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Recommended Competencies Needed for Training in International Extension Settings

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Abstract

Agricultural extension plays a significant role in the global production and supply of food. A problem with extension services in developing countries is the lack of an adequate balance between the technical and professional competencies of personnel. The purpose of this study was to explore the professional competencies needed by U.S. extension agents to teach adults in international settings. The conceptual framework for this study was constructed on the knowledge domains that doctoral students should acquire before teaching internationally. Twelve internationally experienced U.S. extension agents were purposively selected to participate in the study based on their regional supervisor's recommendation of program excellence. Change strategies, program evaluation methods, learning principles, and organizational development were identified by the agents as professional competencies needed before teaching internationally. Extension administrators and professional development specialists should ensure mechanisms are in place for current and future agricultural extension agents to acquire these competencies. U.S. agricultural extension agents could be mentored by agents proficient in the identified professional competencies before teaching globally. Enrolling in a doctoral program is an avenue for extension agents to acquire the professional competencies associated with teaching adults in international settings. Preparing current and future U.S. extension agents in the identified professional competencies could enhance global agricultural extension programs.

Keywords

professional competencies, agricultural extension agents, professional development

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Abstract

Agricultural extension plays a significant role in the global production and supply of food. A problem with extension services in developing countries is the lack of an adequate balance between the technical and professional competencies of personnel. The purpose of this study was to explore the professional competencies needed by U.S. extension agents to teach adults in international settings. The conceptual framework for this study was constructed on the knowledge domains that doctoral students should acquire before teaching internationally. Twelve internationally experienced U.S. extension agents were purposively selected to participate in the study based on their regional supervisor's recommendation of program excellence. Change strategies, program evaluation methods, learning principles, and organizational development were identified by the agents as professional competencies needed before teaching internationally. Extension administrators and professional development specialists should ensure mechanisms are in place for current and future agricultural extension agents to acquire these competencies. U.S. agricultural extension agents could be mentored by agents proficient in the identified professional competencies before teaching globally. Enrolling in a doctoral program is an avenue for extension agents to acquire the professional competencies associated with teaching adults in international settings. Preparing current and future U.S. extension agents in the identified professional competencies could enhance global agricultural extension programs.

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Introduction

Agricultural extension's goals play an integral part in global food safety and production (Sundermeier, 2006). Educating farmers is the most important aspect of an extension agent's responsibilities in international environments (Tladi, 2004). Extension personnel are needed in developing countries in order to provide information to increase crop production via training and educational programs (Jiggins, Samanta, & Olawoye, 1996). From a humanitarian perspective, extension agents should consider teaching internationally because "extension services have the potential to improve agricultural productivity and increase farmers' incomes, especially in developing economies where more than 90 percent of the world's nearly one million extension personnel are located," (Anderson & Feder, 2004, p. 41). Benefits for extension agents include opportunities for careers and experiences abroad, gaining ideas from other systems, and an increased ability to educate clients on international concerns (Blake, 2005).

Shinn et al. (2009) said "international agricultural and extension education is intended to develop agricultural leadership and to help people to identify and use knowledge to help themselves" (p. 83). Highly competent extension personnel produce positive results from consumers of extension information. Clients may increase adoption rates when extension personnel provide practical information, utilize adequate technology, and give sound advice.

Etling and Radhakrishna (1998) indicated extension in developing countries struggle with a lack of balance between the technical and professional competencies of personnel. The failure to cultivate professional competencies in extension agents is a weakness of extension systems in developing countries (Pezeshki-Raad, Yoder, & Diamond, 1994). One solution for bridging the gap while developing countries work to build the capacity of their own

extension personnel is utilized by such organizations as ACIDI/VOCA, USAID, and USDA to bring in experienced extension professionals from established systems, like in the United States. For this system to be beneficial, the visiting U.S. extension professionals must be prepared to teach internationally.

