JOURNAL OF LEADERSHIP EDUCATION

APRIL 2021

RESEARCH MANUSCRIPT

Suzanna Windon, Ph.D.
The Pennsylvania State University

Mariah K. Stollar, M.S.
The Pennsylvania State University

Rama Radhakrishna, Ph.D.
The Pennsylvania State University

ASSESSING LEADERSHIP DEVELOPMENT NEEDS OF 4-H VOLUNTEER LEADERS

Abstract

The purpose of this quantitative study was to investigate Penn State Extension 4-H volunteer leaders' leadership development needs and preferred delivery methods for leadership development. The participants were 147 volunteer leaders who attended Penn State Extension Annual 4-H Leader Forum and filled out the survey. We found that the overall mean score for leadership skills needs among volunteer leaders was 4.33 (SD = .45). Volunteers' overall leadership skills needs do not differ based on volunteer gender, level of education, age, and previous volunteer experience. The preferred delivery methods of leadership development for Penn State Extension 4-H volunteer leaders were workshop and in-service training. Leadership education is critical in advancing volunteers' skills and preparing them to delivery well-developed, state of the art contemporary leadership education programs.

Introduction

The 4-H program, the largest youth development program in the United States, is delivered through Cooperative Extension (National 4-H Council, 2019). The Extension organization has a presence in almost every county of every state to provide research-based education and resources to communities (Rasmussen, 2002). 4-H, like many other volunteer-based organizations, is dependent on the help of others to sustain and reach its organizational goals (Morrison et al., 2019). Additionally, the program relies on adult volunteers, or "leaders," who help teach youth life skills (Smith & Finley 2004). County 4-H Extension educators manage these programs and supervise 4-H volunteer leaders. Due to the efforts of 4-H educators, other paid county Extension staff, and volunteer leaders working together, non-formal educational programming for all youth in each of the counties is thriving.

A major emphasis within the 4-H program is leadership development, which helps youth develop life and leadership skills through non-formal educational programs (Arnold & Gandy, 2019). Because 4-H volunteer leaders are critical to the success of these educational programs (Davis et al., 2018; Hutchins et al., 2002), it is important to understand more about them. A 4-H volunteer leader is an unpaid adult who manages and leads 4-H programming under the supervision of the county 4-H Extension educator. These volunteer leaders assist 4-H Extension educators in running county programming in various ways (Radhakrishna & Ewing, 2011), including managing clubs, teaching educational sessions, running camps, and organizing events for youth. Culp et al. (2007) opined that to maximize volunteer contributions to Extension and fulfill the goals of the Extension program, 4-H youth development professionals should find effective ways to lead and manage volunteer programs. According

to the Land Grant University Presidents and Chancellors, leadership education at both individual and community levels helps communities embrace new and emerging leadership needs (The Council of 1890 Presidents and Chancellors, 2000).

The purpose of this quantitative study was to investigate 4-H volunteer leaders' leadership needs and preferred delivery methods to receive leadership professional development training and information. Also, this study determined whether volunteers' overall leadership skill needs differed based on demographic variables such as gender, level of education, age, and previous volunteer experience.

Conceptual Framework

Leadership Development for 4-H Volunteers. Many researchers have completed empirical studies on leadership development in 4-H and other non-profit organizations. The foci of these studies were on various leadership development topics: leader competencies and skills (Culp et al., 2007; Morrison, 2018; Heck et al., 2009), volunteer leadership development needs (White & Scanga, 2019), leadership styles of volunteers (Rose, 2010), and relationships between the development of volunteer leadership and the skills youth learn in 4-H (Radhakrishna & Ewing, 2011). Consensus from these studies suggest the importance of leadership education as an essential component for the successful development, delivery, and evaluation of volunteer programs (Safrit et al., 2005). Culp et al. (2007) surveyed community volunteers and Extension agents in 12 states to determine the competencies required of volunteer leaders in order to deliver 4-H youth development programs and activities. The authors identified 32 leadership competencies for volunteer leaders and suggested a national curriculum that focused on the following common competencies: communication, organization skills, interpersonal skills, time management, teamwork and facilitation, conflict resolution, ethics, risk management, recruitment, motivation, fundraising, empowerment, needs assessment, club management, evaluation, and recognition (Culp, et al. 2007).

Morrison et. al. (2019) indicated that "programs led by volunteers have a greater impact on communities" (p.1). They defined a volunteer leader as the following:

> …a non-paid individual with a formally defined role within the organization. A volunteer leader takes charge and ownership in coordinating projects and programs that build community assets, meet community needs, and provide volunteers with a positive experience so that they continue their journey of service while helping to carry out the mission of the non-profit organization (p.1).

