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The Effects of Florida Master Gardener Characteristics and Motivations on Program Participation

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Abstract: Master Gardeners are very important in helping Extension deliver horticultural information to local citizens. The theoretical framework of the study reported here was based on Houle's Typology. The purpose was to develop an understanding of adult motivations to participate in the Florida Master Gardener program. The sampled population was 613 adult Master Gardeners, with a total response rate of 86.78%. Participants felt a Competence-related Curiosity had "much influence" on their participation in Master Gardeners. Developing an understanding of adult motivational orientations will assist practitioners to alter the program to best meet the needs of Master Gardener participants.

Introduction

Extension is employing volunteers to represent the university and assist the public through education (Bobbitt, 1997). Extension agents need to develop an understanding of what motivates volunteers in order to effectively recruit, educate, and retain them (Boyd, 2004). Master Gardeners (MGs) can become strong advocates for Extension because of their enhanced horticulture educational knowledge skill set (Relf & McDaniel, 1994).

MGs provide people, time, and organizational expertise as volunteer educators for local program coordinators (Meyer, 1997). Florida MGs donate a minimum of 75 volunteer hours annually to Extension. More rigorous research is needed to learn why adults continuously participate in the Master Gardener (MG) program (Kirsch & VanDerZanden, 2002; Peronto & Murphy, 2009). Extension should utilize more MG volunteers in order to maximize the outreach of organizational objectives (Schrock, 1999; Swackhamer & Kiernan, 2005).

Theoretical Framework

Houle (1961) identified three separate learning taxonomies for adults that identify why adults are motivated to participate in educational programs. Learning-oriented adults primarily participate in educational programs for a desired need to learn new information. Adults who are goal-oriented participate to address an objective as identified by themselves, a separate individual, or an organization. Activity-oriented adults participate in educational programs in order to improve social contact or meet a new acquaintance. No particular motivational orientation is more advantageous than another (Houle, 1961).

Developing an understanding of which learning classification (learning, goal, and activity) motivates adults is advantageous in leading effective adult education (Houle, 1961). Houle said older adults participate in continued learning more than younger adults. Houle postulated that individuals possessing formal education are more apt to participate in educational programs. Adults with higher incomes are also more likely to participate continued learning experiences (Houle, 1961).

Purpose and Objectives

The purpose of the study reported here was to develop a better understanding of adult participation in the Florida Master Gardener program. The primary objectives were to:

1. Describe participant motivational orientations in the Florida Master Gardener program.

2. Determine if significant differences exist between motivational orientations based on participant demographics.

Methodology

The study reported here was part of a larger study to develop an understanding of adult participation in MG. The findings presented in this article are focused on the motivational orientations of Florida MGs. The researchers utilized stratified random sampling to select the population of participants from the Florida MG program. The portion of the study reported here focused on motivational orientations of Florida MGs. In Florida, there are approximately 3,822 active adult Master Gardeners who serve 58 of the Florida's 67 counties.

According to Cochran (1977), a sample size of 362 usable surveys was required for a confidence interval of +/- 5 when *N* = 3,822. Bartlett, Kotrlik, and Higgins (2001) said response rates in recent literature are utilized to determine the potential response rate for future research involving a mail survey with a similar population. For mail surveys, 5 to 10 % should be added to the total sample size in order to account for incorrect participant mailing addresses, participants who may have recently passed away, and for questionnaires with incomplete participant responses (Babbie, 2007; Salkind, 1997). The response rate was anticipated to be between 62 and 68% based on response rates in previous research utilizing a mail survey with Master Gardeners (Schrock, 1999; Sutton, 2006).The sample size was 613 MG participants (362 usable surveys Ã· 65% average response rate Ã 10% = a sample size of 613). A stratified random sampling of 613 MGs from the five Extension districts was selected.

