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DETERMINING MASTER GARDENER VOLUNTEER MANAGEMENT COMPETENCIES FOR EXTENSION AGENTS

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ABSTRACT

Extension agents often must lead a Master Gardener (MG) program, but lack the knowledge and skills to properly manage and advise volunteers. This study used the ISOTURE Volunteer Management Model and a modified Delphi method to determine specific competencies needed. Promoting a positive image of the MG Program; recruiting diverse volunteers; understanding volunteer motivation; empowering veteran volunteers to take on leadership roles; and articulating the public value of the MG Program were deemed the most important competencies for agents to successfully train and manage MG volunteers. This study can inform future professional development training with new and existing agents.

INTRODUCTION

From serving on program planning advisory committees to helping extend the educational reach of Extension agents and specialists, volunteers are vital to the mission of Cooperative Extension (Boyd, 2004). The Master Gardener (MG) Program is a nationwide Extension educational and volunteer leader training program that prepares volunteers to educate individuals in the community on home horticulture. In return, volunteers donate time to the Extension Service in the form of teaching and other related activities (Gibby et al., 2008). Master Gardener volunteers often assist well beyond implementing horticulture projects and delivering horticulture information to the community (Wilson & Newman, 2011).

In addition to conducting horticulture training, Extension agents play a vital role in managing and overseeing county MG volunteer groups. They must have certain competencies that are vital for successful administration of the MG Program and MG volunteers, including teaching, recruiting, facilitation, conflict management, leadership, and recognition. Bumgarner & Donaldson (2017) assessed the Tennessee Extension Master Gardener Program and found that agents play a key role in program leadership and administration and provide specific knowledge of local horticultural needs and outreach opportunities.

ISOTURE Volunteer Management Model

The ISOTURE Model is a framework to help lead volunteers more effectively (Denny, 2019). This model is favored by the Extension Service and can aid Extension agents in building and strengthening volunteer programs (Culp et al., 1998; Dodd & Boleman, 2010). The ISOTURE Model emphasizes that leadership development is a continuous and consciously planned effort by volunteer administrators to improve and maintain strong volunteer leadership (Boyce, 1971).

Individuals who become MG volunteers must be guided throughout multiple aspects of the program. This is done through different steps and is an ongoing process throughout their time as a volunteer. The ISOTURE Model is a set of seven steps that volunteer administrators implement to keep volunteers involved and effective. They are Identification, Selection, Orientation, Training, Utilization, Recognition, and Evaluation (Boyce, 1971). Each step of the model also represents competencies needed for successful development and management of MG volunteers. According to Stone & Bieber (1997), competencies are the application of knowledge, technical skills, and personal characteristics leading to outstanding performance. Identifying these competencies should be the foundation for relevance, usefulness, and quality of an educational program.

Problem Statement

Extension agents play a vital role in being administrators to volunteers, but the literature reveals that agents often lack the needed knowledge and skills to properly manage and advise volunteers (Boyd, 2004; Hange et al., 2002; Seevers et al., 2005). This can negatively affect programs in a variety of ways, including quality work and programming, participation, and organizational liability and risk management issues (Boyd, 2004). A strong volunteer program requires not only capable and willing volunteers but also professional staff with knowledge and skills necessary to coordinate and direct the program (Seevers et al., 2005). If an agent lacks the competencies needed in the area of volunteer management, they will not be able to effectively manage the volunteers that are so important to an organization that relies very heavily on volunteers to help serve and meet clientele needs.

Individuals hired by Extension typically do not have formal education in volunteer management, but these skills can be learned through professional development training (Brodeur et al., 2011). By identifying strategic competencies and determining training priorities, new and meaningful benefits can be

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delivered to clientele more quickly while demonstrating the value of the Extension Service. Competency-based training encourages Extension educators to assess their level of competence in a given area and participate in training that is relevant, useful, and customized to their learning style (Stone & Bieber, 1997).

Since the inception of the Mississippi MG Program, there has not been a study conducted to determine the specific volunteer management competencies needed by Extension agents who work closely with MG volunteers. Additionally, there have been no professional development opportunities specific to MG volunteer management provided to Extension agents.

