themes. First, most of the women entered agriculture in a holistic and thoughtful way with many of them commenting that the impact agriculture has on the environment and on people drove them to work in agriculture. Second, the women each had strong, articulate, and empathetic role models. Third, most of the women realize that agriculture is dominated by male clients and male colleagues and have adjusted their work to be effective as women instead of recreating themselves to be more like men. Finally, many of the skills they use to educate are feminine in nature reflecting a view of social justice and equality.

While these ten women only represent a small sampling of the women working in agricultural extension in California, their stories meld together as one and point to some of the struggles and rewards of working in agricultural extension. Their standpoints as women are informed by their ability to listen and approach their work through considerations of the interconnectedness of agriculture and humans. Information gleaned from these interviews informs future studies in developing countries where a push to hire female extension educators is evident (Saito & Weidemann, 1990).

References
Seevers, B. S., & Foster, B. B. (2003). Women in agricultural and extension education... A


Kenyan Farmers’ Participation in Farm and Church Groups, and Diffusion of Agricultural Innovations

Ian Shelburne
LivingStone International University
910 Evergreen Street
Abilene, TX 79601
325-267-0605
ian@livingstoneuniversity.org

David Lawver
Jonathan Ulmer
Steven Fraze
Charles Stephenson
(Lubbock Christian University)

Keywords: Kenya, groups, diffusion, innovations

Introduction

There has been in recent years a movement away from the training-and-visit model of extension in Sub-Saharan Africa. Its replacement is a more diversified, pluralistic approach to training farmers and to disseminate improved agricultural methods and technologies (Davis & Place, 2003; Birner et al., 2006). One element has been increased interest in the role of farmer groups in innovation systems (Davis, 2004; Juma, 2011; Miller & Shinn, 2012). The present study examined this and related issues among farmers of the rural Twiga community in the Moiben area of the Uasin Gishu North district of Kenya.

Purpose and Objectives

The overall purpose was to study the association of selected demographic characteristics with the effectiveness of farmers in diffusing agricultural innovations. The specific research objective in this paper was to identify and describe relationships between farmers’ participation in both farm and church groups with their implementation and dissemination of improved practices after receiving training.

Methods and Data Sources

The research team collected data from three convenience samples of farmers living within a 10-kilometer radius of Twiga Demonstration Farm. Each sample consisted of farmers who attended a seminar at the farm. Three seminars took place from November, 2011 to January, 2012 (dairy-management, \(n=32\); poultry-keeping, \(n=30\); bee-keeping, \(n=28\)). Interviewers obtained demographic information from seminar participants. There were two follow-up interviews with each participant, one focused on adoption of recommended practices and the other on diffusion to others. The primary theoretical framework was the Diffusion of Innovations model (Rogers, 2003).

The two demographic characteristics discussed in this paper were membership in a farmers’ group and the frequency of participation in the activities of a local faith community. The study used correlational analysis to explore associations between these characteristics and
five criterion/outcome variables: adopter/non-adopter, extent of adoption (by number of innovations), diffuser/non-diffuser, extent of diffusion (by number of innovations), and extent of diffusion (by number of secondary adopters). When assumptions for parametric tests were met, Pearson’s $r$ was calculated. The majority of the data was nominal or ordinal in nature. Considering the relatively small sample sizes, Kendall’s $\tau$ was used when a non-parametric test was indicated (Field, 2009).

**Results and Conclusions**

There were small to medium-sized (.10-.49) positive associations found after training in all three samples between membership in a farmers’ group and adoption of recommended practices. The study found the same strength-range of relationships for group membership and successful dissemination to other farmers. Associations between frequency of involvement in church activities and the criterion variables were in the negligible to small range (.00-.29) across the three samples. All were positive in direction except for relationships involving the three diffusion-related variables in the first sample.

A first conclusion was that a slightly to moderately greater proportion of farmers’-group members in the samples adopted recommended practices after training and disseminated them to others, in comparison with non-group members. Second, the study concluded that a slightly larger proportion of farmers in all samples who participated more frequently in activities of their local faith community than others also implemented recommended innovations after training. A third conclusion was that in two out of three samples a slightly greater proportion of those with more frequent church involvement also diffused innovations to others, in comparison with those who participated less frequently in church activities.

**Implications and Recommendations**

Implications of the study include a number of interesting possibilities for further research and application to the evolution of extension in Kenya and perhaps elsewhere in Sub-Saharan Africa. First, the utility of group membership in farmers’ diffusion of innovations may be associated not only with agriculturally oriented groups, but also with other kinds of groups, though to a lesser degree. This would suggest the value of further research into whether or not farmers’ simultaneous participation in multiple groups of various kinds may be associated with incremental increases in diffusion activity.

Second, if there is even a small association between farmers’ activity in a local faith community and diffusing agricultural innovations, how can key factors be identified and optimized? Further investigation could include qualitative approaches for developing a contextually rich understanding of influential constructs. Third, this study suggests potential benefits of actively including church-based groups that also have an agricultural focus when planning extension strategies in Kenya (e.g., church women’s poultry- or bee-keeping groups). A final recommendation is for more intentional collaboration at the community level among agricultural/extension and religious networks, centered on common concerns for issues of food security and economic development.
References


Learning Methods – Inquiring Extension Educators for Professional Development Needs

Nav R. Ghimire
University of Wisconsin-Extension
571 County Road A, Green Lake, WI 54941
Phone: 920-294-4037
Email: nav.ghimire@ces.uwex.edu

Robert A. Martin
Iowa State University

Keywords: Learning competencies, Extension educators, knowledge and skill, further training needs, professional development

Introduction

Extension is a teaching-learning process that aims at improving lives focusing on issues and needs of communities. The Cooperative Extension Service involves clients in learning activities through various educational programs. Clients’ learning from participation in such programs followed by change in their practice largely depends on the Extension educators’ ability to involve them in a successful learning experience (Boone & Boone, 2005; Pratt & Bowmen, 2008). However, these educators often have little or no formal pre-service training or experience in teaching and learning competencies needed to provide a successful learning experience to their program participants (Seivers, Graham, & Conklin, 2007). Once hired as Extension agents/educators, they are given the responsibilities to educate the community on their own, by trial and error.

Franz et al. (2009) stated that little research has been conducted in the Cooperative Extension Service regarding how successful learning transfers new knowledge and skills and promotes change in behavior. They also noted that Extension educators often lack learning competencies needed in the workplace. Taylor (2007) stated that educators in nonformal education systems usually lack opportunities for developing competencies in learning methods.

Purpose

This study aimed to determine Extension educators’ knowledge and skills in learning methods and their needs for further training in this area.

Methods

A census of 2497 Extension educators in 12 states of the North Central Region (USA) served as the sample for this study. The data-collection instrument was a closed-form questionnaire that included nine competencies in the areas of learning methods; Match learning to practical application, create a motivating learning environment, recognize learning styles of clientele, use group learning techniques, identify factors that influence learning, use a learner-centered approach, use principles of learning, match learning objectives to individual learning needs, use techniques to develop problem solving skills of clients.

Participants’ knowledge and skills and their further training needs in given competencies were measured using a five-point Likert-type scale (1= very low, 2 = low, 3= moderate, 4= high, 5= very high). Instrument’s reliability was derived from a pilot-study. The questionnaire was e-
mailed to participants using Survey-Monkey and three reminders messages were sent to non-respondents. The response rate was 30% ($n = 752$).

**Results**

For each of the nine competencies, Extension educators generally assessed themselves as having ‘moderate’ knowledge and skills and indicated a ‘moderate’ need for further training in this area. The Agriculture and Natural Resource Extension educators had significantly lower means score for their knowledge and skills, and had higher means score for further training needs in stated competencies than that of 4-H and Youth Development, Family Living and Consumer Science, and Community Economic Development educators. The highest proportion of most likely audience to participate in professional development was found for the following competencies: ‘recognize learning styles of clientele’, ‘use techniques to develop problem solving skills of clients’, and ‘use a learner-centered approach’.

**Educational Significance**

Findings have implications for Cooperative Extension Service developing policies and guidelines for in-service trainings in learning methods. Findings could provide guidelines for colleges and universities designing curriculum that can foster the learning competencies of students pursuing to develop their career in the field of Extension education.

**International Implications**

In developing countries, agricultural ministries that provide extension service to public and agricultural universities and colleges that produce agricultural graduates for extension are two different entities. Evidence suggests that extension staff in these countries are inadequately trained in the area of teaching-learning processes required for successful extension programming (FAO, 1997; Maiangwa et al., 2010; Swanson & Rajalahti, 2010). The government owned extension training centers lack pre-service training curriculum for new recruit agricultural graduates in learning methods and their training focus has remained largely technical subject matter (Omoregbee & Ajayi, 2009). Results of this study can be useful for developing insight on how the agricultural extension system in the developing world could enhance learning capacities of their extension agents.

**Recommendations**

Based on the findings, the following are recommendations for the North Central Region (USA) Cooperative Extension Service and the related land-grant universities. The universities and colleges with academic Extension education programs should review their curricula to make sure that future Extension educators are trained well to effectively deliver educational programs using appropriate teaching-learning processes. Offering a learning methods course is recommended especially for colleges of agriculture.

The Cooperative Extension Service should make sure that new Extension agents possess competencies related to the learning process when entering the organization. Periodical assessment of Extension education courses being offered by land-grant universities is recommended. New agent training should begin as soon as the agents are hired and before they are involved in educational program implementation. The current study should be replicated in other regions of the United States to verify whether the findings are consistent and valid at the national level.
References


Learning About Other Countries and Their Agriculture: Students’ Perceived Personal and Professional Benefits

Maria Navarro
131 Four Towers Building
Agricultural Leadership, Education, and Communication
The University of Georgia
Athens, GA 30602-4355
Telephone: 706 583 0225
e-mail: mnavarro@uga.edu

Keywords: Internationalization, agriculture, curriculum, personal benefits, professional benefits

Introduction
As the world of agriculture becomes more global, colleges of agriculture continue to develop and refine strategies to provide an internationalized curriculum. Efforts generally focus on the integration of international dimensions into the operational (grouping of students, time, and place, teaching and learning methods) and formal (materials, content, and structure) aspects of the curriculum (Navarro, 2004). The interaction, nature, and intensity of contribution of five different groups have a significant influence in the quality and scope of internationalization at each institution. These five groups include organizational units (American Council on Education, 2000), senior administrators (Harari, 1992), faculty (Childress, 2008) students (Mazon, 2010), and other stakeholders (Green, 2002). To best determine the strategies that can be used to engage each group in curriculum internationalization endeavors, it is crucial to understand the particular sources of their motivation.

Purpose and Objectives
The purpose was to explore the motivation of students to participate in an internationalized agricultural curriculum. The objectives were to quantify the personal and professional value that students attribute to learning about other countries and their agriculture, and to analyze qualitatively their motivation for participation in internationalization programs.

Methods and Data Sources
The research was non-experimental and descriptive. A paper and pencil questionnaire was used to gather data. The quantitative data corresponded to a demographic question and two statements to assess whether or not students considered that learning about other countries and their agriculture was valuable to them (personal value) and to their education and professional development (professional value). Students were asked to rate these statements from strongly disagree (0) to strongly agree (7). The qualitative data corresponded to an open-ended question about student motivations to participate in internationalized agricultural curricula.

The questionnaire was given to students at the beginning of the semester in three agriculture courses, “Plants, pathogens, and people,” “Fungi, friends, and foes,” (non-internationalized courses) and “International agricultural development” (internationalized course). The questionnaire was completed by 31, 66, and 36 students respectively, with 85% response rate or more per course. The quantitative responses were analyzed using descriptive statistics. The
Results, Discussion, and Conclusions

Table 1 summarizes student quantitative responses. Students in the two courses that were not “international” in nature had less experience with study abroad (26% and 20% respectively) than the students choosing the “internationalized” course (50%), hinting to a self-selection of students whereas students who choose to study abroad are also more likely to choose “internationalized” on-campus courses.

The construct “value” (combined personal and professional) had a mean of 5.77, 5.97, and 6.52 respectively. For the two “non-international” courses it corresponded to a response at the “agree” level. For the “international” course, it corresponded to a “strongly agree” level. In all cases, the values were higher than expected. The comparison of the distribution of responses between the personal and professional values indicated that while most students appreciated more the “personal value,” the “professional value” was quantified at a similar level, surprising to the authors, given the common assumption that many students do not understand the value of an international curriculum to their academic major, education, and professional development.