To measure competencies needed for youth volunteers and their future professional development, Heck et al. (2009) used the 4-H Professional Research, Knowledge and Competencies (PRKC) tool. They found that future volunteer management training should focus on the following competencies: develop and conduct an assessment of volunteer efforts, communicate with stakeholders, develop and conduct organizational and community needs assessments relative to volunteer engagement, gain meaningful input from diverse audiences, develop and conduct community analysis, and apply community development tools and processes in community volunteer work. White and Scanga (2019) utilized Culp's et al. (2006) Volunteer Research and Knowledge Competency (VRKC) Taxonomy and the 4-H youth development's foundational volunteer skills framework to develop a qualitative instrument and codebook. They developed six scales related to leadership development needs for 4-H volunteer leaders: communication skills, organizational skills, 4-H program management, educational design and delivery, positive youth development, and

interpersonal skills. Rose (2010) investigated how 498 adult 4-H volunteer leaders in Oregon perceived the leadership styles of 4-H educators and how those styles related to their sense of empowerment. They found that 4-H volunteer leaders felt a sense of empowerment in their role within the 4-H program. Radhakrishna and Ewing (2011) conducted a descriptive-correlational study of 378 4-H volunteer leaders in Pennsylvania to investigate the relationship between the competencies of 4-H volunteer leaders and the skills that youth learn in 4-H programs. Significant relationships existed between leadership competencies and skills youth learn in 4-H. They concluded that: "when volunteer leaders make kids feel welcome and important to the 4-H program and demonstrate the importance of life skills, then youth learn life skills relative to communications, decision making, goal setting, and relationship building" (p.1). Morrison and Greehaw (2018) conducted a Delphi study with a snowball sample of directors in various non-profit volunteer organizations in Mississippi to identify volunteer leaders' competencies and skills. The authors identified 41 leadership competencies and skills. Twenty panel experts reached consensus on the following nine items: ability to obtain quality volunteers, return rate of volunteers, interactions with other volunteers, communication with general volunteer population, confidence in skills taught, feedback for other volunteers, leader follow-through, observations, and responsiveness of a general volunteer population to react to a leader's call to action.

Other researchers found that volunteers who work with youth require a specific leadership development skill set. Leadership development is critical for youth workers (Bowie & Bronte-Tinkew, 2006). Leadership development for youth leaders is often cited as the area where adolescent programming needs the most attention (Hechinger, 1992, as cited in Astroth, 2002). There have been attempts to develop core competencies necessary for youth workers and leaders, and leadership skills are embedded in these competency lists (Barcelona et al., 2011; Heck et al., 2009). Barcelona et al. (2011) identified and synthesized leadership competencies required of youth workers and parks and recreation professionals under the following major categories: conceptual foundations, professionalism, delivery system, program and event planning, administration and planning, and legal aspects.

Boezeman and Ellemers (2014) found that women volunteered more than men, but men had a greater diversity of type of volunteer organization. Morrison and Greenhaw (2018) recommended investigating whether volunteer demographic variables impact volunteer leadership skills. Hong and Morrow-Howell (2013) recommended exploring potential volunteer needs with volunteer demographic characteristics. In this study, we sought to fill this gap in the literature by determining whether volunteers' overall leadership skill needs differ based on demographic variables such as gender, level of education, age, and previous volunteer experience.

The literature review revealed that education is a necessary component of volunteer administration. Multiple volunteer management models guide effective volunteer programs (Brudney, 1990; Culp et al., 1998; Culp & Bullock, 2017). Deppe and Culp (2001) indicated that 4-H programs often lack a structured volunteer development program. In 2001, Serafino emphasized that volunteer trainings are usually formal and focus on skill development. However, most volunteers receive little formal training. Additionally, they lack on-the-job experiences and informal mentoring from other experienced volunteers (Fletcher, 1987; Jamison, 2003). Previous findings suggest that volunteer education increases volunteer satisfaction, leads to stronger organizational commitment, increases program sustainability, and serves as a powerful tool for recruitment of volunteer leaders (Anderson, 2005; Fahey et al., 2003; Fox et al., 2009).

Developing a volunteer leader training program that will fit the needs of the organization and the volunteer demographics (Connors, 2011; Proctor, 2012; Morrison & Greehaw, 2018) is of paramount importance if youth organizations, such as 4-H,

desire to enhance the leadership capacity of their volunteer leaders. However, Paton et al. (2007) mentioned that existing volunteer leadership training materials available for non-profit and volunteer-based organizations are outdated. There is a need for contemporary leadership training resources that meet the needs of the modern non-profit organization and volunteers.

Leadership Development Delivery Method. Several studies have been conducted on effectiveness of delivery methods in delivering leadership training programs. Kaslon et al. (2005) indicated there is a need for designing effective professional development programs for 4-H volunteer leaders. These professional development programs enhance volunteer leaders' skills and make them more productive (Fox et al., 2009; Kaslon et al., 2005; Rauner, 1980). In 1984, Richard and Verma wrote that the 4-H program is enhanced and improved when 4-H leaders are trained accordingly and take responsibility for program delivery. Fox et al. (2009) investigated the benefits of the 4-H Youth Development Volunteer training and ranked preferred training methods and topics. The results of their study suggested that volunteer leader training motivates participants and also has educational benefits. Moreover, group trainings and electronic communication were identified as the preferred training delivery method.

Kaslon et al. (2005) indicated that the training delivery methods for 4-H volunteer leaders should be diverse. County Extension educators usually provide face-to-face training for volunteer leaders. However, budget limitations, volunteer time constraints, and program expansions require alternate methods of training delivery. They also suggested exploring the use of advanced technology and offering more choices for delivering training. Conklin et al. (2002) indicated that face-to-face approaches are the most frequently used delivery method in Extension trainings. In their study, 90% of participants indicated that they would be willing to participate in distance education, while Seevers et al. (2005) found that workshop sessions, conferences, membership in professional organizations, and professional journals were also considered preferred delivery methods to learn content.