The questionnaire included 41 statements from Mergener's (1979) Education Participation Scale (M-EPS) and five questions associated with demographic characteristics. The M-EPS was derived from Boshier's (1971) Education Participation Scale, which was derived from Houle's (1961) Typology. The constructs

within the M-EPS were Competence-related Curiosity, Interpersonal Relations, Community Service, Escape from Routine, Professional Advancement, and External Influence. The Competence-related Curiosity construct aligned with Houle's learning-oriented adults. The Interpersonal Relations and Community Service constructs aligned with Houle's activity-oriented adults. The Escape from Routine, Professional Advancement, and External Influence constructs aligned with Houle's goal-oriented adults. Variables on the M-EPS were measured on a five-point scale: 5 = *very much influence*, 4 = *much influence*, 3 = *moderate influence*, 2 = *little influence*, 1 = *very little influence* (Mergener). Reliability of the M-EPS was calculated *ex post facto* at .93.

The researchers utilized the methods outlined by Dillman, Smyth, and Christian (2009) to increase response rate from participants when instituting a mail questionnaire. The data collection instrument was a booklet layout mailed to the sampled population. Six hundred thirteen participants were surveyed, and 532 participants returned their completed survey to the researchers, for an 86.78% response rate. Early and late respondents were compared, and no significant differences existed. Therefore the results may be generalized to the target population (Lindner, Murphy, & Briers, 2001).

Respondents were homogenous. The majority of respondents were white (n = 488, 92.07%) women (n = 387, 73.01%). Due to the shortage of Florida MG participants of races other than white, the researchers did not include the findings from race and motivational orientations. Seventy percent of respondents were 56 years of age or older. Also, 79% of respondents had obtained at least an Associate's Degree. Eighty-five percent of respondents' annual income was at least $25,000. Effect sizes are explained as d for a t-test and $\hat{I}\cdot\hat{A}^2$ for ANOVA's (Babbie, 2007).

Findings

The first objective was to describe the motivational orientation for adults participating in the Master Gardener program. Motivational orientations were: (a) Competence-related Curiosity, (b) Interpersonal Relations, (c) Community Service, (d) Professional Advancement, (e) Compliance with External Influences, and (f) Escape from Routine. Competence-related Curiosity was perceived to have much influence (M = 4.35, SD = .63) on adult participation in MG. Community Service was perceived to have moderate influence (M = 3.22, SD = .97), and Interpersonal Relations was perceived to have little influence (M = 2.74, SD = .79). Escape from Routine (M = 1.87, SD = .90), External Influence (M = 1.32, SD = .63), and Professional Advancement (M = 1.20, SD = .53) were perceived to have no influence on adult participation. Table 1 illustrates the descriptive statistics for the construct items of the M-EPS.

Table 1.
Descriptive Statistics for Item Constructs of the M-EPS

Construct and Item	***N***	***M***	***SD***
Competence related Curiosity			
To Feed an Appetite for Knowledge	530	4.48	.75
To Satisfy Intellectual Curiosity	530	4.47	.82
To Satisfy an Inquiring Mind	530	4.42	.79
To Obtain Practical Benefit	530	4.37	.92
To Seek Knowledge for its Own Sake	530	4.01	1.14

Community Service			
To Be a More Effective Citizen	530	3.58	1.23
To Improve My Community Work	530	3.55	1.22
To Improve My Ability to Serve Mankind	530	3.51	1.24
To Prepare for Community Service	530	3.25	1.33
To Gain Insight into Human Relationships	530	2.26	1.25
Interpersonal Relations			
To Respond to the Fact that I am Surrounded by People Who Continue to Learn	530	3.70	1.23
To Share a Common Interest with Someone Else	530	3.64	1.23
To Participate in Group Activities	530	3.16	1.24
To Become Acquainted with Congenial People	530	3.02	1.21
To Fulfill a Need for Personal Associations	530	2.57	1.24
To Take Part in an Activity Which is Customary in the Circles in Which I Move	530	2.15	1.17
To Improve Social Relationships	530	2.04	1.25
To be Accepted by Others	530	1.77	1.05
To Comply with the Fact that People with Status and Attend Adult Education Classes	530	1.68	1.05
To Maintain or Improve My Social Position	530	1.32	.73
Escape from Routine			
To Provide a Contrast to the Rest of My Life	530	2.21	1.19
To Get a Break from Routine of Home or Work	530	1.93	1.15
To Have a Few Hours Away from Responsibilities	530	1.66	1.08
To Gain Relief from Boredom	530	1.66	1.07
External Influence			
To Comply with Recommendations from Someone Else	530	1.47	.95
To Carry Out the Recommendations from Some Authority	530	1.37	.88
To Fulfill My Professional Obligation	530	1.26	.76
To Fulfill Requirements of a Government Agency	530	1.16	.62
Professional Advancement			
To Secure Professional Advancement	530	1.27	.74