According to Ludwig (1999), enthusiastic extension workers that have global knowledge and technical skills are well suited to effectively spread knowledge internationally. Extension agents must be knowledgeable about the specific culture and social norms of the people with whom they work. Harder, Place, and Sheer (2010) identified cultural sensitivity as a core professional competency needed in entry-level extension educators. There is a positive correlation between cultural competency and the effectiveness of education programs (Tiraieyari, 2009). Despite the general support for cultural competency, further research is needed to generalize the agricultural and extension education professional competencies needed to teach cross-culturally (Lindner, Dooley, & Wingenbach, 2003).

According to Seevers, Graham, and Conklin (2007), extension agent is the term used to identify county extension professionals in the U.S. Literature has linked reasons associated with individual and organizational improvement when extension agents participate in teaching experiences globally. Selby et al. (2005) indicated U.S. extension agents may gain from the educational experience of global teaching opportunities, learn new markets for agribusinesses, and how better to sustain environmental resources. U.S. Extension should continue to broaden its influential capacity in global communities in order to be a successful organization in the future (Bates, 2006).

Conceptual Framework

There is a lack of information available on the competencies needed by U.S. extension professionals wishing to work internationally. However, Shinn et al. (2009) identified the knowledge domains that agricultural and extension education doctoral students should acquire before teaching in international settings. Shinn et al. used the Delphi method to examine a panel of 15 international scholars' beliefs of the knowledge domains needed in international agricultural and extension education. The Delphi technique is a method to collect data from respondents in a discipline of expertise (Hsu & Sanford, 2007).

Respondents representing five United Nations Regions provided the researchers with 126 knowledge objects for doctoral students studying international agricultural and extension education. Shinn et al. (2009) utilized literature and common principles to categorize the 126 knowledge

objects into 12 exclusive knowledge domains. Doctoral students need competencies such as agricultural/rural development; agricultural/biophysical systems; change and technology adoption; delivery strategies; human resource development; instructional design/curriculum development; learning theory; organizational development; philosophy, history, and policy planning; needs assessment; evaluation; research methods and tools; and scholarship and communications in order to teach in international settings (Shinn et al.).

The knowledge domains identified by Shinn et al. (2009) formed the conceptual framework that guided the research questions to determine the knowledge domains that U.S. extension professionals should possess to teach agricultural extension education programs internationally. Figure 1 illustrates the knowledge domains identified by Shinn et al.

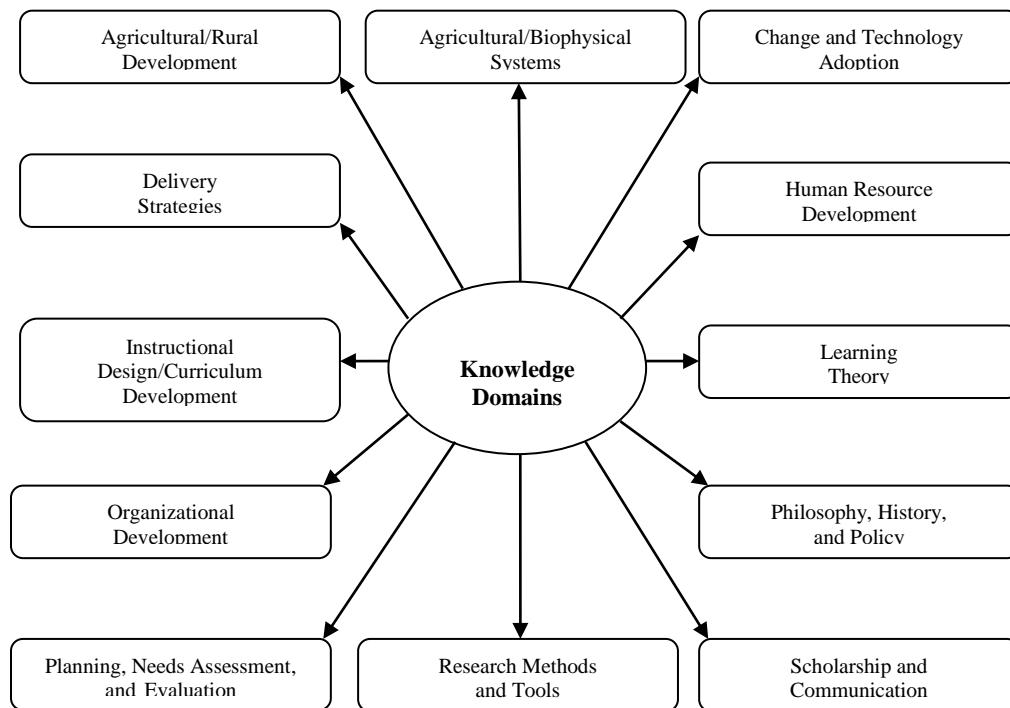


Figure 1. Shinn et al.'s (2009) conceptual framework of knowledge domains needed in agricultural and extension education.