Table 1.
Summary of Student Responses Regarding Perceived Personal and Professional Value of Learning about other Countries and their Agriculture

<table>
<thead>
<tr>
<th>Course</th>
<th>Students Total</th>
<th>Study Abroad</th>
<th>Number of students responding:</th>
<th>Strongly disagree to indifferent to Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plants, path., people</td>
<td>31</td>
<td>8</td>
<td>Personal 0 0 0 1 5 2 7 16</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Professional 0 1 2 0 6 3 6 13</td>
<td></td>
</tr>
<tr>
<td>Fungi, friends, and foes</td>
<td>66</td>
<td>13</td>
<td>Personal 0 1 0 1 4 11 18 31</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Professional 0 1 0 1 6 13 18 25</td>
<td></td>
</tr>
<tr>
<td>International Development</td>
<td>36</td>
<td>18</td>
<td>Personal 0 0 0 0 1 1 8 25</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Professional 0 0 1 0 1 4 5 25</td>
<td></td>
</tr>
</tbody>
</table>

Regarding the analysis of the qualitative data, students explained in many different ways why they valued learning about other countries and their agriculture. Major themes included cultural and social issues, academic preparation and professional advantage, curiosity about globalization, and personal enjoyment. The students who rated the value of internationalization at the lower levels expressed that their disinterest was more about their lack of need for agriculture than for international knowledge.

In conclusion, many efforts to internationalize the agricultural curriculum focus on mobility opportunities. However, discipline-specific on-campus internationalized courses are seldom developed in part because faculty assume that students are not interested. The results of this paper show that students attributed higher value than expected to learning about other countries and their agriculture, and they understood better than expected the professional need for internationalized curricula.
**Recommendations, Educational Importance, and Implications**

Internationalization champions should reanalyze the motivations, values, and knowledge of students in their campus to assure that decisions are made according to the situation of their students in their university rather than conferring to wrong assumptions based on research from several decades ago.

**References**


Measurable Changes in Pre-Post Test Scores for Iraqi 4-H Volunteer Leader’s Knowledge of Animal Science Production Principles

Tim Kock
1114 Symons Hall
Office of International Programs in Agriculture and Natural Resources (IPAN)
College of Agriculture and Natural Resources
University of Maryland
Ph. 301-405-9589
Fax: 301-314-7185
tkock@umd.edu

Justen Smith
Utah State University

Keywords: Animal Science, Iraq 4-H, Pre-Post Tests

Introduction

As Iraq emerged from war and family incomes increase, so did the demand for meat protein in the Iraqi diet. In 2010, Iraqi 4-H and the USAID-Inma Agribusiness Program established youth-driven 4-H sheep clubs (livestock production businesses) as a means to meet the growing consumer demand while generating income for rural families. USAID-Inma entered into partnership with the Iraq 4-H organization to create agricultural business (livestock production) opportunities for youth and widows through the development of the 4-H sheep production program. The volunteer 4-H youth development program was a new concept for the culture of Iraq, traditionally youth and adults did not participate in agricultural community organizations in Soviet-style dictator driven countries (Banajanian, B. 2005; Kock, T. 2010).

Today Iraqi adults are serving in volunteer leadership roles working with club members from all sectors of Iraqi culture, but these volunteers lacked the animal production skills needed to educate youth in profitable livestock businesses management (USAID-Inma Agribusiness Program, 2010). These adult leaders, many of whom had never worked with livestock, served the role of business consultants for the youth-driven 4-H clubs. Therefore, the USAID-Inma program conducted basic three-day animal science courses for the adult volunteers and Inma field staff working with the 4-H clubs.

Purpose of Study

The purpose of the study was to describe the knowledge change among the participants of the animal science training courses.

Objectives of the Study

For this study, the objectives were:
1. To measure the level of animal science knowledge of participants before the training course.
2. To measure the level of animal science knowledge of participants after the training course.
Methods
The methodology implemented for this study was a pre-post test research design. An instrument containing 12 multiple choice questions regarding animal science (nutrition, physiology and health) was designed by the researchers and evaluated by a panel of experts (Iraqi and American) for content and translated into Arabic. The panel of experts compared the instrument to course syllabus to ensure that questions asked were covered in course content, thus not asking questions outside of the training program. A 100% response rate was achieved; all fifteen participants completed both the pre and post instruments in spring 2012. Descriptive statistics was used to analyze the data allowing researchers to draw percentages of correct and incorrect responses between both tests.

Results
Data indicated that the majority (83%) of the respondents answered all 12 questions incorrectly on the pre-test instrument. Moreover, pre-test data indicated the majority of respondents answered incorrectly on six questions (2, 5, 7, 10, 11 & 12), while 65-80% of respondents answered pre-test questions, 1, 4, 6 and 9 correctly. Those questions covered such topics as gestation periods of livestock, heat detection and length of heat cycle.

However, post-test data indicated 83% of respondents answered the majority of the 12 questions correctly. All respondents answered questions five correctly and 60% answered question 12 correctly. Moreover, data gleaned post-test respondents continued to answer questions 2, 5, 10 and 11 incorrectly. Data also shown all respondents (100%) answered question four correctly, 87% for question one, 80% for question six and 73% for question three.

Recommendations, Educational Importance and Implications
Based on the findings of this study, most participants (volunteers) lacked basic animal science production principles, which would make it extremely difficult for the volunteers to advance the knowledge of 4-H youth livestock producers. However, after completing the animal science short-course participants understanding of livestock production increased significantly. Although participants completed the course, four areas remained difficult for participants to grasp. Participants continued to answer questions 2, 5, 10 and 11 incorrectly, leading the researchers to realize more training was needed in age identification of sheep, determining the length of gestation period for ewes, creep feeding lambs and best injection site location for pharmaceutical application. These four areas are important in livestock production; producers need a solid understanding of all animal science aspects to ensure to better flock management.

Research conducted by (VanWinkle, Busler, Bowman and Manoogian, 2002) indicated volunteers recognize their need for training and value the opportunity. Hoover and Connor (2001) concluded it is important that volunteers are provided professional development opportunities which enhance their ability to be more effective. However, the Inma Program ended in 2012 and the 4-H volunteers are on their own to advance their production skills. Training is an important aspect of sustainable development; it provides participants the skills needed long after funding sources are gone (Kock & Turnbull, 2011). The researchers certainly hope this is the case in Iraq.
References
Monitoring and Evaluating Adoption Behavior and Integration after an Educational Training Program in Hazaribag, India

Meghan Luckett
Texas A&M University
141 Selkirk Ct
Kalamazoo, MI 49006
281-804-1755
luckemeg@hotmail.com

Dr. Kim Dooley
Texas A&M University

Keywords: Extension, Adoption, Nutrition, Horticulture, India

Introduction
“Getting a new idea adopted, even when it has obvious advantages, is difficult” (Rogers, 2005, p. 1). This is often the case because of limited access to proper inputs and technologies (Moriba, Kandeh & Edwards, 2011), but can be alleviated with consistent support. The rural poor of Hazaribag suffer from vitamin A and iron deficiencies because of a lack of access to nutritious foods, and knowledge about proper nutrition. Therefore, this study followed 24 women after a three-day training program on using avocados and drumstick leaves/pods to address malnutrition in Hazaribag. The women were monitored and evaluated to understand their level of adopting four behaviors taught during the extension workshop. The four behaviors were (a) eating and feeding the avocados to their children that they were given every week; (b) increasing their weekly consumption of drumstick leaves and pods; (c) caring for the grafted avocado tree planted near their homes and (d) planting the seeds of the avocados they consume. Using prolonged engagement (Guba & Lincoln, 1989), the process of adopting the behaviors was monitored and evaluated for four months beginning on August 13th, 2012 and culminating on December 7th, 2012.

Purpose
The purpose of this study was to study 24 women who participated in a training program to understand their rate of and reasons for adopting the four behaviors that they learned.

Methods
This study utilized a phenomenological design methodology to conduct an organized, disciplines, and systematic study of the process of adoption. According to Rogers' Diffusion of Innovation theory (2005) the rate of and reasons for adoption are judged by the members of a social system based on the perceived benefits of the innovation, including five attributes, which are relative advantage, compatibility, complexity, trialability and observability (Rogers, 2005).

In addition to the observations and interviews, five data collection instruments were utilized. The first was the willingness to adopt survey that asked the women to rate their willingness to adopt the new behaviors learned during the training session. The second was the SOCRATES stages of change readiness and treatment eagerness scale to measure the women’s understanding of their diet problems and eagerness to address these problems (Miller & Tonigan, 1996). The third was the 24-hour food recall survey, which asked the women to record all the
food and drink consumed in a 24-hour period. The fourth collected frequency data on the amount of times each week the women cared for their trees and ate the avocados and drumstick leaves/pods. The fifth asked the women questions using Rogers’ five attributes of adoption to better understand their perception of the behaviors.

Results

Results show that the women did adopt the majority of the behaviors, with 100% eating or feeding avocados to their children; 60% eating more drumstick leaves/pods; 90% caring for the grafted avocado trees and 50% planting avocado seeds. According to Rogers’ adopter categories, there were no laggards among the 24 women, meaning that none of the women were completely adverse to the new behaviors. There was one woman in the late majority category, meaning she was skeptical and was late to embrace some of the behaviors because she preferred her more familiar and proven food choices. There were six women in the early majority category who were slower to adopt because of their low social position and lack of resources. There were eleven women in the early adopter category meaning they embraced at least three of the four behaviors and devoted more time to changing their lifestyle. These women had more social standing and held great influence over others outside the program. Finally, there were six women in the innovator category, who embraced all four behaviors from the beginning and not only implemented the lessons learned from the training program but fully integrated them into their daily lives.

Conclusion and Recommendations

Eating avocados and drumstick leaves/pods became habitual as all 24 participants were eating and feeding them to their children. The adoption of the avocados also led to the women taking special care of their grafted trees so they would grow strong and quickly bear fruit. The participants also perceived that eating the avocado and drumstick leaves/pods improved their health and resulted in their children falling sick less often. With the high level of adoption among the participants and perceptions of improved health, additional studies could be done using avocados and drumstick leaves/pods to gain definitive evidence on the potential of these foods to address malnutrition in rural Hazaribag.

References

Needs Assessment for Effective University Outreach Programs to the Neighboring Community: Chuka Kenya

Michael G. Kanyi  
Texas Tech University  
Chuka University  
Department of Education, Box 109  
Chuka Kenya  
Email: michael.kanyi@ttu.edu

David E. Lawver  
Texas Tech University

George Muthaa  
Gilbert Odilla  
Joyline Mugambi  
Chuka University

Keywords: needs assessment, community, outreach

Introduction  
Chuka University was established in 2004 as a constituent campus of Egerton University in Kenya. The University is located in a rural community where farming and small business ventures are the main economic activities. The University recognizes the importance of working together with the neighboring community to foster university/community relationship. The University is committed to the mission of the university which puts emphasis on working with other stakeholders to provide, promote and coordinate life-long education, training and research for sustainable development and responsible citizenry (Watkins, West, & Visser, 2012).

During the eight years of existence of Chuka University, there has been no study conducted to determine community needs in which the University could effectively offer outreach programs. This is the problem that was addressed in this qualitative study. The methodology involved use of questionnaires to collect qualitative data from neighboring community.

A needs assessment survey provides information useful in planning and implementing relevant outreach programs which are participatory, impact-driven and sustainable (Soriano & Fernando, 1995). The University intends to improve the effectiveness of its outreach programs by ensuring that felt needs of the neighboring community form criteria for prioritizing projects to be implemented in the community with the help of the University (McMahon, 1970).

Purpose and Objectives  
The purpose of this study was to determine the felt needs of the community that neighbor’s Chuka University in order to help the University to plan effective outreach programs. The study aimed to establish social economic needs, concerns and expectations of community members that neighbor Chuka University. The specific objectives that guided this study were:
1. to establish community expectations of Chuka University;
2. to investigate the socio-economic challenges faced by the neighboring community; and,
3. to determine the contribution/benefits of Chuka University to the community.

Methodology

The target population for this study was small and medium-scale farmers, private housing providers for University students and small scale entrepreneurs around the University. The study was conducted using a cross-sectional survey research design. Purposive sampling was used to ensure adequate representation of the different categories of the members of the community based on their economic activities, age and gender. A sample of 120 community members were randomly selected using a simple random method.

The data were collected using a questionnaire. This instrument was validated by a panel of three faculty members from Chuka University and two experts in community development who are government employees. The instrument was pilot-tested for reliability with 20 respondents drawn from outside the research area. A Cronbach’s reliability coefficient of 0.76 was realized.

Results

The findings of the research study are reported according to the objectives that guided the study. The community members indicated that they expect educational benefits from the University as the priority. The second ranking priority was provision of employment. The neighboring community members expected the University to offer employment to them. The third ranked expectation was business expansion. Students and university workers were expected to provide a larger customer base.