To Give Me Higher Status on the Job	530	1.20	.70
To Comply with My Employer's Policy	530	1.13	.59
Note. Scale*:* 5 = *very much influence*, 4 = *much influence*, 3 = *moderate influence*, 2 = *little influence*, 1 = *no influence.*			

There was a significant difference in respondents' motivational orientations by gender. There was a significant difference for the Competence-related Curiosity construct by gender, t (529) = -3.69, $p < .05$, with women having significantly higher means than men. The effect size was small ($d = .38$). There was a significant difference for gender, t (529) = 2.70, $p < .05$, with men ($M = 1.46$, $SD = .79$) receiving higher means than women ($M = 1.27$, $SD = .56$) for External Influence. The effect size was small ($d = .28$). There was a significant effect for gender, t (529) = 1.70, $p < .05$, with men ($M = 1.27$, $SD = .57$) having higher means than women ($M = 1.18$, $SD = .52$) for Professional Advancement. The effect size was small ($d = .17$). There were no other significant differences between respondents' motivational orientations by gender (Table 2).

Table 2.
Independent Samples t-test for Gender and Motivational Orientations

Constructs	***N***	***M***	***SD***	***t***	***p***
Competence related Curiosity					
Male	143	4.17	.71	-3.69**	.00
Female	387	4.42	.59		
Community Service					
Male	143	3.14	1.00	-1.33	.19
Female	386	3.26	.95		
Interpersonal Relations					
Male	143	2.73	.82	-.21	.84
Female	386	2.75	.79		
Escape from Routine					
Male	143	1.91	.87	.62	.36
Female	387	1.91	.91		
External Influence					
Male	142	1.46	.79	2.70*	.01
Female	386	1.27	.56		
Professional Advancement					
Male	143	1.27	.57	1.70*	.02

Female	386	1.18	.52		
Note: *$p < .05$. **$p < .01$.					

A shortage of ethnically diverse respondents outside of the "white" classification existed. Therefore, a non-white classification was constructed that included all respondents who had selected any race except "white." There was a significant difference in race, t (525) = -2.80, $p < .05$, with non-whites (M = 3.63, SD = .92) having higher means than whites (M = 3.20, SD = .95) for Community Service. There was a medium effect size (d = .46). There was a significant difference in race, t (5, 461) = 7.17, $p < .05$, with non-whites (M = 1.58, SD = .75) having higher means than whites (M = 1.30, SD = .62) for External Influence (Table 3). The effect size was medium (d = .41). There were no other significant differences between race and motivational orientations.

Table 3.
Independent Samples t-test for Race and Motivational Orientations

	n	***M***	***SD***	***F***	***p***
Competence related Curiosity					
White	488	4.36	.63	.33	.57
Non-white	40	4.30	.65		
Community Service					
White	488	3.20	.95	-2.80**	.00
Non-white	40	3.63	.92		
Interpersonal Relations					
White	488	2.74	.79.	-.61	.55
Non-white	40	2.82	.85		
Escape from Routine					
White	488	1.87	.90	.24	.81
Non-white	40	1.84	.92		
External Influence					
White	488	1.30	.62	-2.28*	.03
Non-white	40	1.58	.75		
Professional Advancement					
White	488	1.19	.53	-1.69	.10
Non-white	40	1.35	.57		
Note: *$p < .05$. **$p < .01$.					

Respondents significantly differed in their motivational orientations by age (Table 4). Due to a small number of respondents in the age 18 â 35 years old and the 36 â 45 years old categories, both groups were merged to create the 18 â 45 years old category. There was a significant difference for Competence-related Curiosity by age, F (3, 524) = 3.81, ($p < .05$). The effect size was negligible ($\hat{I}\cdot\hat{A}^2 = .02$). Age accounted for 2% of the variance in Competence-related Curiosity as a motivational orientation. Tukey's post hoc analysis was conducted to determine if differences existed according to age. There was a significant difference ($p < .05$) from respondents who were 56 â 65 years old ($M = 4.45$, $SD = .54$) and who were age 66 or over ($M = 4.27$, SD = .66).

