The Relationship of Future Agricultural Extension Educators' Cognitive Styles and Change Strategies for Adult Learners

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Abstract: The study expands reported here Extension education's knowledge regarding characteristics of potential change agents. Graduate students learning to become agricultural Extension educators were studied to determine their definition of a change agent. Participants' cognitive styles were assessed using Kirton's Adaptation-Innovation Inventory to explore if cognitive style influenced preference for and potential usage of diffusion of innovations as a planned change strategy. Findings indicated future Extension practitioners' cognitive styles were associated with the planned change strategy they preferred. This findings could assist Extension professional development specialists in better understanding how to prepare current Extension practitioners to effect behavior change in clients.

Introduction

Bringing about behavior change in individuals, groups, and organizations is a challenging task (Burke, 2008; Kirton, 2003; Kotter, 1996). The need exists for agricultural Extension educators to continually evaluate their professional competencies with respect to planned change strategies for adult learners. The primary responsibility of agricultural Extension educators is to assist producers and growers with behavior change that provides adults with an enhanced livelihood (Battel & Krueger, 2005; Clements, 1999; Skelly, 2005). Extension educators should develop their competencies in relation to change practices, because without those competencies it is challenging to promote behavior change (Ladewig, 1999).

Research suggests the cognitive style of agents of change is a significant component in the change process. Cognitive style is an individual's habitual method of problem solving, perception, and reflection (Riding & Cheema, 1991). Kirton (2003) indicated cognitive style is the preference or tendency one employs in putting problem solving into action. Educators' perceptions of change are the essential first steps in perceiving a problem, and these perceptions are shaped by their cognitive style (Happé, 1999; Hayes & Allinson, 2005;

Kirton, 2000). Sadler-Smith and Badger (1998) found cognitive style to be an influential attribute of one's behavior in discerning professional objectives and the process the individual undergoes to achieve those objectives.

Theoretical Framework

The theoretical framework for the study reported here included Kirton's (2000) Adaption Innovation theory and one of the foremost perspectives on planned change strategies, the diffusion of innovations (Rogers, 2003). Kirton's Adaptation-Innovation (KAI) theory outlines differences among management competencies and preferred problem solving style towards group and personal creativity (Kirton, 2000).

Kirton (2000) indicated KAI is not a gauge of cognitive ability. The Kirton Adaptation-Innovation Inventory characterizes individuals according to their preferred problem solving style as either more adaptive or more innovative. "Innovators" seek out problems, present various solutions, contest rules, and assist in unforeseen crisis. Kirton identified "adaptors" as particular, dependable, proficient, disciplined, cautious, disciplined, and conforming. He categorized individuals with KAI scores close to the mean (96) as "bridgers" who encompass the third group in the KAI. The bridger is an arbitrator of differing opinions and responsibilities between innovators and adaptors.

Rogers (2003) said the progression in which an innovation is communicated through specified outlets over time between members of a social structure is the diffusion of innovations. Change agents are people who influence consumers' innovation-decisions in a direction-estimated desirable by a change organization (Rogers). Agents of change strive to enhance adults' pursuit of the innovation. The change agent uses adults' needs in order to recommend and influence the clients' behavior change. Change agents can alleviate the behavior change to adults instituting the adoption via reinforcing messages. Change agents strive to alter clients' stance from reliance on the agent to self-reliance. Change agents may improve relationships with consumers by being recognized as reliable, proficient, and dependable, and by understanding the clients' needs and problems.

Purpose

The specific purpose of the study was to determine the change strategies graduate students studying to become future agricultural Extension educators preferred when working in a professional context. Specifically, the study sought to:

1. Describe graduate student's perceptions of a change agent and;

2. Explore the relationship of graduate students' cognitive problem solving style and their role as a change agent.

Methodology

Graduate students, future agricultural Extension educators, participating in a graduate course on the methodology of planned change were the population for the study. Eighteen students were enrolled in the course during the fall semester of 2008. The course provided a comprehensive overview of theories, models, and processes related to planned and unplanned changes affecting individuals, organizations, and communities.

Qualitative research was the method implemented for the study. Lincoln and Guba (1985) indicated data collection strategies used in qualitative research include focus groups, case studies, observations, archived data, and interviews. Focus groups were selected as the research method for the study. Krueger (1988) indicated focus groups have high face validity and are intended to foster group interaction and unearth public opinion. Focus groups may be identified "as a carefully planned discussion, designed to obtain perceptions on a defined area of interest in a permissive, nonthreatening environment" (p. 16).

Researchers administered the KAI to graduate students in the course to assess their cognitive style. Students were categorized by their cognitive style group (adaptor, bridger, or innovator) based upon their KAI score (Kirton, 2000). According to Kirton, innovators' scores on the scale are between 113 and 160. Adaptors' scores are between 32 and 64 on the scale. The mean on the scale is 96, and bridgers' scores are between 65 and 112. Cognitive style groupings were then linked to researchers' qualitative findings.

A semi-structured interview guide was used to investigate graduate students' perceptions of strategies associated with planned change. Member checking was used to assist the researchers with the study's credibility. The lead researcher asked every participant to review the transcript from their interview to ensure confirmability and trustworthiness (Hatch, 2002). In this case, the lead researcher emailed the participants the transcript from their interview to ensure validity and reliability.