Purpose of Study

As Extension evolves to meet the needs of changing clientele, there is an increasing need to examine competencies of Extension educators (Berven et al., 2020). The purpose of this study was to determine specific competencies that Extension agents need to successfully work with MG volunteers. Identifying and understanding these competencies will help to inform future professional development training with new and existing agents.

The population for this study was county Extension agents in Mississippi who manage MG volunteers. The research objectives were to identify the competencies needed to successfully train and manage MG volunteers. The ISOTURE model was used as the conceptual framework. The instrument developed for this study could be used in other states to determine relevant competencies for targeted professional development with MG volunteer administrators.

METHODS

A modified Delphi method was used because it has been shown to be a successful process for setting priorities, encouraging broad participation, enabling dialogue and reflection, and facilitating collective decision making (Polush et al., 2016). "The modified Delphi technique is similar to the full Delphi in terms of procedure (i.e., a series of rounds with selected experts) and intent (i.e., to predict future events and to arrive at consensus"; Custer et al., 1999, para. 5). The difference is that the process begins with predetermined items rather than an open-ended topic or question. The authors developed several knowledge and skill competency statements prior to the first round of questionnaires. Each statement was aligned with a particular stage of the ISOTURE model. Statements that could not be aligned to a specific stage were grouped as "General Knowledge and Skills." The complete list of competency statements is provided in Table 1.

Table 1. Agent competencies for Master Gardener Program Management in Mississippi based on the ISOTURE Model

Construct	Competencies
	Knowledge of advertising the MG training to reach potential volunteers.
	Ability to promote the MG Program so members of the community understand its purpose.
Identification	Ability to promote a positive and recognizable image of the MG Program within the county.
	Ability to promote the Advanced MG Training to increase knowledge and provide opportunities to meet educational requirements.
	Ability to recruit MG volunteers to strengthen and increase the longevity of the program.
Coloction	Ability to understand and recognize personality traits of MG volunteers.
Selection	Ability to recognize and select appropriate volunteers for leadership positions.
	Ability to recruit volunteers that represent the diverse audiences of local communities.
	Ability to explain the importance of the training sessions and final evaluations.
	Understanding of the mission and purpose of the MG Program.
Orientation	Ability to assign new volunteers a MG number/password and set them up in the reporting system.
	Knowledge of how and why to set up a county MG board of directors.
	Ability to create MG Project committees to allow volunteers to prioritize group efforts.
	Understanding of adult learning principles and non-formal education techniques.
	Understanding of volunteer motivation.
	Ability to set up the training room to create an environment conducive for learning.
	Ability to make the training Introduction session personal for each county.
	Ability to plan for different delivery methods used for the MG training. (In person, Zoom, hybrid, online)
	Ability to match the training to the delivery method used.
Training	Ability to train volunteers to recognize potential MG projects.
	Ability to train volunteers to provide horticulture education to the public.
	Ability to train volunteers to use technology relevant to the MG Program. (Reporting System Desktop Version, Reporting System Smartphone App, Remind Communication App, Email)
	Ability to collaborate with other MG County Coordinators to provide learning opportunities for volunteers.
	Ability to provide educational training opportunities on horticulture topics for volunteers by utilizing appropriate teaching tools and techniques.