Purpose and Objectives

The purpose of this study was to explore the professional competencies needed by U.S. extension agents to teach adults in international settings. More specifically, the study's objectives were to: (a) describe the professional competencies that agricultural extension agents should possess prior to teaching adults globally, and (b) describe the professional competencies that combine to form knowledge domains of agricultural extension agents as global nonformal educators.

Methods

A fundamental qualitative research design (Dooley, 2007) was implemented for this study. Twelve agricultural extension agents with previous experience teaching agricultural and extension education in international settings were purposively recommended as participants to the researchers by their Florida District Extension Director. Purposeful sampling enables the researcher to amplify the capacity of data achieved from the context (Lincoln & Guba, 1985). Seven of the respondents were women and five respondents were men. Five of the respondents were environmental horticulturalists, three worked primarily with livestock programs, and three agents were responsible for small fruit and vegetable programs. Names were altered to address confidentiality of respondents (Denzin & Lincoln, 2008).

A semi-structured interview guide was utilized to convey the research questions to the participants (Denzin & Lincoln, 2008). The semi-structured interview provided opportunities for participants to explore their thoughts and responses to the research questions. This type of semi-structure uncovers participants' reactions to the broader issues raised by the researcher (Lincoln & Guba, 1985). The interviews were conducted between January and March 2010 and lasted approximately

sixty minutes each. Interviews took place at regional county extension offices near each participant's location. Data from the interviews were recorded on audio recorders and hand written notes.

Dooley (2007) identified trustworthiness as the level of confidence that the findings represent the respondents and context of the study. Addressing trustworthiness gives the data credibility, generalizability, dependability, transferability, and confirmability to the population and study's context (Lincoln & Guba, 1985). Triangulation and member checks are techniques to earn trustworthiness (Dooley, 2007). The data was triangulated through Trustworthiness was achieved through triangulating the data from each of the twelve participant interviews and observations, and member checks with each participant.

Denzin and Lincoln (2008) defined member checks as the approach to summarize the information received and solicit agreement from the participants. Member checks were conducted by the researchers as each participant was emailed a transcript of their comments for verification. Each participant ($n = 12$) emailed their verification of the information they provided during data collection before the researchers analyzed the data.

An audit trail is a set of records from the data collection experience (Denzin & Lincoln, 2008). Lincoln and Guba (1985) indicated the benefits of an audit trail are to organize, connect, cross-reference, and assign priorities to the data. Videotapes, audio recordings, index cards, field notes, and survey results are examples of records that may be included in an audit trail (Dooley, 2007). In this study, the audit trail was composed of electronically recorded data and field notes. The researchers utilized the recorded data and field notes to consolidate, link, and designate important themes in the dataset.

The data analysis approach utilized by the researchers was the constant comparative method. The constant comparative method enables researchers to identify units of data that will construct overall categories for the distinguished themes (Glaser, 1978). Moghaddam (2006) suggested researchers using the constant comparative method may implement selective coding to analyze data. Selective coding is the process of choosing the central category and validating its association to other categories in the dataset (Glaser, 2002). Common themes and similar findings in the data were uncovered with selective coding through implementing the constant comparative method. Due to the qualitative landscape of this study, results should not be generalized beyond the population in this study.

Results

Several key findings emerged from the interviews with agricultural extension agents who had taught in international settings. Change strategies, program evaluation methods, learning principles, and understanding organizational development were identified by seasoned Florida extension agents as professional competencies that agents need before travelling abroad to educate adults. The results were separated in order to highlight each recommended competency to possess before teaching adults in international settings.