Results indicated that unemployment was the major challenge to the neighboring community. The research study revealed that with the establishment of the university in the neighborhood, there is an increase of residents from outside the community leading to rise in the cost of property, housing and other commodities. Occasional theft cases associated with the youth was also reported. The third ranked socioeconomic challenge was moral decadence. The findings indicate that the neighboring community felt that the level of inappropriate social behavior is on the increase in the area. They gave examples as inappropriate dressing, alcohol consumption, drugs and promiscuity.

On the contribution of the University to the neighboring community, the findings indicate that the neighboring community members had benefitted with educational opportunities in the university. The findings ranked employment as the second contribution of the University to the neighboring community. The results also indicated that the University offered facilities for social gathering to the neighboring community. This was due to the beautiful sceneries in the University.

Conclusions

The community members neighboring the Chuka University have high expectations from the university and believe their expectations should be met overtime. The community members were aware of their felt needs and were able to point out causes of the identified problems. Chuka University has created positive impact in the neighboring community through provision of education, employment and recreational amenities.
Recommendations

The University should work closely with the neighboring community members since they have high expectations of the university to help change their lives to the better. There is a need to urgently address the issue of insecurity and the perceived increase in antisocial behavior associated with incoming new residents. This would enhance responsible citizenry. There is a need for the University to plan short-term need based educational programs for capacity building among neighboring community members.

References


Obstacles of Agricultural Extension Work in AL-Diwaniyah Province, Iraq

Thamir N Al-Janabi
A. College of Agricultural Science and Natural Resources
   Oklahoma State University, US
B. College of Agriculture
   Al-Qasim Green University, Iraq
   thamiraljanabi@yahoo.com

Bassim H Khash
Al-Qasim Green University, Iraq

Keywords: obstacles, agricultural extension, agricultural extension obstacles

Introduction
Agricultural extension faces a number of obstacles that limit its effectiveness in achieving agricultural development. Numerous studies have been conducted to determine the obstacles of agricultural extension work in many countries around the world. In Bhutan (Tshering et. al., 2007) found that the most important obstacles are the lack of a standardized monitoring, evaluation and feedback system, inadequate resources and facilities, and insufficient support from local government bodies. (Hosseini & Niknami, 2009) classified challenges facing the agricultural extension service in Iran into six types of challenges, namely organizational, technical, financial, social, regulatory, and those related to human factors. (Nazarzadehzare et. al., 2012) added the use of uniform methods of educational for teaching educational content courses by extension workers.

In Egypt, (Shalaby et.al. 2011) found that the main obstacles are lack of extension workers to appropriate education, and capacity building programs are not available for women extension agents. In Iraq, (Amin, 2012) found the following obstacles: The vast majority of extension workers (80%) non-specialists in agricultural extension, commissioning extensionists to administrative duties more of the extension duties.

Objective of the Study
The objective of this study was to identifying the obstacles of agricultural extension services in AL-Diwaniyah Province, Iraq from the point view of the agricultural extension agents.

Research Methodology
The target population of this study consisted of all 60 extension agents employed at AL-Diwaniyah Province, Iraq who work in the extension training center with (15) extension units spread over areas of the province. From these (60) extension agents (10) were chosen for the purpose of open questionnaire, and the same for the purpose of questionnaire stability, the remaining 40 agents comprise the research sample. Because non-attendance one of them during the data collection period, our final sample consisted of 39 extension agents. Face to face interview schedule was used and data collected personally by the researchers’ visits to extension agents to their offices during 1-18 September, 2012. The data collected for this study was analyzed using frequency, percentage, and weighted arithmetic mean.
Results/Conclusion

The result showed that (89.7%) of the respondents were males, while the rest (10.3 %) were females. The findings revealed that 17.9% of the respondents hold bachelor degrees of agricultural extension, 66.7% hold bachelor degrees other than agricultural disciplines, 10.3% hold agricultural secondary high school, and 5.1% hold trade secondary high school. Majority of our sample, (82%) of the respondents were do agricultural extension duties more than other duties, while (64%) were work on administrative duties more than extension duties. In term of years of experience, the average years of experience in agriculture extension were (17.5) years. Also, the average number of training courses in which they participated is (5.2).

The study revealed that there were 16 strong obstacles faced the agricultural extension services at AL-Diwaniyah Province, Iraq: decrease in the number of agricultural extension agents, weakness in the level of preparation and training of extension agents, mandated agricultural agents with administrative and office work more than extensions work, widening the geographical area under the responsibility of extension agent, lack of understanding of some rural residents to the role and duties of the agricultural extension, limited the role and influence of agricultural media, weak relationship between the agricultural extension system and scientific and research institutions, centralization in planning agricultural extension programs, non-participation of extension agents in planning of extension program, lack of understanding of many agricultural officials to the nature and functions of extension work, lack of understanding of the beneficiaries to concept and philosophy of agricultural extension, low salaries and material incentives granted to workers in the agricultural extension, no specific policy to the plans, programs and extension activities, shortage in the number of female extension workers, assigning people non-specialist to carry out agricultural extension tasks, and not taking the opinion of the beneficiaries when planning extension programs.

Recommendations

The number of extension agents in the province, private females should be increased. Curricula should be reconsidered in preparing and training agricultural extension workers in Iraq, and may provide a benefit from the experiences of other countries in this area. Extension agents administrative duties should be minimized. The role of agricultural media should be activated to assist in the definition of the importance and the role of agricultural extension. Extension should reduce the centralization in extension work and involvement of extension agents when planning to programs and extension activities. A comprehensive study should be conducted to identify the obstacles of agricultural extension in Iraq.

References


Overcoming Barriers to Participatory Extension and Development

Sabrina Tuttle
University of Arizona Cooperative Extension
PO Box 850, San Carlos, AZ 85550
(928)-475-2350, Fax (928)-475-2359, sabrinat@ag.arizona.edu

Cathy L. Martinez
Juanita Waits
Linda Masters
Jeannie Benally
Matt Livingston
Elisabeth Alden
University of Arizona Cooperative Extension

Keywords: participatory methods, inclusionary practices, community issues

Introduction

Since the 1980s, extensionists often viewed participatory extension as the panacea for the failure of top-down extension models (Ledwith & Springett, 2010; Masters & Tuttle, 2010). While participatory extension programs seemed like the answer to problems with top-down strategies, issues arose that created barriers to program implementation. These barriers include: gender gaps, dependency, insufficient leadership skills, resistance to new ideas, and inadequate time or money to conduct projects (Tuttle et al., 2010). However, we can overcome obstacles to participation using methods of inclusion, promoting self-reliance over dependency.

Research Purpose and Question

The purpose of this paper is to provide an analysis of research findings of global participatory methods to provide a better understanding and approaches to improving inclusionary practices that increase the involvement of marginalized clientele in community development while addressing critical community issues.

Methodology

The researchers employed literature review from two international journal abstracts, a practical program guide, and eight books that explored participatory extension. They used qualitative analysis of data (Glaser, 1965) that explored participatory extension in two frameworks-theoretical and applied. As a part of a larger research project, researchers chose two of the eight categories, inclusion and dependence vs. self-reliance, as most relevant to overcoming barriers to international extension projects.

Results and Conclusions

In contrast to centralized, top-down extension models, participatory models should aim for inclusion: use local knowledge, and include poor and marginalized people: women, the elderly, and the disabled as well as others. To encourage inclusion, extension personnel should also avoid "rural tourism bias," and be willing to conduct projects outside of the 9 to 5 work hours, in remote areas, and in all seasons (Cooke & Kothari, 2001; Ledwith & Springett, 2010).
In a project in India, the Bhoomi Senda labor group desired to learn from each person and village. They used key outsiders to facilitate learning, and to help make decisions that affect quality of life (Kahn, 2009). Masters and Tuttle (2010) showed that participatory extension in Africa encourages the integration of the wealth of villagers’ creative and analytical abilities. Vincent (2004) encouraged extension staff in Peru to help locals plan their own lives.

Tuttle et al. (2011) and Kumar (2002) explained participatory methodologies/techniques that foster inclusion: individual interviews, focus groups of local men, women, and children; community mapping; ecological transects; oral histories; and time schedules of men and women. Community-based health organizers in the Appalachian region of North Carolina, U.S.A., comprehended that material and non-material cultural elements were vital in health maintenance. They used community cultural information to formulate health maintenance strategies—“residents defined their communities as small neighborhoods, based on traditional kinship ties and landholdings” (Plaut, Landis, & Palmour Trevor, 2003, p.235).

Top-down extension often creates dependency, whereas participatory programs promote self-reliance – locals change from being dependant, and augment their awareness and self-confidence. Open systems in methods, behaviors, and processes of participation allow us to better depict participants’ realities than quantitative data (Kumar, 2002). Participatory projects should foster self-reliance while linking local social capital to outside resources (Cook, 2003). A self-help project in the Philippines promoted independence by financing a loan for a tractor through a local bank (Bodenstedt, 1975), and the Bhoomi Senda group in India coordinated activities between many villages through locals, not outsiders (Khan, 2009). Developing leadership in local participants is important, to hand over the project to the participants. Platt et al. (2003) describe how the Community Health Advisory Board in North Carolina utilized nominal group process to divide the Board into smaller units to discuss and prioritize needs. Later, this local group became the Community Health Coalition, and worked out problems between doctors and emergency personnel by finding grant funding for 911 emergency systems and diabetes education.

**Educational Implications**

Top-down extension programs tend to include a selected, easily accessible population while neglecting the input of more marginalized communities. As extension systems move from top down organization to more participatory methods, extensionists at universities and field staff worldwide must learn how to use participatory methods to create inclusion and self-reliance for communities. Overcoming barriers of a participatory system may also require a paradigm shift for extensionists, to focus on relationships with locals, and to integrate into the community’s way of life. In our work with Native Americans in Arizona and New Mexico, we often facilitate participatory methods. Our programs integrate cultural elements, such as traditional gardening crops and techniques, to help tribes regain their cultural heritage, and to increase self-esteem in youth through the life skills of responsibility, teamwork, and self-reliance.

**References**


Participants’ Views of Training to Improve Communication on Issues of Food Security in East Africa: A Project Assessment

Dr. J. Tanner Robertson
West Texas A&M University
Department of Agricultural Sciences
WTAMU Box 60998
Canyon, TX 79015
Tel. #: 806.651.2591
trobertson@wtamu.edu

D. Dwayne Cartmell II
M. Craig Edwards
Shelly Sitton
Oklahoma State University

Cindy Blackwell
University of Southern Mississippi

James W. Hynes
Sam Houston State University

Tracy Irani
University of Florida

Keywords: communication, food security, professional development

Introduction
The need to improve food security in Sub-Saharan Africa is an enormous problem. In East Africa, Kenyans and Ugandans are no strangers to the devastating effects of food scarcity. Nearly four million Kenyans and more than two million Ugandans require food assistance regularly (USAID, 2008, 2009).

The project assessed sought to improve food security in Kenya and Uganda by providing professional development for three key stakeholder groups whose collaboration stood to amplify their collective impact on food insufficiency: community leaders, media specialists, and policymakers. They were the project’s Food Security Fellows (FSFs). The project proposed to improve communication flow among and between these groups by their and U.S. counterparts participating in two-way, reciprocal exchanges. It was funded by the U.S. Department of State.

The training model was designed to facilitate the flow of communication between these groups while stressing food security policy and its impact on communities. The presentation will report on aspects of the project’s summative assessment (Popham, 1993).

Conceptual Framework
Ajzen’s (1991) theory of planned behavior posits that “a relation between a person’s salient beliefs about the behavior and his or her attitude toward that behavior” (p. 192) exists. Ajzen called this association an individual’s belief salience for a given behavior and theorized it...
influences how and what is perceived, which, in part, determines one’s intentions or planned behaviors. Therefore, the FSFs’ views on knowledge gained as a result of the training and its impact on future communication practices were conceptualized as indicators of planned behaviors (Ajzen, 1991) in regard to communicating about food security.

**Purpose/Objectives**

This study assessed the perceptions of professionals who participated in educational training to improve their understanding of and how to communicate effectively about food security issues. Three objectives guided the study: a) describe FSFs’ perceptions of change in their knowledge regarding communicating on issues of food security, post-training; b) determine FSFs’ perceptions of the training’s impact on their understanding of effective communication for improving food security; c) determine FSFs’ perceptions of the training’s impact on their developing professional practices related to improving food security.

