

Evaluating the Evaluation of Master Gardener Volunteer Training in Virginia

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Abstract

The purpose of this project was to determine what types of evaluation survey tools, more specifically survey questions, are being used to evaluate master gardener volunteer training programs in Virginia. This project was conducted to start the process of developing stronger evaluation tools to measure master gardener volunteer training program impacts across Virginia. Examples of evaluation survey tools for master gardener training programs in Virginia were collected and evaluated to understand the breadth of evaluation already occurring. After asking 60 master gardener units to submit evaluation survey tool documents from their volunteer training programs, eleven individual training programs responded submitting 23 evaluation survey tool documents. Those eleven training programs represented 20 cities and counties from across Virginia. In total, 352 questions were sorted. Questions were analyzed in a number of ways. First, they were analyzed using the Virginia Cooperative Extension Master Gardener program logic model to determine if they were focused on evaluating inputs, outputs or outcomes. Next, the questions were sorted by theme, question format, question use and question type. The majority of questions, 66%, were process evaluation oriented, focused on inputs and outputs, and 34% outcome evaluation oriented. Meaning, more of the questions collected information on the processes of the training courses and less on the outcomes of them. This indicates there is a need to include more questions that help document program impacts by utilizing more outcome-oriented survey tool questions. One way to do this is through developing a template of evaluation survey tool questions for master gardener volunteer training that can be used, in whole or in part, to collect meaningful data from across the state. For now, it is imperative to collect data that improves training experiences, records impact and sustains the master gardener program.

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Introduction

Background

Having volunteer organizations present and active in communities can help increase civic involvement, create better-connected, stronger communities and improve community health (O’Neil et al., 2021). In communities across Virginia, volunteer organizations, like the Virginia Cooperative Extension Master Gardener (VCEMG) volunteer program, are vital in educating youth and adults about sustainable horticulture and landscape management practices (Virginia Cooperative Extension, 2022). Extension master gardeners are volunteer community educators who provide research-based horticultural information to gardeners in Virginia (Virginia Cooperative Extension, 2022). Extension master gardener volunteers go through a rigorous training program. They attend at least 50 hours of classroom and hands-on instruction, or training, and provide no less than 50 hours of localized volunteer service in their first year as a master gardener intern (Virginia Cooperative Extension, 2022). These training programs are organized by master gardener coordinators, usually an extension agent, but can be organized by part-time or full-time program support staff (Dorn, 2018). In the VCEMG program, agriculture and natural resources Extension agents, volunteers or paid staff may serve in the role of master gardener coordinator.

Extension master gardener volunteers help residents reduce the impact they make on their local environment through their educational outreach efforts about responsible pesticide use, managing storm water runoff and using non-invasive plants in the landscape. They teach respect for the environment, emphasize accountability through the wise stewardship of natural resources, and provide “guidance in making the natural environment accessible to all residents regardless of disabilities, incomes, or where they live” (Virginia Cooperative Extension, 2022). They also work with diverse groups of people in urban, rural and suburban settings (Virginia Cooperative

Extension, 2022). As of December 2021, there were 5287 master gardener volunteers in Virginia according to the state coordinator of the VCEMG program, Kathleen Reed (K. Reed, personal communication, March 29, 2022). Ms. Reed provides statewide leadership and direction to local master gardener coordinators in her role as the VCEMG state program coordinator.

Statement of the Problem

At this point in time, there is no state-wide process or evaluation tool to record the impacts of VCEMG training programs. Each master gardener unit is responsible for creating, collecting and utilizing evaluation data from their own training programs. Swackhamer and Kiernan (2005) note that evaluations developed and conducted on smaller, local levels result in a multitude of duplication of efforts by master gardener coordinators. This is also true for master gardener units in Virginia who use an array of evaluation survey tools to evaluate training efforts, leading to inconsistencies in data collection across the state.

Significance of the Problem

The problem being addressed in this project is significant because there is a need to unify the way master gardener training programs in Virginia are evaluated in order to identify the impacts individual training programs have based on the VCEMG logic model. Internal and external stakeholders have expressed the need for a unified set of evaluation tools for master gardener units to draw from in order to collect state-wide data on training program successes and failures, participant retention, impacts, and inclusion and diversity. There has not been a specific effort to unify the state-wide evaluation process for master gardener training. This unfortunately means data is being lost that could contribute to the acquisition of grant funds, contribute to the creation of partnerships with other organizations and provide accountability to local and state government officials. Furthermore, the absence of a unified set of state-wide evaluation tools

creates a duplication of efforts on the part of master gardener coordinators which wastes time they could be dedicating to other educational purposes.

Purpose of the Project

The purpose of this project was to collect and evaluate the evaluation survey tools VCEMG training programs are currently using. The questions within these survey tools were compared to the VCEMG program logic model to determine how effectively they measured program outcomes.

Project Objectives

The objective of this project was to lay the foundation for the creation of a state-wide evaluation survey tool for master gardener training.

Definition of Keywords/Terms

Cooperative Extension- Cooperative Extension is an organization of agents who help “farmers and ranchers achieve greater success, assist families with nutrition and home economics, and prepare today’s youth to become leaders tomorrow” (National Institute of Food and Agriculture, 2012).

Master Gardeners- Master gardeners are trained volunteer educators who encourage and promote sustainable horticulture practices in their communities (Virginia Cooperative Extension, 2022).

Volunteerism- Volunteerism means a persons’ giving of talents, energies or time to a group for which the person is not paid (Connors, 2012).

Pedagogy- Pedagogy is the science and art of teaching children (Knowles, 1980). This method of teaching is more teacher centric (Knowles, 1980).

Andragogy- Andragogy is the methods, activities and theory involved in teaching adult learners (Cambridge Dictionary, 2022). This method of teaching is more learner centric (Knowles, 1980)

Evaluation- Evaluation is intentional, planned, and purposeful (Srikanth and Preskill, 2014). It is intended to inform decision-making about processes, outcomes, improvements, resource allocation, or even whether to continue the program or initiative, or change a strategy (Srikanth and Preskill, 2014).

Evaluation Capacity Building (ECB)- Intentionally and continuously working towards a sustainable organizational process which makes evaluation and the uses of it routine (Preskill & Boyle, 2008).

Review of Literature

Cooperative Extension

Over two centuries ago, Cooperative Extension put down its roots thanks to agricultural clubs and societies which were formed after the American Revolution (National Institute of Food and Agriculture, [NIFA] 2021). In the years following the revolution, it was realized a more formal Extension service was needed. Congress determined that an Extension system could effectively address rural agriculture issues (NIFA, 2021). In 1914, the Smith-Lever Act formalized the US Department of Agriculture's partnership with land-grant universities to conduct research and provide education for the agriculture community (NIFA, 2021). The National Institute for Food and Agriculture (2021) notes the engagement between Extension and agriculture producers during those early years, which increased farm productivity, allowing more food to be produced by fewer farmers to feed an expanding population, made the American revolution possible.

Extension agents, also known as Extension educators in some parts of the United States, help ranchers and farmers achieve greater success, prepare today's youth to become tomorrow's leaders, and assist families with nutrition and home economics (NIFA, 2021). Uçak (2019) calls Extension agents, "change agents", who participate in the Extension process. Moreover, these agents provide a two-way link between land grant research institutions and farmers (Uçak, 2019), as well as, provide service to adults and youth through research-based curriculum.

Today, Extension has adapted and remained innovative in many ways, not only through the research it conducts, but by adapting to the changing ways in which United States residents live (NIFA, 2021). Even though the population of those living in rural areas has steadily decreased

over the last century, Extension can still be found in those rural areas as an integral part of the community (NIFA, 2021). Extension is also present in urban and suburban areas, focusing on positive youth development through the 4-H positive youth development program, family financial education, nutrition and disease prevention, agriculture and horticulture sustainability, environmental stewardship and much more.

Volunteers

Simply stated, a “volunteer” is defined as a person who is not paid for the work they do through or for an organization (Connors, 2012). In their roles, people who volunteer fit into one of two categories: service volunteers or policy volunteers. Policy volunteers are those who sit on advisory boards or boards of directors for nonprofit organizations and play the role of strategic advisors (Connors, 2012). These are the people who spend their volunteer time and efforts leading the organization. Service volunteers are those who donate their time to assist the operations of the organization or assist other people (Connors, 2012). Continually, volunteers play a vital role in many government agencies and non-profit organizations throughout America (Connors, 2012). The training of volunteers requires a monetary and time commitment from the host organization in order to get a good return on the initial investment (Swackhamer & Kiernan, 2005). Volunteerism plays a larger and more important role in western civic life than in other parts of the world (Dreyfus, 2018). Volunteering can also have far-reaching effects in communities (Oesterle et al., 2004). It has mental health benefits, like warding off depression and loneliness, building a person’s sense of purpose and helping someone feel more socially connected (Dreyfus, 2018).

Movements in American history, such as women’s rights, mobilized new generations to become involved in civic life (Dreyfus, 2018). Some of our largest institutions were formed during these movements. The most notable of these being the American Red Cross, Salvation Army and the United Way (Dreyfus, 2018). Historically, programs utilizing volunteers developed in order to

address the needs of a targeted audience or group (Connors, 2012). For example, in rural America in the first decades of the 20th century, 4-H youth development was established to address the developmental needs of school-age girls and boys (Connors, 2012)

These organizations are great examples of how volunteering has the power to unite people of different races, religions, sexes and ages, bringing them together for a common cause (Dreyfus, 2018). Some unifying efforts of volunteering are sustaining physical and mental health, improving education, increasing economic success (Osterle et al., 2004), fostering understanding, increasing awareness and improving knowledge. “Volunteering does not happen in a vacuum, and so it stands to reason that major life events and social phenomena that impact society in general will also have an impact on volunteer activity” (as cited in Connors, 2012. pg. 33). In relation, Dreyfus (2018) mentions the influence of the terror attacks on the United States of America that took place on September 11, 2001 as being a huge influence and a major unifying event that directly motivated 15,570 new volunteers to assist fellow Americans through the American Red Cross.

Master Volunteers

The concept of a “master” volunteer expands from the traditional notion of every-day volunteer service (Hunter, 2021). Volunteers who earn “master” status through an Extension program are dedicated individuals with experience and/or knowledge in a specific field (Hunter 2021), such as gardening, financial planning, recycling or native plants. These volunteers undergo intense, in-depth training, where upon completion, the volunteer commits to spend a certain amount of time sharing their expertise with others in their community (Hunter, 2012). Extension master volunteer programs grew from the need to reach more homeowners, landowners, businesses and families in communities (Collman, 2017). A single Extension agent could not reach a large number of people in a community without the help of volunteers and master volunteers (Collman, 2017).

