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Improving Participation of Non-Traditional Extension Audiences: The Empower Ocala Garden Project

Abstract

Marion County Extension created the Empower Ocala Garden project to increase participation among low-income minority populations and address "food desert" conditions around its office. The project built trusting relationships, created a community garden for 12 households, and provided bi-weekly garden skills trainings. Participation, attitudinal changes, and knowledge gains were evaluated using pre- and post-project questionnaires. On average participants attended 53.4% of sessions. Attitudes improved by 9.82% across four gardening-related indicators, while knowledge increased by 19.57% across eight indicators. Overall, the project successfully engaged new clients, positively changed attitudes and knowledge, and may benefit other Extension professionals serving these audiences.

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Introduction

As diversity increases in the United States, Extension faces a growing challenge to meet the needs of minority, limited-resource, and other non-traditional audiences. Extension programs should achieve parity in the clients they serve (University of Wisconsin, 2011), but evidence is scarce. One of the few available studies reports Hispanic participation in Texas Extension programs to be less than 70% of parity (, et al., 2005). Although a less direct measure of involvement, respondent attributes from customer satisfaction surveys and survey data show clients in Florida to be primarily white, non-Hispanic (90%) and having some college or more education (70%) (Galindo-Gonzalez & Israel, 2010). These data support the view that Extension programs serve mostly a "white, middle-class audience" (Grogan, 1991, p. 1).

Recognizing this need, the urban horticulture agent in Marion County, Florida, investigated opportunities for developing relevant programming to improve outreach to non-traditional audiences. The county is largely rural, while the county seat (Ocala) is urban and densely populated (US Census Bureau, 2013). Marion County's poverty rate (16.5%) is just above the national average (US Census Bureau, 2013). However, the Extension office is located in an economically depressed area with a poverty level of over 30%. Several adjacent apartment complexes are Section 8 subsidized housing managed by the Ocala Housing Authority, and residents are disproportionately low-income and non-

white. The area is also designated a "food desert" by the United States Department of Agriculture, characterized by both low income and low access to healthy foods, fruits, and vegetables (USDA, n.d.). These factors presented an opportunity for Extension to address poverty-related issues faced by residents in its immediate surroundings and to serve a population not traditionally involved in programming.

In September 2012 an informal needs assessment was conducted. Two members of the urban horticulture program visited the apartment complexes adjacent to the office and interviewed a convenience sample of 20 residents. Interviewees were exclusively Black, with ages ranging from 18 to 70 and represented both genders. Interviewees were asked what they knew about Extension, whether they had any gardening knowledge or experience, and whether they would be interested in participating in a gardening program. Overwhelmingly, interviewees expressed ignorance of Extension (despite the office being within eyesight), general lack of gardening experience, and moderate interest in a gardening program. Observations were also taken about the potential for home gardening at the complexes, where most residents had small but mainly unused planting areas at their units.

Consequently, Marion County Extension developed a community garden program for neighboring households. Urban community gardens have been conducted with diverse populations in a variety of environments and can help provide residents of food desert areas with fresh and healthy foods (American Community Gardening Association, n.d.). Furthermore, the Extension office had a vegetable garden that was difficult to maintain due to lack of volunteers. Converting that land into smaller plots assigned to individuals or households could be mutually beneficial and cost-effective (Hoorman, 2002). Thus, the program's objectives were to create a community garden program that engaged non-traditional participants (low-income minorities), provided the gardening training and experience necessary to grow vegetables at home, and increased consumption of fresh vegetables by participants.

Program Activities

A program team was formed to implement the Empower Ocala Garden Project, consisting of the urban horticulture agent, a horticulture intern, and two Master Gardener volunteers. The team included members with prior experience working with non-traditional audiences. Its efforts were guided by Rogers' (2003) Diffusions of Innovations theory, particularly the concept of homophily/heterophily and how it affects diffusion. Homophily suggests that individuals who interact possess similar traits, such as: economic status, ethnicity, culture, education, and beliefs. In contrast, heterophily indicates differences in the aforementioned attributes. When Extension agents and clients are heterogeneous, their limited common experiences, language, and understanding are barriers to building trust, and this impedes social interaction. By developing familiarity and deepening relationships with target audiences, resistance to participation and change can be reduced.