There was a significant difference in age, F (3, 523) = 2.93, $p < .05$, for Community Service. The effect size was negligible ($\hat{I}\cdot\hat{A}^2 = .17$). Age accounts for 1.70% of the variance in Community Service as a motivational orientation. There was a significant difference ($p < .05$) from respondents who were 46 â 56 years old ($M = 2.96$, $SD = .95$) and those who were 56 â 65 years old ($M = 3.30$, $SD = .92$). There was a significant difference ($p < .05$) from respondents who were 46 â 56 years old ($M = 2.96$, $SD = .95$) and those who were age 66 or over ($M = 3.29$, $SD = .97$).

There was a significant difference in age, F (3, 523) = 6.95, $p < .05$, for Interpersonal Relations. The effect size was negligible ($\hat{I}\cdot\hat{A}^2 = .38$). Age accounts for 3.80% of the variance in Interpersonal Relations as a motivational orientation. There was a significant difference ($p < .05$) from respondents who were 46 â 56 years old ($M = 2.40$, $SD = .76$) and those who were ages 56 â 65 ($M = 2.82$, $SD = .77$). There was a significant difference ($p < .05$) from respondents who were 46 â 56 years old ($M = 2.40$, $SD = .76$) and those who were age 66 or over ($M = 2.82$, $SD = .78$).

There was a significant difference in age, F (3, 524) = 4.15, $p < .05$, for External Influence. The effect size was negligible ($\hat{I}\cdot\hat{A}^2 = .23$). Age accounts for 2.30% of the variance in External Influence as a motivational orientation. There was a significant difference ($p < .05$) from respondents who were 56 â 65 years old ($M = 1.24$, $SD = .50$) and those who were ages 66 or over ($M = 1.41$, SD = .75). There was a significant difference in age, F (3, 523) = 3.65, $p < .05$, for Professional Advancement. The effect size was negligible ($\hat{I}\cdot\hat{A}^2 = .20$). Age accounted for 2.00% of the variance in Professional Advancement as a motivational orientation. Tukey's post hoc analysis was conducted to determine if differences existed according to age. There were no significant differences.

Table 4.
Analysis of Variance for Age and Motivational Orientations

Learning Orientations	***n***	***M***	***SD***	***F***	***p***
Competence related Curiosity					
18 â 45 years old	20	4.15	.74	3.81*	.01
46 â 55 years old	87	4.43	.66		
56 â 65 years old	186	4.45	.54		
66 years old and over	235	4.27	.66		
Community Service					
18 â 45 years old	20	3.16	1.07	2.93*	.03

46 â 55 years old	87	2.96	.95		
56 â 65 years old	186	3.30	.92		
66 years old and over	235	3.29	.97		
Interpersonal Relations					
18 â 45 years old	20	2.72	.90	6.95**	.00
46 â 55 years old	87	2.40	.76		
56 â 65 years old	186	2.82	.77		
66 years old and over	235	2.82	.78		
Escape from Routine					
18 â 45 years old	20	2.06	1.07	.66	.58
46 â 55 years old	87	1.88	.95		
56 â 65 years old	186	1.81	.83		
66 years old and over	235	1.90	.92		
External Influence					
18 â 45 years old	20	1.49	.75	4.15*	.01
46 â 55 years old	87	1.21	.46		
56 â 65 years old	186	1.24	.50		
66 years old and over	235	1.41	.75		
Professional Advancement					
18 â 45 years old	20	1.45	.74	3.65*	.01
46 â 55 years old	87	1.31	.74		
56 â 65 years old	186	1.14	.38		
66 years old and over	235	1.20	.53		
Note: $*p < .05$. $**p < .01$.					

There was a significant difference in education F (4, 521) = 6.10, $p < .05$, for External Influence (Table 5). The effect size was medium ($\hat{I}\cdot\hat{A}^2 = .44$). Education accounts for 4.40% of the variance in External Influence as a motivational orientation. Tukey's post hoc analysis was conducted to determine if differences existed in education levels. There were no significant differences.