Literature also suggests that 4-H volunteer leaders are comfortable receiving information via internet technologies. For example, scholars found that group training, e-mailed information, small support group, videos, CDs, mail, mentoring, self-guide, web-based training, audio, and webinars delivered through Zoom or online videoconferencing were effective methods for delivering information (Fox et al., 2009, Lobley & Oullette, 2017). Other studies reveal that 4-H volunteers were satisfied with online learning modules delivered as a series of webinars (Oulette, et al., 2014) and professional websites as a useful platform to share resources with Extension volunteers (Langellotto & Dorn, 2016).

Purpose and Research Objectives

This study examined the gaps in the literature related to the lack of studies exploring leadership needs of volunteers based upon demographics and lack of up-to-date training materials for volunteers. Morrison and Greenhaw's (2018) study noted the need to determine if volunteer demographic variables influence volunteer leadership skills. Hong and Morrow-Howell (2013) also recommended assessing if volunteer demographic characteristics affect volunteer leadership skills. In this study, we sought to fill this gap in the literature by determining whether volunteers' overall leadership skill needs differ based on demographic variables such as gender, level of education, age, and previous volunteer experience. Paton et al. (2007) found that volunteer leadership training materials are outdated. Moreover, Penn State Extension State Extension volunteer leaders noted the volunteer leader curriculum had not been revised for over 20 years (Hack, K., Personal communication, October, 2018). There is a need for contemporary leadership training resources that meet the needs of the modern non-profit organization and volunteers.

The purpose of this study was to assess 4-H volunteer leaders' leadership needs and preferred

delivery methods to receive leadership professional development training and information. This study was guided by the following three research objectives:

1. Describe the leadership needs for the 4-H volunteer leader role.
2. Determine whether volunteer leaders' overall leadership skill needs differ based on demographic variables such as gender, level of education, age, and previous volunteer experience.
3. Determine the most desirable delivery method for 4-H volunteer leaders' leadership professional development.

Method

Participants. We collected data at the Penn State Extension Annual 4-H Leader Forum on March 9, 2019 during lunch. We used a descriptive research design for the study, as it helps to describe accurately and systematically the characteristics of the population being studied (Babbie, 2001). It also helps explore relationships (not causation), if any, between the independent and dependent variables (Werisma & Jurs, 2005). We used a non-probability sampling method, which relies on data collection from population members who are conveniently available to participate in a study (Gay, Mills, & Airasian,1996). We did not identify any inclusion criteria prior to the selection of research subjects. We invited all Penn State Extension 4-H volunteer leaders at the annual forum to participate in this study. The university's Behavioral and Social Sciences Review Board approved this study. The overall response rate was 81.7% (N = 149). After removing responses with missing data, the final data set included responses from 147 volunteer leaders.

Measures. A paper and pencil survey method allowed us to address the three research objectives of the study. Specifically, we used a paper and pencil questionnaire to collect data. We developed the "4-H Volunteer Leaders Leadership Skills" scale using four existing instruments (Culp at el., 2007; Radhakrishna & Ewing, 2011; Rose, 2010; White & Scanga, 2019) and researchers' team experience. The final instrument was comprised of 19 items. A panel of seven experts--Extension educators, Extension volunteers, and academic faculty members with expertise in survey methodology--reviewed the instrument for face and content validity. The 4-H Volunteer Leaders Leadership Skills scale measured volunteers' perception of the importance leadership skills using 19 items. To measure the 4-H Volunteer Leaders Leadership Skills construct, we used a 5-point Likert-type scale: 1 (unimportant), 2 (of little importance), 3 (moderately important), 4 (important), 5 (very important). To determine reliability of the instrument, a pilot test was conducted. For the pilot study, we selected 35 Penn State Extension county 4-H volunteers. The response rate for the individuals completing the pilot study was 71 % (n = 25). The Cronbach Alpha reliability coefficient for the newly developed 4-H Volunteer Leaders Leadership Skills scale was .885. In this study, the reliability coefficient of the overall 4-H Volunteer Leaders Leadership Skills scale was .939. The reliability statistics for each scale item are shown in Table 1.

Table 1. ***Reliability Statistics of Volunteer Leadership Development Scale***

Items	Cronbach's Alpha
Communication skills	.939
Planning skills	.937
Trust building skills	.935
Time management skills	.936
Teamwork skills	.936
Teaching skills	.935
Work with diverse audience	.934
Conflict resolution	.936
Ethical decision making	.937
Risk management	.935
Recruitment	.934
Motivation	.935
Fundraising	.934
Applying experiential learning approach	.936
Ability to assess program needs	934
Problem solving skills	.935
Marketing management skills	.934
Club management skills	.936
Recognition skills	.935
Overall	.939

We conducted a principal component analysis with direct oblique rotation (assuming scale items are highly correlated) to identify the factor loadings for the newly developed 19-item scale "4-H Volunteer Leaders Leadership Skills". The scree plot (Figure 1) indicates the point of inflection on the curve. This curve begins to tail off after one factor.