Master Gardener Volunteers

Within the realm of master volunteers lies a group which works specifically to educate the public in the area of sustainable horticulture. The American Society for Horticultural Science (2022) defines horticulture as the study of both the science and aesthetics of plants. To go further, it is the science and art of producing vegetables, fruits, herbs, flowers and ornamental plants (American Society for Horticultural Science, 2022) and doing so in a sustainable way. Therefore, master gardeners educate the public, through their volunteer service, about sustainable horticulture. The word sustainable is important because a goal of the program is to teach practices that can be implemented perpetually without degrading the environment. In 1973, the master gardener volunteer program began in Washington state through Washington State University Extension agents in the metropolitan areas of Pierce and King counties (Collman, 2017). Through the work of Dr. David Gbby, Extension agent in King County, WA, Extension agents and specialists came up with the concept of recruiting and training volunteers through to serve the urban horticulture population of those two counties (Collman, 2017). The concept of horticulture “Master” volunteers was so effective from those early days that it has spread throughout North America, including Canada, and South Korea (Collman, 2017). In the United States there are currently six Extension Master Gardener programmatic regions which were designated in 2006 by the Extension Master Gardener National Committee (Dorn et al. 2018).

In 2019, the VCEMG program had approximately 4,800 volunteers who contributed more than 397,018 volunteer hours towards sustainable horticulture education across 62 master gardener units (Virginia Master Gardener Program, [VMGP] 2021). The mission statement of the VCEMG program is “sharing knowledge, empowering communities” (VMGP, 2021). The values of the VCEMG program are to respect the environment, each other and those they serve, have accountability to the organization, the community and each other, be wise stewards of resources,

to actively seek out partners and to collaborate with a diverse group to reach common goals (VMGP, 2021). According to the VCEMG (2021) website, the collective vision of the program is “to be the Virginia Cooperative Extension volunteer organization extending horticultural and environmental outreach across the Commonwealth”. This coincides with the unifying mission statement of the Extension Master Gardener National Committee which states “Extension Master Gardener programs educate people, engaging them in learning to use unbiased, research-based horticulture and gardening practices through a network of trained volunteers directed and supported by land-grant university faculty and staff” (Langellotto et al., 2015).

Training

Swackhamer and Kiernan (2005) state that those who go through master gardener training should increase their knowledge on many topics and gain greater confidence, enabling them to interact with the public in order to answer gardening questions. Hood (as cited in Connors, 2012, p. 246) suggests trainings should be conducted one step at a time and structured sequentially. The master gardener program requires one to have the ability to commit a significant amount of time for training (Dorn, 2018). Volunteers should be able to grasp concepts through discussion and actually doing tasks through role-playing and other experiential methods (as cited in Connors, 2012, p. 246). In most state Cooperative Extension organizations, master gardener training is often county-based (Swackhamer & Kiernan (2005). Traditional teaching and program delivery methods in Extension must continually change to meet the needs of clientele (Davis, 2006). In this case, the targeted clientele are master gardener trainees.

Volunteerism

John Wilson (2000) describes volunteering as any activity where time is given freely by a person to benefit another person, cause or group. He states that volunteering is characterized by helping behaviors which are focused and committed (Wilson, 2000). Clary et al. (1998) describes

volunteering as a form of sustained, ongoing helping or “planned helping” where matching of capabilities and interests and the sorting of priorities and planning is involved in helping others. Additionally, there are four fundamental tenets of volunteerism. These tenets, or points, are that volunteerism (1) implies active involvement, (2) is not motivated primarily by financial gain, (3) is relatively uncoerced and (4) focuses on the common good (Connors, 2012).

McKee and McKee (2012) mentioned the way the world evolved during the years following the turn of the 21st century changed the way people volunteered and volunteerism as a whole. They listed the transformational shifts in technology, speed, family dynamics, isolation, flexibility, generations, professionalism, episodic volunteering and micro-volunteering as reasons for changes in volunteering (McKee & McKee, 2012). The term technology in this list was used to illustrate moving from face-to-face interactions to ones happening in cyberspace (McKee & McKee, 2012). The evolution of isolation means there has been a shift from community focus to individual focus and thus more episodic volunteering (McKee & McKee, 2012). This illustrates how the long-term volunteer commitments of the past have shifted to volunteers completing short-term volunteer projects through episodic volunteering (McKee & McKee, 2012). In chapter one of *The Volunteer Management Handbook*, Safrit and Schmiesing mention in today’s fast paced, ever-changing world, it is important that organizations utilizing volunteers engage them in logical, holistic and systematic processes which maximize their impacts in order to reduce the demands on each volunteer (as cited in Connors, 2012, p. 4). Doing this is essential in order to sustain volunteer involvement (as cited in Connors, 2012, p. 4). Volunteerism at its core is voluntary, sustainable and ongoing (Clary et al., 1998). Long-standing organizations like the American Red Cross are proof that a volunteer group can be sustainable. The American Red Cross celebrated 140 years of service in 2021 (The American National Red Cross, 2022).

Pedagogy/Andragogy

In Knowles' (1980) book, *The Modern Practice of Adult Education*, pedagogy is defined as the science and art of teaching children. Further on in the book, he states a child's full-time occupation is that of a learner, the role of an adolescent is to move from a learner into a role of greater self-direction and responsibility (Knowles, 1980). An adult's role is seen as being a producer or doer as they have fully developed in the areas of self-direction and responsibility (Knowles, 1980). In regards to andragogy, Knowles (1980) describes it as "the art and science of helping adults learn". However, he found the two models for learning, pedagogy and andragogy, should actually meld together and be included along the same spectrum (Knowles, 1980). He states andragogy is the process where the learning/teaching transaction is the mutual responsibility of the teacher and learners (Knowles, 1980). To go more in depth, Knowles (1980) writes,

Andragogy is premised on at least these four crucial assumptions about the characteristics of learners that are different from the assumptions on which traditional pedagogy is premised. These assumptions are that as individuals mature: 1) their self-concept moves from one of being a dependent personality toward being a self-directed human being; 2) they accumulate a growing reservoir of experience that becomes an increasingly rich resource for learning 3) their readiness to learn becomes oriented increasingly to the developmental task of their social roles; and 4) their time perspective changes from one of postponed application of knowledge to immediacy of application, and accordingly, their orientation toward learning shifts from one of subject-centeredness to one of performance-centeredness. (pp.44-45)

Learning as an adult is also influenced by an individual's prior experiences in an educational setting (Knowles, 1980). Knowles (1980) stated that adults are so deeply conditioned by their previous schooling that they become dependent and passive recipients of transmitted educational content. Teachers of adult learners should consider adding different and enjoyable learning activities and having classes or educational programs in non-academic locations (Knowles, 1980). The physical environment should be comfortable and conducive to adult learning (Knowles, 1980). The psychological climate in adult education should cause adults to feel accepted, supported and respected where the freedom of expression can be made without the fear of ridicule or punishment (Knowles, 1980).

Learning Styles

When discussing learning, there are three basic styles; auditory, visual and kinesthetic (Connors, 2012). We all utilize a mix of learning styles as individuals; using different styles in different situations (Connors, 2012). In chapter ten of *The Volunteer Management Handbook*, Hood (as cited in Connors, 2012, pp. 240-242) lists characteristics of each style of learner. For auditory learners she lists a few of their characteristics as remembering lessons by verbalizing them, sitting where they can listen, but not necessarily where they need to pay attention to what is going on in the front of a room and, acquiring knowledge by reading aloud. For visual learners' characteristics, she lists they tend to sit up front, take detailed notes, like to see what is being learned and benefit from presentations that use color (Connors, 2012). Finally, for kinesthetic learners, she lists they need to be active and take frequent breaks, find reasons to tinker or move when bored, are uncomfortable in classrooms where hands-on experiences are not offered and often can remember what was done, but have a hard time remembering what was seen or said (Connors 2012).

Importantly, when planning volunteer training, adult learning styles need to be considered (Connors, 2012). There are also a few other aspects to consider during the planning process. For example, it is important to consider the importance of psychological and physiological variables when planning volunteer training (Connors, 2012). The psychological variables are experience, role, cognitive ability and personality (Connors, 2012). The physiological variables are energy, health, hearing and seeing (Connors, 2012). One must consider the above variables, as well as, learning styles (Connors, 2012) when planning, implementing and evaluating volunteer training programs.

Logic Models

Using a logic model is a visual and systematic way to present the relationships among resources of a program, its activities and its outcomes, or changes the program hopes to achieve (Workman & Sheer, 2012). Logic models create a comprehensive way to address the requirements of funders and stakeholders in the areas of outcome measurement and program implementation, which allow for improvement (Wholey, et al., 2010). Many Extension services in the early 2000's invested heavily in providing their educators with evaluation and logic model-based training sessions founded on the University of Wisconsin's ECB efforts (Arnold & Cater, 2016). All of the approaches to using a logic model are based on underlying assumptions about a program, how it is believed to function and how it achieves its outcomes; usually represented in graphic form (Clark & Anderson, 2004; Wholey et al., 2010). The logic model is typically developed by a group of individuals who construct the logic model in five stages (Wholey et al., 2010).

In their chapter (3) of the Handbook of Practical Program Evaluation, McLaughlin and Jordan say one of the fundamental uses of logic models is to foster communication between program staff and those outside the program, such as stakeholders and funders (Wholey et al., 2010). They also emphasize that understanding a logic model can help those involved in a program

understand how the program works and what their responsibilities are within that program (Wholey et al., 2010). When logic models are used for program design and management, the organization usually has to adopt a theory of change, requiring more resources, including time, to keep the logic model updated (Wholey et al., 2010). Clark and Anderson (2004) describe theory of change as linking outcomes and activities to explain why and how the anticipated change is expected to happen. The five steps they describe are (1) collecting relevant information, (2) defining the problem and its context clearly, (3) utilizing a graphic table to define its elements, (4) drawing of the model and (5) getting feedback and validating the model through stakeholder input (Wholey et al., (2010).

One of the best ways to begin the evaluation process is through the construction of a logic model that serves as a start to the story of a program's anticipated performance (Wholey et al., 2010). Logic models are helpful in predicting relationships and intended outcomes (Wholey et al., 2010), but they do not identify indicators of whether outcomes have been met or not (Clark & Anderson, 2004). The additional information generated from a logic model is referred to by Hernandez (2000) as outcome relevant information. Outcome relevant information allows program coordinators to know if they have offered a service in the intended way and with the anticipated quality they desire (Hernandez, 2000). The outcomes that are generated from a logic model approach are short-term outcomes, what participants learned, medium-termed outcomes, what actions participants took, and long-term outcomes, what changed in society as a result (Arnold & Cater, 2016). The theory of change will help provide justification for why those short, medium and long-term changes occurred and how they occurred (Clark & Anderson, 2004).

