TEXAS 4-H AGENTS' PERCEPTIONS OF SELECTED COMPETENCIES IN THE 4-H PROFESSIONAL RESEARCH, KNOWLEDGE, AND COMPETENCIES MODEL

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Abstract

There are many competencies necessary for success as a 4-H agent. The 4-H Professional Research, Knowledge, and Competencies (PRKC) Model organizes competencies into six domains: (a) Youth Development, (b) Youth Program Development, (c) Volunteerism, (d) Partnerships, (e) Organizational Systems, and (f) Equity, Access and Opportunity (National 4-H Professional Development Task Force, 2004). Previous research (Harder & Dooley, 2007; Seevers, Baca & VanLeeuwen, 2005) identified competencies in the Organizational Systems domain as some of the most important, but most competency research has focused on volunteer management. A modified Borich (1980) model of needs assessment was used to determine the training needs of Texas 4-H agents in the Organizational Systems domain. Agents perceived they were more proficient in the competencies associated with program delivery and less proficient in competencies associated with their own personal wellness. Significant differences existed between perceived proficiency and importance levels for several competencies. Training is most needed in providing the knowledge, skills, and abilities required to overcome the stresses associated with careers as 4-H extension agents.

Introduction/Theoretical Framework

Cooperative Extension 4-H agents must be competent in many areas, including youth and volunteer development, public relations, and programming (Cooper & Graham, 2001). Some 4-H agents may be overwhelmed by the diverse skills required for effective job performance. One method for helping agents understand the skills needed for excelling in their roles is the use of competency models. According to Stone and Bieber (1997, ¶ 2), competencies are "the application of knowledge, technical skills and personal characteristics leading to outstanding performance." Competency models clarify what is expected of effective employees and can be used to ensure employees are adequately prepared for their professional roles (Stone, 1997).

Historically, Cooperative Extension has used competencies to assess employees' training needs. Keita and Luft (1987) investigated agricultural agents' training needs by measuring their perceptions of the importance of selected competencies. A similar approach was taken to determine the competencies needed by Extension workers to effectively teach farmers (Martin & Bin Sajilan, 1988). Extension research has focused on employees' perceived competence in areas such as volunteer administration (King & Safrit, 1998), human resource management (Haynes, 2000; Lindner, 2001), and public issues education (Singletary, Smith, Hill, & Corcoran, 2004).

Several state-based competency models have been proposed for 4-H (Boyd, 2004; Cooper & Graham, 2001; Gregg & Irani, 2004), but only one national model exists. According to Astroth, Garza, and Taylor (2004), "The 4-H Professional Research and Knowledge Base (4-Hprk) has been seen as the foundation for competency guidelines in the 4-H youth development profession since it was created in 1985" (p. 34). In 2004, a National Professional Development Task Force convened to formally revise the

4-Hprk. The revision process included a review of the existing model, examination of internal and external youth development research, and interviews with state 4-H program leaders, administrators, content experts, and internal and external youth development professionals (Stone & Rennekamp, 2004). A draft document was then shared with stakeholders and released via 4-H-related Web sites in an effort to solicit additional input. The resulting document was renamed the 4-H Professional Research, Knowledge, and Competencies (4-H PRKC) model.

The 4-H PRKC model consists of six domains representing subject matter areas that "focus on what matters most when working with young people" (National 4-H Professional Development Task Force, 2004, p. 1), including: (a) Youth Development, (b) Youth Program Development, (c) Volunteerism, (d) Partnerships, (e) Organizational Systems, and (f) Equity, Access and Opportunity. Each domain lists the competencies necessary for effectiveness within that subject.

Past studies of competencies have emphasized the Volunteerism domain. Hange, Seevers, and VanLeeuwen (2002) compared 4-H agents' attitudes and perceived competence in relation to nine volunteer management competencies listed in the 1985 version of the 4-H PRKC. Although agents perceived the competencies to be important, they were less confident in their abilities to perform the competencies. Hange et al. concluded volunteer management training was necessary to decrease the gap between competence and importance. The findings of their study confirmed previous work by King and Safrit (1998) and Collins (2001) which documented similar disparities related to volunteer management competencies.

Although the Volunteerism domain of the 4-H PRKC has been well-examined, research into the other five domains has been limited. Yet, a study by Harder and Dooley (2007) found that most of the competencies perceived to be important by 4-H agents were in the Organizational Systems domain, not in Volunteerism. Organizational Systems competencies include time management, conflict management, and communication (Stone & Rennekamp, 2004). Harder and Dooley's results are supported by Seevers et al.'s (2005) identification of conflict management and people skills as highly requested areas for training. A needs assessment should be conducted to expand the existing understanding of priority training needs to include the Organizational Systems domain.