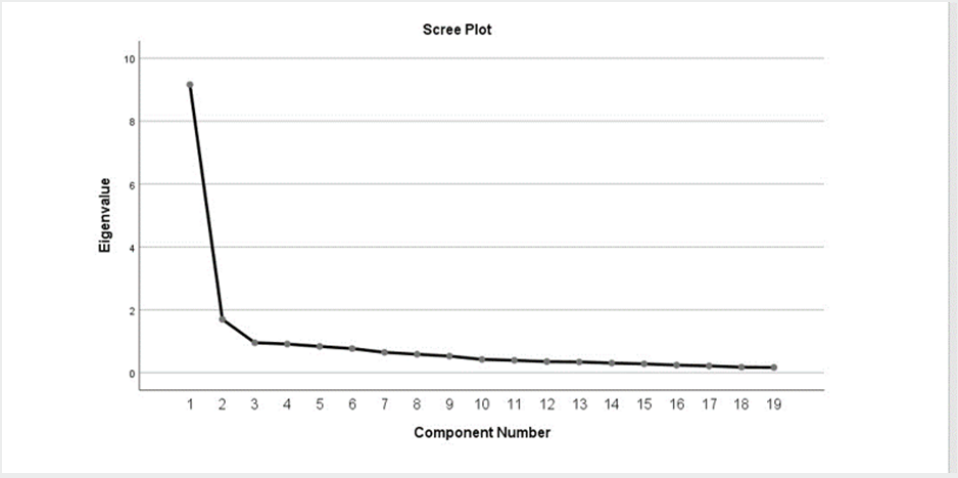

Figure 1. Scree Plot of Component Extraction

The initial principal component analysis yielded one factor, which is presented in Table 2. In other words, the result in Table 2 showed that there are 18 items that were highly loaded onto the same factor (Factor 1), and only one item (communication) was loaded onto Factor 2. The rotated factors accounted for 48.23% of the cumulative variance, and measures of sampling adequacy were found to meet the criteria of .50 as identified by Jolliffe (2011). The Kaiser-Meyer-Olkin statistics of sampling adequacy for these 19 variables was .912, and the Bartlett's Test of Sphericity was 1469.526 with significance of .000.

We compared the rotated matrix with the unrotated solution. The result of the unrotated matrix showed that most variables (18 items) loaded highly onto the first factor, and the remaining one item had a low factor loading. We justified that the newly developed scale is a one-factor model.

Table 2. ***Factor Loadings***

Items	Factor 1	Factor 2
Communication skills	.505	.614
Planning skills	.625	.441
Trust building skills	729	.141
Time management skills	.672	.173
Teamwork skills	.694	.315
Teaching skills	.731	.069
Work with diverse audience	.782	.056
Conflict resolution	.685	.185
Ethical decision making	.598	.400
Risk management	.706	-.145
Recruitment	.737	-.220
Motivation	.716	.098
Fundraising	.751	-.229
Applying experiential learning approach	.668	-.222
Ability to assess program needs	.759	-.374
Problem solving skills	.708	.034
Marketing management skills	.759	-.437
Club management skills	.632	. -044
Recognition skills	.683	. -510

Also, we reviewed multiple studies related to preferred leadership training delivery methods in the Extension organization in the conceptual framework section (Conklin et al., 2002; Fox et al., 2009; Lobley & Oullette, 2017). For the purpose of this study, we identified five delivery methods to measure, namely, one-time in-service training, series of workshops, webinars, online courses, and educational videos. These five delivery methods were measured using a nominal scale of measurement. Respondents were given an option to check Yes or No for each delivery method. Frequencies and percentages were calculated to describe leaders' preferred leadership training methods.

The last section of the survey tool included demographic questions such as age, gender, education, volunteer education outside of Extension organization, and 4-H project area. All the demographic variables were measured using nominal/categorical scale of measurement. See Table 3.

Data analysis. We used the Statistical Package for Social Sciences (SPSS) version 25 to analyze the data. We utilized descriptive statistics to describe research

objectives one and three. For objective two, we used two parametric tests: a one-way ANOVA for ordinal variables and an independent t-test for categorical data to define the mean differences in volunteers' overall leadership skills needed among demographic variables. According to Oliver and Hinkle (1981), parametric tests can be used when a population is treated as a sample especially with the presence of other populations with the same characteristics. Using this justification, the current population serves as a "slice of life" sample of all volunteer leaders in the Penn State Extension who are familiar with 4-H programming and volunteer work within the 4-H program.

The data collected for this study is self-reported from volunteers who were attending a 4-H annual leadership forum. The use of self-reported data has both advantages and disadvantages. Self-reported data are valuable because of a variety of factors: popularity of self-reported measures to collect lots of information, cost effectiveness in terms of both time and money, ability to collect data from large samples either by face-to-face or by mail, and acceptability to use measures when behavioral or psychological measures are difficult to obtain (Hoskins, 2012; Fan et al., 2006; Austin et al., 1998). Researchers are also aware of the disadvantages of self-reported data; for example, respondents may not provide an accurate or honest response. Additionally, they may have difficulty in understanding the question depending on their familiarity with question format, first language, and other issues. To address these, the instrument used in this study was reviewed by panel of experts to make sure that the questions and scales used had both content and face validity. Further, the factor analysis and the post-hoc reliability showed that the instrument has acceptable reliability.