Along with this is the importance of evaluation planning and implementation and its synchronization with the program, such as master gardener training, or service being offered

(Hernandez, 2000). Again, one way to bridge these aforementioned processes is through the use of logic models and the implementation of accountability evaluation (Hernandez, 2000) and theories of change (Clark & Anderson, 2004). In the case of the VCEMG program, assumptions are made about trainings, programs and activities which lead to intended outcomes (Wholey, 2010). These assumptions are related to a theory of change where the intuition of the program coordinator, in regards to what works, help move program participants to change (Arnold & Cater, 2016). This process of utilizing a logic model coincides with program theory (Wholey et al., (2010). Leonard Bickman defines program theory as “the construction of a plausible and sensible model of how a program is supposed to work” (Bickman, 1987, p. 5).

The inputs of the VCEMG program lead to outputs which lead to outcomes. To put this into perspective, the list of inputs and outputs is fairly simple in the VCEMG program logic model (see Table 1). Outcomes, by their nature, are more complex and are direct results of the inputs and outputs of a program. The outcomes of the VCEMG program can be found in Table 2.

Table 1

VCEMG Program Logic Model Inputs and Outputs

VCEMG Program Logic Model	
Inputs	Outputs
	<i>Activities</i>
State Program Leadership	
Local Coordinator	Training Course
Curriculum Instructors	Field Trips
Support Staff	Site Visits
Participants	Reading of Training Manual
Mentors	Mentorship
Stakeholders	Course-end Examination
Time	Course-end Presentation
Money	Evaluation Survey Tools
Volunteer Management System	
Technology	<i>Participation</i>
Marketing & Advertising	Graduation from master gardener trainee to intern
Meeting Space	Data collection of training evaluation survey tools
Transportation	Continuation with mentorship
Training Manual	Volunteers participate in extension programs
Training Materials & Supplies	

Turning to another point, Arnold and Carter (2002) reference Michael Patton's statement that logic models are used to describe something whereas a theory of change predicts and explains. This is because, in most cases, casual links can be hypothesized and then tested through a theory of change (Arnold & Carter, 2002). There is value in utilizing theories of change because they help outline a common definition and vision of long-term program goals, help the organization understand the best way to reach those goals, and what program qualities need to be observed then evaluated as it relates to long-term outcomes (Arnold & Carter, 2016). There is also value in using a logic model as a representation of the list of components (Clark & Anderson, 2004) of the Extension master gardener training program. Arnold and Carter (2016) also address Blythe's thinking that smaller, local-level programs should work on improving program quality, including implementation, and the assessment of outcomes should be the responsibility of those who are part of an organization at the policy level. In this case, the policy level of the VCEMG program would include the program director and coordinator, as informed by their strategic planning efforts and those involved in the process.

Evaluation

In the field of evaluation, there is no collectively agreed upon definition of what evaluation is (Schwandt, 2015). In his book, Schwandt (2015) refers to evaluation research as a specific type of applied social science research which deals with the procedures of collecting, analyzing, understanding, and communicating information about the effective attributes of a program or policy and whether or not it is working. With this, it is very important to ask the right evaluation questions to document program outcomes (Radhakrishna and Relado, 2009). Asking the most appropriate evaluation questions will help focus the evaluation, set objectives, select appropriate data collection strategies and indicators, manage resources wisely, anticipate problems and make improvements (Radhakrishna & Relado, 2009). It is also important to document evidence of

impacts that demonstrate how organizations and programs are accomplishing positive things and making a difference (Workman & Sheer, 2012). To document evidences of impact, summative evaluation must be utilized. Summative evaluation examines the outcomes, or effects, of some object or program (Trochim, 2022). It is used to determine if the outputs of the program directly lead to the targeted outcomes (Trochim, 2022). In contrast, Trochim (2022) says formative evaluation is used to strengthen the program being evaluated through the examination of delivery techniques, technology, procedures, personnel and other inputs of the program. Formative evaluation must also be used to assess Extension programs to make improvements.

In many cases, educators teaching in nonformal settings, such as those working in Cooperative Extension, must use evaluation results to maintain accountability to stakeholders and provide programs that are need-based and community driven (Baughman et al., 2012). Swackhamer and Kiernan (2005) note that evaluations developed and conducted on smaller, local levels results in a multitude of duplication of efforts by master gardener coordinators. They also tout that staff within the program who design these evaluations are not experienced in evaluation and often produce low-quality evaluation designs (Swackhamer & Kiernan, 2005). Often Extension personnel fail to document programmatic impacts or evidence of behavior change through evaluation (Workman & Sheer, 2012). One way to measure change over a short period of time, such as short-term outcomes, within a program is through the utilization of the pretest-posttest model and the retrospective pretest model (Gouldthorpe & Israel, 2013). In the pretest-posttest model, a pretest is given to participants before the program starts and a posttest is administered again after the program to measure the same variables (Gouldthorpe & Israel, 2013). The retrospective pretest model administers the pre-program assessment at the same time as the post-test by asking participants to recall their behavior or knowledge prior to the program

(Gouldthorpe & Israel, 2013). Workman and Sheer (2012) state most program evaluation in Cooperative Extension stops at the reaction or learning levels and does not measure higher-level changes. However, higher level changes, like short-term outcomes, can be measured with both pretest-posttest and retrospective pretest methods (Gouldthorpe & Israel, 2013).

Therefore, it is imperative to incorporate program evaluation into the program development processes for Cooperative Extension so that an organization, such as the master gardener program, can understand how its activities and resources are connected to changes in knowledge, aspirations, skills and attitudes (Radhakrishna & Relado, 2009). As imperative as the incorporation must be, oftentimes Extension educators have no formal training in program evaluation planning and reporting (Baughman et al., 2012). In the non-formal education setting of Cooperative Extension programs, instrumental evaluation is often utilized since the results of the evaluations used are then made to modify or change the program to some extent (Baughman et al., 2012). Instrumental use of evaluation occurs when findings from a program evaluation result in direct action or decision making (Baughman et al., 2012). Another type of evaluation being used in Cooperative Extension programs is accountability evaluation. This is also known as decision-oriented evaluation (Hernandez, 2000). Hernandez (2000) explains this form of evaluation is used to identify how successful the provider was at achieving expected outcomes.

Accountability evaluation is practiced when master gardener coordinators use evaluation tools, like surveys, to find out if intended outcomes were achieved. Being able to account for intended outcome successes and failures helps coordinators improve the program. Swackhamer and Kiernan's (2005) found that most of the data generated from master gardener training evaluations focus on the benefits of volunteering, amount of time contributed and the number of contacts made as anecdotal and are not useful for program improvement. They do not help identify

where the programs strengths and weaknesses are (Swackhamer & Kiernan, 2005). However, according to Connors (2012) psychological and physiological variables must be considered when planning, implementing and evaluating volunteer training programs. Although they may not help identify where a programs strengths and weakness are, the anecdotal data he mentions is imperative for making program improvements.

Evaluation Capacity Building

One way of describing ECB comes from Preskill and Boyle's article *A Multidisciplinary Model of Evaluation Capacity Building* (2008). They describe ECB as a "sustainable evaluation practice – where members (of a group or organization) continually ask questions that matter, collect, analyze, and interpret data, and use evaluation findings for decision-making and action" (Preskill & Boyle, 2008, p. 444). The sustainable aspect of ECB comes from a participant's abilities to incorporate evaluation into their everyday work (Preskill & Boyle, 2008). During the 2000s, logic model training took place to prepare Extension educators to think through all logical connections between what their anticipated outcomes were and what they did in their programs (Arnold & Cater, 2016). There must be leadership, support, and systems in place, including plans, to help incorporate evaluation into the organizations mission and strategic goals (Preskill & Boyle, 2008). Thus, in the early 2000s, ECB efforts were shifted to logic models due to the efforts of a team with University of Wisconsin's Cooperative Extension service (Arnold & Cater, 2016). Their training efforts were duplicated and taught to other Extension professionals throughout the country in an effort to move from satisfaction as an indicator of program success to measuring program outcomes (Arnold & Cater, 2016).

There is a growing demand for documenting program results and outcomes which has created an increased need for ECB (Arnold & Cater, 2016; Labin et al., 2012). The two levels of ECB are noted as organization level and individual or participant level (Preskill & Boyle, 2008).

The individual level references employees or organization members where evaluation curriculum, like designing evaluations and analyzing data is taught (Labin et al., 2012). At the organization level, ECB is accomplished through fostering a culture of learning, making evaluation more routine, increasing resources for evaluation, and providing leadership support for evaluative activities (Labin et al., 2012).

There can also be internal and external demands for ECB in an organization (Preskill & Boyle, 2008). Understanding if an organizations motivation for utilizing ECB comes from an internal or external demand will offer insight into which members participate and which learning and teaching strategies will be most beneficial (Preskill & Boyle, 2008). Some of the assumption's organization leaders might make about utilizing ECB are that it helps organization members learn how to design and conduct evaluations, makes learning about and from evaluation intentional, and can help programs be more effective if members think evaluatively (Preskill & Boyle, 2008). In the case of internal reasons for implementing ECB, Preskill and Boyle (2008) list the following, “(a) changes in the organization, (b) a mandate from leadership to increase the learning function of evaluation, (c) a perceived lack of internal evaluation knowledge and skill, (d) a desire to seek new or increased funding, (e) a perceived shortage of evaluators with expertise and background in specific program content or specialized organizations, and (f) a desire to use evaluation to make program improvements” (p. 446).

On a broad level, ECB efforts are usually found within service organizations, such as the education and health fields (Labin et al., 2012). In these fields, Labin et al. (2012) states ECB's purpose is to “support the efforts of organizations to improve their programs and program outcomes for their service population” (p. 328). Similarly, evaluators of non-formal education must ask focused evaluation questions to determine what the purpose of the evaluation is and learn

how to utilize the results in order to document the required outcomes (Radhakrishna & Relado, 2009) that improve programs and services.

