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Online Education Saves Master Gardeners Time and Money

Abstract

An online Advanced Learning Series was developed to provide opportunities for current Master Gardener Volunteers to obtain required annual education hours during the pandemic. A secondary purpose was to increase the outreach capacity of the local Extension office. The learning series was developed and presented by the State MG Coordinator and numerous MSU Extension specialists and provided 17 weekly Zoom classes with presentations and videos. Participants were instructed on advanced horticulture and education topics. Current MGs were emailed a registration link using their state provided MG number. This prevented any non-Master Gardeners from obtaining entry into the learning series. Each session was recorded and placed on a website with controlled access. To assess the impact of the online series, participants were emailed a Qualtrics survey at the end of the series. The results were used to show participant savings and project impacts. With an average round trip of 24.7 miles to the local Extension office, a total of 68,888 miles were not driven and a total of \$4,396.02 was saved in fuel costs. Participants reported a significant increase in knowledge and abilities to answer client questions, and collectively rated the value of the series at \$135,150. The MG Advanced Learning Series was a success as participants received substantial opportunity to obtain required education hours. These one-hour classes allowed MGs the opportunity to get education hours from home, eliminated costly travel time to the local Extension office, and saved travel costs.

Introduction

Extension offices across the country rely on Master Gardener Volunteers (MGV) to help disseminate home horticulture information to clientele. These MGVs typically have annual service hour and education hour requirements to maintain an 'Active' MG status (EMG, 2023). The annual minimum requirements in Mississippi are 20 service hours and 12 education hours (Wilson, 2022). MGs traditionally obtained these education hours by attending in-person events such as lectures, presentations, and demonstrations. However, during the Covid-19 pandemic there were limited opportunities for in-person education.

The response from Mississippi State University Extension was to provide weekly online educational classes. Zoom was the medium of choice as it was fully supported by the on-campus Center for Technology Outreach. These one-hour classes allowed MGs the opportunity to get education hours from home, eliminated costly travel time to the local Extension office, saved travel costs, and provided current MGs an opportunity to obtain the required educational hours.

To assess the impact of the online series, participants were surveyed for miles traveled, years as a MG, if there was an increase in knowledge, if there was an increase in ability to field questions, and other variables related to the series. The results were used to show participant savings and project impacts, as done in previous studies (Particka et al., 2018).

Materials and Methods

Weekly educational online zoom classes, known as the Advanced Learning Series, were presented over a 17-week period from April through July of 2020. Eleven specialists and agents teamed up to cover numerous horticulture and education topics of interest to MGVs (Table 1). The series was planned and managed by the State MG Coordinator.

Current MGs in Mississippi were emailed a registration link using their state provided MG number. This prevented any non-Master Gardeners from obtaining entry into the learning series. Each of the 17 weekly sessions were recorded and placed on a website with controlled access. Any MG who missed a session could log onto the site using their state issued MG number and password and view the class.

Participants completed an online Qualtrics evaluation at the end of the series. The evaluations asked:

- How many miles do you travel to reach your county Extension office?
- How many years have you been a Mississippi MG?
- What is your gender?
- What is your age bracket?
- As a result of watching these trainings, I increased my knowledge in home horticulture (agreement scale)
- As a result of watching these trainings, I increased my ability to field horticulture questions (agreement scale)
- How do you rate the value of each training offered?

The system also recorded the number of sessions attended by each participant.

Results

In 2020, 747 MGs in Mississippi reported a total of 18,511 education hours with a value of \$470,135. Total volunteer hours reported were 47,616 with a value of \$1,210,873 and a Full Time Equivalent of 23 employees (Wilson, 2020).

Of the 747 MGs that reported volunteer hours in 2020, 268 watched at least one of the 17 Advanced Learning Series sessions. MGs from 43 of 54 counties with a MG group participated. Forty-five MGs (17%) watched all 17 sessions, 144 MGs (54%) watched at least 10 of the 17 sessions, which totaled 79% of all sessions (Table 1). The 268 MGs watched a total of 2,789 sessions. The overall mean for the number of sessions watched by MGs was 9.56.