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Utilization	Ability to identify and use veteran MG volunteers to help manage the training sessions.
	Ability to accommodate and provide appropriate opportunities for volunteers that have physical limitations.
	Ability to delegate tasks to volunteers that are appropriate to their knowledge/ability.
	Ability to work with MG volunteer leaders (board) to plan and implement meetings and events.
	Ability to successfully guide volunteers throughout their volunteering efforts.
	Ability to manage conflict among volunteers with varying opinions.
	Ability to retain MG volunteers over time by keeping them engaged in appropriate activities.
Recognition	Ability to motivate volunteers by recognizing and rewarding them for volunteer service.
	Ability to promote the effectiveness and benefits of the MG Program to county government officials.
Evaluation	Ability to effectively use the MG Volunteer Reporting System.
	Ability to evaluate MG projects to determine the continuation of the project.
	Ability to process MG volunteer annual reports.
	Knowledge of conflict and conflict management.
	Understanding the criteria for approval of MG county projects.
	Knowledge of fundraising for MG projects.
	Understanding of how and why to create a MG banking account.
	Ability to enroll volunteers for training and explain what is expected as volunteers.
General	Ability to utilize computer-based software to keep MG information organized.
Knowledge and Skills	Ability to relay information from State MG Coordinator to Master Gardener volunteers using face to face and digital communications.
	Ability to handle and adjust to changes in the MG Program participants. (lose interest, move away pass on, or have bad health)
	Understanding the importance of social media for all aspects of MG volunteers and the MG Program.
	Ability to use appropriate social media platforms.
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The questionnaire of all the competency statements and an open-ended response option for additional competencies was administered using Qualtrics (www.qualtrics.org). There were two rounds of questionnaires. In the first round, participants were asked to review the competencies and assess their perceived importance to successfully manage MG volunteers and the MG Program. Participants were asked to rate each competency on a five-point Likert scale (1 = *Unimportant*; 5 = *Very Important*). Participants also could suggest competencies that were not listed. That information was incorporated into the second round of questionnaires, since Extension agents should have the opportunity to identify the knowledge, skills, and behaviors they will need to be effective administrators of volunteer groups (Stone & Bieber, 1997).

During the second round, respondents were asked to review the competencies and rate their perceived importance. Based on the literature, three rounds of questionnaires are common to reach consensus among respondents (Boyd, 2004). However, a detailed analysis of responses from the second round revealed no new information and yielded consensus. As such, it was deemed that a third round was unnecessary.

Identification and Selection of Participants

This study utilized a non-random, purposive sampling technique to identify and select participants. "The purposive sampling technique, also called judgement sampling, is a deliberate choice of an informant due to the qualities the informant possesses" (Tongco, 2007, p.147). Twenty-six county-level Extension agents in Mississippi who manage a local MG Program were identified to participate in the study. Sample sizes ranging from 11 to 30 are typical for the Delphi method and have been shown to be effective and reliable (Dalkey, 1969).

The first criterion when making the selection of participants was their geographic location in the state. Then, participants were selected based on years of employment, experience with the Master Gardener Program, gender, and race. The years of employment criteria were broken down by late (>15 years of employment), middle (6 to 15 years), and early career (5 or fewer years) stages. The criterion of experience with the MG Program was evaluated by determining how involved each agent is with their county program (e.g., hosted past Mississippi Master Gardener Association State conference, regularly conduct educational programs on county and regional levels, received awards for accomplishments, oversee plant sales as fundraising events), as determined by the State MG Coordinator. This intentional selection of agents allowed for diversity among our participants.

Data Analysis

Likert-scale data were collected, except for the single competency statement for the *Recognition* construct. Derrick & White (2017) stated a Likert item is a forced choice ordinal question which captures the intensity of opinion or degree of assessment in survey respondents. Likert scales seek information for understanding a subject's attitude by combining the individual's responses to a series of opinion questions designed to address relevant aspects of the attitude in question (Willits et al., 2016). The reason for using Likert-scale data was to provide a quantitative measure of Extension agents perceived importance of each competency.

The Likert-scale data for each competency statement were combined into a single composite score to provide a quantitative measure (Boone & Boone, 2012). The frequency, mean, median, mode, and standard deviation were calculated using Excel to identify the competency perceived to be of highest importance from each construct of the ISOTURE model and the General Knowledge and Skills section.

To test for internal consistency among the competencies in each construct, Cronbach's alpha was calculated (Santos, 1999). It is important when analyzing the importance of the competencies of each construct that if the questionnaire was to be administered again the competencies would produce the same responses.

RESULTS

There were 26 Extension agents identified to participate in the study. In Round 1, 24 agents responded to the survey, for a 92% response rate. The average years of employment among respondents was fifteen years, and the average number of years working with MG volunteers was 10. For Round 2, 21 agents responded to the survey, for a response rate of 81%.

We calculated Cronbach's alpha to test for internal consistency among the competencies within the constructs of the ISOTURE model, except for *Recognition*, as there was only one competency statement for that particular construct. Coefficient alphas ranged from 0.77 to 0.92, well above the minimum accepted standard for reliability (Cortina, 1993). The scores indicate a high level of internal consistency among the competencies within each construct.