Since the early 2000's, program evaluation has become a responsibility for Extension educators as a means of reporting requirements and building evaluation capacity as Baughman et al., 2012 mentions in their work. Through their study of evaluation in Extension settings, Baughman et al. (2012) also states the importance of developing evaluation skills, especially with educators in non-formal settings, through ECB and making the culture of evaluation use a nurturing one. If evidence of a higher level of impact can be demonstrated, including how Extension programs make positive differences in the lives of not only individuals but their families and communities through the implementation of program evaluation, then Extension's impact can be used to sustain funding and can have positive political implications. (Workman & Sheer, 2012).

Summary

From the literature, I have shown that Cooperative Extension has continued to utilize Extension master gardener volunteers since 1973 as educators who promote sustainable horticulture practices (Langellotto et al., 2015). I have also shown there is a need to increase ECB within the VCEMG program. The use of evaluation is important for documenting evidence of impacts which demonstrate how programs are accomplishing their goals and making differences (Workman & Sheer, 2012). Documenting the state-level impacts of the VCEMG program will be beneficial to stakeholders, funders and supporters of the program.

Considering all that was previously reviewed, improving ECB in the VCEMG program will support the organization's efforts to improve programs and program outcomes (Labin et al., 2012). If the leadership of the VCEMG program emphasizes the importance of sustainable evaluation practices, the evaluation culture within the organization can improve and become a nurturing one. Conducting this evaluation will help show the leadership of the VCEMG program

that evaluation efforts on the state level must be conducted if outcomes of the program are to be used to document the impacts VCEMG volunteers have throughout Virginia.

Design and Methodology

Conceptual Framework

I used the VCEMG program's logic model, as theory of change, to generate the codes necessary for analysis. This program theory of change was used to determine how and why outcomes occur according the logic model (Arnold & Cater, 2016). Comparing the data collected to the intended program outcomes (see Table 2) helped determine if the program evaluation tools were being used to measure the intended outcomes of the program. The complete VCEMG logic model is provided in Appendix A.

The outcomes of the VCEMG program are indicators of the impacts the program has in Virginia. Program results are measured through short, medium and long-term outcomes in the VCEMG logic model. These outcomes have been duplicated in Table B. Short-term outcomes are things that happen as a direct result of the inputs and outputs of the VCEMG program (see Table A). Some of the short-term outcomes that happen immediately following the master gardener training course that relate to participants are an increased knowledge of sustainable horticulture practices, an increase in research capabilities, an increased awareness of community partners, an increased awareness of community needs, an increase in evaluation skills, and an increase in self-confidence. Medium-term outcomes are direct results of the short-term outcomes. Some of the medium-term outcomes that happen after the short-term outcomes are master gardeners use research-based information to inform the public about sustainable horticulture practices, master gardeners interact with community partners, master gardeners increase their use of evaluation survey tools and master gardeners recruit future VCEMG trainees. Long-term outcomes culminate

Table 2

VCEMG Program Logic Model Outcomes

Short-Term Outcomes	Medium-Term Outcomes	Long-Term Outcomes
<ul style="list-style-type: none"> - Increase in the number of Master Gardener (MG) volunteer trainees and interns - Increase knowledge of sustainable horticulture practices (MG and client) - Increase evaluation skills - Increase awareness of community needs (MG) - Increase in self-confidence (MG) - Increased sense of belonging (MG) - Increase in research capabilities (MG & client) - Improve technology skills (MG) - Improve horticulture skills - Increased use of laboratory services at Virginia Tech (MG & client) - MG's reach out to mentor or coordinator for advice and leadership 	<ul style="list-style-type: none"> - MG's interact with community partners - MG's use research-based information to inform the public about sustainable horticulture practices - MG's conduct site visits - MG's recruit future trainees - Increased adoption of sustainable horticulture practices (MG & client) - Increased sense of accomplishment (MG & client) - Increased use of evaluation survey tools 	<ul style="list-style-type: none"> - Community increases the adoption of sustainable horticulture practices - Community partners are more aware of the impacts of the master gardener program - Friendships and community partnerships are sustained - Continuation of the master gardener program cycle

from the short and medium-term outcomes and are the broad, community-wide impacts which happen in a specific community. The long-term outcomes for the VCEMG program are community members increase their adoption of sustainable horticulture practices, community partners are more aware of the impacts of their local VCEMG program, friendships and community partnerships are sustained and the continuation of the VCEMG program cycle is continued.

Data Collection

This project was an evaluation of program evaluations. Specifically, it was an evaluation of VCEMG training program evaluation survey tools. It is also important to note that I currently work for Virginia Cooperative Extension as an agriculture and natural resources associate extension agent. I work closely with master gardener volunteers, plan local training courses and teach individual training classes both in my unit office and for other unit offices in my region.

The first step of data collection was completed through the request for copies of master gardener training evaluation survey tools from master gardener coordinators across Virginia. In this first step, David Close, the director of the VCEMG program at the time, agreed to serve as the liaison between master gardener coordinators and me. This step was taken because Mr. Close possessed a master list of coordinator's email addresses. I composed a letter, typed in Microsoft Word, to VCEMG coordinators (see Appendix D) asking for copies of their evaluation survey tools for master gardener training from the previous three years. The letter was sent to Mr. Close on August 17, 2021, to check its suitability and garner approval. Once the request letter was approved, Mr. Close sent it through his master email list of coordinators on August 18, 2021 asking them to email their evaluation survey tools directly to the researcher. This process of soliciting and collecting information through email is considered a form of the web survey method, where data is collected electronically through email or other online submission tools (Dillman et al. 2014).

I saved the evaluation survey tools and emails received from respondents as digital files in the order they were received. The second step was asking Mr. Close to send a second email request to the same list of master gardener coordinators asking them to submit evaluation survey tools directly to me. This occurred on October 13, 2021, using a copy of the original email from step one. The evaluation survey tools received from the second email solicitation were also saved as digital files in the order they were received. As the final step, a third solicitation request to submit

survey tools was sent via Mr. Close's list of master gardener coordinators on December 20, 2021. All evaluation survey tools from the final solicitation were saved in the same manner as steps one and two, finalizing step three.

Data Analysis

The data for this case study was digitally collected. I compiled evaluation survey tools into a digital folder as stated previously. Then, I categorized them based on the mode of delivery; trainings that happened in-person only, trainings that were conducted in hybrid settings, both in-person and virtually, and in virtual only settings. From there, I created a master list of evaluation survey tool questions (352 total) from all survey tools collected in a Microsoft Word document. The questions in the master list were then coded into groups using descriptive themes developed from the VCEMG program logic model (see Appendix A) in a Microsoft Excel document. I created codes based on the logic model outcomes and surprising codes (Creswell and Creswell, 2018) when analyzing the survey tools. The recurring themes generated from these codes were used as indicators of the types of information master gardener training evaluators were attempting to gather, such as overall training program satisfaction or trainee confidence. Digging deeper, I sorted the questions into other categories. For example, I used my experiences and training in developing evaluation survey tool questions to classify each of the 352 questions as either needing revision or removal, or being suitable for use. Additionally, I received evaluation survey tools targeted at evaluating the mentorship process that occurs in some master gardener training programs. However, for the purpose of this project, mentor evaluation survey tools were not assessed.

Findings

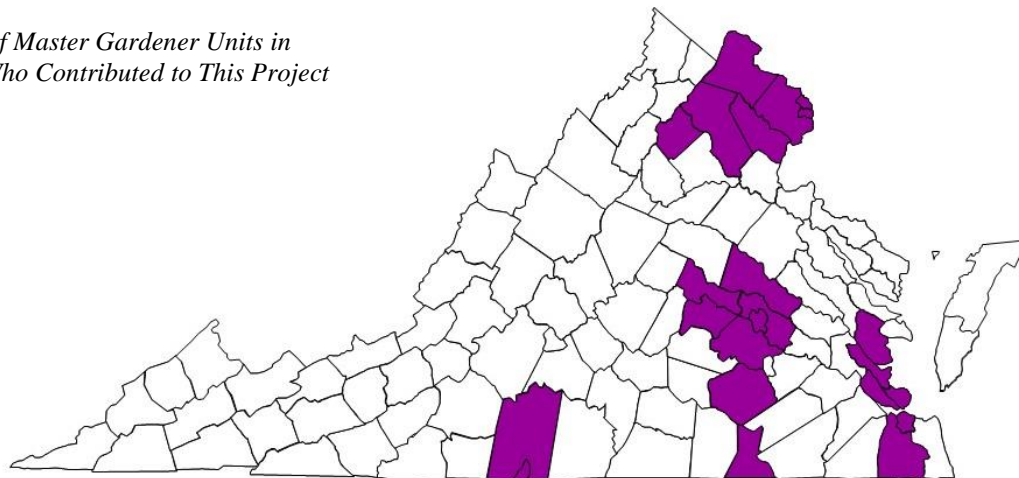
Results

In total, evaluation survey tools were received from 11 master gardener training programs. From those 11 programs, 23 survey tools were collected. Those 11 training programs represented 23 cities and counties from across the state. Most of the Master Gardener units that contributed evaluation survey tools were from the more highly populated areas or corridors in Virginia. The more populous counties and cities in northern Virginia are located outside of Washington D.C., the counties and cities in central Virginia surround the City of Richmond and the eastern most counties and cities are in the Hampton Roads area. The area in south-central Virginia includes the City of Danville and surrounding Pittsylvania County (see Figure 1).

Altogether, there were 6 survey tools from in-person training programs, 14 from hybrid training programs and 3 from virtual training programs. The evaluation survey tools submitted to me from the 11 master gardener training programs occurred between 2018 and 2021. The 23 evaluation survey tools I received contained 352 questions in total. Of these 352 questions, 29%, or 101 questions, came from evaluation survey tools for individual classes within master gardener training programs. The remaining 251 questions, or 71% of the 352 questions, were generated from evaluation survey tools for overall master gardener training courses.