**Methods & Data Sources**

This descriptive study used a mixed-methods approach (Creswell, 2008) to collect data: survey questionnaires and focus group interviews (Krueger, 1994). The data were provided by 13 Kenyans and 13 Ugandans who participated in the project’s training in the United States during 2011 (12 in April; 14 during September-October). Fifteen males and 11 females participated ranging from 28 to 54 years of age. Their education varied from “some college” to master’s degrees. The three targeted participant groups were uniformly represented.

The FSFs rated their levels of knowledge on communication and food security – before and after the training – using a five-point, response scale (four items): 1 = Strongly agree . . . 5 = Strongly disagree. The same scale was used to rate their agreement with 10 statements describing the training’s impact on their understanding effective communication practices to improve food security and developing such professional practices. The quantitative data were analyzed descriptively.

An outside evaluator moderated the focus group interviews (Krueger, 1994). A series of open-ended questions were asked to assess the FSFs’ views on their training experiences. The responses were recorded using audio and video recording equipment and later transcribed and analyzed for dominant themes.

**Results/Conclusions**

The FSFs’ views on their knowledge in regard to communicating about food security issues changed from neutral before the training to agree after (all items). The largest perceived change was for “knowledge of food security challenges.” The FSFs strongly agreed the training impacted their understanding of effective communication practices for improving food security and their developing such practices. Of the 10 statements, “useful in professional development” had the highest mean score (\(M = 1.04; SD = .20\)). The themes emerging from both focus groups regarding the training were consistent, e.g., the need for community level social change to improve food security.

**Implications/Recommendations/Educational Importance**

Röling (2004), regarding communication for development, stated “[i]nnovation is not the end-of-pipe result of a linear process but the emergent property of interaction among multiple stakeholders . . .,” i.e., “a network of actors” (p. 18). He asserted further, “the network is based
on shared perceptions with respect to the issues at stake” (p. 18). This project operationalized Röling’s position by bringing together diverse actors around the theme of improving food security in hope these actors begin a discourse to identify issues and solutions regarding food security in East Africa. Such communication among network actors could lead to improvements in the social, industrial and/or political factors regarding food security. The findings imply Participants’ views of their experiences supported the project’s premise and approach. Others charged with providing training on complex problems should include participants of seemingly disparate groups who hold similar aims.

References
Perceptions of Public Extension in a Pluralistic Extension System in Trinidad and Tobago

Norma Samuel
UF/IFAS Marion County Extension Service
2232 NE Jacksonville Road
Ocala, Florida 34470
Phone: 352-671-8400
Fax: 352-671-8420
Email: nsamuel@ufl.edu

Amy Harder
Austen Moore
Angela Valadez
University of Florida

Keywords: public extension, pluralistic system, extension

Introduction
Trinidad and Tobago (T&T) does not produce enough food to sustain its population and is working to become a food secure nation by implementing The National Food Production Action Plan 2012 – 2015. The country’s food imports comprise approximately ten percent of the total imports (Ministry of Food Production, Land and Marine Affairs (MFPLMA), 2012). The MFPLMA (2012) envision the capacity building of farmer organizations, improving extension service delivery to farmers, and partnering with non-governmental organizations and the private sector as critical strategies. Achieving the status of a food secure nation will also require increased production from the many small farmers comprising T&T’s agricultural sector, but education will be a key component for making this happen.

Purpose
The purpose of this study was to describe the perception of stakeholders (farmers, non-governmental organizations, farmer organizations, input suppliers / agro-dealers, extension personnel, and University of the West Indies (UWI) Faculty of Agriculture and students) on the services provided by public extension in Trinidad and Tobago.

Methods / Data Sources
A basic qualitative design was used (Merriam, 1998). Convenience sampling of agricultural stakeholders in Trinidad and Tobago was drawn, where farmers (n=17) formed the basis of this study (Flick, 2009). Semi-structured individual and small group interviews were conducted in March 2012, and detailed hand-written notes were taken. Data was analyzed with the constant comparative method to search for recurring themes related to perceptions of public extension in a pluralistic system (Merriam, 1998). Triangulation occurred by cross-referencing notes with the other three members of the research team, while member checking with respondents was used to increase trustworthiness (Lincoln & Guba, 1985).
Results / Conclusions

All farmers interviewed knew of the public extension service; however, only five either used extension as a source of information or knew the extension officer assigned to their area. All indicated the input suppliers as the first source of information and not extension because of lack of timeliness and relevance. However, although farmers were quick to acknowledge input suppliers as their first source of information, they were concerned about the high cost of inputs to produce a crop. The possibility exists that farmers may be purchasing unneeded products when less expensive organic methods or even changes in cultural practice could suffice. Another concern noted by farmers was that many of the officers were “fresh out of college with no practical experience” and they would have to teach the officer.

According to Dowlath (2012), Director of Extension, extension in T&T is pluralistic with 16 groups providing information to farmers. The main players in order of importance were input suppliers, farmer organizations, and public extension. Dowlath (2012) indicated the high ratios (200:1 to 300:1) of farmers to officers; large geographic areas to cover; many regulatory duties assigned to officers; frequent assessments needed for items such as flood damage and invasive species; and sudden changes in ministerial directives all present challenges impacting the effectiveness of public extension. Respondents from farmer organizations and UWI faculty interviewed expressed concerns with the system’s inadequacies citing many of the limitations identified by Dowlath.

Many of the organizations providing extension service in T&T operate in isolation, leading to the potential for farmers to receive conflicting information. Two farmers interviewed, both using a different agricultural principle, were frustrated that neighboring farmers were not adopting the practice they were promoting. Also, many terminologies were being used, such as sustainable farming, ecological crop management, permaculture, and good agricultural practices that might be confusing to farmers due to the similarities between all these terms.

A senior lecturer (2012) in the Department of Agricultural Economics and Extension at UWI, indicated that extension “officers tend to interact more with groups rather than with individual farmers,” and recommended “each farmer joins an organization in order to gain access to the services” offered through public extension. Leadership within the farmer organizations indicated they provide regular training for their members and do not rely on public extension.

Recommendations / Implications

The government of T&T needs to reassess its role in the delivery of extension services, and public extension should facilitate collaboration between organizations. Okorley, Gray, and Reid (2010) recommended all parties in a pluralistic system meet on a regular basis to identify the issues that need to be addressed and the capabilities and role of each agency. Monitoring the information provided is also necessary to ensure that farmers are not receiving conflicting information.

References


Performance of Supervised Enterprise Projects (SEPs) Conducted by Sasakawa Africa Fund for Extension Education (SAFE) Students of Bayero University Kano, Nigeria

Mahmoud Ibrahim Daneji
Department of Agricultural Economics and Extension
Bayero University
Kano, Nigeria
Tel: +2348036342323
Email: midaneji@gmail.com

Mercy Akedolu
Sasakawa Africa Fund for Extension Education

Aminu Suleiman
Bayero University

Muhammad Sabiu Suleiman
Bayero University

Keywords: supervised enterprise projects, capacity building, extension staff

Introduction
Agricultural extension system in Nigeria especially at the grassroots level constitutes a very weak point in the country’s agricultural development efforts. To this end, an alternative and unique educational training programme is designed by the Sasakawa Africa Fund for Extension Education (SAFE) and other partner institutions in Africa (Suleiman, Mohammed, & Daneji, 2008). The programme emphasizes hands-on experiential learning as its central theme and is aimed at producing qualified and more practice oriented frontline agricultural extension staff with up-to-date theoretical and practical knowledge that enables them meet the challenges of an ever increasing and complex issues in agricultural development. To achieve this, the Supervised Enterprise Projects (SEPs) which is a participatory problem solving approach based on the needs, yearnings and aspirations of the target communities became the nerve centre of SAFE programme. (Zinnah, 1997). It therefore became imperative to examine the roles of various stakeholders in the conduct of SEPs.

Purpose and Objectives
The main objective of the study was to examine the performance of Supervised Enterprise Projects (SEPs) conducted by SAFE graduates of Bayero University, Kano (BUK), Nigeria and specifically the study had the following specific objectives. To describe the socio-economic characteristics of BUK SAFE graduates; to assess the types of SEPs conducted by the students; to assess the role of stakeholders in the conduct of SEPs; to examine the sustainability of SEPs in the location of conduct and the BUK; to assess the perception of SEPs beneficiaries, and to evaluate the strengths, weaknesses, opportunities and threats (SWOT) of the SEPs.
Methods and/or Data Sources

A census of SAFE graduates (2008/09 and 2009/10) was conducted and random sampling technique was used for the study and covered four categories of respondents (the graduates, the beneficiaries, the supervisors and the employers). Data were collected from 265 randomly selected respondents (15 employers; 55 graduates; 165 beneficiaries and 30 supervisors) using structured questionnaires and interview schedule. The data were analyzed using descriptive statistics and chi-square analysis.

Results, Products, and/or Conclusions

The results revealed that the SAFE graduates, participating beneficiaries, and supervisors were middle aged, with mean ages of 38, 42 and 44 years respectively. Majority (77.60%) of the participating beneficiaries, 94.50% of the graduates and 90.00% of the supervisors were male. Also, 81.82% of the participating beneficiaries were married with 12 mean years of experience in main occupation. Majority (57.00%) of the participating beneficiaries had religious education while hundred percent of graduates and supervisors had at least one post secondary certificate. Sixty-three different types of SEPs were carried out with about 44.44% crop based and 28.57% livestock based. It was also found that all the stakeholders played one or more roles in the conduct of SEPs. The results of chi-square analysis of factors that determine the sustainability of SEPs among participating beneficiaries indicated that there were significant ($p<0.001$) relationship between the performance of stakeholders and sustainability of SEPs.

However, participating beneficiaries perceived that there was significant ($p<0.001$) relationship between their agriculture and rural development needs with the type of SEPs conducted. The results of SWOT analysis across stakeholders showed that assistance of material resource; technical assistance; research skill, field work experience and linkage facilitation; information dissemination, increase in agricultural production; group work motivation; availability of target beneficiaries were the internal and external favourable factors in the conduct of SEP. Insufficient fund, low coverage of SEPs, inadequate monitoring and supervision and poor patronage of local/hosting community, poor linkage among stakeholders, inadequate mass mobilization and awareness campaign, seasonal nature of agricultural activity and incompatibility of government policies were the internal and external unfavorable factors that affect smooth conduct of SEPs in Bayero University Kano and the location of conduct.

It was concluded that the SEPs conducted has helped to address agriculture and rural development needs of the participating beneficiaries and the stakeholders performed their expected roles.

Recommendations, Educational Importance, Implications, and/or Application

It is recommended that emphasis should be placed on increasing stockholder’s strength and opportunities to overcome their weaknesses and threats through individual and collective interventions.

References


Qualitative Research Methodology in Program as Assessment: A Longitudinal Case Study

Charles H. Klein

Texas Tech University
PO Box 42121
Lubbock, TX 79409-2121
806-742-2858 (Office)
806-742-0770 (Fax)
charles.klein@ttu.edu

David Lawver
John Ulmer
Courtney Meyers
Debbie Laverie
Texas Tech University

Keywords: Qualitative Methodology, Case Study, Study Abroad, Service-Learning, Assessment

Introduction

The focus of this study is the use of qualitative research methods in the assessment of a study abroad program that incorporated an extension-like component where students worked with rural Maya agricultural communities in Mexico. The program combined two very significant learning pedagogies; study abroad and service-learning.

By nature, service-learning can result in a very unstructured learning environment (Forsyth, Lu, & McGirr, 1999) and the international setting of that environment can compound the complexities. Consequently, understanding how students describe and internalize the impact of the program can be equally complicated. The situation is as described by many experiential education scholars who consider learning, or the accumulation of knowledge, is the result of one’s own experiences within a context or social setting (Dewey, 1902; Kolb, 1984). Qualitative inquiry assumes a subjective reality whereby individuals construct knowledge from their experiences within the context of a social setting and is ideally suited as a research methodology for this study.

Purpose and Objectives/Theoretical Foundation

The purpose of this case study was to describe the qualitative research methodology and techniques used when evaluating a long-term study abroad program. The methodology included the coding and analysis of student journals utilizing NVivo software program.

Oftentimes, researchers attempting to understand the human condition, and especially the inner workings of the human mind, tend to take the scientific approach and isolate one specific aspect of the brain. However, the human brain is far too complex to completely isolate a single variable in any realistic, ethical fashion (Klein C. V., 2007). Qualitative research methodology is ideally suited to making sense of a complex situation with multiple variables. It is also particularly suited to answering questions such as “what” and “why” by gathering a wealth of information that provides more in depth and insightful data rather than statistics that responds to a specific hypothesis (Lindlor & Taylor, 2002) (Cresswell, 1998) (Gall, Gall, & Borg, 2007).
Methods and/or Data Sources

The context of program is the Community-Based Ecotourism in Yucatán course that has been offered as a summer study abroad class from 2005 through 2010. The primary data set was 59 student journals from six study abroad programs. As part of the traditional service-learning reflection activities, students were required to keep journals in which they wrote essays in response to pre and post-reflection prompts. It is important to note that there were never more than 11 students participating at any one time, yet, as is typical with qualitative research, the data provided considerable depth and richness.