Findings

Demographic data. The participants were Penn State Extension 4-H leaders who participated at the annual Penn State Extension 4-H Leaders' Forum. The final data set included responses from 147 4-H leaders. The descriptive statistics for the demographic variables are presented in Table 3. Most participants were women (86.2%), and 51.4% were in the age group of 35 to 54 years old. An overwhelming majority of volunteer leaders (84.1%) reported volunteer experience outside of Extension organization. Almost one-half of volunteer leaders (48.9%) reported bachelor's and master's degrees as their highest education level.

Research Objective 1. The first research objective was to describe the level of importance volunteer leaders place on the need for leadership skills in completing their work as 4-H volunteer leaders. The overall mean score for leadership skills needs was 4.33 (SD = .45, n = 147). See Table 4. Higher scores indicate greater importance of leadership skills to 4-H volunteer leaders. The items with the highest mean values of importance were (a) Communication skills (M = 4.68 ; SD = .58), (b), followed by Trust building skills (M = 4.61; SD = .60), (c) Teamwork skills (M = 4.60; SD = .52), and (d) Ethical decision making (M = 4.50; SD = .53). Almost all skills were rated either "important" or "very important."

Table 3. ***Summary of Demographic Variables of 4-H Volunteer Leaders***

Items	*n*	%
Age		
< 25	5	3.5
25-34	15	10.6
35-44	29	20.4
45-54	44	31.0
55-64	23	16.2
65-74	13	9.2
75-84	13	9.2
Gender		
Female	125	86.2
Male	20	13.8
Volunteer Experience outside of the Extension organization		
Yes	122	84.1
No	23	15.9
Education		
High school diploma	35	24.1
Some college, no degree	38	26.2
Bachelor's degree	54	37.2
Master's degree	17	11.7
Doctoral degree	1	.7
4-H project area		
Agronomy and natural resources	5	3.4
4-H youth development	109	74.1
Animal systems	37	25.2
Community development	6	4.1
Food, family, and health	23	15.6
Food safety	13	8.8
Horticulture	8	5.4

Table 4. ***4-H Volunteer Leaders Leadership Skills Needs***

Items	*n*	*M*	*SD*
Communication skills	147	4.68	.58
Trust building skills	145	4.61	.60
Planning skills	146	4.60	.53
Teamwork skills	144	4.60	.52
Ethical decision making	143	4.50	.53
Time management skills	145	4.49	.54
Problem solving skills	141	4.45	.58
Club management skills	144	4.43	.58
Motivation skills	143	4.41	.63
Teaching skills	144	4.41	.64
Conflict resolution	144	4.35	.63
Work with diverse audience	145	4.33	.64
Applying experiential learning approach	139	4.31	.68
Recruitment	144	4.22	.72
Risk management	142	4.17	.66
Recognition skills	143	4.15	.72
Ability to assess program needs	137	4.11	.77
Marketing management skills	143	3.99	.82
Fundraising	143	3.89	.90
Overall leadership skills	147	4.33	.45

Note: 1 = unimportant 2 = of little importance, 3 = moderately important, 4 = important, 5 =very important.

Research Objective 2: The second research objective was to determine whether volunteers' overall leadership skills needs differed based on demographic variables such as gender, level of education, age, and previous volunteer experience. A one-way ANOVA was conducted to examine the difference between volunteers' overall leadership skills need and their age and education level (see Tables 5-8). An independent t-test was conducted to determine mean differences on overall leadership skills based on gender and previous volunteer experience outside of Extension organization (See Tables 9-12). No statistically significant difference was found between volunteers' overall leadership skills needs and age groups as demonstrated by the one-way ANOVA test ($F(6,135) = .718$, $p = .636$).

Table 5. ***Descriptive Statistics for Volunteer Leadership Skills Needs by Age***

Variable	*N*	*M*	*SD*	*STD. Error*
Age				
< 25	5	4.35	.40	.179
25-34	15	4.39	.56	.143
35-44	29	4.25	.36	.066
45-54	44	4.35	.47	.071
55-64	23	4.42	.49	.104
65-74	13	4.34	.44	.124
75-84	13	4.18	.37	.105
Total	142	4.34	.45	.038

Table 6. ***Analysis of Variance for Volunteers' Overall Leadership Skills Needs by Age***

Overall Leadership Skills	*Sum of squares*	*df*	*Mean Square*	*F*	*Sig.*
Between groups	.891	6	.149	.718	.636
Within Groups	27.915	135	.207		
Total	28.806	141			

Note: $p < .05$

Table 7. ***Descriptive Statistics for Volunteer Leadership Skills Needs by Education Level***

Variable	*N*	*M*	*SD*	*Std. Error*
High school	53	4.41	.45	.077
Some school	38	4.34	.42	.068
Bachelor's degree	54	4.26	.47	.064
Master's degree	17	4.29	.41	.099
Doctoral degree	1	5.00	-	-
Total	145	4.33	.45	.037

Table 8. ***Analysis of Variance for Volunteer Leadership Skills Needs by Education Level***

Overall Leadership Skills	*Sum of squares*	*df*	*Mean Square*	*F*	*Sig.*
Between groups	.939	4	.235	1.153	.334
Within groups	28.509	140	.204		
Total	29.448	144			

Note: $p < .05$

No statistically significant differences were found between overall leadership skills needs and volunteer's education levels as demonstrated by the one-way ANOVA test (F (3,140) = 1.153, p = .334).