Figure 1

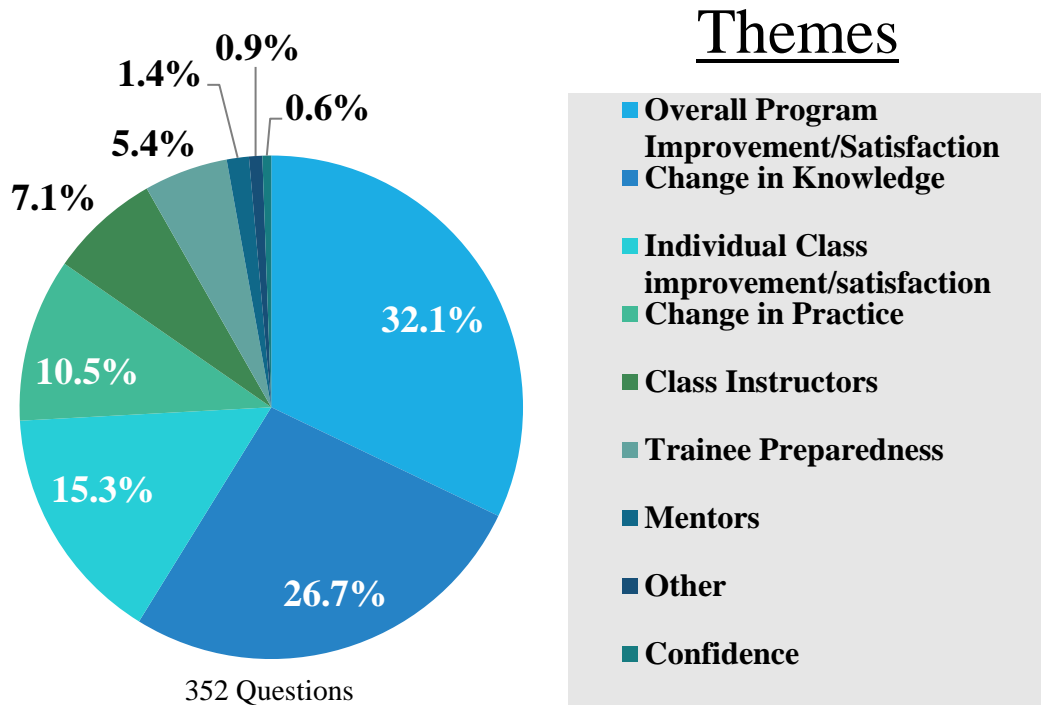
Location of Master Gardener Units in Virginia Who Contributed to This Project



A majority of questions, 186, were used to gain insight on program improvement followed by 91 questions to gain insight on knowledge gained by the trainee. The remaining 75 questions were used as a means of program justification, meaning the changes in behavior that occurred which justified the implementation of the program (see Figure 2). Similarly, the questions either fit into one of two categories, outcome-based (achievement of program goals) or process-based (the how and why of program achievement). Out of the 352 questions, 66% were process-based and 24% were outcome-based. The themes generated from the 352 questions were program improvement/satisfaction (32.1%), changes in knowledge (26.7%), class improvement/satisfaction (15.3%), change in practice (10.5%), class instructors (7.1%) and trainee preparedness (5.4%), mentors (1.4%), other (0.9%) and confidence (0.6%) (see Figure 2). In overall master gardener training evaluation surveys,

Figure 2

Percent of Questions by Theme



Themes

- Overall Program Improvement/Satisfaction
- Change in Knowledge
- Individual Class improvement/satisfaction
- Change in Practice
- Class Instructors
- Trainee Preparedness
- Mentors
- Other
- Confidence

question intent focused on knowledge gained (25%), participant satisfaction (15%), confidence (14%), a participant's level of understanding (9%), participant suggestions (8%) and changes in practice (7%). Next, 10% of overall training questions were categorized as 'other' questions which include experience, organization, meeting expectations, time and class length. In individual class evaluation surveys, question intent focused on presentation quality (15%), meeting class objectives (13%), trainee behavior changes (10%), suggestions (10%), trainee's personal comfort (6%), additional learning opportunities (6%), and training quality (6%). 35% of individual class questions were categorized as having 'other' question intent such as marketing, organization, equipment and meeting expectations. Notably, 168 questions (48%) were identified as needing to be revised or were unsuitable for use and 184 questions (52%) were deemed suitable for use as-is. Finally, of the 352 questions, 63%, were formatted using a Likert scale followed by 25% in an open-ended format. Only 9% of questions were formatted as yes/no questions and 3% were multiple choice questions. To elaborate, Likert scale questions use ordinal scales, where categories are provided to respondents as options to pick from when answering survey questions (Boise State University, 2022). Furthermore, open-ended questions allow respondents to provide and answer in their own words (University of Michigan, 2020).

Discussion

After analyzing the data, I discovered the majority of evaluation survey tool questions, 53%, were used as indicators for program improvement. Comparing this statistic to the VCEMG program logic model shows master gardener coordinators were most concerned with making improvements to individual classes and the overall training program and less about what the outcomes were. For instance, only 26% of questions were used to analyze knowledge gained by master gardener trainees as an indicator of a short-term outcomes. The remaining questions, 21%,

were used as a means of program justification, or proof of changes in behavior as an indicator of medium-term outcomes. Therefore, questions that assessed changes in knowledge or changes in behavior made up 47% of the 352 questions collected. The type of evaluation used to assess changes in knowledge or behavior is summative evaluation where the outcomes, or effects, of a program are evaluated to determine if the outputs of the program directly lead to the targeted outcomes (Trochim, 2022)

The bulk of questions collected, 71%, were from overall master gardener training program survey tools. This indicates the majority of evaluation survey questions were used in the surveys at the conclusion of master gardener training programs. A smaller number, 29%, of questions were used at the conclusion of individual classes within the multi-class training program. Interestingly, this indicates almost a third of questions specifically targeted the improvement of individual classes through the evaluation of speakers, presentation quality, communication, usability of materials, a trainee's personal alternatives, and satisfaction of processes used to conduct those classes. These types of improvements are examples of what one would use in formative evaluation where you try to answer how well you are accomplishing what you set out to do (Radhakrishna & Relado, 2009) and how you can improve it (Trochim, 2022). Some of the notable survey tool questions for individual classes dealt with lecture content, support resources, class length, personal physical comfort, class location, class improvement and satisfaction, practice implementation and instructor preparedness.

In overall master gardener training evaluation surveys, there were more questions about participant's satisfaction, confidence and level of understanding, knowledge gained, participant suggestions and changes in practice utilized than other topics. This indicates there was a specific attempt to evaluate short-term outcomes. There were fewer questions about the training program's

organization, participant's understanding of the materials, usefulness of content and program length which are a mixture of inputs and outputs, according to the VCEMG program logic model. Interestingly, in the overall evaluation for one particular training program, the document was titled as a post-evaluation tool. However, it was actually written as a pre-evaluation tool to understand what the knowledge level of the master gardener trainee was before starting the training program. It could have been the intention of the coordinator to use it as a retrospective pre-test, or post-then-pre, evaluation survey tool (Klatt & Taylor-Powell, 2005). However, this survey tool lacked the post portion, which is necessary to make the comparison in a retrospective pre-test tool.

After classifying each of the 352 questions as either needing revision or removal, or being suitable for use as-is, I found 48% of questions either needed some form of revising to be useable or needed to be removed all together. For example, a question needing revising was, "please rate your knowledge gain and effectiveness of each of the Master Gardener Classes- 'Botany' and 'Orientation to Volunteering'" (see Appendix C, p. 61), which used a Likert scale with the options, "excellent, good, average, poor and terrible" (see Appendix C, p.61). This question is an example of how the coordinator tried to capture too much data in one question. There should be separate questions for each of the two classes, botany and orientation of volunteering, regarding knowledge gain and effectiveness separately for a total of four questions. It may have seemed like it was more effective to ask everything in one question, but in this case, it was a confusing question that would not provide clear, useable data. Also, the Likert scale options, in the way they were worded, would not have provided useable data.

In contrast, a well written question was "we used Zoom for the presentations. How easy did you find Zoom to navigate the live sessions on Tuesday evenings?" (see Appendix C, p. 47). The Likert answer choices were "extremely easy, somewhat easy, neither easy nor difficult,

somewhat difficult and extremely difficult” (see Appendix C, pg. 47). Although this question was not intended to be used to record impacts, it was helpful to gauge the usability of the online software platform during live virtual training presentations.

Overall, I observed less than half of the questions collected were used to gauge impacts for changes in KASA (knowledge, aspirations, skills and attitude (Radhakrishna & Relado, 2009), which would indicate changes in short-term outcomes according to the VCEMG logic model. Although some survey tools I collected incorporated some KASA-type questions, most evaluation tools were focused on gathering information on the satisfaction of the participant with the individual classes or overall training program. It was encouraging the majority of survey tools were being used to improve individual classes and the overall training program, but much more information could be collected to record outcomes as indicators of the impacts of the VCEMG program.

Recommendations

The purpose of this project was to compare evaluation survey tool questions to the VCEMG program logic model to determine how effectively those survey tools measure program outcomes. Based on this, first, I recommend the director and state coordinator for the VCEMG program utilize the data from this project to inform the creation of a state-wide evaluation survey tool question template for master gardener training. Creating a template of this nature will help the VCEMG program create impactful statements regarding sustainable horticulture practices adopted by volunteers and those they educate.

Second, I recommend the VCEMG program integrate ECB elements into master gardener leadership training for all master gardener coordinators. With this type of training, master gardener coordinators will be able to fully utilize the evaluation tools developed by the VCEMG

leadership team and its stakeholders. I will go further and recommend training on basic evaluation skills become a permanent part of training for master gardener coordinators in every Extension office housing a master gardener unit in Virginia. Once this is done, I recommend training on basic evaluation skills be offered to all VCEMG volunteers. Collectively, these additional trainings for coordinators and master gardener volunteers will strengthen the VCEMG program through the use of beneficial evaluation techniques that stem from ECB efforts.