Change Strategies

Nine of the twelve participants indicated change strategies were an important professional competency for U.S. extension agents to possess when teaching globally. Nancy said, "I felt I could have done a better job in helping to change adult's behavior." Changing behaviors is a part of what we do as nonformal teachers." Madeline included:

In my role as an environmental educator in Florida, I know that changing my student's behavior is hard due to costs, perceptions, and time. I never dreamed it would have been even more difficult to do the same in Thailand. Having better relationships with opinion leaders in Thailand before arriving, would have made my job easier, as an educator, to get participants to change their behavior over the long-term. I was only there for ten days, so I know the relationship with my Thai change agents is important in hindsight. They live and work among the people every day, unlike me.

Participants indicated having a review on change strategies would have been helpful before they taught adults in international settings. Susan said, "Learning to determine if people changed their behavior was harder internationally for me." John stated; "Having a review on how to get people to change their behavior would have been an asset for me." Karen added:

I never really understood the barriers to implement what I was teaching to my students in Costa Rica until I got back to Florida. When my supervisor wanted me to report on my experience, the primary thing I remember was not being confident in understanding how to change my students' behaviors in Costa Rica. The more I thought about it I evaluated my ability to change student behaviors in [County]. The conclusion I came to was I needed to learn more about

changing behaviors if I go and teach students in Costa Rica again. I hope to do it again, I loved it!

Other participants detailed their opinions of change strategies further. Scott added, "A major part of being an extension agent is getting people to change their behaviors. I believe changing farmer's behaviors is something we should be able to do." Jenny included, "Regardless of program, understanding how to change agriculture producers' behaviors is an area each agent should know." Anthony added:

I went to Haiti to teach a program about goat production. People were grateful I was there to help them. I did receive some resistance from farmers when I taught deworming and castrating goats. Leaders in the community did not want to change those current methods of goat production. After I informed them how they and their community could make more money from their goats, they became more interested in my information. Understanding and knowing how to get people to change their production methods is a challenge and should be an area of expertise that extension agents have before teaching in other countries and in their county.

Agents explained their challenges with changing participant behaviors in international settings. John stated, "Most agents have experienced difficulty in teaching producers to change their behavior. I think training and experience on changing farmer's behaviors will help extension agents before they teach internationally." Phillip added, "As an extension agent

internationally, we have to know how to get adults to change current practices for the better. It was the primary part of my job in Costa Rica." Connie said:

I was so excited when I got to South Africa. I wanted to do this and do that but after a couple of days I was frustrated. People in my program and the agency liaison to an extent, were resistant to spraying coffee plants for insects and diseases differently in order to avoid personal illnesses. They had been taught to spray chemicals on crops a certain way for generations. What I was presenting and demonstrating did not resonate to the extent I would have liked. I believe I could have been better prepared to teach those villagers to spray chemicals in a manner to reduce personal risk. Getting people to change is challenging but as extension professionals that is a part of our job.

Evaluating Methods

Nine extension agents indicated program evaluation methods would be a necessary professional competency to possess when teaching adults globally. Phillip noted, "I could always be better at evaluation but what little I know helped me describe my time on a grant report." Anthony said, "I am required to report evaluations every year but a focused training on evaluation would have better prepared me before I went to India." Nancy added,

I am so thankful I understood evaluation strategies before I went to teach outside the U.S. I could have struggled at times to interpret some of the

results of my teaching. The agency that funded my experience wanted detailed results. Evaluation is very important to understand and apply when you teach internationally.

Participants explained their perceived importance of evaluating programs. Agents described their perceptions of evaluation methods further. Connie said, "In Extension, evaluations are important no matter where or who you are teaching. I think it can be more difficult in another country because once you get home you get into your daily life routine." John included, "I cannot imagine not mentioning the word evaluation when talking about extension work." Anthony added,

I am a County Extension Director and occasionally meet with our county administrator to discuss our budget. My county administrator wanted me to report the accomplishments I had made while teaching in India. She was primarily interested because the county pays a large portion of my salary and I could have been using that time to teach local citizens. It is hard to report your accomplishments without doing an evaluation. I learned that being able to report what I had done in India was not only important to administrators at the University of Florida but also to my county administrators.