Table 9. ***Descriptive Statistics for Volunteer Leadership Skills Need by Gender***

Overall Leadership Skills	Gender	*N*	*Mean*	*SD*	*Sty. Error mean*
	Male	20	4.31	.51	.115
	Female	125	4.33	.44	.039

Table 10. ***Independent Samples t-Test – Mean Scores of Volunteer Leadership Skills Need Based on Gender Differences***

		Leven's Test for Equality of Variance		*t*	*df*	*Sig. (2-tailed)*
		F	*Sig*			
Overall Leadership Skills	Equal variance assumed	1.664	.199	-.138	143	.890
	Equal variance not assumed			-.123	23.661	.903

Note: p < .05

Based on the data presented in tables 9 and 10, no significant differences were found in the volunteers' overall leadership skills needs for males (M = 4.31, SD = .51) and females (M = 4.33, SD = .44); t (143) = -.138, p = .890.

Table 11. ***Descriptive Statistics for Volunteer Leadership Skills Need by Previous Volunteer Experience***

	Prior volunteer experience	*N*	*Mean*	*SD*	*Sty. Error mean*
Overall Leadership Skills	Yes	122	4.34	.44	.039
	No	23	4.36	.45	.093

Table 12. ***Independent Samples t-Test – Mean Scores of Volunteer Leadership Skills Need Based on Prior Volunteer Experience Differences***

		Leven's Test for Equality of Variance		*t*	*df*	*Sig. (2-tailed)*
		F	*Sig*			
Overall Leadership Skills	Equal variance assumed	.124	.725	-.227	143	.821
	Equal variance not assumed			-.224	30.43	.825

Note: p < .05

There were no statistically significant differences between the volunteers' overall leadership skills needs for the group with prior volunteer experience (M = 4.34, SD = .44) and the group with no prior volunteer experience (M = 4.36, SD = .45); t (143) = -.227, p = .821.

Research Objective 3: The third research objective was to determine the best delivery methods for volunteer trainings for 4-H volunteer leaders at Penn State Extension. Participants were provided five options. Participants were able select more than one option for their preferred volunteer training delivery method. See Table 13.

Table 13. ***Desirable Volunteer Leader Professional Development Delivery Method***

Items	*f*	%
One-time in-service training		
Yes	51	34.7
No	96	65.3
Total	147	100
Series of workshops		
Yes	68	53.7
No	79	46.3
Total	147	100
Webinars		
Yes	22	15.0
No	125	85.0
Total	147	100
Online courses		
Yes	28	19.0
No	119	81.0
Total	147	100
Educational videos		
Yes	22	15.0
No	125	85.0
Total	147	100

Discussion

Casteel (2012) found that 4-H volunteer leaders need specialized training. The results of this study align with Culp's et al., (2006, 2007) studies wherein communication, trust building, teamwork skills, and ethical decision-making were rated as most important leadership development skills by Penn State Extension 4-H youth volunteer leaders. Radhakrishna and Ewing (2011) found that 4-H volunteer leaders need training related to interpersonal leadership and communication skills. Kish et al., (2014) concluded that good communication, honesty, trustworthiness, and collaboration are desirable characteristics of 4-H volunteers. Findings from this study support Fox's et al. (2009) study conclusion that 4 H volunteers were most interested in developing leadership skills.

Few studies beyond the 4-H program examined the relationship between volunteer leader leadership needs and demographic variables. The results of our study partially supported Nestor's et al., (2006) research findings, which examined the relationship between volunteer occupation, level of education, college major, and leadership competencies needed to run 4-H programs. The authors found no significant relationships between level of education and volunteers' leadership competencies. Previous research has shown that 4-H volunteer leaders are more highly educated than volunteers in other

organizations, which should be taken into consideration when developing leadership training materials for volunteers (Nestor et al., 2006). Our findings are similar to Nestor and colleagues' (2006) findings; high school graduates tend to be the most common and doctoral tend to be the least common educational attainment level among volunteers. 4-H volunteers are now better educated than in previous years and better equipped to learn leadership development competencies (Nestor et al., 2006). More studies should be done to investigate the relationship between volunteer demographics and leadership development needs. Studies outside of 4-H do not confirm our study findings. Posner's (2015) study found a correlation between leadership behaviors and demographic variables: gender, level of education, age, and employment status. Posner (2015) also found that leadership styles vary significantly across these demographic variables. Other volunteer practitioners, both within and outside of the 4-H organization, should replicate this study to better determine if these findings should impact the design of future volunteer leader leadership trainings.