Purpose and Objectives

The purpose of this study was to determine the professional development needs of 4-H extension agents in Texas using the Organizational Systems (OS) domain of the 4-H PRKC. Specific objectives were to:

1. Establish levels of reliability for the six scales in the OS domain.
2. Describe agents' perceived levels of proficiency for competencies in the OS domain.
3. Describe the perceived levels of importance assigned by agents to competencies in the OS domain.
4. Compare proficiency and importance levels for each competency to determine priority training needs for Texas 4-H agents.

Methods

A census was conducted on the population of interest. According to Fraenkel and Wallen (2006), a census is appropriate when the entire population is of interest. However, care should be taken when attempting to generalize the results of this study to any other population. The target population for this study was 4-H extension agents in Texas. The Texas 4-H program is built upon a traditional project and community club-based model (Texas Cooperative Extension, 2005). Texas Cooperative Extension plans statewide professional development opportunities (Boleman, James & Couch, 2002; Stone & Coppernoll, 2004). Therefore, it is important to understand training needs on a statewide basis.

Participants were identified using the *Texas County Extension Offices* (Texas Cooperative Extension, 2006) online directory. There were 83 agents with a job title that included 4-H Youth Development. This list was reviewed by the associate state leader for accuracy. Corrections were made to reduce the population to 81 agents.

An online questionnaire was used for data collection. The instrument was derived from the competency statements in the Organizational Systems (OS) domain of the 4-H PRKC model (National 4-H Professional Development Task Force, 2004). A modified Borich (1980) model of needs assessment was used to measure participants' perceptions of 59 competency statements. Previous research supports the use of modified Borich models to study 4-H agent competencies (Culp & Kohlhagen, 2004; Waters & Haskell, 1989). Participants used a four-point scale (0 = *No Proficiency/Importance*, 1 = *Low Proficiency/Importance*, 2 = *Average Proficiency/Importance*, and 3 = *High Proficiency/Importance*) to rate the levels of importance and proficiency for each competency. Table 1 includes example competency statements from the OS domain.

Table 1
Organizational Systems Competencies: Organizational Effectiveness

Competency Statement
Understands CES/4-H history, structure, and mission.
Displays commitment to CES/4-H/mission.
Uses mission and vision to shape programs and organizational structure.
Uses mission and vision for long-range planning.
Plans, manages, and embraces change.
Establishes appropriate management structures.
Creates governance boards.
Monitors and support board and committee work.

Content validity of the competency statements was established by a panel of experts during the development of the 4-H PRKC (National 4-H Professional Development Task Force, 2004). The task force included county agents, state 4-H specialists, state 4-H program directors, and members of the National Collaboration for Youth, the National 4-H Council, and National 4-H Headquarters. The 4-H PRKC competencies were reviewed by a seven-member professional development subject matter expert panel. Two additional experts from Texas Cooperative Extension reviewed the instrument for this study for content and face validity.

Data were collected according to Dillman's (2000) Tailored Design Method. A personalized pre-notice was sent by e-mail in October 2006. Of the 81 original e-mail addresses, 76 were valid. A notice was e-mailed two days after the pre-notice. The notice included individual passwords and a hyperlink to the study's information and consent page. The information and consent page explained the study's purpose, provided Internal Review Board approval, and the researcher's contact information. Texas 4-H agents who agreed

to participate in the study entered their unique passwords on the consent page, which forwarded to the online questionnaire.

Reminders were e-mailed to non-respondents every three business days until data collection ceased. A total of three reminders were e-mailed. One participant opted out of the study which reduced the accessible population (N = 75). A final response rate of 78.67% (n = 59) was achieved. Non-response error was controlled by comparing early to late respondents (Lindner, Murphy, & Briers, 2001). Early respondents were defined as those who responded to the first stimulus (n = 28). Late respondents participated after receiving the reminder stimuli (n = 31). A two-group independent t-test was used to compare the early and late respondents' summed scores from the Personal Effectiveness scale (Gall, Gall, & Borg, 2007). No significant differences between early and late respondents were found for proficiency $t(56) = .405$, $p > .05$, or importance $t(57) = -0.357$, $p > .05$. Thus, it was concluded the results could be generalized to the target population.

Two separate methods were used to analyze the data. Reliability for the six OS scales was determined by calculating Cronbach's alpha coefficient. Data were also analyzed according to the ranking procedure described by Edwards and Briers (1999). The following procedure was repeated for each competency.

A discrepancy score was obtained for each participant by subtracting his/her perceived level of proficiency from the perceived level of importance for a specific competency. Each discrepancy score was then multiplied by the mean importance level for that competency, resulting in a weighted discrepancy score for each participant. The weighted discrepancy scores were summed and divided by the total number of usable observations to yield a mean weighted discrepancy score for the competency. The mean weighted discrepancy scores for all the competencies were ranked to determine the priorities of professional development needs in the Organizational Systems domain.