Table 5.
Analysis of Variance for Education and Motivational Orientations

Constructs	***n***	***M***	***SD***	***F***	***p***
Competence related Curiosity					
High School Diploma	113	4.30	.66	.65	.63
Associate's Degree	96	4.34	.65		
Bachelor's Degree	162	4.33	.64		
Master's Degree	110	4.41	.56		
Doctoral/Professional Degree	46	4.43	.61		
Community Service					
High School Diploma	113	3.37	.91	.82	.52
Associate's Degree	96	3.19	1.00		
Bachelor's Degree	162	3.21	.96		
Master's Degree	110	3.15	.96		
Doctoral/Professional Degree	46	3.24	.98		
Interpersonal Relations					
High School Diploma	113	2.86	.85	1.95	.10
Associate's Degree	96	2.83	.83		
Bachelor's Degree	162	2.70	.73		
Master's Degree	110	2.74	.76		
Doctoral/Professional Degree	46	2.52	.77		
Escape from Routine					
High School Diploma	113	1.02	.96	.79	.53
Associate's Degree	96	1.88	.92		
Bachelor's Degree	162	1.82	.81		
Master's Degree	110	1.83	.89		
Doctoral/Professional Degree	46	1.82	.86		
External Influence					
High School Diploma	113	1.56	.88	6.10*	.00
Associate's Degree	96	1.33	.67		
Bachelor's Degree	162	1.26	.54		
Master's Degree	110	1.20	.38		
Doctoral/Professional Degree	46	1.21	.43		

Professional Advancement					
High School Diploma	113	1.33	.73	2.16	.07
Associate's Degree	96	1.19	.52		
Bachelor's Degree	162	1.19	.47		
Master's Degree	110	1.15	.42		
Doctoral/Professional Degree	46	1.12	.41		
Note: $*p < .01$.					

There was a significant difference in income, F (5, 460) = 4.25, $p < .05$, for External Influence (Table 6). The effect size was negligible ($\hat{I}\cdot\hat{A}^2 = .44$). Income accounted for 4.40% of the variance in External Influence as a motivational orientation. Tukey's post hoc analysis was conducted to determine if differences existed according to income levels. There were no significant differences.

There was a significant difference in income, F (5, 461) = 3.01, $p < .05$, for Professional Advancement. The effect size was negligible ($\hat{I}\cdot\hat{A}^2 = .32$). Income accounted for 3.20% of the variance in Professional Advancement as a motivational orientation. There were no other significant differences between income levels and motivational orientations.

Table 6.
Analysis of Variance for Income and Motivational Orientations

Constructs	***n***	***M***	***SD***	***F***	***p***
Competence related Curiosity					
24,999 or less	71	4.38	.74	1.94	.09
25,000 â 49,999	142	4.29	.64		
50,000 â 74,999	117	4.35	.64		
75,000 â 99,999	65	4.49	.52		
100,000 or more	73	4.50	.52		
Community Service					
24,999 or less	71	3.24	.92	.78	.56
25,000 â 49,999	142	3.28	.99		
50,000 â 74,999	117	3.26	.92		
75,000 â 99,999	65	3.41	.97		
100,000 or more	73	3.14	.98		
Interpersonal Relations					

24,999 or less	71	2.81	.77	.97	.44
25,000 â 49,999	142	2.86	.87		
50,000 â 74,999	117	2.70	.75		
75,000 â 99,999	65	2.79	.77		
100,000 or more	73	2.75	.77.75		
Escape from Routine					
24,999 or less	71	1.93	.95	.48	.79
25,000 â 49,999	142	2.00	1.01		
50,000 â 74,999	117	1.85	.79		
75,000 â 99,999	65	1.90	1.00		
100,000 or more	73	1.88	.88		
External Influence					
24,999 or less	71	1.42	.72	4.25**	.00
25,000 â 49,999	142	1.49	.79		
50,000 â 74,999	117	1.25	.53		
75,000 â 99,999	65	1.14	.56		
100,000 or more	73	1.14	.33		
Professional Advancement					
24,999 or less	71	1.24	.64	3.01*	.01
25,000 â 49,999	142	1.33	.64		
50,000 â 74,999	117	1.17	.49		
75,000 â 99,999	65	1.14	.49		
100,000 or more	73	1.05	.21		
Note: $p < .05$. ** $p < .01$.					