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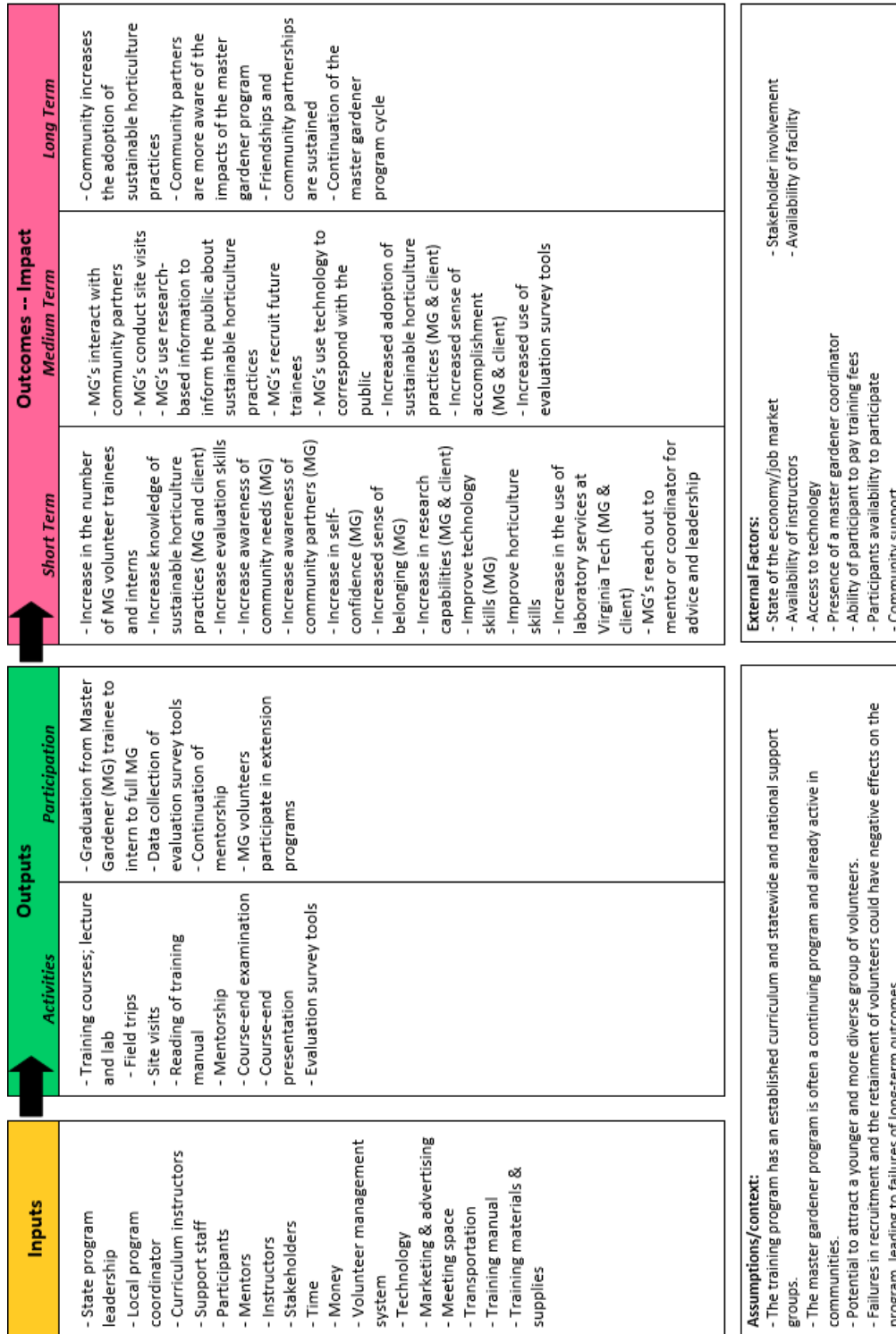
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Appendix

Appendix A- Program Logic Model

Virginia Cooperative Extension Master Gardener Program Logic Model



Appendix B- Individual Class Survey Questions
 Questions from Individual Class Survey Tools
 Virginia Cooperative Extension Master Gardener Training
 2018 – 2021

Individual Class Improvement/Satisfaction
 Inputs

Rate each item below as Excellent (E), Good (G), Fair (F), or Poor (P) as it pertains to the complete training session OVERALL (not one or two specific lectures):

Lecture content	E	G	F	P
Audio/visual aids	E	G	F	P
Demonstrations	E	G	F	P
Room comfort	E	G	F	P
Appropriate use of time	E	G	F	P
Opportunity for questions/discussion	E	G	F	P
Class Facilities	E	G	F	P
Handouts	E	G	F	P

Facilities:	Rating Scale: (1) Lowest & (5) Highest				
How well did the facility suit the program:	1	2	3	4	5
Equipment and materials used in program:	1	2	3	4	5
Cleanliness & Appearance:	1	2	3	4	5

The setting for this session was appropriate for the content. Disagree Neutral Agree

Was the session length appropriate? Please explain.

Indicate your agreement with the following questions: 5 being "strongly agree" with the statement and 1 being the lowest level of agreement with the statement

- The assigned readings supported the lesson objectives.
 1 2 3 4 5
- The quiz for the class material was helpful in learning/retaining topic information.
 1 2 3 4 5

Do you have any suggestions for improving this lesson?

What aspects of this topic lesson did you find most beneficial?

What more would you like to learn on this topic?
 How could this program be improved?

Overall rating of this program? (circle one) very good good fair poor very poor

Do you have any suggestions for improving this lesson?

Which class did you enjoy the most? Please explain.

Which class did you enjoy the least? Please explain.

What aspects of this topic lesson did you find most beneficial?

Do you have any suggestions for improving this lesson?

Please check the box that matches best as a result of attending this training today.

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
I will be able to use this information as a master gardener volunteer				
I want to learn more on this subject				

Overall Training Program Improvement/Satisfaction
Inputs & Outputs

Rate each item below as Excellent (E), Good (G), Fair (F), or Poor (P) as it pertains to the complete training session OVERALL (not one or two specific lectures):

Handbook	E	G	F	P
Session length	E	G	F	P
Organization and administration of training	E	G	F	P
Educational value of out-of-class assignments	E	G	F	P

Was the time of year for EMG training suitable?

Was the location of this year's EMG training suitable?

In your opinion was the pace of [how often training classes were held] suitable for EMG training? Please explain.

Program:	Rating Scale: (1) Lowest & (5) Highest				
Program Content:	1	2	3	4	5
Program Organization:	1	2	3	4	5
(class/activity starting and finishing on time):	1	2	3	4	5
Rate how well the program met your expectations:	1	2	3	4	5

What other related topics would you like to hear or learn about?

Indicate your agreement with the following questions: 5 being "strongly agree" with the statement and 1 being the lowest level of agreement with the statement

- If the lesson included a lab or a hands-on participation, did the lab/hands on contribute to your learning?
1 2 3 4 5
- The assigned readings supported the lesson objectives
1 2 3 4 5
- The quiz for the course material was helpful in learning/retaining topic information.
1 2 3 4 5

What aspects of this topic lesson did you find most beneficial?

Did you receive adequate information at the time of application or upon request?

How can EMG training be better promoted?

How could the training itself be improved?

Has the basic training portion of the EMG experience met your expectations?

What subjects do you feel you need to know more about in order to better prepare you in your role as an EMG?

Which class content do you feel you will use the most?

Would you remove any of the topics or speakers from the course? If so please explain.

List topics on which you would have liked spending more time during training.

List topics on which you would have liked spending less time during training.

How would you rate the field trips?

Are you interested in additional classes and field trips? If yes, what subjects and which places?

Please share any additional comments.

How did you find out about this program?

T.V. ____ Newspaper ____ Brochure ____ Radio ____ Newsletter ____ Friend ____

Other: _____

Do you feel this information will benefit you as a Master Gardener?

Indicate your agreement with the following questions: 5 being "strongly agree" with the statement and 1 being the lowest level of agreement with the statement

- The assigned readings supported the lesson objectives.

1 2 3 4 5

- The quiz for the class material was helpful in learning/retaining topic information.

1 2 3 4 5

Please rate your satisfaction level with the education received in this class

1	2	3	4
Poor	Fair	Good	Excellent

Where did you hear about this seminar?

Do you have any suggestions for future lecture topics, or any other comments?

Do you have any suggestions for future online training sessions?

Instructor Satisfaction

Inputs & Outputs

Rate each item below as Excellent (E), Good (G), Fair (F), or Poor (P) as it pertains to the complete training session OVERALL (not one or two specific lectures):

Instructors	E	G	F	P
-------------	---	---	---	---

Instructor & Host/Hostess:	Rating Scale: (1) Lowest & (5) Highest				
Program Instructor/Leader(s) was well prepared:	1	2	3	4	5
Program Instructor/Leader's knowledge of the program:	1	2	3	4	5
Program Instructor/Leader's organization:	1	2	3	4	5
Host/Hostess overall rating:	1	2	3	4	5

The instructor increased my understanding of the course material 5 4 3 2 1 N/A

How would you rate the overall effectiveness of this instructor? 5 4 3 2 1 N/A

The instructor(s) for this session was knowledgeable. Disagree Neutral Agree

Indicate your agreement with the following questions: 5 being "strongly agree" with the statement and 1 being the lowest level of agreement with the statement

- Guest speaker was well prepared and knowledgeable about the lesson topic.
1 2 3 4 5
- Guest speaker's presentation was easy to understand, held my attention and facilitated my learning of the topic content.
1 2 3 4 5
- Guest speaker encouraged group participation and interaction.
1 2 3 4 5

Please check the box that matches best as a result of attending this training today.

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
The speaker spoke clearly				
I understand what the speaker was saying throughout the presentation				
I would recommend this speaker				

Indicate your agreement with the following questions: 5 being "strongly agree" with the statement and 1 being the lowest level of agreement with the statement

- Guest speaker was well prepared and knowledgeable about the lesson topic.
1 2 3 4 5
- Guest speaker's presentation was easy to understand, held my attention and facilitated my learning of the course content.
1 2 3 4 5
- Guest speaker encouraged group participation and interaction.
1 2 3 4 5

Changes in Practice
Short Term Outcomes

As a result of this course, will you change any of your current gardening and/or pest management practices? If yes, please give some examples.

How likely are you to implement new practices in your own home garden?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely

- Extremely unlikely

What new practice(s) are you most likely to apply?

If participating in this program has changed the way you think about agriculture/environment/natural resources, what will you do differently, based on what you learned?

Changes in Knowledge
Short Term Outcomes

I learned new information in this session. Disagree Neutral Agree

The topic developed my abilities & skills for the future 5 4 3 2 1 N/A

Has participating in this program changed the way you think about agriculture/ environment/ natural resources? YES NO

Please check the box that matches best as a result of attending this training today.

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
I learned something				

Other

Do you plan to continue as an EMG after your initial volunteer internship is completed?

Appendix C- End of Program Survey Questions
 Questions from Overall Training Survey Tools
 Virginia Cooperative Extension Master Gardener Training
 2018 – 2021

Individual Class Improvement/Satisfaction
 Inputs

We used Eventbrite for registration and to administer the series. How easy did you find the registration process?

- Extremely easy
- Somewhat easy
- Neither easy nor difficult
- Somewhat difficult
- Extremely difficult

We used Zoom for the presentations. How easy did you find Zoom to navigate the live sessions on Tuesday evenings?

- Extremely easy
- Somewhat easy
- Neither easy nor difficult
- Somewhat difficult
- Extremely difficult

The length of each class was

- Too Long
- About Right
- Too Short

What ideas do you have to make the class better?