Results/Findings

Objective 1: Reliability

Cronbach's alpha coefficients were calculated to measure the internal consistency of the instrument's scales. Reliability coefficients of .80 or higher are considered acceptable (Gall et al., 2007). Cronbach's alpha coefficients for proficiency ranged from .64 to .88. Cronbach's alpha coefficients for importance ranged from .70 to .89. Reliability levels for individual scales are presented in Table 2.

Objectives 2 and 3: Proficiency and Importance

Agents perceived themselves to be highly proficient in "Is accountable and accepts responsibility for actions" (M = 2.81, SD = 0.39) and had low proficiency in "Develops grants and proposals" (M = 1.29, SD = 0.87). The most important competency was "Follows ethical standards of professionalism at all times" (M = 2.92, SD = 0.33). The least important competency was "Promotes the University" (M = 1.85, SD = 1.03). Due to the excessive space necessary to present the means and standard deviations for all 59 competencies, only competencies with the five highest means for proficiency and importance are listed in Table 3. Complete results are available from the authors upon request.

Table 4 presents the means and standard deviations for the proficiency and importance levels of each scale. Proficiency ratings were highest for Professionalism competencies (M = 2.42, SD = 0.38). Agents were least proficient in the Resources Development and Management competencies (M = 2.09, SD = 0.45). Agents perceived Personal Effectiveness competencies to be the most important (M = 2.73, SD = 0.38), while Organizational Effectiveness competencies were least important (M = 2.37, SD = 0.45).

Table 2
Reliability of the Organizational Systems Domain Scales

	Alpha Levels	
Scale	Proficiency	Importance
Communication Strategies	.64	.70
Organizational Effectiveness	.74	.87
Personal Effectiveness	.71	.85
Professionalism	.84	.88
Resources Development and Management	.77	.82
Risk Management	.88	.89

Table 3
Competency Ratings: Proficiency and Importance

	Proficiency		Importance	
Competency	*M*	*SD*	*M*	*SD*
Is accountable and accepts responsibility for actions.	2.81	0.39	2.88	0.33
Understands, follows and communicates policies regarding the 4-H name and emblem.	2.76	0.43	2.75	0.44
Follows ethical standards of profession at all times.	2.76	0.47	2.92	0.28
Demonstrates attributes of a positive role model.	2.71	0.46	2.85	0.36
Displays commitment to CES/4-H/mission.	2.68	0.47	2.56	0.60
Promotes positive youth development to decision makers.	2.59	0.53	2.85	0.36
Listens effectively and actively.	2.53	0.54	2.86	0.35

Note. Scale: No Proficiency/Importance = 0, Low Proficiency/Importance = 1, Average Proficiency/Importance = 2, High Proficiency/Importance = 3.

Table 4
Perceived Proficiency and Importance Ratings for OS Scales

	Proficiency		Importance	
Scale	*M*	*SD*	*M*	*SD*
Professionalism	2.42	0.37	2.57	0.38
Risk Management	2.38	0.36	2.61	0.33
Organizational Effectiveness	2.32	0.33	2.37	0.46
Communication Strategies	2.23	0.31	2.65	0.30
Personal Effectiveness	2.14	0.35	2.73	0.30
Resources Development and Management	2.09	0.45	2.42	0.45

Note. Scale: No Proficiency/Importance = 0, Low Proficiency/Importance = 1, Average Proficiency/Importance = 2, High Proficiency/Importance = 3.

Objective 4: Priority Training Needs

Mean weighted discrepancy scores (MWDS) were calculated for each of the competencies. MWDS were initially calculated by subtracting perceived proficiency from perceived importance. When importance exceeded proficiency, a positive MWDS resulted; conversely, when proficiency exceeded importance, a negative MWDS resulted. Positive MWDS were interpreted as a need for training in a specific competency, while negative MWDS indicated no training was necessary.

The MWDS for competencies rated as high training needs are in Table 5. The lowest MWDS had negative values: a) Understands CES/4-H history, structure, and mission; b) Promotes the University; c) Promotes the youth development profession; d) Seeks professional affiliations that will enhance the youth development profession and their own professional knowledge base; and e) Understands, follows, and communicates policies regarding the 4-H name and emblem.

Topics within the OS domain varied according to the need for training. Participants had very low need for training in Professionalism competencies. Training was most needed for the Personal Effectiveness competencies. Ranges of MWDS for each scale are listed in Table 6.