Analysis of the student journals used Krathwohl’s five levels of the affective domain to understand changes in student’s attitudes and perceptions. This process was utilized in other similar studies and was found to be effective (Boyd, Dooley, & Felton, 2006; Klein & Lawver, 2007). The analysis was conducted using NVivo software which provided the ability to manage a large amount of data using a process known as coding/re-coding. The students’ writing was first categorized, or coded, to identify the prominent themes. The themes were then re-coded into one of Krathwohl’s levels. A third analysis of the data compared the differences between the students’ writing from the pre- and post-essays within the five levels of the affective domain.

Results, Products, and/or Conclusions

Analysis showed that student journaling in response to pre- and post-reflection prompts shifted toward the higher level of the affective domain at the conclusion of the program. Further analysis indicated that the inclusion of the service-learning activity enhanced that shift. Finally, a comparison of the student journals with specifics of the service-learning activities indicated that close interaction with the client played an important role. NVivo’s coding query and graphing functions helped visualize these phenomenon with a three-dimensional charting function.

Recommendations and Educational Importance

The use of qualitative research methodologies can be very informative when dealing with studies involving a small number of participants as well as complex, interactive social phenomenon. The sheer volume of information can at times be overwhelming but its management and analysis can be greatly enhanced with the use of NVivo software. The program can also be used to help establish research rigor. However, like any assessment tool, computer software is not a substitute for the logical and knowledgeable use of the qualitative paradigm.

References


Rebranding Caribbean Extension: An Analysis of a Key Panel Discussion

David Dolly
Department of Agricultural Economics and Extension
University of the West Indies
Saint Augustine
Trinidad and Tobago
1-868-662-2002 Ext 83206
farmdavid42@gmail.com

Diana Francis
Brent Theophile
University of the West Indies

Keywords: Extension rebranding, panel analysis, training

Introduction
This paper analyses a panel discussion on the topic of rebranding agricultural extension in the Caribbean. The discussion occurred at a roundtable discussion at the Caribbean Week of Agriculture (CWA) held in Grenada, October 2010. The panel consisted of key extension leadership and the audience was a responsive collection of lead farmers, practitioners, media personnel, consultants, government personnel and representatives of local and international organisations. The two succeeding CWAs did not address agricultural extension. It is important to understand the perspectives of this discussion which can guide future extension effort.

Purpose and Objectives of the Paper
Caribbean extension faces enormous challenges. There is currently low staff morale, weak or absent policy, unclear definitions about extension’s role and a lack of farmer involvement. From an enabling perspective there are minimised programme budgets, the challenge to integrate with health and education and a range of natural global issues like climate change to economic ones like marketing and trade. The paper’s objective is to eke an understanding of how leadership thinks about an extension resolve.

Lindner and Dolly (2009) had conceived a continued role for Extension to facilitate agricultural development. They argued that it is not a question of if, but how. Likewise in searching for an answer, Swanson (2008) felt that nontraditional entities are overtaking Extension’s role is within the agricultural sector. He suggested that Extension must integrate with new entities in partnerships. This view concurs with the idea of a pluralistic extension approach which Rivera (2001) had earlier advocated.

Data Source
The author used the original transcript of a panel discussion at CWA 2010. The panel consisted of Directors of Extension from Antigua and Barbuda and the Commonwealth of Dominica, the head of the Extension services of the National Agricultural Marketing Company of Trinidad and Tobago (NAMDEVCO), a representative of the regional University of the West Indies and a director of a major agricultural input supply company. The chairperson controlled the discussion.
throughout three hours of interaction. Members of the audience then made individual rebuttals and new contributions to the head table’s analysis. Technical staff of the Inter American Institute for Cooperation in Agriculture (IICA), Saint Augustine, Trinidad and Tobago transcribed the entire discussion verbatim. This study analysed the discussions.

Results and Conclusions
At the onset, the organisers made the case that, in recent years there is much criticism of the extension services of the ministries and departments of agriculture despite restructuring and modernisation strategies. They also recognised that the private sector firms which supply farm inputs engaged in extension services, duly implying that other forms of Extension services are operative. These observations guided the panelist in their own thoughts about the topic of extension in 21st century Caribbean agriculture.

The panel summarised that there is dissatisfaction with the traditional and typical government based Extension service as the demands for extension has changed. There is need for continuous training of officers and their clients. The panel concluded that ICTs will enhance communication initiatives. The panel expects that ancillary extension services will facilitate specialist options. For example commodity value chain application and a diverse range of livelihoods and occupations will now become part of the priority. Therefore Extension can be of service to Organic Farming, Food Standards, Good Agriculture Practices, Agribusiness and Marketing. In the rebranding strategy there must be joint focused approaches among the stakeholders.

Recommendations, Educational Importance and Application
The panel concluded that rebranding Extension is a priority. Any format of rebranding must have a strong educational intervention. There must be wider stakeholder participation in extension effort. The next study will use a more expansive sample of extension stakeholders who can verify consensus and contribute to the design of distinct elements of a rebranded portfolio for Caribbean extension.

References
Self-Perceived Outcomes of Students During a College of Agricultural and Life Sciences Short-term Study Abroad Program

Nathan W. Conner
University of Florida
310 Rolfs Hall
PO Box 110540
Gainesville, FL 32611-0540
352-273-2614 (phone)
352-392-9585 (fax)
nathan.conner@ufl.edu

T. Grady Roberts, University of Florida

Keywords: Short-Term Study Abroad, College of Agricultural and Life Sciences

Introduction

Increased interconnectedness of the world’s economy has led to a world in which people routinely interact with people from all over the world (Anderson, Lawton, Rexeisen, & Hubbard, 2006). International exposure, knowledge, and experience have become critical to an individual’s professional success (Open Doors, 2006). One method of providing international experiences and knowledge to help prepare individuals for future careers has been through undergraduate study abroad programs (Bruening & Frick, 2004). Enrollment in study abroad programs has been on the rise and has gained recognition as a learning experience that provides experiences not adequately provided in the home classroom (Vande Berg, 2009). Additionally, Vande Berg communicated a need for study abroad educators to facilitate learning before, during, and after the study abroad program.

Purpose and Objectives

The purpose of this study was to explore the self-perceived outcomes of a short-term study abroad program within the College of Agricultural and Life Sciences at the University of Florida.

Methods

During the spring of 2012, thirteen College of Agricultural and Life Sciences students participated in a week long study abroad program in Costa Rica. All thirteen students were invited to complete four post-experience questions and email their responses to the researcher. This abstract focuses on a case study of five of the students. Pseudonyms were used to protect the identity of the participants. A basic or generic methodical approach was used for this study because it allowed for the interpretation of the data through the emergence of themes (Merriam, 1998). The data was analyzed using the constant comparative method in accordance with the procedures outlined by Lincoln and Guba (1985). Referential adequacy materials and peer debriefing were used to help ensure trustworthiness (Dooley, 2007).
Results

Seven themes emerged from the data: gratitude, social awareness, cultural awareness, economic awareness, environmental awareness, professional growth, and maturation. Upon completion of the study abroad program, the participants showed appreciation and gratitude for having the opportunity to participate in the program. Sara said, “I am so grateful for having the opportunity to experience this study abroad trip. I feel lucky, happy, captivated, and all good thoughts about the experience.” The study abroad program was an eye opening experience for the participants. Tim noted that the stigma towards poverty in Costa Rica was different than it is in the United States, and “despite the poverty, the locals managed a happy life.” Despite abundant poverty (Tim; Chris), Chris realized that the economy in Costa Rica depends on tourism. Chris realized that the economic dependence on eco-tourism has led to an increase effort and focus on conservation and sustainability efforts within Costa Rica.

The study abroad program allowed the participants to grow professionally through exposure to conservation efforts and eco-tourism that has been taking place in Costa Rica. Tim stated, “I came away with a better understanding of field work and how natural science is actually conducted.” One participant has aspirations of becoming a doctor and she felt that the program allowed her the opportunity to visit with injured people and perform first aid.

The entire program was a maturation process for the participants. Tim realized that traveling abroad presents many cultural challenges and barriers and that it often requires much effort to learn when you are submerged in a different culture. Mary recognized that it would have been beneficial for her to learn Spanish prior to attending the program. Sara stated, I felt like I grew up a lot during this trip and learned that I can push myself more than I ever thought”. The study abroad experience exposed the students to new cultures and ways of doing things, which helped to expand the participants view and push them to mature rapidly (Sara).

Recommendations and Implications

In accordance with Bruening and Frick (2004), participants in the study abroad program felt that they were experiencing professional growth that would help prepare them for future careers. In addition, the participants experienced social, cultural, and economic awareness that may not be fully experienced in the home classroom (Vande Berg, 2009). Individuals charged with developing and facilitating study abroad programs should recognize that student learning may happen through social, cultural, and academic interactions. Learning opportunities should not be overlooked due to the academic focus of the program. It is important for facilitators to intervene throughout the program and guide the students through a positive learning experience (Vande Berg, 2009) that allows for individual growth and maturation.

References


Integrating Teacher’s International Experience into High School Agriculture Education Curriculum and Its Effects on Student Perceptions

Laura Lemons  
Texas Tech University  
Department of Agricultural Education and Communications  
15th and Detroit Ave, Box 42131  
Lubbock, TX 79409-2131  
Phone: (806) 742-2816  
Fax: (806) 742-2880  
Email: laura.lemons@ttu.edu

Candis Carraway  
Scott Burris  
Todd Brashears  
Texas Tech University

Joe Barbour  
Florence High School

Keywords: agriculture, education, international, curriculum, integration

Introduction  
Awareness of globalization is increasing, and students are being encouraged to prepare to enter a more internationalized job market. The agriculture industry is no exception (Sharp & Roberts, 2011). If agriculture students are going 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, Boyd, Lindner, Dick, Arispe, & Haba, 2003).

A need for the development of high school international agriculture curriculum has been identified (Sharp & Roberts, 2011). Important steps in the development of this curriculum include understanding students’ current perceptions of international agriculture and effective ways to influence students’ perceptions.

Purpose and Objectives  
This study sought to identify high school students’ perceptions of international agriculture. 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.
Methods

Social learning theory indicates that learning can occur through vicarious experience (Bandura, 1977). A high school agricultural educator in [state, country] 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. A census of the students present in the class was used for pre-test/post-test data collection. A 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 from five to 50.

Results and Conclusions

Questionnaires were collected in such a way that analysis could be conducted on matched pairs. On the pre-assessment, 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-test was 37.64 (SD = 4.23). On the post-assessment, students’ 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-test was 44.14 (SD = 2.05).

A paired samples t-test indicated a significant difference in the pre-test and post-test summated scores. As indicated by the mean scores, the post-test summated scores were significantly higher than the pre-test 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-test indicated students’ disagreement with the statements, the research still showed movement of all item means further toward “strongly agree” on the post-test. This suggests that even one integrated lesson may further convince students’ of the importance of international agriculture and its relevance to them.

The results of this study indicate that high school curriculum integrated with vicarious international experience can positively impact students’ perceptions of international agriculture. Therefore, development of international agriculture curricula should be encouraged and increased. This is supported by recommendations from previous research (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. Therefore, a prudent way to encourage and increase the development of internationally integrated curriculum may be to provide international experiences for instructors which they can then utilize in lesson development.

Finally, it should be recognized that time constraints limited this study to analysis of the effects of one integrated lesson on students’ perceptions. It is recommended that research also be conducted on student knowledge of international agriculture. Additionally, it is recommended
that research be conducted on the sustainability of an increase in students’ perceptions regarding international agriculture.

**References**


Students’ Awareness, Use, and Perceptions of Biodiesel: An International Perspective

Donald M. Johnson
University of Arkansas
Department of Agricultural and Extension Education
205 Agriculture Building, Fayetteville, AR 72701
479-575-2039 / dmjohnso@uark.edu

Don W. Edgar
Leslie D. Edgar
University of Arkansas

Keywords: Biodiesel Awareness, Biodiesel Use, Biodiesel Perceptions, Alternative Energy, Education

Introduction

Liquid biofuels have received renewed interest among the public, government, and industry due to diminishing reserves of easily-extracted petroleum, increasing energy demands, the geographical concentration of known petroleum reserves, and concerns about the environment (Koonin, 2006; Rojey & Monot, 2010). Consumers in Europe are the largest consumers of biodiesel globally and 3,041 million gallons of biodiesel were produced (EBB, 2010) as compared to the US where 315 million gallons were produced (NBB, 2012). However, many potential consumers, globally, may not have adequate knowledge of and hold negative perceptions of biodiesel.