Conclusions

Respondents indicated a Competence-related Curiosity had "much influence" on their participation in MG. The Community Service construct had "moderate influence" on adult participation. Respondents indicated the Interpersonal Relations construct had "little influence" on their participation. The Escape from Routine, External Influence, and Professional Advancement constructs had "no influence" on their participation.

Women were more apt to participate in the MG program for Competence-related Curiosity than men. Men were more interested in participating in the MG program due to External Influence and Professional

Advancement than women. Non-whites were more likely to participate for the purpose of serving the community and due to an External Influence than whites.

Respondents significantly differed in their motivational orientations by age. Adults age 56 â 65 were more motivated to participate in MG for the Competence-related Curiosity construct than respondents ages 66 and over. This indicates the 56 â 65 years old group was more learning oriented than those 66 and over. Respondents between ages 46 â 55 years old were more apt to participate in MG for Community Service and Interpersonal Relations than adults 56 and over. Older respondents were less activity-oriented as a motivation to participate in Florida MG.

Other significant differences existed among demographic characteristics and motivational orientations. There were significant differences in education, income, and race for External Influence. Respondents with a High School Diploma were more motivated by Professional Advancement and an External Influence to participate than other adults. Individuals earning $25,000 â 49,999 annually were more motivated to participate due to Professional Advancement and External Influence than other respondents. This group of adults participated in Florida MG for the vocational experience in order to enhance current incomes.

Implications

In the study reported here, the Competence-related Curiosity construct had the highest means for Florida MGs and had "much influence" on participation. Competence-related Curiosity was associated with Houle's (1961) learning-oriented group. Respondents in the study participated in MG to fulfill a desire to learn and believed continued learning is an experience that is personally enjoyable.

Community service, associated with the goal-oriented orientation, was found to have "moderate influence" on participation in Florida MG. Goal-oriented adults participate in continued learning in order to meet a personal goal (Houle, 1961). Professional development was found to have "no influence" on participation. Seventy percent of respondents were ages 56 or over. This would account for Professional Development having "no influence" on MG participation as probably most respondents were contemplating retirement.

Results from MG participation by gender have implications for Houle's (1961) Typology. Women were more learning-oriented than men, and this finding is key due to the vast majority (73.01%) of MG participants being women. Findings from the study add to Houle's (1961) findings in that men were more goal-oriented than women due to men being more motivated to participate by Professional Advancement or External Influence.

The study's findings support Houle's (1961) research suggesting older adults participate in educational programs more than younger individuals. The younger adults were more activity-oriented than the older adults. This finding contradicts Houle's (1961) research in that older adults are typically more activity-oriented, seeking social stimulation. Seventy-nine percent of respondents had obtained at minimum an Associate's Degree. This facet aligns with Houle's (1961) findings that adults who had earned formal education were more likely to participate in continued learning opportunities.

Recommendations

The study reported here addressed the recommendation by Kirsch and VanDerZanden (2002) to identify adult motives to participate in the Florida MG program. The M-EPS includes six motivational orientations that may be used to explain why adults participate in the Florida MG program. Other state programs should assess why adults participate as volunteer educators in MG due to the benefit (Schrock, 1999) provided to the

land-grant institution. The results of a comprehensive study on the effect of demographic characteristics (gender, race, age, education, and income) and motivational orientations on MG tenure would be beneficial in order to attract new volunteer educators, predict MG tenure, and to serve participant needs based upon motivational orientations as outlined by Houle (1961).

MGs were homophilic to MG coordinators. Researchers should examine the relationship between the local MG coordinator and adult participants in the program. Specifically, the facets of agent and client homophily and heterophily on program participation should be studied. This would inform researchers and practitioners if Rogers' (2003) findings of change agent and client homophily and heterophily are present in the Florida Master Gardener program and may explain another facet to adult participation.