We also investigated preferred leadership development delivery methods among volunteer leaders. Having advance information on preferred delivery methods could help reduce frustration and burnout among volunteers (Fuller & Friedel, 2017). Nestor et al. (2006) confirmed that volunteers' educational level also informs the selection of delivery methods for volunteer training. Several Extension studies explored the benefits of new modes of technology for Extension training and Extension volunteers' training (Lobley & Oullette, 2017; Oulette et al., 2014; Stevenson, et. al., 2011). However, in our study, volunteer leaders rated webinars, online courses, and educational videos as lowest and indicated that they would like to have series of workshops and in-service trainings, which are similar to Conklin and colleagues' (2002) study findings. We find these results surprising when recent advances in technology and volunteer receptiveness to technology in Stevenson and colleagues' (2011) recent study were preferred. However, age may be a point to consider, as the majority of our respondents were over the age of 35, and age is negatively related to technology use (Hauk et al., 2018). Again, due to the possibility of regional differences (Culp et. al., 2007) and lack of similar studies, our study should be replicated with other 4-H and nonprofit organizations.

Finally, a limitation of this study was that we used a convenience sample. Our participants were an available primary data source during the annual 4-H Leaders' Forum, and we invited them to participate in our study without additional requirements. A randomized sample of all 4-H volunteers in Penn State Extension would have strengthened this study. Moreover, volunteer core competencies can vary across regions (Culp at. el., 2007), so these results cannot be generalized to 4-H volunteers across America. Another limitation of this study was the data was heavily skewed with female respondents. However, this result aligns with previous research among 4-H volunteers (Culp et al., 2005). More studies should be conducted to determine if this trend is the norm.

Implications

This study makes a unique contribution to the research in the field of volunteerism and volunteer leadership education, specifically in Extension organizations or similar organizations. Previous studies reported that volunteer leaders need to have strong leadership skills to transfer and communicate strong leadership skills onto youth (Radhakrishna & Ewing, 2011), and 4-H Extension educators should teach them how to do so. The results of this study revealed that overall volunteer leaders indicated needs for leadership skills as "important" and "very important" for completing their work as 4-H volunteer leaders. The overall mean score for leadership skills need was 4.33. Sinasky and Bruce (2007) emphasized that 4-H volunteers need educational opportunities to help them grow as volunteers. Penn State Extension 4-H administration should focus on updating and providing training in the leadership need areas ranked most important

—communication, trust building, teamwork, and ethical decision-making. It is important to emphasize that self-report data is about individual behaviors, or perceptions that are simply unobservable by anyone else. Findings from self-reported data should be interpreted with caution. However, when assessing volunteer leaders' leadership needs based on self-reported data, we need to consider the many current trends of volunteer management and its contexts.

There are other implications of this study for 4-H volunteer program administrators. Another implication is that curriculum writers and designers of volunteer trainings for Penn State Extension 4-H volunteer leaders, and similar organizations, should re-evaluate whether their leadership development programs are sufficiently strong enough to enhance volunteer leaders' leadership skills and competencies. Penn State Extension 4-H volunteer leaders should consider the results of this study and the literature when updating current curricula or creating new curricula for 4-H volunteers related to volunteer leadership education. Volunteer leadership education can provide benefits for both 4-H volunteers and the 4-H program, providing personal development for volunteers and an opportunity to conduct a program evaluation for program administrators. Perhaps, state 4-H programs should form a committee to specifically look at the existing curriculum, revitalize the curriculum by adding contemporary leadership skills to reflect the current situation. Volunteers should be part of this committee so that they can provide valuable input to revising the curriculum.

Culp and Bullock (2017) found that leadership trainings for volunteers cause volunteers the desire to become more involved. The authors' work with the 4-H Volunteer Continuing Academy found that volunteers resolved to promote more leadership opportunities in their clubs, encourage other volunteer leaders to attend the training, and use new activities with their clubs due to their involvement in the program. The present study also revealed that respondents were predominantly women, so curriculum writers and designers of volunteer trainings may want to research the best leadership training techniques for women volunteers as well. Then, writers and program administrators should determine if current trainings align with these techniques.

Studies beyond the 4-H program may provide insight to the leadership education component for 4-H volunteer leader programs, yet more research is needed in this area. Morrison et al. (2019) found that volunteers need refresher leadership trainings, opportunities to apply the leadership skills they are learning to volunteer scenarios, and chances to transfer their corporate skills into a volunteer setting. Fuller and Friedel (2017) found 76% of female participants preferred leadership development training. Similarly, volunteers in Fuller and Friedel's (2017) study who held a leadership position were more likely to be actively involved in other community organizations. The authors also found that micromanaging, disorganization by volunteer managers, and lack of resources and guidance could impede leadership development of volunteers. Therefore, teaching and facilitation competence on the part of 4-H Extension educators is crucial in developing 4-H volunteer leadership education. Penn State Extension 4-H administrators should not only focus on developing effective leadership trainings for volunteers, but also on empowering 4-H educators to deliver leadership trainings more effectively.

Despite the demonstrated importance of leadership education for 4-H volunteers, volunteer practitioners sometimes struggle to get volunteers to attend leadership development programs. Davis et al. (2018) found that offering a fee waiver, adding a special focus component (such as teen training), bringing in community experts to teach sessions, providing network opportunities, and using social media campaigns can encourage participation in leadership development programs. Culp and Bullock (2017) also found networking opportunities to be a motivator for volunteer attendance of educational sessions.