Purpose and Objectives

Specific objectives were to determine: (1) awareness of biodiesel and if awareness differed by university; (2) use of biodiesel and if biodiesel use differed by university; and (3) perceptions of biodiesel and if perceptions of biodiesel differed by university.

Methods

The population for this study was comprised of students enrolled in an introductory agricultural economics course at the University of Arkansas (US) and an introductory chemistry course at the University of Ghent (EU) during the fall 2011 and fall 2012, respectively. At the US, 89 of 105 (84.8%) students enrolled were present and provided usable responses, and at the EU, 119 of 120 (99.2%) provided usable responses.

The survey instrument was developed by the researchers based on a review of the literature related to consumer awareness, use, and perceptions of biofuels (Kinsey, Peterson, & Haines, 2003; Kulscar & Bolender, 2011; Popp, Van de Velde, Vickery, Van Huyl enbroeck, Verbeke, & Dixon, 2009; Selfa, Kulscar, Bain, Goe, & Middendorf, 2010; Skipper, Van de Velde, Popp, Vickery, Van Huyl enbroeck, & Verbeke, 2009; Vogt, Cantrell, Carranza, Johnson, & Peters, 2008; Xue, Grift, & Hansen, 2011). The test-retest procedure was used to determine instrument reliability (Gall, Gall, & Borg, 2006). The coefficients of stability were 1.0, 0.81, and 0.99, for sections one, two, and three, respectively. Data were analyzed using descriptive and inferential statistics.
Results and Findings

Undergraduate students enrolled at the University of Arkansas (n = 89) (US) and at the University of Ghent (n = 119) in Belgium (EU) were surveyed during the fall semesters of 2011 and 2012, respectively. A significantly (p < .05) higher percentage of EU students (60.3%) reported owning or driving a diesel vehicle than did US students (16.8%). At 100%, awareness of biodiesel was significantly (p < .05) higher for EU students than for US students (85.6%). Despite EU students being more likely to own or drive a diesel vehicle and being more aware of biodiesel, there was no significant difference in the percentages of EU and US students who had ever purchased biodiesel (4.3% and 5.4%, respectively).

Overall, EU students were significantly (p < .05) less positive about engine performance with biodiesel than were US students. EU students were less likely to agree that diesel engines would run properly on biodiesel and more likely to agree that use of biodiesel would increase maintenance and repair costs. Similarly, EU students were more likely to agree that they would never use biodiesel and less likely to agree that use of biodiesel was better for engines. EU students were significantly (p < .05) more likely than US students to agree that global warming was real and exhaust emissions contribute to global warming.

Conclusions and Recommendations

With a greater majority of students (EU) having previous knowledge about biodiesel and utilizing diesel more commonly, it was interesting to note that EU students were less positive about biodiesel. When this is compared to biodiesel production statistics in Europe (EBB, 2010) and the US (NBB, 2012), there was an inverse relationship between production and acceptance. Further research is needed to identify factors contributing to EU students’ more negative perceptions of biodiesel.

Overall, the differences between the two groups were apparent. It is recommended that education programs for both EU and US students should be developed to increase their knowledge about biodiesel and its effects on engine performance and emissions. Furthermore, education in EU settings should also specifically target the environmental impacts of biodiesel.

References


The “New Extensionist”: Roles and Capacities to Help Reduce Hunger and Poverty

Rasheed Sulaiman V.
Centre for Research on Innovation and Science Policy (CRISP)

Kristin Davis
Global Forum for Rural Advisory Services (GFRAS)
Eschikon 28, 8315 Lindau
SWITZERLAND
Ph. +41 (0)52 354 97 64
Mobile +41 (0)79 886 75 30
Fax +41 (0)52 354 97 97
Kristin.davis@g-fras.org

Sue Canney Davison, Pipal Ltd.

Keywords: Capacity, roles, individual, organizational, system

Introduction
Extension and advisory services (EAS) play an important role in agricultural development and to reduce hunger and poverty (Davis, 2008; Sulaiman & Hall, 2003). However, these services need new capacities to address the current challenges in agriculture and to contribute better to agricultural innovation.

To do so, EAS should collectively perform a wide range of roles. These include developing networks; organizing producers; facilitating access to credit, inputs, and output services; convening innovation platforms; promoting gender equality; and disseminating new knowledge through training and demonstrations. To play these roles, EAS needs new capacities at the individual, organizational, and system levels.

Purpose and Objectives
The broad objective of the “New Extensionist” concept was to increase clarity on the important role of EAS within agricultural development. This paper is based on a follow-up process to several international forums on extension that discussed the role of EAS in agricultural development. Specifically, the objective was to produce a position paper on the roles and capacities needed, using a process of global dialogue to validate the concepts and recommendations in the paper.

Methods
Based on a literature review, a position paper was developed detailing the role of advisory services; the need for enhanced capacities for EAS at individual, organizational, and system levels; capacity constraints at national, regional, and global levels; and recommendations to strengthen the capacities and role of EAS. The paper was peer-reviewed by a panel of experts from different sectors. A two-page summary of the paper was created and sent to international agricultural list serves with an invitation to an online survey. The survey consisted of seven questions with Likert scale or yes/no responses, with the option of giving open-ended responses. Over 200 global respondents took part in the survey, and many joined the in-depth electronic
discussion, enabling dialogue and validation of the concepts and recommendations. Finally, the paper underwent validation exercises at global meetings of extension stakeholders and stakeholders from the entire agricultural sector.

Results

The position paper stated that at the individual level, EAS need staff with understanding of technical knowledge plus skills to manage social processes. At the organizational level, EAS need capacities to put in place systems and procedures to manage human and financial resources, institutions to facilitate partnerships and learning, and frameworks to deal with institutional, legal, and regulatory issues. At the system level, capacities for interaction, learning, and adaptation are important. To develop new capacities in EAS, actions must be initiated at the national, regional, and global levels by different actors.

Overall the response to the position paper was positive and the concept and recommendations were validated. Experts agreed that the paper was useful for raising awareness of the importance of EAS.

Survey respondents came predominantly from development agencies, research, education, and public advisory services. While they came from all over the world, areas such as Australia and the Caribbean were underrepresented. The core roles suggested were mainly supported, except for that of mediating conflicts. Most of the capacities suggested to fulfill these roles were considered essential and in need of further development. On the whole there was agreement that the recommendations at the three different levels (national, regional, global) were actionable and clear.

Following up on comments from the survey and experts, the electronic discussion debated further on the need to focus on gender issues, the role of private and civil society EAS, and the use of information and communication technologies (ICTs).

Recommendations, Educational Importance, and Implications

There is much global interest surrounding the role of EAS and how to strengthen the capacities of these institutions to contribute to innovation and the reduction of hunger and poverty. The validated position paper made 12 recommendations for national-level capacity strengthening, 5 for the regional level, and 7 for the global level. These recommendations also detailed which actors should take part. For international agricultural extension and education, these actors include universities and research centers, advisory services organizations, non-governmental organizations, and training institutions. Agricultural education programs are needed to further strengthen the roles and capacities of extension to better contribute to agricultural development.

References


The Role of Agricultural Extension in Post-Conflict Zones: Transforming Leadership Impacts in Iraq

Aparupa Chatterjee  
Department of Agricultural Leadership, Education and Communications  
Texas A&M University  
College Station, TX-77840  
aparupa.chatterjee@tamu.edu

Edwin Price  
Kim E. Dooley  
Texas A&M University

Keywords: Capacity building, transformational leadership, post-conflict reconstruction, agricultural extension

Introduction

An International Institute at a Land Grant Institution undertook assessment, planning and implementation of agricultural development in Iraq. From June 2008 to September 2009, four multi-disciplinary teams spent 154 person-months in 14 Iraqi provinces, facilitated by respective multinational forces. Funded by the Department of Defense (DoD), the teams were embedded with the military units at forward operating bases (FOBs). The Provincial Reconstruction Teams (PRTs), USDA/FAS, and occasionally USAID in-country projects co-operated (Shinn & Briers, 2009).

This case study focused on the joint extension-reconstruction efforts undertaken by the US Army Tenth Mountain Division and Team Borlaug in 8 provinces of Iraq. Extension projects included establishment of farmers’ market, promoting leadership to mitigate conflict, installation of infrastructure, interacting with community leaders to design rural development projects, starting 4-H clubs, improving fish brood stock and other activities. This research project investigated the impacts of combined leadership roles of the US Armed forces and a team of policy makers and researchers working in a conflict zone, Iraq, as a case study.

Purpose and Objectives

The purpose of this research was to develop a theoretical understanding of global leadership roles undertaken by the team members, responsible for reconstruction in Iraq. The first objective was to develop an integrated model of leadership efforts of global leaders and impacts of their public policies in zones with a history of political violence and conflict (Shannon & Keller, 2007). The second objective was to introduce a leadership approach that motivates the forces engaged in violence to take part in peace-building in a conflict-laden society.

Method

The study was based on a qualitative methodological paradigm in the context of a post-conflict reconstruction. Using a grounded theory approach, the basic leadership style applied in Iraq was analyzed to study the future demands of transformation of the leadership
responsibilities in similar contexts (Glaser & Strauss, 1967). The theoretical structure for this study was contingent upon Bass’ transformational leadership, Hersey’s situational leadership and House’s path goal theory of leadership.

A purposive sample of 13 key informants out of a population of 15 individuals of Team Borlaug, ranging from senior professors, researchers, military personnel, development professionals, student leaders and administrators were interviewed individually and in focus groups (Chalomsky, 1999).

To ensure transferability of the data, a diverse sample with at least one individual from each category was interviewed. The highlighting method was utilized to categorize data. The data sources were the coded interviews, field notes, project reports and technical summaries provided by the team.

The confirmability and dependability of the transcribed data were ensured by the audit trails prepared after the interview sessions by comparing with the Final Report published in May 2009 by the Borlaug Institute Iraq Advisory Group. Triangulation of documents, field notes, reports involving Iraqi technical leaders and in addition, focus group and individual interviews and feedbacks of the team leaders as peer debriefing and member checks ensured credibility of the findings (Lincoln & Guba, 1985).

Results

The findings of this study propose a model of integrated leadership approach in post-conflict zones from the coded experiences of Iraqi and Borlaug team leaders, based on transitioning from violence to mitigating it from Iraq, extending the situational leadership aspect proposed by Shinn and Briers (2009). This model incorporates the outcomes of the combined impacts of leadership styles on reconstruction of post-conflict zones like Iraq, and the characteristics of leader-follower behavior and factors affecting these. The new model instills an understanding of the expectations of role-model agricultural extension workers.

Several themes emerged from this study, which reveal that post-conflict leadership is an integrated form and not a singular approach, considering social unrest, political non-governance in these challenging and unpredictable conflict zones, making them more situation-oriented. This model may be understood against a background of leader-follower characteristics and Iraq’s infrastructural weaknesses in lieu of autocracy, terrorism, exploitation and war. The need for trust, relationship, focus and capacity building in a post-conflict zone is a product of the two factors- leader characters and post-conflict reconstruction expectations. The model supports the fact that success in extension work in post-conflict zones is dependent on the ability of a directive, supportive, adaptive leader (team) to make the followers (Iraqis) realize the value of their work through performance evaluation, for which relationship, trust and capacity building are necessary as well.

Recommendations

This leadership model, one of the first attempts in academia to connect leadership roles with reconstruction, is to formulate a leadership criterion for post-conflict peace-building. Similar integrated leadership approaches may prove to be effective in various post-conflict areas like Afghanistan and Bangladesh. A lot of existing research by social scientists addresses the operation of emerging principles to be followed by global leaders, under conditions of political
violence and conflict; however, most of the models perhaps have not attempted to construct a leadership criterion for conflict zones. This research highlights that in presence of effective global leaders, the forces engaged in conflict can be transformed for progress in the International agricultural development sector, thus contributing to restoring the socio-economic infrastructure of the nation. Applying this model may enable extension workers to improve not only governance, education, youth development, gender issues and resolve conflict, but also to appropriately transform violent forces into a resourceful, peace-building mass.