If the Florida MG program seeks to include participants with more demographic diversity, then steps will need to be incorporated to promote the inclusion of adults with characteristics dissimilar from those that emerged from this study. Specific demographic data for each Florida county should be considered when the local MG coordinator promotes and plans their program. The researchers admit time requirements of an adult to be a MG may not be possible for all adults. Nonetheless, the attempts to market MG to a broader audience should be researched in order for Extension to broaden its fleet of volunteer educators (Swackhamer & Kiernan, 2005). The Florida MG program should strive to identify, recruit, and train a more ethnically diverse group of adults as volunteer educators for MG.

Extension agents who serve as MG Coordinators can use the study reported here to understand what does and does not motivate adults to participate in the Florida MG Program. Houle (1961) said none of the motivational orientations are better than another, but practitioners should understand the differences in motivational orientations in order to meet the educational needs of adults. This facet would provide flexibility to the program and may make it more diverse and inclusive.

Promotional techniques can be altered to increase initial continued participation from adults primarily interested in learning. Adults who are mainly interested in learning and sharing horticulture-related subject matter may be more tempted to remain involved if opportunities to learn from a specialist were provided. This learning experience could provide adults more detailed horticultural knowledge in order to enhance learning and help retain adults in the program, as recommended by Boyd (2004), to educate the local communities.

References

Babbie, E. (2007). *The practice of social research* (11th ed.). Belmont, CA: Wadsworth.

Bartlett II, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology, Learning and Performance Journal,* 19(1), 43-50.

Bobbitt, V. (1997). The Washington State University Master Gardener program: Cultivating plants, people, and communities for 25 years. *HortTechnology,* 7(4), 345-347.

Boshier, R. (1971). Motivational orientations of adult education participants: A factor analytic exploration of Houle's typology. *Adult Education Journal,* 21(2), 3-26.

Boyd, B. L. (2004). Extension agents as administrators of volunteers: Competencies needed for the future. *Journal of Extension* [On-line], 42(4) Article 2FEA4. Available at: http://www.joe.org/joe/2004april/a4.php

Cochran, W. G. (1977). *Sampling techniques* (3rd ed.). New York, NY: JohnWiley & Sons.

Dillman, D. A., Smyth, J. D., & Christian, L. M. (2009). *Internet, mail and mixed-mode surveys: The Tailored Design Method* (3rd ed.). New York, NY: John Wiley & Sons.

Houle, C. O. (1961). *The inquiring mind*. Madison, WI: University of Wisconsin Press.

Kirsch, E., & VanDerZanden, A. M. (2002). Demographics and volunteer experiences of Oregon Master Gardeners. *HortTechnology,* 12(3), 505-508.

Lindner, J. R., Murphy, T. H., & Briers, G. E. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education, 42*(4), 43-53.

Mergener, M. A. (1979).The motivational orientations of pharmacists toward continuing education. *Dissertation Abstracts International, 39*(08), 3775B. (UMI No. 7820638)

Meyer, M. H. (1997). Master Gardener projects-making connections. HortTechnology, 7(4), 339-344.

Peronto, M., & Murphy, B. (2009). How Master Gardeners view and apply their training: A preliminary study. *Journal of Extension* [On-line], 47(3) Article 3RIB2. Available at: http://www.joe.org/joe/2009june/rb2.php

Relf, D., & McDaniel, A. (1994). Assessing Master Gardener priorities. *HortTechnology,* 4(2), 181-184.

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York, NY: The Free Press.

Salkind, N. J. (1997). *Exploring research* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Schrock, D. S. (1999). A functional approach to understanding and assessing the motivation and retention of university extension Master Gardener volunteers. *Dissertation Abstracts International*, *59*(12), 6508B. (UMI No. 9913378)

Sutton, E. A. (2006). An evaluation of the Master Gardener program in Arkansas. *Dissertation Abstract International,* 44(05), (UMI No. EP15456)

Swackhamer, E., & Kiernan, N. E. (2005). A multipurpose evaluation strategy for Master Gardener Training Programs. *Journal of Extension* [On-line], 43(6) Article 6FEA4. Available at: http://www.joe.org/joe/2005december/a4.php

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