For the *Identification* construct (Table 2), 95% (n=20) of respondents rated the "Ability to promote a positive and recognizable image of the MG Program within the county" as *Important or Very Important* (M=4.48, SD=0.60). In response to the competency, "Ability to promote the Advanced MG Training to increase knowledge and provide opportunities to meet educational requirements," there was more variability among respondents (M=4.00, SD=0.95). This was despite 77% (n=16) of respondents rating this competency as *Important* or *Very Important*.

Table 2. Descriptive statistics for Identification competencies (n=21)

Identification Competencies	Important f/%	Very Important f/%	Mean	SD
Ability to promote a positive and recognizable image of the MG Program within the county.	9 43%	11 52%	4.48	0.60
Knowledge of advertising the MG Training to reach potential volunteers.	9 43%	10 48%	4.38	0.67
Ability to promote the MG Program so members of the community understand its purpose.	10 48%	8 38%	4.24	0.70
Ability to promote the Advanced MG Training to increase knowledge and provide opportunities to meet educational requirements.	9 43%	7 34%	4.00	0.95

For the Selection construct (Table 3), 90% (n=19) of the respondents rated the "Ability to recruit MG Volunteers to strengthen and increase the longevity of the program" as *Important* or *Very Important* (M=4.43, SD=0.68). There was more variability among respondents for the competency "Ability to recognize and select appropriate volunteer for leadership positions" (M=4.24, SD=0.83). Even though, 86% (n=18) of respondents rated this competency as *Important* or *Very Important*.

Table 3. Descriptive statistics for Selection competencies (n=21)

Selection Competencies	Important f/%	Very Important f/%	Mean	SD
Ability to recruit MG volunteers to strengthen and increase the longevity of the program.	8 38%	11 52%	4.43	0.68
Ability to recruit volunteers that represent the diverse audiences of local communities.	9 43%	9 43%	4.29	0.72
Ability to recognize and select appropriate volunteers for leadership positions.	9 43%	9 43%	4.24	0.83
Ability to understand and recognize personality traits of MG volunteers.	10 48%	8 38%	4.19	0.81

Within the *Orientation* construct (Table 4), the competencies "Understanding of the mission and purpose of the MG Program" (*f*=62%, M=4.57, SD=0.60) and "Ability to assign new volunteers a MG number/password and set them up in the reporting system" (*f*=67%, M=4.48, SD=0.87) were more frequently rated as *Very Important*. However, there is less variability among respondents regarding the competency "Ability to explain the importance of the training session and final evaluations." More than half of the respondents rated this competency *Important* (*f*=67%, M=4.14, SD=0.57).

 Table 4. Descriptive statistics for Orientation competencies (n=21)

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Ori

	f/%	f/%		
Understanding of the mission and purpose of the MG Program.	7 33%	13 62%	4.57	0.60
Ability to assign new volunteers a MG number/password and set them up in the reporting system.	4 19%	14 67%	4.48	0.87
Knowledge of how and why to set up a county MG board of directors.	7 33%	9 43%	4.19	0.81
Ability to explain the importance of the training session and final evaluations.	14 67%	5 24%	4.14	0.57
Ability to create MG project committees to allow volunteers to prioritize group efforts.	11 52%	6 29%	4.10	0.70

For the *Training* construct (Table 5), the competency "Understanding of volunteer motivation" (*f*=52%, M=4.33, SD=0.86) was more frequently rated as *Very Important*, even though there was more variability among respondents. However, there is less variability among respondents regarding the competencies, "Ability to provide educational training opportunities on horticulture topics for volunteers by utilizing appropriate teaching tools and techniques" (*f*=80%, M=3.95, SD=0.59) and "Understanding of adult learning principles and non-formal education techniques" (*f*=71%, M=3.90, SD=0.54), which well over half of the respondents rated as *Important*.