Based on these concepts, project implementation occurred in two phases: (1) generating community interest/support and relationship building with potential participants, and (2) hands-on training in gardening skills for identified participants.

Phase One: Relationship Building

Phase one was conducted over a 3-month period (October to December 2012). As recommended by Webster and Ingram (2007), substantial time was spent generating community support and buy-in, and relationship building and trust building within the target audience. This step is usually not needed when working with traditional Extension audiences. However, trustworthiness of the change agent from the perspective of the target audience can influence learning and the diffusion of innovations, especially as heterophilous individuals are less trusting of each other (Placek, 1975). With greater heterophily, Webster and Ingram (2007) recommend that change agents work to develop trust prior to implementation of the program to ensure high quality and sustainability.

First, to build partnerships with local community organizations, program leaders attended and presented the program at two local churches and contacted apartment complexes near the Extension office. Two complexes managed by the Ocala Housing Authority expressed interest in participating. Furthermore, the Housing Authority agreed to promote the program in its monthly newsletter, facilitate distribution of program materials to residents, and offer community service hours to entice residents to participate.

Next, an informational meeting was held at the county Extension office. Community members were invited through the aforementioned channels, yet the turnout was quite low. Attendees suggested that informational flyers and off-site meetings were not effective ways to stimulate interest. Frequent and regular sessions were also determined necessary to keep potential participants from exiting the program.

A container gardening session was conducted in November 2012 on-site in the apartment complexes to generate interest in the project. Twenty residents participated, and seven signed up for garden plots. In December 2012, a holiday crafts session was held for community members at the Extension office. The turnout was much higher than the original meeting, and additional participants signed up for plots. At that point, the program had successfully identified 12 households for the spring 2013 growing season.

Through this process, program personnel and residents got to know each other, exchange contact information, and begin to develop trust. One member of the project team took the lead as the community liaison, and relationships were cultivated through bi-weekly telephone contact with participants throughout phase one. These conversations were informal and usually involved thanking the residents for participating in previous sessions, discussing their interest in gardening, and soliciting ideas for the upcoming garden program.

Phase Two: Hands-On Training

Phase two of the program was anticipated to repeat each spring and fall growing cycle and last 4 months (February to May) and (August to November), respectively. The second phase of the program commenced January 2013 at the Extension office. Participants attended a planning meeting where they chose garden plots, picked vegetables to grow, and drafted rules for participation. Project personnel facilitated this meeting and deferred to participants in decision-making whenever possible. Master Gardener volunteers were also present to meet the participants, and a team-building exercise was conducted.

Over the next 4 months, participants attended free, bi-weekly, 15-20 minute training sessions on gardening skills, followed by one-on-one assistance from team members. Topics included: soil preparation, planting, garden maintenance, composting, harvesting, and cooking harvested vegetables. All sessions (except the last) were conducted in the gardens and used hands-on teaching methods. Training materials used with traditional Extension audiences were simplified to suit this audience (e.g., poster boards and pictures instead of PowerPoint presentations), consistent with Hoorman (2002) and Webster and Ingram (2007). Sessions were conducted on Saturday mornings to accommodate participants' work schedules. A youth-oriented garden activity was included to promote whole family involvement and to prevent childcare from being a potential barrier to participation (Ingram & Syvertsen, 2005). Participants also had open access and regularly tended their gardens between scheduled activities.

Maintaining high levels of participation with this audience required an atypical strategy. At the beginning of phase two, all participant households were given a project schedule for the 4-month growing cycle. Extensive follow-up was also conducted to maintain participation. One week prior to each session, a written letter was mailed to each household discussing the topic, location, and time of the activity. However, literacy and/or education level made these letters ineffective without follow-up. Consequently, a day before each session the project community liaison called each participant to provide a verbal reminder. This phone call became an essential step towards maintaining participation levels, but also helped the project team understand and remove barriers to participation (lack of transportation, need for childcare, etc.) while building trusting relationships with participants.