Table 5
High Priority Training Needs

Competency	Mean Weighted Discrepancy Scores
Practices stress management and stress reduction.	2.87
Incorporates wellness practices into personal life style.	2.19
Manages time effectively.	2.11
Balances conflicting demands.	2.02

Table 6
Ranges of MWDS for Selected 4-H PRKC Scales

Scale	Range
Personal Effectiveness	0.49 – 2.87
Communication Strategies	0.49 – 1.68
Resources Development and Management	0.40 – 1.62
Risk Management	-0.05 – 1.34
Professionalism	-0.47 – 1.06
Organizational Effectiveness	-0.53 – 0.60

Conclusions/Recommendations/ Implications

The first objective of the study was to establish levels of reliability for the Organizational Systems domain of the 4-H Professional Research, Knowledge and Competency model. Five of the six scales (Professionalism, Personal Effectiveness, Organizational Effectiveness, Risk Management, and Resources Development and Management) had acceptable levels of reliability for measuring proficiency and importance. The Communication Strategies scale failed to attain an acceptable level of reliability. If the reliability level was related to a small sample size or return rate, then similarly low levels of reliability should have been observed across all six scales. The lack of such occurrences suggests a problem with the construction of the Communication Strategies scale.

The second objective was to describe agents' perceived levels of proficiency for competencies in the OS domain. Agents perceived themselves to be proficient in many of the competencies. They were most proficient in Professionalism and Risk Management competencies, which included competencies such as "Demonstrates attributes of a positive role model," and "Designs and maintains a safe, inclusive program environment for youth and adults." Due to the nature of the 4-H program, agents often have the opportunity to practice these competencies.

4-H agents were least proficient in Personal Effectiveness competencies. Extension agents have struggled to balance their careers with their personal lives for many years (Ensle, 2005; Fetsch & Pergola, 1991). Reasons for job burnout include night meetings, weekend events, and unexpected clientele drop-ins. More complex reasons may exist. Ensle found agents were burdened by the need to be accountable to multiple administrations (county, state, and national). The constant pressure to prove the educational value of extension programs was an additional source of stress (Ensle). Unfortunately, most of these reasons are inherently linked with Extension work, which makes overcoming them a challenge.

The third objective was to describe the perceived importance of competencies within the OS domain. Grant writing was a competency in which the agents did not perceive themselves to be proficient. Grant writing was only assigned average importance. One might speculate the lack of proficiency assigned to grant writing is related to its perceived lack of importance. The lack of importance is interesting because grant writing has been considered an integral part of subsidizing programs and salaries for at least 20 years (Wilson, 1985). Barth, Stryker, Arrington, and Syed (1999) suggested the pursuit of alternative funds became necessary because of reasons such as insufficient federal funding and the expansion of Extension programming beyond the traditional USDA/CSREES

mission. Funding is predicted to continue its decline due to private sector competition and insufficient political support (Comer, Birkenholz, & Stewart, 2004). It would be a surprise if grant writing did not take on a more important role in Texas in the next several years. An increase in proficiency may become a necessity.

Personal Effectiveness competencies were perceived to be the most important. Conflict management and time management, competencies included in the Personal Effectiveness domain, were also identified as important in the Harder and Dooley (2007) study. The ascribed level of importance is particularly worth noting because agents did not perceive themselves to be proficient in Personal Effectiveness. The problem may be endemic to a culture which often equates success and respect with the amount of time dedicated to the job.

Organizational Effectiveness was the least important scale. Agents favored competencies which were more practical, such as "Listens effectively and actively," over more abstract concepts like "Uses mission and vision to shape programs and organizational structure." This can likely be attributed to a difference in how frequently the competencies are used. An agent can be expected to set priorities, listen actively, and mediate conflict on a regular basis. The integration of mission and vision into program planning is most commonly associated with the creation of plans of work, an activity that traditionally occurs on an annual basis.

Finally, the study sought to determine priority training needs for Texas 4-H agents. Training is most needed to assist agents with achieving proficiency in the Personal Effectiveness competencies. The five highest MWDS scores were for Personal Effectiveness competencies. The need for training in the area of stress management and stress reduction is significant. Agents must be able to gain proficiency in Personal Effectiveness to combat the burn-out trend so commonly associated with Extension.

This study provides important data which may be used: (a) to plan training opportunities addressing Personal Effectiveness competencies, (b) as a reference for evaluating the success of training interventions, and (c) as a reference for reliability. This study is limited by the small population size and the examination of a single domain. Replicating this study on a broader scale is recommended, as it would increase the inference base for which generalizations may be made. However, researchers are encouraged to revise and pilot test the Communication Strategies scale of the instrument prior to data collection. This may increase the likelihood of attaining an acceptable level of reliability. Future research should investigate the remaining domains so a greater understanding of the 4-H PRKC can be developed.

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