Table 5. Descriptive statistics for Training competencies (n=21)

Training Competencies	Important f/%	Very Important f/%	Mean	SD
Understanding of volunteer motivation.	7 33%	11 52%	4.33	0.86
Ability to make the training Introduction session personal for your county.	12 57%	7 33%	4.24	0.62
Ability to train volunteers to use technology relevant to the MG Program. (Reporting System Desktop Version, Reporting System Smartphone App, Remind Communication App, Email)	12 57%	7 33%	4.19	0.75
Ability to plan for different delivery methods used for the MG training. (In person, Zoom, hybrid, online)	12 57%	7 33%	4.19	0.75
Ability to train volunteers to provide horticulture education to the public.	7 33%	9 43%	4.14	0.91
Ability to match training to the delivery method used.	13 62%	5 24%	4.10	0.62
Ability to collaborate with other MG County Coordinators to provide learning opportunities for volunteers.	14 66%	5 24%	4.10	0.70
Ability to train volunteers to recognize potential MG projects.	10 48%	6 28%	4.00	0.84
Ability to provide educational training opportunities on horticulture topics for volunteers by utilizing appropriate teaching tools and techniques.	17 80%	2 10%	3.95	0.59
Ability to set up the training room to create an environment conducive for learning.	13 62%	3 14%	3.90	0.62
Understanding of adult learning principles and non- formal education techniques.	15 71%	2 10%	3.90	0.54

Within the *Utilization* construct (Table 6), 52% (n=11) of respondents rated the "Ability to identify and use veteran MG Volunteers to help manage the training session" (M=4.38, SD=0.80), "Ability to accommodate and provide appropriate opportunities for volunteers that have physical limitations" (M=4.38, SD=0.80), and "Ability to manage conflict among volunteers with varying opinions" (M=4.29, SD=0.90) as *Very Important*, although there was more variability among

respondents. However, there was less variability among respondents regarding the competency "Ability to delegate tasks to volunteers that are appropriate to their knowledge/ability," which more than half of the respondents rated as *Important* (*f*=71%, M=4.05, SD=0.67).

 Table 6. Descriptive statistics for Utilization competencies (n=21)

Utilization Competencies	Important f/%	Very Important f/%	Mean	SD
Ability to identify and use veteran MG volunteers to help manage the training sessions.	8 38%	11 52%	4.38	0.80
Ability to accommodate and provide appropriate opportunities for volunteers that have physical limitations.	8 38%	11 52%	4.38	0.80
Ability to manage conflict among volunteers with varying opinions.	6 29%	11 52%	4.29	0.90
Ability to work with MG volunteer leaders (board) to plan and implement meetings and events.	11 52%	8 38%	4.29	0.64
Ability to retain MG volunteers over time by keeping them engaged in appropriate activities.	12 57%	7 33%	4.19	0.75
Ability to delegate tasks to volunteers that are appropriate to their knowledge/ability.	15 71%	4 19%	4.05	0.67
Ability to successfully guide volunteers throughout their volunteering efforts.	13 62%	4 19%	4.00	0.63

For the *Recognition* construct, 57% (n=12) rated the "Ability to motivate volunteers by recognizing and rewarding them for volunteer service," as *Very Important*. Twenty-four percent (n=5) felt it was *Important* (M=4.38, SD=0.80).

Within the *Evaluation* construct (Table 7), 57% (n=12) of the respondent rated "Ability to promote the effectiveness and benefits of the MG Program to county government officials" as *Very Important* (M=4.33, SD=0.91). In response to the competency, "Ability to process MG volunteer annual reports," there was significant variability among respondents (M=4.10, SD=1.04). This was in spite of 81% (n=17) of respondents rating this competency as *Important* or *Very Important*.

 Table 7. Descriptive statistics for Evaluation competencies (n=21)

Evaluation Competencies	Important f/%	Very Important f/%	Mean	SD
Ability to promote the effectiveness and benefits of the MG Program to county government officials.	5 24%	12 57%	4.33	0.91
Ability to effectively use the MG Volunteer Reporting System.	9 43%	9 43%	4.29	0.72
Ability to process MG volunteer annual reports.	8 38%	9 43%	4.10	1.04
Ability to evaluate MG projects to determine the continuation of the project.	11 52%	5 24%	3.95	0.80

For the *General Knowledge and Skills* competencies (Table 8), 57% (n=12) of the respondents rated, "Knowledge of conflict and conflict management" as *Very Important* (M=4.38, SD=0.80). However, there was less variability among responses for the competencies, "Ability to handle and adjust to changes in the MG Program participants (lose interest, move away, pass on, or have bad health)" (M=4.38, SD=0.59), and "Ability to enroll volunteers for the training and explain what is expected as volunteers" (M=4.33, SD=0.58). Considering 95% (n=20) rated both of the competencies as *Important* or *Very Important*.