Extension agents described the value of evaluations to their professional development in the U.S. and internationally. Kristy said, "The evaluations of my programs have taught me what I needed to keep doing and what needed changing. Evaluations are an integral part of my

professional development." Joseph added, "Evaluations help us to provide a better product to our international audience. I believe conducting evaluations of programs is major part of working internationally." Jenny included,

Providing results from evaluations is becoming more and more important these days. I do not think that will change. We should view program evaluations abroad as valuable as we do in the U.S. I know being prepared to evaluate my teaching in an international setting is very important to me as a professional and the agencies funding my time and expenses to teach adults outside of the U.S.

Other participants revealed the competency of understanding how to conduct evaluations internationally is important to the extension profession. Joseph included, "Agents should know different methods to evaluate their programs before teaching internationally." Anthony added, "Understanding how to evaluate programs is a competency extension agents need." Madeline said, "We need to know when new evaluation methods are available. This will keep us aware of the latest techniques to evaluate programs globally." Phillip included,

Legislators want more and more information that international educational programs are making a positive impact. The team I was a part of had to prepare a detailed written report of our accomplishments and deliver a presentation to the funding agency in D.C. Detailed evaluations are beneficial for extension agents who

conduct educational programs outside the U.S. as budgets get more restrictive. These experiences have taught me knowing evaluation methods are a competency extension agents should have to teach abroad.

Learning Principles

Eight of the twelve extension agents indicated understanding learning principles and how to apply those techniques was a professional competency needed to teach adults globally. Phillip said, "Knowing how to teach adults differently than youth is important. Adult's motives, experiences, and the ability to be in charge of their learning is different than youth." Karen included, "I really enjoyed teaching adults and my experience in Costa Rica but I believe there is more I could have known about teaching them." Overall, I could have prepared myself better as an educator before teaching abroad." Joseph added:

I witnessed the value of understanding adult needs and how I could tailor my instruction to meet those needs. The ability to be flexible in terms of delivering content to the audience is key, and something that should be on the forefront of our minds. I think knowing how to teach adults is a foundation that should be included in each agent's international or domestic teaching toolbox.

Agents provided their opinions regarding the usefulness of learning principles as a professional competency for international extension work. Connie said, "We do not teach internationally very long, and we have to use our time wisely. Knowing how to teach to meet adult's needs in a short amount of time is important."

Scott included, "Adults want to know how information can help them and if they can apply it to what they do every day. Understanding how to teach adults is very important to know before going to work in an international environment." Kristy added, "An extension agent should understand how adults learn before planning lesson plans that will be used in an international setting." John said:

I have taught livestock production programs internationally. My audiences are adults who are concerned about how to earn more money from their animals. I try to provide practical research based information they can implement to meet their goals. Most of my audiences are full-time producers with various levels of experience in animal industries. It is important that I offer information that will directly relate to their operation and help them enhance profitability. Providing information in a way that a farmer needs is a skill educators can learn.

Other participants shared their beliefs of understanding adult learning principles is a professional competency needed by extension agents before teaching internationally. Madeline added, "Adult learning methods are important to understand to be a more effective nonformal international educator. Agents should make sure they understand those methods before teaching abroad." Anthony said, "International environments can be diverse and challenging. The one true constant is that we are teaching adults. It is very important that agents understand how adults learn before they prepare an international teaching experience." Susan added,

I enjoy teaching adults but it can be a challenge. Adults want to know how the content will help them better their life. There are more opportunities to impact people internationally versus what we do in Florida but we have to know how to teach adults to maximize that potential impact.

Organizational Development

FLORIDA Six respondents identified developing a comprehension of organizational development as a professional competency to acquire before teaching adults globally. Connie included, "One professional competency should be understanding organizational development. Agents will be more effective as educators when they comprehend the organizational development of the institution or agency involved in the collaboration." Kristy said, "When teaching internationally, it is important to know how you plan to develop personnel within organization. You want to understand how you can help your in-country partner agency achieve their organizational goals." Phillip added,

I value my time in educating farmers and cooperatives in Costa Rica, and helping them develop the ability to be self-sustaining. A year after I went to Costa Rica, I went back to conduct a follow-up training. I received a lot of positive feedback about the gardening techniques I had taught previously. The agency I had worked with was teaching more farmers in more communities innovative approaches to gardening. My work helped the agency achieve their goal of promoting sustainable

gardening practices, and further developed the ability of the agency to serve the people.