References
Utilizing Interactive Lessons to Incorporate Global Social Justice Issues into the Classroom

Anna McGucken
Agricultural Leadership, Education, & Communications
Texas A&M University
600 John Kimbrough Boulevard
2116 TAMU
College Station, TX 77843
979-458-7975
Anna.McGucken@agnet.tamu.edu

Melanie Balinas
Orry Pratt
Stephanie Curs
Gary Wingenbach
Texas A&M University

Keywords: global awareness, social justice issues, education, interactive lessons, teacher learning

Introduction

Societies and cultures are becoming more integrated and the need for teachers and students to improve their global awareness and multicultural literacy is increasing (Banks, 2004). To heighten global awareness and create global citizens, educators should help learners progress through the six stages in Bennett’s (2004) developmental model of intercultural sensitivity (DMIS). Learners should move from ethnocentrism to ethnorelativism, gradually growing in their understanding and appreciation for the uniqueness and interconnectedness of other cultures (Bennet, 2004).

One solution for improving global awareness is to incorporate interactive lessons on global social justice issues in the classroom. According to Barry (2005), social justice issues encompass the fair “distribution of rights, opportunities, and resources” (p. 18). It is not enough for learners and educators to simply have knowledge about the issues; to become culturally literate, they must develop communication and critical thinking skills necessary for formulating feasible options of addressing these issues and implementing change (Banks, 2004). Also, by teaching these issues in the classroom, learners are encouraged to develop a passion and commitment to action for changing the world (Banks, 2004).

Purpose

The purpose was to determine participants’ awareness of global social justice issues related to the role of social sciences in feeding the world. The research question guiding this study was “Did participation in workshop sessions on global social justice issues increase participants’ awareness of those issues?”
Methods
The “Role of Social Sciences in Feeding the World” workshop began with roundtable discussions in which participants ($N = 60$) were divided into ten small groups and assigned case studies detailing different global social justice issues. Groups were instructed how to use the nominal group technique, an effective method for encouraging group discussion, to analyze the issues and how they might incorporate them into their classrooms (Diep et al., 1997). Each group created a priority list and shared their top ideas with the larger group.

As part of the workshop, participants were also required to attend four different breakout sessions, one of which focused on “Utilizing Interactive Lessons in Global Social Justice Issues.” During this session, participants took part in an interactive role-play activity to learn different teaching strategies, tools, and techniques that could be used to encourage ethnorelative perspectives and facilitate discussions about social justice issues in their classrooms.

At the conclusion of the workshop, participants completed an online evaluation survey composed of 11 Likert-type questions that were designed using appropriate research methods (Frankel & Wallen, 2009). Survey questions assessed participants’ awareness of various global social justice issues and the importance of including these topics into their curricula. Data were collected using the post-then-pre method of assessment to reduce response shift typically resulting in pre-posttest assessments by reducing the tendency of respondents to over-estimate their original skill levels. The post-then-pre method offers a reflective perspective that shows a more accurate self-assessment of skill development by giving an opportunity for comparison (Rohs, 1999). In total, 51 participants completed the survey, yielding an 85% response rate. Survey participants consisted of high school social studies teachers, community college educators, and Texas A&M University faculty, staff, and graduate students. Data were analyzed using descriptive statistics.

Results
Results showed participants strongly agreed that the workshop met their expectations and that the content was relevant to their jobs. Participants’ perceptions shifted from agree to strongly agree for the importance of discussing global social justice issues (gender inequality, lack of medical care, lack of education, world hunger, and population explosion) in their classrooms. Regarding human trafficking and local Texas social justice issues, no perception shifts were observed, although the majority of participants agreed that these were important issues to discuss in their classrooms. Participants’ perceptions shifted from agree to strongly agree for the importance of having one’s own global perspective, creating global perspectives for learners, and capability of incorporating and discussing global social justice issues in their classrooms.

Recommendations/Implications
This workshop helped raise awareness about global social justice issues by informing participants about such issues. It encouraged them to discuss these issues with their peers. The workshop provided participants’ with tools and frameworks for incorporating such issues into their curricula. These processes are valuable because they promote an environment where teachers are engaging in active learning and using critical thinking skills (Liberman, 1995). This approach helps teachers become more invested in such issues, which is essential to reforming educational approaches in the classroom (Liberman, 1995). More teacher-based professional
development workshops related to global social justice issues should be held to promote global social justice issues awareness and proactiveness among educators and learners.

References
Views of Stakeholders on eLearning as an Alternative Mode of Delivery of SAFE Mid-Career Training

Mercy Akeredolu
Sasakawa Africa Fund for Extension Education (SAFE), Nigeria
Email: makeredolu@field.winrock.org
Tel: +2348075989344

Keywords: e learning, mid-career students, technology, universities, stakeholders

Introduction
Fulfilment of the increasing thirst of people in sub-saharan Africa especially Nigeria in the last one or two decades for formal (university, technical and vocational) training continue to be stunted by limited access, time and funds of prospective students, using the existing conventional modes of education delivery. This has activated calls for non-conventional education delivery modes such as e-learning, as an alternate/alternative mode, described by Hedge and Hayward (2004) as an innovative approach for delivering electronically mediated, well-designed, learner-centered and interactive learning environments to anyone, anyplace, anytime through internet and digital technologies, and as the use of ICT to acquire knowledge and improve skills at times and on terms defined by each learner in an interactive and engaging environment (Dutta, Mosley, & Akhtar, 2011). E-learning which is currently being used to teaching some subjects in various universities around the world including Nigeria is becoming popular in the field of agricultural extension.

For over two decades Sasakawa Africa Fund for Extension Education (SAFE) has been involved in agricultural education programs in Sub-Saharan Africa, but has witnessed low level female participation and low private sector involvement. SAFE’s interactive workshops and need assessment organised primarily with female mid-career professionals in public and private sectors to find out reason for low participation and employers’ preferred mode of delivery revealed a desire for more flexible modes of delivery than the conventional mode especially for participants from the private sector. In Nigeria, two SAFE collaborating universities (Ahmadu Bello, Zaria and Bayero Kano) are hosting the mid-career training programme and in order to improve accessibility of mid-career staff into the programme, adopting alternative modes of delivery are being considered.

Purpose and Objectives
This study examined views of stakeholders on e-learning as an alternative mode of delivery of SAFE programmes in Nigeria.

Methods and Data Sources
Primary data sources were all mid-career students currently involved in training programmes in the two universities (114), 12 lecturers each from BUK and ABU, and 34 officials of agricultural development programmes (ADP) in Kano and Kaduna States. Secondary data were from academic records of the two universities. Questionnaires were designed for students, employers and university lecturers, focusing on socio-demographic characteristics of current mid-career students, current mode of delivery and level of convenience for students,
lecturers and employers, preference for e-learning and modes of instruction, and e-learning delivery mode challenges.

**Results, Products, and/or Conclusions**

Mid-career students were mostly men (about 82%), all married professionals with (96%) from public and (4%) private sectors and a mean age of 42 years in ABU, and 39.5 years in BUK. 78% of students and 92% of employers rated the present full time intensive mode of delivery as inconvenient. Students’ family responsibilities, high travel time and costs for off-campus students, inability to select learning materials that meet their knowledge level and interest, restriction to mainly classroom setting and students’ inability to operate self-paced learning modules, employers not willing to release staff over a long period of time, were some of the issues. All the respondents preferred e-learning because it offers wider access to education generally but specifically University education because it:

1. ensures equality of educational opportunities (78%)
2. enhances education for all and life-long learning (74%)
3. facilitates the entrenchment of global learning culture (72%)
4. provides instructional resources via intensive ICT usage (64%)
5. offers flexible, but qualitative education (61%)
6. reduces cost, inconvenience, hassles of and access to education and its delivery (60%)
7. can cope well with job, family/social responsibilities and training (92%)

**Recommendations, Educational Importance, Implications, and/or Application**

SAFE should gradually introduce e-learning within the regular mode of delivery in the two universities so as to learn and evaluate its effectiveness as a partial mode of delivery. Extensive research should be conducted on learner’s access, cost and other considerations before introducing advanced ICT into SAFE programmes as well as garner experience from or explore the possibility of collaborating with the already existing Open University Programme (OPU). Contextual considerations are essential when introducing e-learning in a country like Nigeria. This study will make knowledge available to the consortium of Universities involved in the SAFE Programme in Africa and other educational bodies in their quest for issues for consideration in the development of a framework for more suitable modes of delivery for mid-career professionals.

**References**


Village Animal Health Worker Training in Nepal: A Follow-up Study

Ramjee Ghimire
150 C, Natural Resources Building, Michigan State University
East Lansing MI 48824
Phone: 517-432-0296
Fax: c/o 517-432-3597
Email: ghimirer@msu.edu

Murari Suvedi
Michigan State University

Keywords: training evaluation, trainees’ perception, knowledge and skills, impact of training

Introduction
Most farmers in Nepal raise livestock. Providing veterinary services in rural Nepal however remains a great challenge. Experts believe that poor show of the public service delivery system and financial constraints have hindered the access of farmers to veterinary services (Sen & Chander, 2003). To address an increasing demand for the veterinary services, Government of Nepal in 1983 initiated the Village Animal Health Worker (VAHW) training. The VAHW training has been offered for over thirty years and sizeable resources have been invested in it. Funders and beneficiaries alike expect training providers to be prudent in conducting trainings and expect trainings to impart positive changes in trainees’ knowledge, skills and attitudes. However, there has not been any systematic assessment of the VAHW training yet and how the VAHW training was conducted and how beneficial this training has been to the alumni is not clear.

Purpose and objectives
The purpose of the study was to evaluate the effectiveness of the VAHW training. The objectives were to: i.) Assess the trainees’ perception of the training quality, ii.) Ascertain the theoretical and practical competencies gained from the training, and iii.) Examine the economic benefits resulting from training.

Methods
Alumni could offer valuable input to improve the training program (Suvedi & Heyboer, 2004). The population for this follow-up study included all 863 trainees who received VAHW training between 2005 and 2010. The list of VAHW trainees was received from training center records. A survey instrument was developed for this study consisting of dichotomous, multiple choice, and open-ended questions. The instrument was reviewed by a panel. It was translated into Nepali language.

A survey was mailed to the population in June 2012. The first mailing included the survey instrument along with a self-addressed, stamped return envelope. The second mailing was a gentle reminder. The third mailing was sent only to non-respondents and included the instrument and self-addressed, stamped return envelope. As of September 2012, a total of 467 usable surveys (62 percent response rate) were received. Participants’ perceptions regarding training quality, behavioral changes and economic impact of the training were measured.
Cronbach alpha coefficients were calculated to assess reliability of constructs pertaining to perception of quality of training, and competencies.

**Results**

Table 1.  
*Trainees’ Perceptions of Training Effectiveness*

<table>
<thead>
<tr>
<th>Statements</th>
<th>N</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training quality*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appropriateness of the teaching methods</td>
<td>411</td>
<td>4.16</td>
<td>.68</td>
</tr>
<tr>
<td>Adequacy of the training facilities</td>
<td>419</td>
<td>3.85</td>
<td>.69</td>
</tr>
<tr>
<td>Opportunities for hands-on learning</td>
<td>436</td>
<td>3.78</td>
<td>.94</td>
</tr>
<tr>
<td>Knowledge and skills competency**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theory—Laboratory works</td>
<td>376</td>
<td>3.06</td>
<td>.92</td>
</tr>
<tr>
<td>Theory—Treatment and/or animal care</td>
<td>331</td>
<td>3.43</td>
<td>.71</td>
</tr>
<tr>
<td>Practical—Laboratory procedures</td>
<td>352</td>
<td>2.92</td>
<td>.93</td>
</tr>
<tr>
<td>Practical—Treatment and/or animal care</td>
<td>301</td>
<td>3.31</td>
<td>.73</td>
</tr>
</tbody>
</table>

*Scale: 1 = strongly disagree, 2 = disagree, 3 = no opinion, 4 = agree, and 5 = strongly agree  
** Scale: 1 = very low, 2 = low, 3 = average, 4 = high, 5 = very high

The VAHW tended to strongly agree that the training program utilized appropriate teaching methods and followed the schedule. They tended to agree that training facilities such as hostels and classrooms were adequate. The trainees least liked the way practical sessions were handled (Table 1).

Findings revealed that VAHWs had difficulties articulating the theory into practice. Trainees struggled with laboratory processes such as fecal examination, sample collection, and dispatch. About two third of the respondents indicated that they were utilizing their VAHW training for employment. Paired sample t-test showed VAHWs had higher post-training annual income (M=52,472 Nepalese Rupees (NRs), SD=48,562) (1$US=86.61NRs) than pre-training income (M= 28,582 NRs, SD= 28, 881). A statistically significant increase in annual income was found, t (179) = 10.322, p < .05.