Table 8. Descriptive statistics for General Knowledge and Skills competencies (n=21)

General Knowledge and Skills Competencies	Important f/%	Very Important f/%	Mean	SD
Knowledge of conflict and conflict management.	5 24%	12 57%	4.38	0.80

Ability to handle and adjust to changes in the MG Program participants. (lose interest, move away, pass on, or have bad health)	11 52%	9 43%	4.38	0.59
Ability to enroll volunteers for the training and explain what is expected as volunteers.	12 57%	8 38%	4.33	0.58
Understanding the criteria for approval of MG county projects.	10 47%	8 38%	4.19	0.81
Ability to utilize computer-based software to keep MG information organized.	9 43%	9 43%	4.19	0.93
Ability to relay information from State MG Coordinator to Master Gardener volunteers using face to face and digital communication.	8 38%	9 43%	4.19	0.87
Understanding the importance of social media for all aspects of MG volunteers and the MG Program.	12 57%	5 24%	4.00	0.77
Ability to use appropriate social media platforms.	11 52%	5 24%	3.86	0.96
Understanding of how and why to create a MG banking account.	8 38%	6 28%	3.86	0.96
Knowledge of fundraising for MG projects.	9 43%	4 19%	3.71	0.90

CONCLUSIONS AND DISCUSSION

While competency-based professional development is common in the private sector, it is still an emerging focus within Cooperative Extension. Overarching core competencies such as effective oral communication and knowledge of the land-grant mission, regardless of an agent's program area, may be addressed during onboarding and subsequent in-service training opportunities. Yet, there is little evidence that targeted development plans are available for agents either by program area or by career stage. One reason for this may be that Extension specialists working in a particular program area may not agree on the specific competencies needed by agents. This hypothesis is supported by ongoing research in the Family and Consumer Sciences realm (Hardman et al., 2021). Another reason for this may be that the diversity of agents and their respective education and career experience make it difficult to develop "one-size-fits-all" learning opportunities. However, a tailored approach to professional development requires significantly more time and resources than what is currently available within most states' Extension systems.

Regardless of these challenges, the need for program area-specific and topic-specific professional development for Extension personnel remains, and volunteer management is no exception. This study identified several competencies that were deemed the primary competencies needed for agents to successfully train and manage MG volunteers. These are promoting a positive image of the MG Program; recruiting diverse volunteers; understanding volunteer motivation; empowering veteran volunteers to take on leadership roles; and articulating the public value of the MG Program. These primary competencies align with those identified by Boyd (2004) that assessed the competencies needed by Extension agents to be volunteer administrators.

Since most agents are not trained in specific volunteer management competencies, our recommendation is to first introduce them to the ISOTURE model and highlight these primary competencies for each construct. Extension specialists and administrators could collaborate with their institution's program and staff development specialists to design a strategic volunteer management professional development program for their respective agents and staff that work with MG volunteers. This training would be critical, in particular, for early career agents that may have little to no experience working with volunteers. More seasoned agents could also benefit from this training by using it to either confirm what they are already doing well or help them "unlearn" ineffective behaviors with their volunteers.

Several secondary competencies that were rated as *Important* from this study should also be taught to agents. Examples of these include the ability to recognize and select appropriate volunteers for leadership positions, the ability to manage conflict among volunteers with varying opinions, and an understanding of adult learning principles and non-formal education techniques. These competencies may not need to be developed early on in an agent's career, but they certainly should be addressed as an agent succeeds to later stages in their career. There is a need for more research on the secondary competencies to determine how best to prioritize them for scaffolded professional development during early, middle, and late career stages. Future research could build on this study with more in-depth interviews with agents that have successful MG groups in their county as well as agents that don't have MG volunteers.

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