Class	Instructor	I found the class to be educational. 1 strongly disagree, 3 neutral, 5 strongly agree
Orientation Volunteering / Botany	[REDACTED]	1 2 3 4 5
Soils	[REDACTED]	1 2 3 4 5
Pruning	[REDACTED]	1 2 3 4 5
Snow day	[REDACTED]	
Organic Gardening	[REDACTED]	1 2 3 4 5

Native Plants	████████████████████	1 2 3 4 5
Small Fruit/ Tree Fruit	████████████████████████████	1 2 3 4 5
Insects Woody Ornamentals	████████████████████	1 2 3 4 5
IPM/ PMG and Pesticide Safety	████████████████████	1 2 3 4 5
“Green” Grass How To	████████████████████████████	1 2 3 4 5
Volunteering/ Risk Management	████████████████████████████	1 2 3 4 5
Turf	████████████████████	1 2 3 4 5
Plant Propagation	████████████████████	1 2 3 4 5
Woody Plants	████████████████████	1 2 3 4 5
Herbaceous Plants	████████████████████████	1 2 3 4 5
Plant Diseases	██████████	1 2 3 4 5
Wildlife	████████████████████████████	1 2 3 4 5
Tour of #18	████████████████████	1 2 3 4 5
Weeds	██████████	1 2 3 4 5
Tour of Rady Park	████████████████████████████	1 2 3 4 5
Vegetable Gardening	████████████████████████	1 2 3 4 5

Overall Training Program Improvement/Satisfaction
Inputs and Outputs

Did these presentations meet your expectations as a home gardener? Yes No

Did you find the soil test kits and the Native Plant guide useful? Yes No

We sent read-aheads and follow-up emails every week with links to various Extension resources.

How valuable did you find this information?

- Very useful
- Good information
- No new information
- Somewhat difficult
- Overwhelming

How satisfied were you with each of the following components of the course:

	Not at all Satisfied	Somewhat satisfied	Satisfied	Very Satisfied
Online platform	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recommended Resources	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparing you to educate the public	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Extension Staff support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

For the following questions, please use the following rating scale: 5 for highest rating; 1 for lowest rating.

Please rate the registration procedures (sign up on wait list online; email to/from coordinator and volunteers, etc.

- 1 2 3 4 5

Was the training cost commensurate with the quality of the training received?

- 1 2 3 4 5

How would you rate the application, interview and background check process? Five is easy; 1 is not easy at all.

- 1 2 3 4 5

What changes would you make to the application, interview and background check process?

The use of VA Tech CANVAS Learning Management System was new this year to GSEMG. How did CANVAS help or hinder your learning experience?

- CANVAS was helpful to have all course information in one place and easily accessible
- CANVAS was helpful but difficult to navigate

The length of the training course was:

- Too Long
- About Right
- Too short

Registration and payment through the Destiny One system was

- Easy and efficient
- Okay
- Confusing
- Difficult

Any additional comments about registration and payment for the class and handbook?

The Canvas course and Module learning system was

- easy to use
- difficult to use
- an effective way to present the course information
- not an effective way to present the course information

Please tell us if you have any suggestions on how the Canvas course could be improved.

Was Zoom an effective way for you to attend class?

Did this class format (pre-recorded presentations and virtual nighttime classes) allow you to join us when you otherwise would not have been able to take the training?

Which class (see list at top) do you think will be most helpful to you in your future EMG efforts?

Were there any classes that you did not find to be valuable? If so, please write it in.

Is there something you would change about how the class was run (e.g. no FAQs, no Q&A sessions, no quizzes or final exam, starting later, etc.)

Was the amount of reading/homework per week acceptable?

- Yes
- Usually
- Usually not
- No

The field day/graduation event was....

How satisfied are you with the knowledge you gained throughout the course?

- Very satisfied
- Satisfied
- Neither satisfied nor dissatisfied
- Dissatisfied
- Very dissatisfied

How effective were the instructional materials used in the course?

- Extremely effective
- Very effective
- Somewhat effective
- Not so effective
- Not at all effective

How effective were the learning activities used in this course?

- Extremely effective
- Very effective
- Somewhat effective
- Not so effective
- Not at all effective

Did the course meet your expectation?

- Yes
- No
- Not sure

Is there another topic you would recommend covering in class?

Are there changes you would recommend in the class?

What was the best part of the training for you?

Please rate the following questions with 1 being the lowest rating and 5 being the highest rating
Please rate the registration procedures (sign up on wait list online; email to/from coordinator and volunteers, etc.)

1 2 3 4 5

Was the training cost commensurate with the quality of the training received?

1 2 3 4 5

How would you rate the application, interview and background check process? Five is easy; 1 is not easy at all.

1 2 3 4 5

What changes would you make to the application, interview and background check process?

What do you recommend we add if we provide another online course?

What would you change from the online class you attended?

List the aspects of the class and format that you liked?

Comments

Think way back to the beginning :) Did the Information Night/Interview provide you with a reasonable understanding of what the EMG Volunteer Training Program would entail? What do you wish you had been told that you weren't?

Overall, what was the best part of the EMG Volunteer Training Program?

What was your least favorite part of EMG Volunteer Training?

Please offer any additional comments about the class you'd like to share.

How likely are you to recommend this course to a friend or classmate? 1 indicating not at all likely and 10 indicating extremely likely.

1 2 3 4 5 6 7 8 9 10

		<u>1</u> strongly disagree, 3 neutral, 5 strongly agree
I know whom to ask questions in order to help me with MG items.	1 2 3 4 5	
I understand how to volunteer with projects I am interested in.	1 2 3 4 5	
I know how to use the web site to submit my volunteer time	1 2 3 4 5	
Having a night class was the only option for my schedule. I could not do a day class.	Yes No	
My mentor has been in contact	Yes No	

Any additional comments?

I know who to ask if I have questions about Master Gardener topics?

- yes
- maybe
- no

I understand how to volunteer with projects I am interested in?

- Strongly agree
- Agree
- Somewhat agree

- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

Each of you have an interesting perspective having experienced both the online training and the in-person training. Please share thoughts on the advantages or disadvantages of each and what could be done to improve an on-line training in the future.

I know how to use the website to report my volunteer hours.

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree
- Disagree
- Strongly disagree

What was the best part of the training for you?

How would you rate the communication process between you and the GSEMG staff & volunteers before the course began and during the course?

How would you improve the communication process between you and the GSEMG staff & volunteers before and during the course?

What could Leslie (EMG Program Coordinator) have done differently or better?

The most helpful thing Leslie did was....

What could Kirsten (VCE Extension Agent) have done differently or better?

The most helpful thing Kirsten did was...?

Trainee class presentations were a new addition to this year's class. Did you find the process and in-class presentation a good learning experience and if so, why? If not, why not?

The hybrid nature of this year's class using Zoom and in-person was new to GSEMGs. Do you feel you connected with your classmates?

- I feel personally connected to most of my classmates.

- I feel personally connected to at least some of my classmates
- I feel personally connected only to those classmates I worked with on a team.
- We went through training together, but I feel no personal connection.

Please give us your suggestions on how to build cohesive class in a hybrid or virtual environment?

Please list in order (1-4) the most valuable parts of the training that you feel helps you to become a competent Master Gardener. Speakers. Labs. Quizzes. Reading Assignments.

Did the Volunteer Fair provide enough information for you to make choices of your volunteer projects?

- Yes
- No
- Maybe

GSEMG choose to do an evening class via Zoom and a daytime in person class this year. Did this format appeal to you given your current circumstances?

- I liked being in person on one afternoon a week
- I would have preferred all evening Zoom classes
- I would have preferred all afternoon Zoom classes
- I would have preferred all afternoon In-person classes

Would you recommend the Master Gardener Program to others?

- Yes
- No

Please provide what you liked BEST about the GSEMG training and what you like LEAST. Also, please provide comments/suggestions for the future. We welcome your input.

What subjects are you most interested in learning about in this course? Check all that apply.

- Soils
- Insects
- Basic Botany
- Water Quality
- Plant Propagation
- Perennials & Annuals
- Turf Management
- Trees and Shrubs

- Pruning
- Tree Fruits & Small Fruits
- Vegetable Gardening
- Diseases & Diagnostics
- Landscape Design
- Pesticides
- Risk Management

Do you plan on participating in the field trip to the Prince George Master Gardeners “Good Gardening Symposium” on March 10, 2018?

Are there any class dates you know you will have to miss? If so, which ones?

What was your favorite part of the 2018 MG training course?

What subjects did you enjoy learning about the most in this course? Check all that apply

- Soils
- Insects
- Basic Botany
- Water Quality
- Plant Propagation
- Perennials & Annuals
- Turf Management
- Trees and Shrubs
- Pruning
- Tree Fruits & Small Fruits
- Vegetable Gardening
- Diseases & Diagnostics
- Landscape Design
- Pesticides
- Risk Management

If you participated in the field trip to the Prince George Good Gardening Symposium, did you find it beneficial? What did you like the most/least?

Please provide any additional comments about the course. You may use the back of this sheet if needed?

Mentor Satisfaction
Inputs and Outputs

My mentor has been in contact with me.

- Yes
- No

No

Each trainee was assigned a mentor before the course began. How would you describe your interactions with your mentor?

- My mentor contacted me and we established a relationship
- My mentor contacted me a few times by email or phone, but I don't really know them
- My mentor contacted me but I did not feel the need for a mentor
- I had a mentor during training

Your Mentors are positioned to assist you with achieving your GSEMG volunteer service requirements. How much interaction would you like in 2022?

- Weekly
- Monthly
- When I need assistance, I will reach out

If you choose to not interact with your mentor, where would you get support to achieve your required volunteer hours?

- From my fellow classmates
- From the Project Leaders of the Projects I will volunteer on
- From my relationship with members of the New Class Support Team (those who were at all the classes) and the Unit Coordinator
- I know what I need to do. I doubt I will need assistance

What would you like to see done differently with mentors?

Instructor Satisfaction
Inputs and Outputs

Who/what was your favorite or most effective speaker/subject? Why?

Who/what was your least favorite/least effective speaker/subject? Why?

How would you rate the instructor's overall teaching performance? One indicating poor performance, 10 indicating excellent performance.

1 2 3 4 5 6 7 8 9 10

How well did the instructor communicate course expectations?

- Extremely well
- Very well

- Somewhat well
- Not so well
- Not at all well

How well did your instructor communicate course assignments?

- Extremely well
- Very well
- Somewhat well
- Not so well
- Not at all well

How prepared was your instructor at the start of each class?

- Extremely prepared
- Very prepared
- Somewhat prepared
- Not so prepared
- Not at all prepared

Was there a topic or presenter that you did not find helpful?

Changes in Practice
Outcomes

How likely are you to seek more information from Virginia Cooperative Extension or Norfolk Master Gardeners for good gardening practices?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

As a result of taking this class, I _____ to test the soil to learn about the pH and nutrients already present.