Table 1. Title of classes and number of attendees for each.

<u>Class Title</u>	<u>Number of Attendees</u>
Statewide Program Update	160
Blackberry Production	177
Interior Plant Scaping	195
Tomato Diseases	161
Weed Management	140
Sub-irrigated Containers	108
Vegetable Insect Control	172
Passion Flowers and Passion Fruit	275
Attracting Bees and Butterflies	145
Filming and Editing Social Media Videos	165
Understanding GMOs	144
All American Selection Winners	171
Cucurbit Diseases	156
Understanding Soil Testing	186
Designing Smart Landscapes	148
Gardening With Special Needs Groups	153
Virtual Botanical Garden Tours	133
Total	2789 or 164 per class

One benefit for delivering education online is the reduction or elimination of costly travel expenses (Allred and Smallidge, 2010). 78% of the MG participants drive 15 miles or less in one direction to the local Extension office and 22% drive 20 or more miles. The mean miles driven one way to the local MSU Extension office was 12.33 miles or 24.7 miles round trip. With 2,789 total programs watched, a total of 68,888 miles were not driven due to the sessions being online.

Average fuel costs in Mississippi during the 17 week learning series was \$1.64 per gallon (GasBuddy, 2021). The average vehicle mpg for 2020 was 25.7 (Energy.gov, 2021). A total of \$4,396.02 was saved in fuel costs by not having to drive to local Extension offices to attend classes (Table 2).

Table 2. Fuel and miles saved by not driving

Miles Not Driven	Gallons Saved	\$\$ Fuel Saved
68,888	2680.5	4,396.02

Other series evaluation responses included the following:

- How many years have you been a Mississippi MG?
 - 57% been a MG less than 5 years
 - 22% 6 to 10 years
 - 14% 11 to 15 years
 - 2% with 21 years or more
- What is your gender? (85% male and 15% female)
- What is your age bracket? (90% at least 60 years of age)
- As a result of watching these trainings, I increased my knowledge in home horticulture (95% strongly agree or agree)
- As a result of watching these trainings, I increased my ability to field horticulture questions (81% strongly agree or agree)
- How do you rate the value of each training offered?
 - 35% responded \$20 or less
 - 30% responded \$30
 - 35% responded \$40+
 - The total rated value per training was \$7,950, for a total rated value for the series of \$135,150.

Discussion

Challenges arose throughout the learning series. Many MGs were not familiar with online learning and had to be educated on connecting and using the Zoom format. Learning to use the 'Chat' feature was also an issue in the first few classes. Another challenge was that not all areas of the state had adequate internet service, which eliminated some MGs from being able to attend the sessions on the day they were presented. Severe weather on two separate occasions prevented some MGs from viewing that day's session live. These challenges were addressed by providing the recorded sessions on the private link, which allowed those MGs who missed the live session an opportunity to view the class.

After seeing the success of this online series, other faculty members and agents provided educational trainings in 2021 and 2022. With much more content being

available online during these two years, the Advanced Learning Series was not offered by the State Master Gardener Coordinator. In 2023, monthly Horticulture Hour zoom sessions are being offered to supplement in-person educational opportunities available to current MGs. These one-hour sessions allow participants to obtain required education hours while saving time and money by not having them drive to local Extension offices.

Conclusions

The MG Advanced Learning Series in Mississippi was a success by all measures. Participants received substantial opportunity to obtain required education hours. A substantial majority of attendees reported increased knowledge because of these classes and shows classes were taught at the appropriate audience level. The precautions taken to provide these classes by distance allowed volunteers to learn in a safe environment from the potential spread of Covid-19. This in turn saved time and money by not having volunteers drive to attend educational programs. MGs also quickly learned how to utilize online trainings, as this was new to many at the time. Online learning series can easily be duplicated by others throughout the country if internet service is available.

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