Program Evaluation

Phase two also included evaluation to help identify and address challenges to program delivery and to allow for improvements in subsequent project iterations. Thus, the level of inclusion of non-traditional Extension audiences and impacts on project participants during the spring 2013 growing cycle. Vegetable consumption was not measured due to unavailability of data. The resulting evaluation objectives were to:

1. Measure participation by non-traditional Extension audiences,
2. Evaluate attitude changes related to vegetable gardening, and
3. Evaluate knowledge changes related to vegetable gardening

Methods

The team identified indicators and measurable variables for each objective (Table 1), and designed appropriate evaluation tools (Rossi, Lipsey, & Freeman, 2004). For Objective 1, participation was measured through sign-up sheets provided at the project planning meeting and the six training sessions. Data were included for each participant/family.

Table 1.
Project Evaluation Framework

| Objective | Indicator | Variable |
|---|---|---|
| Participation by non-traditional Extension audiences (Obj1) | Program participant households are identified in sufficient numbers to assign to each of the 12 plots | |
| | Program participants regularly attend and participate in vegetable gardening sessions | Participant Attrition Rate |
| | | Participant Attendance Rate |
| Attitude changes related to vegetable gardening (Obj2) | Program participants develop an interest in gardening | Attitude about Vegetable Gardening |
| | | Attitude about Growing own Vegetable Garden |
| | Program participants develop an interest in gardening at home and/ or beyond the program | Attitude about Growing own Vegetable Garden at Home |
| | Program participants develop an interest in incorporating healthy vegetables into their diets | Attitude about Eating Garden Vegetables at Home |
| Knowledge changes related to vegetable gardening (Obj3) | Program participants increase their knowledge of small-scale vegetable production | Knowledge of Preparing Garden Soil |
| | | Knowledge of Composting |
| | | Knowledge of Planting Vegetable Gardens |
| | | Knowledge of Controlling Bugs and Pests |
| | | Knowledge of Maintaining Vegetable Gardens |
| | | Knowledge of Garden Observations and Note-Taking |
| | | Knowledge of Cooking Garden Vegetables |
| | Program participants | Knowledge of Importance of |

| | | |
|--|---|----------------------------|
| | increase their knowledge of the nutritional value of fresh vegetables | Fresh Vegetables to Health |
|--|---|----------------------------|

Objectives 2 and 3 evaluated multiple indicators. Attitudinal indicators included opinions of vegetable gardening, the importance of fresh vegetables to health, and intentions to garden at home as a result of the program, while knowledge indicators focused on the specific gardening topics. The simple pre-post study method was selected, which gathers pre- and post-project data to assess gains made on knowledge and attitudinal indicators over the course of the program (Ary, Jacobs, Sorensen, & Razavieh, 2009; Rossi et al., 2004). As such, the pre-test was given to participants at the planning meeting in January 2013, while the post-test was completed following the final training session in May 2013. Participant attrition and non-response led to a sample size of $n=10$ for this data set.

The one-page written instrument was developed in collaboration with an evaluation specialist. The instrument included a single question to assess each of the evaluation variables (Table 1). Respondents were asked to rank their answers along a balanced five-point Likert-type scale (Ary et al., 2009). Likert-type scales are effective at quantifying attitudes and knowledge (Kellogg Foundation, 2004) and are less intimidating and confusing to respondents of varying education levels and experience with evaluation (Dillman, Smyth, & Christian, 2009; Tourangeau & Rasinski, 1988).

Data from Objective 1 were analyzed by determining the attrition level of participants over the course of the program. Twelve plots were deemed a manageable number to pilot the project, with future adjustments based on program success. Attrition was quantified by the percentage of the original 12 households still involved in the program by the final training session. Participation percentages for each session were also calculated to determine levels of and trends in participation at various points during the program.