Respondents indicated unavailability of the veterinary equipment and difficulty to get advisory services as very important problems in their work as VAHWs. Overall, the trainees have liked the training; training has helped them acquire basic veterinary skills; and they were able to work as VAHWs post-training.

**Recommendations**

Curriculum revision to accommodate more hands-on sessions and letting trainees engage in real-life scenarios are important in making training more effective and VAHW service more efficient. We advise Department of Livestock Services to assign a point person (technical staff) whom VAHWs can contact for advice.

**References**

What Job-Related Competencies Employers Perceive are Needed by Entry-Level International Development Consultants

Tim Kock
1114 Symons Hall
Office of International Programs in Agriculture and Natural Resources (IPAN)
College of Agriculture and Natural Resources
University of Maryland
Ph. 301-405-9589
Fax: 301-314-7185
tkock@umd.edu

William Weeks
Oklahoma State University

Abstract
According to the United States General Accounting Office (2003) and (Kock & Weeks, 2011), since the 1990s the United States Agency for International Development (USAID) has decreased the number of staff. Therefore, USAID began contracting aspects of development to contract staff to manage its day-to-day overseas activities. This change created an avenue for many non-governmental agencies (NGOs) to become implementing partners in aid-supported development projects, thus creating employment opportunities for college graduates who have an interest in international agriculture and extension education. According to Irigoin, M., Whitacre, P., Faulkner, D., & Coe, G., (2002) some colleges and universities are in a position to effectively design curricula that prepare graduates for careers in international development by understanding the competencies needed by possible employers.

The purpose of this study was to describe employers’ (NGO Administration) perceptions of job-related competencies for entry-level international development agents. Nine constructs were derived from the research: conflict management and resolution, cultural diversity, management responsibility, personal and professional development, personal skills, program planning and evaluation, public relations, staff relations, and work habits. An internet-based questionnaire was used to collect data and a 35.4% response rate was achieved. Employers rated all nine constructs as important, moreover, when asked to rank the constructs in order of importance, NGO participants ranked work habits and personal skills as the most important followed by management skills, staff relations and program planning and evaluation.

Keywords: Competencies, educators and international development agents

Introduction
Over the last fifty years, funding agencies, such as USAID and USDA, are relying more on non-governmental organizations (NGOs) and universities in addressing poverty-related issues (Duffy, S., Toness, A., & Christiansen, J., 1998). These funding agencies lack the manpower for implementation and see local governments as ineffective as implementing partners (FAO, 2004). Therefore, NGOs have taken on a larger role in development and hire consultants to implement the projects.
This shift has created employment opportunities for college graduates in implementing aid-supported development projects. Based on the human resources needed in international development, it is important to understand what competencies are needed by entry-level consultants.

**Purpose of Study**

The purpose of the study was to describe the competencies desired by management of international NGOs who employ entry-level international development agents.

**Objectives of the Study**

For this study, the objectives were:

3. To describe the perceptions of employers, (NGO administrators) who hire entry level consultants for careers in international development.

4. To investigate rating differences of the nine constructs between the management positions held in NGOs and length of time participants worked in foreign countries.

**Theoretical Framework**

The theoretical framework for this study was grounded in the human capital theory. The theory indicates as people expand their knowledge through avenues of formal education human capital advances (Shultz, 1961). Students come to colleges and universities to acquire the knowledge and job skills demanded in the job market. The same may be said of employers, they look to institutions of higher learning to prepare students. Therefore, it is important for educational institutions to know what is needed in the job market in order to effectively prepare students for careers after graduation (Becker, 1993; Quiggin, 2000 and Shultz, 1961).

**Methods**

The methodology implemented for this study was a criterion group survey research design conducted in the winter 2009 and spring 2010. To address the international logistics of some participants, an electronic questionnaire implemented. A 35.4% response rate was achieved and reliability coefficients for the constructs ranged from .64 (conflict management) to .92 (staff relations). Descriptive statistics were used to determine the importance of competencies needed for success. To achieve the research objectives, the researcher tailored a preexisting Internet-based instrument on competencies needed by Extension Educators in the United States Cooperative Extension Service.

**Results**

Data revealed that both groups of the NGO sample perceived all of the nine constructs important, mean scores ranged from 3.57 to 4.39, none were perceived as very important. The lowest score for any construct was public relations and the highest score was work habits. Participants also ranked the level of importance of the constructs; one being least important and nine being most important. NGO participants ranked work habits as the most important followed by personal skills and management responsibilities. The least important constructs perceived were public relations and cultural diversity.

To broaden the understanding of the NGO participants’ perception of the constructs, the researchers investigated the management position held in the NGOs by dividing the NGO participants into two subgroups. Vice Presidents/Project Directors (D.C.-based management team) and Chiefs of Party and Deputy Chiefs of Party (field-based management team) rated all
the constructs somewhat important or important. Again to delve deeper into an understanding of the NGO population, the researcher investigated the length of time participants spent working in countries other than the country in which they hold citizenship. The researcher used the mean score of the number of years (11) to divide the population; 11 participants had worked more than 11 years in foreign countries, while 16 had 11 or less years of experience in a foreign country. Data indicated that all participants rated the constructs as somewhat important or important. There were no differences between the two groups.

**Recommendations, Educational Importance and Implications**

Based on the findings in this study, employers put more importance on work habits and management responsibility than on cultural diversity and conflict resolution, whereas, educators place more importance on program planning and cultural diversity (Kock & Weeks, 2011). That finding is supported by research conducted by Cooper and Graham (2001), Hassel (2004), Vulpe et al. (2001) and the United Nations (2005). As funding agencies extend aid (human or financial) to developing countries, the need for properly trained development agents to implement those projects will remain. Understanding what competencies are desired by employers may help educational institutions in creating courses designed to better prepare students for careers in international settings. Irigoin, et al., (2002) purposed identifying competencies should include individuals working in the field.

**References**


Women Farmers’ Experiences with Extension Education in Turkey: A Qualitative Study

Havva Savran Al-Haik
Virginia Tech University
2270 Litton-Reaves Hall (0343)
Blacksburg, VA 24060
Phone: 540-231-6836
Email: hsavran@vt.edu

Curtis R. Friedel
Kim Niewolny
Virginia Tech University

Keywords: Women Farmers, Extension Education, Turkey, International Agriculture, Developing Countries

Introduction

Turkish women farmers make significant contributions to agriculture and are the backbone of the farm labor. Further, considering the entire female workforce in Turkey, it was estimated one out of two women work in the agricultural sector (Gulcubuk, 2010). Although rural women play an important role in different venues of the agricultural sector like crop production, and livestock production, they have insufficient access to resources, agricultural extension education services, and the latest technical knowledge and information sources (Butt, Hassan, Mehmood & Muhammad, 2010). As it is the case in other developing countries, Turkish women farmers do not have equal opportunities to access agricultural information from government extension services.

The Food and Agricultural Organization (FAO, 2010) report pointed to a need for closing the gender gap in agriculture, which would generate significant gains for the agriculture sector and for society. If women had the same access to productive resources as men, they could increase yields on their farms by 20 to 30 percent (FAO, 2010). Unfortunately, women, especially in developing countries, are confronted by difficult constraints that block their active participation in extension education. Kizilaslan (2007) reported that there were major factors limiting the females access to extension education in Turkey: (1) insufficient time, (2) lack of training, (3) social structure and (4) poverty. In her research, she also concluded that the time and sources reserved for women farmers in ongoing agricultural extension services in Turkey are limited. Further, there is definitely need for sensitivity on the social and cultural barriers that may inhibit women’s participation in agricultural activities.

When examining closely the female role in farm management and crop production, and consequently their involvement in day-to-day decision makings, the outcomes are not very encouraging. As an example, a findings of study carried out by Meares (1997) highlighted the stereotyped gender-roles and responsibilities not only within the farm but also within the household and in the agriculture movement at large. Basically the study contrasted that men involvement continues to steer, if not dominate, the decision makings while females were adapting to the roles of movement supporter, occasional farm workers, and of course as the typical household major player.
Purpose and Objectives

The purpose of this study was to explore the extension education needs for Turkish women farmers in Turkey, specifically women living in one Mediterranean farmer community and two Central Anatolia farmer communities. To fulfill the intentions of this purpose, the researchers sought to identify the demographic characteristics of these women farmers, describe their experiences and responsibilities in working on the farm, and describe their educational experiences with extension.

Methods

Phenomenological inquiry in the qualitative tradition was used to achieve the purpose of this study. The two regions in Turkey previously identified were selected because of the importance of agriculture in these farming communities and the researcher’s familiarity of the regions. In-depth, semi-structured interviews were conducted with ten women farmers regarding their small-sized farming procedures. Interview questions related to the three aspects associated with the purpose of the study aforementioned. Interviews were conducted face-to-face, audio recorded and transcribed in Turkish, then translated to English for coding. Data were analyzed through a feminist lens (Sachs, 1983) using open codes to identify major themes in the data. The coding was done in an iterative process designed to identify common and recurring themes.

Results and Conclusions

As a result of this study, eight themes were emergent from the study. These included: extension education experiences; deciding what to produce on their farm; labor distribution on the farm; financial decisions; approval of new techniques to improve farming; barriers to attending extension education programs; types of information and educational programs sought; and spousal support of attending extension education. It was evident that these women played significant roles in the decision making and production of agricultural goods, which was similar to the findings of Al-Rimawi (2002) in his study of Jordanian women farmers. Further, Turkish women farmers had limited experience with extension sources, but pointed out insufficient time to attend extension meetings because of workload.

Recommendations

This study reinforces common knowledge regarding women farmers’ extension education needs in developing countries. Findings may assist women extension education programs in Turkey by better serving their specific requests. More research will be needed to explore the best approaches and times to provide women farmers with extension programs and materials while making it easier for them to attend.

References


Participatory Rural Appraisal: Understanding Gender Roles among Rwanda Pyrethrum Farmers

Katherine Whitney
Norman Borlaug Institute for International Agriculture
Texas A&M University
578 Kimbrough Blvd, Office 216
College Station, Texas 77843
979.324.2148 (phone)
979.845.5663 (fax)
klwhitney@ag.tamu.edu

Nancy Granovsky
Texas A&M AgriLife Extension

Joseph N. King
Norman Borlaug Institute for International Agriculture
Texas A&M University

Keywords: Participatory Rural Appraisal, Gender, Agriculture Development

Introduction
Participatory rural appraisal is a qualitative research method that has gained popularity since the 1990’s with its focus on learning about rural life from and with participants (Chambers, 1994). Angstreich and Zinnah (2007) suggest that new agricultural development professional learn competencies that will help them listen to and learn from clients. The purpose of the study is to conduct participatory rural appraisal techniques in two pyrethrum cooperatives in Rwanda to learn about gender roles and responsibilities among farmers. The information gained will be used in the USAID-funded Rwanda Pyrethrum Project to design interventions to address gender disparities.

Research Methodology
Two assessments were conducted in Rwanda using different techniques. The first assessment was conducted with a group of 20 farmers (N=20) from a pyrethrum cooperative in northern Rwanda; 10 women (n=10) and 10 men (n=10). The researchers separated the men and women into two groups, and each group created a community map that identified houses, fields, water and firewood supplies.

The second assessment was conducted at a different pyrethrum cooperative. Nineteen farmers participated in the survey (N=19); eight women (n=8) and 11 men (n=11). The researchers kept the men and women together while conducting a gender analysis. The participants identified crops and production activities related to each crop, and the researcher asked about the gender role for each activity.

Results
The first assessment resulted in two community maps, one by men and one by women. The men’s map placed the cooperative buildings in the middle with fields and homes fanning out
from the center with detail given to distances. The women’s map also had the cooperative at its center, and the women spent more time detailing specific crops.

Men and women actively participated in the second assessment to assign gender descriptions to farm activities. The women were not shy to speak up or disagree with the men. Both researchers noted an unspoken awareness in the group of the large role of women in both farm and household activities.

Conclusions and Recommendations

The researchers had some idea of the inequality between men and women’s roles in farm activities before the study. The information shared by the participants provided more detail and context into the daily lives of the men and women. Gender interventions planned in the future should address gender perceptions of both men and women.

The limited time available to the researchers did not allow for time to build rapport with the participants. More time would also allow researchers to use multiple techniques with the same group to add layers of detail to the data, leading to a rich description of the farmers’ lives and work.

The process of participating in a group discussion about a sensitive topic like gender roles could be considered an intervention in itself. Further interviews after a few weeks might reveal that the gender-themed discussion has changed participant perceptions about gender roles.

References