Extension agents further described their opinions of international organizational development as a professional competency needed before teaching globally. Anthony said, "I consider it a professional competency to help develop the reach of the international organization partner. This tells me my time and work was worth the effort in Haiti." Scott included, "To me, assisting an international organization is very important because they work with locals every day. If we can help develop those organizations, they can educate more farmers with effective methods in the future." Madeline added,

Understanding how you can help develop an international organization should be a requirement of extension agents before going to teach internationally. We have a portfolio full of successful production techniques and methods, and the ability to collaborate with peers. When we work to expand the outreach of organizations on the ground, we have can affect more people within the country and the organization as a whole. My limited experiences have taught me to develop the local organizations and help them develop local farmers.

Conclusions

Change strategies, program evaluation methods, learning principles, and organizational development were identified by seasoned Florida extension agents as professional competencies that agents need before preparing to work in an international extension setting. The competencies

identified by the participants in this study were also identified in Shinn et al.'s (2009) study on competencies needed by doctoral students. The results from this study suggest the identified professional competencies (change strategies, evaluation methods, learning principles, and organizational development) are important characteristics needed by U.S. extension agents in order to teach adults globally. The four knowledge domains identified in this study for U.S. extension agents are consistent with four of the twelve knowledge domains found in the conceptual framework by Shinn et al. for doctoral students. Although the qualitative nature of this study prevents the results from being generalized, they do help to validate the importance of the competencies identified by Shinn et al.

Recommendations & Implications

U.S. extension agents wishing to work internationally may find it beneficial to enhance their competencies in the areas of change strategies, learning principles, evaluation methods, and organizational development before teaching in international settings in order to be the most effective adult educators. Training programs and field work could be enhanced if individuals develop these skill sets and competencies. The competencies identified in this study could be acquired from a formal class on each of the competencies or professional development training regarding each of the competencies.

Finding a mentor who has worked internationally and is proficient in the identified professional competencies is recommended before agents teach globally. Mentoring can provide less seasoned extension agents support in situations not yet experienced (Kutilek & Earnest, 2001). Place and Bailey (2010) indicated extension mentors assisted mentees in becoming successful extension agents. It seems probable that extension agents who seek to develop their professional competence prior

to working internationally will be more prepared to positively impact their new global environments. Extension administrators could identify and recommend high quality extension agents with experience in teaching globally to mentor agents desiring to teach in international settings. Florida Extension has a mentoring program that could connect agents to an international teaching mentor.

Future research should examine the effect of recommended professional teaching, evaluation, behavior change and organizational development competencies in international extension settings on global food production and safety. As one of the participants shared, time is limited because U.S. extension agents do not work in international locations very long. Another participant revealed her supervisor was concerned about the time she spent teaching international audiences and not citizens in her local community. This underscores the importance of proficiently preparing U.S. extension agents to teach adults, evaluate their efforts, promote behavior change, and understand how to develop the international organization before agents leave the U.S. Developing an understanding regarding the effect of professional competencies on global food production and safety, may save international organizations and U.S. extension systems time and money and lead to the acquisition of shared goals.

The U.S. Cooperative Extension system is in a position to aid developing countries by sharing its human resources until those countries reach self-sufficiency. Preparing U.S. agents to teach internationally based on research is a positive step toward being able to enhance international extension programs. The acquisition of change strategies, evaluation methods, learning principles, and organizational development as professional competencies may help U.S. extension agents to be more effective in increasing the adoption rates of learners in international

settings, and may better enable them to develop capacity within international extension systems. It should be noted that competencies identified in this study are not unique to working in international settings; they have been identified as important for U.S. extension work as well (Cooper & Graham, 2001; Harder, Place, & Scheer, 2010; Schwarz & Gibson, 2010). Training current and future U.S. extension agents in the identified professional competencies could enhance global agricultural extension programs.

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