To analyze data from Objectives 2 and 3, participants' attitudes and knowledge scores from the pre-test and post-test were compared (Rossi et al., 2004). Participants rated their attitudes on four attitudinal questions and their knowledge about a series of eight gardening topics along a five-point Likert-type scale (Dillman et al., 2009; Rossi et al., 2004). A score of one represented very negative attitudes or very low knowledge levels, while a score of five represented very positive attitudes or very high knowledge levels.

An overall index and the means for each of these questions were computed from both the pre- and post-test to allow for comparison. Changes in the mean responses were calculated to show the impacts of the program for each variable. Percent change was also determined to help present level of impact. Finally, paired t-tests were conducted at $\alpha=0.1$ to test the statistical significance of observed differences (Agresti & Finlay, 2008). This alpha level is recommended for low sample sizes that may lack statistical power (Noymer, 2008).

Results

Attrition rates for the program were low (8.3%). Only one of the 12 participants left the program. Special accommodations were made for this participant by the addition of a wheel-chair accessible bed, although transportation and health problems made her continuation impossible. All remaining

participants expressed the desire to continue in the fall growing cycle and requested a summer component be added to the program. The participants had also begun to discuss the program in their apartment complexes and recruited neighbors to the program.

Despite ongoing interest in the program, attendance rates were moderate. The average number of participant households at any given session was 6.43 (of 12), or 53.6% of the total group. Family/work obligations and transportation issues were frequently cited reasons why participants were unable to attend sessions. On average, participants attended 3.75 of the 7 sessions (53.4%), although this number increased to 4 of 7 (57.1%) when the participant that was unable to continue was removed from the calculations. It should be noted that all participants visited their plots between sessions as determined through observations by Extension personnel.

Table 2.
Attitude Changes Related to Gardening

| Attitudes about... | Pre-Test Mean | Post-Test Mean | Mean Change | % Change | P-Value (α=0.1) |
|--------------------------------------|----------------------|-----------------------|--------------------|-----------------|------------------------|
| Vegetable Gardening | 4.50 | 4.90 | +0.40 | +8.89% | 0.0519 |
| Growing own Vegetable Garden | 4.70 | 4.90 | +0.20 | +4.26% | 0.0839 |
| Growing own Vegetable Garden at Home | 4.00 | 4.50 | +0.50 | +12.50% | 0.1494 |
| Eating Garden Vegetables at Home | 4.40 | 5.00 | +0.60 | +13.64% | 0.0119 |
| Total: | 4.40 | 4.83 | 0.43 | +9.82% | 0.0041 |

Participants entered the program with very positive attitudes about the four indicators, and the overall mean attitude was 4.40 (out of 5). Despite the high initial scores mean responses did improve. Indeed, results from the post-test show positive changes in participants' overall attitudes and for all four variables. The overall mean increase was 9.82%, while the individual increases ranged from 4.26% to 13.64%. Even with high initial scores, statistically significant changes were found in overall attitudes and attitudes about vegetable gardening, growing one's own vegetable garden, and eating garden vegetables at home. Only attitude changes related to growing a home vegetable garden were not statistically significant.

Table 3.
Knowledge Changes Related to Gardening

| Knowledge about... | Pre-Test Mean | Post-Test Mean | Mean Change | % Change | P-Value (α=0.1) |
|---------------------------|----------------------|-----------------------|--------------------|-----------------|------------------------|
| Preparing Garden Soil | 3.10 | 3.90 | +0.80 | +25.81% | 0.0349 |
| Composting | 2.80 | 3.30 | +0.50 | +17.86% | 0.1222 |

| | | | | | |
|--|------|------|-------|---------|--------|
| Planting Garden Vegetables | 3.30 | 3.90 | +0.60 | +18.18% | 0.1394 |
| Controlling Bugs & Pests | 2.80 | 3.10 | +0.30 | +10.71% | 0.2799 |
| Maintaining Vegetable Gardens | 3.20 | 4.00 | +0.80 | +25.00% | 0.0519 |
| Garden Observations & Note-Taking | 2.60 | 3.70 | +1.10 | +42.31% | 0.0242 |
| Cooking Garden Vegetables | 4.00 | 4.50 | +0.50 | +12.50% | 0.1611 |
| Importance of Fresh Vegetables to Health | 4.80 | 5.00 | +0.20 | +4.17% | 0.0839 |
| Total: | 3.33 | 3.93 | +0.60 | +19.57% | 0.0003 |