The constant comparative method was employed for data analysis. Glaser (1994) indicated this method allows the researcher to identify common themes, non-verbals, observations, and similar and dissimilar findings. Transcriptions were coded and categories were developed based upon identified themes (Glaser). Trustworthiness was accomplished through triangulating the data from observations and interviews. An audit trail was constructed of electronically recorded data and field notes.

Findings and Limitations of the Study

There were nine (*n* = 9) bridgers, five innovators (*n* = 5), and four (*n* = 4) adaptors in the study. All nine bridgers and the five adaptors preferred the diffusion of innovations as a planned change strategy. Because the study was conducted in a course on planned change that is available each fall semester, findings were limited in scope and therefore not generalizable. However, several key findings emerged from the interviews and KAI scores with graduate students. Synopses of the emerging themes are presented in the sections that follow.

Perceptions of Change Agent

Graduate students were asked what the definition of a change agent meant to them. Michele indicated: "A change agent is someone predetermined to influence a change, and part of a system designated to elicit a particular change." Stephen added: "Change is evitable and agents facilitate the change process by creating an environment to make sure the change happens." Amy indicated:

> The change agent is the leader of the change being attempted, and someone on the outside but uses others for grunt work, and uses other people for the big picture like opinion leaders or champions of change to like accomplish their goal.

Heather felt:

> Change agents have something at stake and get around obstacles by figuring out alternatives to keep the potential of change an option. Change agents are agents of the people they service. They will keep working with an audience to more likely insure the change occurs. In

order to convince the audience to adopt the change, change agents always make sure it is a positive change—or the right change by pursing the sustainability of the change. A change agent is trying to develop something that is long lasting.

Karen added: "A change agent is external to the process but is on the frontline of the change approach." Melissa believed:

Change agents are like sheep herders, because they are trying to get the flock headed in a certain way by guiding them to go a certain direction just like a sheep herder would do with their sheep. Like the sheep herder, change agents are going to be there long-term to care for the change process.

Bridgers' Preferred Planned Change Strategy

All nine bridgers in the study favored diffusion of innovations as the preferred strategy for achieving planned change for adult learners. Ann suggested:

I would definitely be a change agent because my current role as teaching assistant and future educator. I have to encourage my students in preparing effective presentations and sometimes I do this by establishing credibility, stroking their egos and building them up. The experiences I have learned [I feel] will prepare me to work with adults trying to change their behavior.

Heather said, "I would be a change agent because the U.S. is so diverse, and because I can come up with the plan and decide how it would be implemented." Carter agreed, "The change agent comes up with the plan and hands it over to the clients. I like the top down approach and the structure it provides." Amy stated:

There is more control of the change process with change agents than buzz agents. I like control and change agents are provided more control than buzz agents in getting a change accepted. Change agents would work better because of the structure provided and the plan you can implement. Buzz agents seem [like] flighty and less reliable or credible.

Will believed: "I would seek out those who are influential and try to convince them to help me achieve my goals." Albert stated:

I see opinion leaders in everything I do. They can be related to you, they can be your friends, they can be neighbors, they can be someone with authority over you, and you trust their opinion. Opinion leaders make the diffusion of innovations more practical to me, and that's way I would choose the approach.

Limitations to the study include the lack of generalizability and confirmability and the use of an intact graduate class in planned change in a single institution. Multiple focus groups in multiple institutions would provide a clearer picture of the phenomena under study and may suggest directions for future research. Qualitative research was implemented due to the nature of research questions and sample size. Lincoln and Guba (1985) indicated qualitative research is not generalizable but provides researchers insight on phenomena that can lead to more detailed studies involving larger samples of participants.

Conclusions and Implications

The findings of the study have implications for agricultural Extension educators. Participants' cognitive style seemed to be related to the planned change strategy graduate students preferred (Kirton, 2003). Results of the study indicate all bridgers were more comfortable with the diffusion of innovations as the more effective planned change strategy. This finding may be due to the fact that bridgers have the capability in coping behaviors to engage those with different problem solving styles, indicating a cognitive style that is variable depending upon the situation (Kirton, 2000). They may therefore appreciate the flexibility of diffusion of innovations, which is characterized as more of a multifaceted behavior change strategy for a wide range of individuals, groups and organizations (Rogers, 2003).

Recommendations

The study reported here stregthens the research that cognitive style determines an individual's implemention of methods to assist in behavior change (Kirton, 2000). The researchers recommend Extension academics study the cognitive styles of current undergraduate and graduate students seeking a degree in Extension Education and the potential impact on clients' behavior change. Further research is needed regarding the relationship of current agricultural Extension educators' cognitive styles toward behavior change strategies. The KAI could be administered to agents before a professional development training, and KAI-certified Extension professional development specialists could tabulate the results. Information related to different planned change strategies could be taught to current agents via face-to-face, Web-based learning modules, podcasts, Skypeâ ¢, Elluminate®, Centra®, etc. The association of planned change strategies among adopters, bridgers, and innovators should be examined.

The study's findings correlated with Sadler-Smith and Badger's (1998) work in that cognitive style dictated the future planned change strategy incorporated by educators. Early, mid-career, and seasoned agricultural Extension educators' cognitive style and preferred planned change strategy should be studied in order to potentially learn how professional development practices can be modified to best assist agricultural field staff in generating postive behavior change in Extension clients. The organizational objectives of Extension could be more efficiently and effectively achieved if administrators, program planners, and field staff were better informed in regards to the effect of cognitive style on planned change strategy toward adult clientele, as recommended by Hayes and Allinson (2005).

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