- did not change my practice
- still won't need to
- will remember to
- will regularly
- will teach my neighbors to

As a result of taking this class, I _____ group plants with similar needs (water, fertilizer, sun...) for easier maintenance

- did not change my practice to

- still won't need to
- will remember to
- will regularly
- will teach my neighbors to

As a result of taking this class, I _____ fertilize based on a soil test and at the appropriate time of year

- did not change my practice to
- still won't need to
- will remember to
- will regularly
- will teach my neighbors to

As a result of taking this class, I _____ identify plant problem and severity of damage before choosing a control

- did not change my practice to
- still won't need to
- will remember to
- will regularly
- will teach my neighbors to

As a result of taking this class, I _____ read and follow all directions on pesticide labels

- did not change my practice to
- still won't need to
- will remember to
- will regularly
- will teach my neighbors to

As a result of taking this class, I _____ work at making sure I use the Right Plant, in the Right Place practice

- did not change my practice to
- still won't need to
- will remember to
- will regularly
- will teach my neighbors to

How likely are you to share information from this series with family/friends?

- Extremely likely
- Somewhat likely
- Neither likely nor unlikely

- Somewhat unlikely
- Extremely unlikely

These best management practices will be taught in Master Gardener training class this year. Please put a check by the landscape practices you *already use*. *If you don't presently use this practice, please leave it blank.*

Recommended Practice	Already Use This Practice √
Test the soil every 3-5 years to learn the pH and nutrients already present.	
Group plants with similar needs (water, fertilizer, sun) for easier maintenance.	
Fertilize and lime based on a soil test and at the appropriate time of year.	
Identify plant problems and severity of damage before choosing a control.	
Choose the right plant for the right place.	
Use compost to improve soil structure and fertility in lawns and gardens.	
Prevent erosion by maintaining vegetative cover using mulch, and correcting drainage problems.	
Plant trees/shrubs in holes that are 3-5 times the width of the root ball, and slightly less the height.	
Mulch only 2-3 inches high, and 4-6 inches away from the trunk of the tree/shrub.	
Maintain healthy plants by meeting their cultural requirements with the goal of using fewer pesticides.	
Avoid planting invasive species; instead choose plants, especially native plants, which minimize maintenance and increase habitat.	
Use no soil amendments in individual planting holes of new plantings	
Maintain desirable pH (6.2-6.5) for turf grass through regular soil testing.	
Measure your turf's square footage – don't guess!	
Fertilize and lime based on soil test and the type of grass.	
In times of low precipitation, irrigate lawn and landscape plants deeply and infrequently, usually no more than 1" of water per week.	
Read and follow all directions on pesticide labels.	
Identify weeds before using a chemical control. Decide which species you can live with and which species you want to control. Contact the Extension office for identification and control recommendations.	

As a result of taking this class, I will no longer....

Changes in Knowledge
Outcomes

Rank yourself at the present time after participating in this training on your understanding of each topic.

	No Understanding	Little Understanding	Moderate Understanding	Quite a bit of Understanding	Almost complete understanding
Botany	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Habitat Gardening for Wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lawn Care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Propagation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Pathology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entomology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caring for Urban Trees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Woody plant id	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Veg. Gardening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landscape design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Home fruits and pruning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Think back to your level of understanding of each topic BEFORE you participated in this training. Rank your understanding before taking the class.

	No Understanding	Little Understanding	Moderate Understanding	Quite a bit of Understanding	Almost complete understanding
Botany	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Habitat Gardening for Wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lawn Care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Propagation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Pathology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entomology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caring for Urban Trees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	No Understanding	Little Understanding	Moderate Understanding	Quite a bit of Understanding	Almost complete understanding
Woody plant id	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Veg. Gardening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landscape design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Home fruits and pruning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Indicate your agreement with the following question: 5 being "strongly agree" with the statement and 1 being the lowest level of agreement with the statement

If the lesson included a lab or a hands-on participation, did the lab/hands-on contribute to your learning?

1 2 3 4 5

As a result of taking this class, I now know how to...

Do you feel you achieved your desired learning outcome?

- Yes
- No
- Not sure

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes - Botany and Orientation to Volunteering

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes - Soils

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes - Woody Plants

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes

- Vegetables

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes

- Organic Gardening

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes

- Pruning

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes

- Plant Diseases

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes
- Pesticide Safety and IPM

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes - Intro
to "Green" Grass

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes
- Volunteering and Risk Management

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes
- Native Plants

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes - Tree
fruit and small fruit

- Excellent
- Good
- Average
- Poor

- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes

– Insects- This was our first online class

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes - Turf

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes

- Herbaceous Plants

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes

- Plant Propagation

- Excellent
- Good
- Average
- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes

- Weeds and a virtual tour of #18 Schoolhouse

- Excellent
- Good
- Average

- Poor
- Terrible

Please rate your knowledge gain and effectiveness of each of the Master Gardener Classes
- Water Quality

- Excellent
- Good
- Average
- Poor
- Terrible

Pre-Evaluation: Please circle the answer that best matches your response for each subject area.

How confident is your knowledge in the subject matter listed below?

Basic Botany -	No Knowledge	Some Knowledge	A Lot of Knowledge
Basic Entomology -	No Knowledge	Some Knowledge	A Lot of Knowledge
Soils -	No Knowledge	Some Knowledge	A Lot of Knowledge
Plant Pathology -	No Knowledge	Some Knowledge	A Lot of Knowledge
Water Quality -	No Knowledge	Some Knowledge	A Lot of Knowledge
Propagation -	No Knowledge	Some Knowledge	A Lot of Knowledge
Fertilizers -	No Knowledge	Some Knowledge	A Lot of Knowledge
IPM/Organic Practices -	No Knowledge	Some Knowledge	A Lot of Knowledge
Composting -	No Knowledge	Some Knowledge	A Lot of Knowledge
Lawns -	No Knowledge	Some Knowledge	A Lot of Knowledge
Plant Identification -	No Knowledge	Some Knowledge	A Lot of Knowledge
Woody Ornamentals -	No Knowledge	Some Knowledge	A Lot of Knowledge
Herbs-	No Knowledge	Some Knowledge	A Lot of Knowledge
Vegetable Gardens -	No Knowledge	Some Knowledge	A Lot of Knowledge
Fruits -	No Knowledge	Some Knowledge	A Lot of Knowledge
Wildlife -	No Knowledge	Some Knowledge	A Lot of Knowledge
Bulbs-	No Knowledge	Some Knowledge	A Lot of Knowledge
Indoor Plants -	No Knowledge	Some Knowledge	A Lot of Knowledge
Trees -	No Knowledge	Some Knowledge	A Lot of Knowledge
Pruning -	No Knowledge	Some Knowledge	A Lot of Knowledge
Landscape Design -	No Knowledge	Some Knowledge	A Lot of Knowledge
Garden Safety -	No Knowledge	Some Knowledge	A Lot of Knowledge

Post Evaluation: Listed below are the topics of each training class.

For each class you attended, please check what you feel you may have learned about the topic.

Topic	Nothing New	Some New Knowledge	A Lot	A Great Deal
Soils				
Botany				

Topic	Nothing New	Some New Knowledge	A Lot	A Great Deal
Turf/Lawns				
Propagation				
Plant Diseases				
Entomology				
Plant ID				
Vegetables				
Herbaceous Plants				
IPM (Pesticides)				
Ornamentals				
Water Quality				
Trees				
Pruning				
Landscape Design				
Organic Horticulture				
Plant Introduction				
Container Gardening				
Risk Management				
Bulbs				
Diagnosing Plant Problems				

How many years have you gardened? No amount is too much or too little.

Trainee Preparedness
Outcomes

After having completed the course and the exam, in which areas do you feel the need for additional training?

How prepared are you to field questions on the topics below?

	Not at all	Not much	I could figure out an answer	I am confident I could answer questions on this topic
Botany	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Habitat Gardening for Wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lawn Care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Propagation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Plant Pathology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Entomology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Caring for Urban Trees	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Woody plant id	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Veg. Gardening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Landscape design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Home fruits and pruning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

What subjects do you feel you need to know more about in order to better prepare you in your role as an EMG?

For the following use: 1 strongly disagree, 3 neutral, 5 strongly agree

I feel prepared to be volunteer as a Master Gardener Intern

1 2 3 4 5

How satisfied were you with each of the following components of the course?

	Not at all Satisfied	Somewhat satisfied	Satisfied	Very Satisfied
Preparing you to educate the public	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I feel prepared to volunteer as a Master Gardener Intern?

- Strongly agree
- Agree
- Somewhat agree
- Neither agree nor disagree
- Somewhat disagree

- Disagree
- Strongly disagree

		<u>1</u> strongly disagree, 3 neutral, 5 strongly agree
I feel prepared to be volunteer as a Master Gardener Intern		1 2 3 4 5

Other

Which Master Gardener Unit do you Volunteer for now?

- Hanover
- Henrico
- Chesterfield
- Powhatan/Goochland
- Richmond City

Appendix D- Letter to VCEMG Coordinators

August 18, 2021

Good afternoon, everyone.

I am Sara Rutherford, agriculture and natural resources extension agent in Greensville County/City of Emporia. I am seeking master gardener training evaluation documentation for the newly formed Consumer Horticulture Program Sub-Team and my master's project titled *Developing an Evaluation Tool for the Virginia Cooperative Extension Master Gardener Training Program*.

The goal of compiling MG training evaluation tools from across the state is to eventually create a pool of evaluation questions agents and coordinators can pull from to evaluate MG training programs. These will range from satisfaction with the program and speakers to impacts made, knowledge gained, etc.

I am requesting copies of any surveys, questionnaires, focus group questions, etc. for your most current master gardener trainings. These can be pre, during or post evaluations. The evaluation questions or survey tool is all that is needed. We do not have a need for collected results at this time.

You can respond to me directly, srutherford@vt.edu, or, you can upload files to this Google Drive folder. Please indicate in your email, or indicate within your files, the most recent year the evaluation was used, the county/city you work or volunteer in as an MG coordinator, your name, and if the training was in-person only, hybrid (mix of in-person and virtual), or virtual. I would like to have all documents submitted via email or Google Drive by Friday, September 10th 2021.

Finally, if you have any anecdotal notes to add on the failures or successes of training programs conducted since January of 2020, please include those if you feel so inclined.

Feel free to reach out to me with any questions or concerns, and I thank you in advance for helping the program team and myself through this collection effort!

Sincerely,
Sara Rutherford