Participants initially reported a slightly above average (3.33) knowledge of gardening topics. However, closer analysis showed a wide range of knowledge and often bipolar distribution, suggesting that some participants had prior gardening experience while others had none. Following participation, mean knowledge scores all showed positive changes. Overall participant knowledge increased by 19.57% and was statistically significant. Changes among the individual indicators were also sizable, with some increasing by up to 42.31%. These improvements suggest the program had a major impact on the gardening knowledge of participants. Statistically significant changes occurred in knowledge of preparing garden soil, maintaining vegetable gardens, garden observations/note-taking, and the importance of fresh vegetables to health.

Discussion

The Empower Ocala Garden Project is an example of an Extension program that successfully engaged new clients from a low-income minority population and positively changed attitudes and knowledge while team members gained a level of satisfaction from their involvement. Consequently, the following lessons learned may be beneficial to Extension professionals seeking to better serve these audiences.

First, engaging non-traditional Extension audiences requires significantly more effort, time, and resources than with traditional audiences. Attention to relationship building and trust building, communication, and barriers to participation is critical. Allotting time for trust building is particularly beneficial (Webster & Ingram, 2007). For example, the first few months of this project included non-horticultural activities to establish relationships with participants before the gardening activities.

Project teams should consider ways to develop homophily by including minority members or those with experience working with non-traditional Extension audiences (Rogers, 2003). It is also helpful to designate a community liaison to facilitate communication and recruitment to sessions. This expedites familiarity and trust building, allows consistency in contact, and helps boost participation. In this case, although the project team and audience served were mostly heterogeneous, this did not impede the success of the program.

Recruitment to sessions may also be different for this audience. Whereas traditional Extension

programs are advertised through indirect marketing (email, social media, or local newspapers), these means did not adequately reach low-income participants. Instead, direct or personal contact by phone or face-to-face proved to be effective for communication and recruitment to Extension sessions (Guion, 2005). Similarly, attempts to get participants to pre-register for sessions failed. This was attributed to lack of comfort contacting the Extension office, as participants preferred to communicate through the community liaison, with whom trust had already been built.

Despite the challenges, teaching low-income minority audiences can be successful if programs are designed appropriately. Early success is important to achieving attitudinal and knowledge gains, and it is recommended that programs serving similar audiences have mechanisms that protect against failure (Rogers, 2003). In this case, the data demonstrated that attitudes improved as participants had success with their gardens. Correspondingly, these positive attitudes helped knowledge increase, especially among participants without prior gardening experience. Thus, there is an opportunity for Extension to positively affect the lives of non-traditional audiences and a desire by these audiences to be served.

Non-traditional audiences may also require extra attention to the appropriateness of materials and teaching methods. Using simple, non-technical language in correspondence and during educational activities is necessary to serve clients with a range of educational backgrounds (Hoorman, 2002). During meetings and trainings, team members interjected to simplify any confusing terms. Also, because participants are often more hesitant to ask questions than traditional Extension audiences, it is essential to include check-for-learning activities to indicate whether additional explanation of the material is required.

Finally, it is important to highlight the program benefits of greatest importance to participants to encourage participation (Guion, 2005; Rogers, 2003). Knowles, Holton, and Swanson (2005) identified that learners are motivated primarily when information is tangibly important and relevant to their lives. As such, participants in the Empower Ocala Garden Project reported food costs savings as their primary motivation, whereas traditional Extension audiences may be motivated by other factors.

Overall, the Empower Ocala Garden Project successfully met its objectives and provided an effective and educational Extension experience to non-traditional participants in Marion County. Although further research may be required to fully understand the successes and challenges of serving these audiences, the experiences and lessons learned have the potential to benefit other Extension professionals who use and modify this model.

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