It is critical that 4-H and other organizations invest in leadership development and education for volunteers to help increase the capacity of both volunteers and

the organization (Morrison et. al., 2019). Each state 4-H program should conduct their own assessment with a randomized sample to better determine leadership needs and preferred delivery methods of leadership education for 4-H volunteer leaders. Moreover, more research concerning the effectiveness of leadership development programming for volunteer leaders needs should continue to be completed if we want to gain a better understanding of the best ways to reach desirable levels of leadership competencies and work outcomes for 4-H volunteers. Continued research in the field of volunteer leadership education allows us to recognize the tremendously nuanced relationships between numerous factors and volunteer leadership education, furthering our understanding of the changing volunteers' trends and the value of leadership education for volunteers.

References

Arnold, M.E., & Gandy, G. (2019). Youth participatory evaluation: Matching 4-H youth experience to program theory. Journal of Extension, 57(4). https://joe.org/joe/2019august/rb4.php

Astroth, K. A., Garza, P. and Taylor, B. Getting down to business: Defining competencies for entry level youth workers. New directions for youth development, 2004(104), 25-37. https://onlinelibrary.wiley.com/doi/pdf/10.1002/yd.96

Austin, E. J., Gibson, G. J., Deary, I. J., McGregor, M. J., & Dent, J. B. (1998). Individual response spread in self-report scales: personality correlations and consequences. Personality and Individual Differences, 24, 421–438. http://www.sciencedirect.com/science/article/pii/S019188699700175X

Babbie, E. (2001). The practice of social research (9th ed.). Wadsworth/Thomson Learning.

Barcelona, R. J., Hurd, A. R., & Bruggeman, J. A. (2011). A competency based approach to preparing staff as recreation and youth development leaders. New directions for youth development, 2011(130), 121-139. https://doi.org/10.1002/yd.401

Boezeman, E. J., & Ellemers, N. (2014). Volunteer leadership: The role of pride and respect in organizational identification and leadership satisfaction. Leadership, 10(2), 160-173. https://journals.sagepub.com/doi/10.1177/1742715012467487

Bowie, L., & Bronte-Tinkew, J. (2006). The importance of professional development for youth workers. Child trends, 17, 1-9. https://www.cyfar.org/sites/default/files/Bowie%202006.pdf

Brudney, J. L. (1990). Expanding the government-by-proxy construct: Volunteers in the delivery of public services. Nonprofit and Voluntary Sector Quarterly, 19(4), 315-328. https://journals.sagepub.com/doi/abs/10.1177/089976409001900403

Casteel, R. (2012). Volunteer management needs assessment of the Tennessee 4-H program. Journal of Extension, 50(1). https://www.joe.org/joe/2012february/rb2.php

Conklin, N. L., Hook, L. L., Kelbaugh, B. J., & Nieto, R. D. (2002). Examining a professional development system: A comprehensive needs assessment approach. Journal of Extension, 40(5), 1-9. https://www.joe.org/joe/2002october/a1.php

Connors, T. D. (Ed.). (2011). The volunteer management handbook: Leadership strategies for success (Vol. 235). John Wiley & Sons. doi:10.1002/9781118386194

Culp, K., III, & Bullock, L.R. (2017). 4-H volunteer continuing academy. Journal of Extension, 55(4). https://joe.org/joe/2017august/iw4.php

Culp III, K., Deppe, C. A., Castillo, J. X., & Wells, B. J. (1998). The GEMS Model of Volunteer Administration. Journal of Volunteer Administration, 16(4), 36-41. https://eric.ed.gov/?id=EJ569731

Culp III, K., McKee, R. K., & Nestor, P. (2005). Demographic differences of 4-H volunteers, agents, and state volunteerism specialists: Implications for volunteer administration. Journal of Extension, 43(4). https://www.joe.org/joe/2005august/a2.php

References

Culp, K., III, McKee, R., & Nestor, P. (2006). Volunteer research and knowledge competency: Taxonomy for 4-H youth development. Washington, DC: National 4-H Headquarters. https://4-h.org/wp-content/uploads/2016/02/VRKC.pdf

Culp, K., McKee, R. K., & Nestor, P. (2007). Identifying volunteer core competencies: Regional differences. Journal of Extension, 45(6). https://joe.org/joe/2007december/a3.php

Culp III, K., McKee, R. K., & Nestor, P. (2005). Demographic differences of 4-H volunteers, agents, and state volunteerism specialists: Implications for volunteer administration. Journal of Extension, 43(4). https://www.joe.org/joe/2005august/a2.php/a3.php

Davis, E., MacArthur, S. S., Peterson, G., & Parent, V. (2018). Investing in 4-H Volunteers through State Leadership Forums. Journal of Extension, 56(6). https://www.joe.org/joe/2018october/iw6.php

Deppe, C. A., & Culp, K. (2001). Ohio 4-H agents' perceptions of the level of importance and frequency of use of the eighteen components of the GEMS model of volunteer administration. Journal of Agricultural Education, 42(4), 32-42. http://www.jae-online.org/attachments/article/388/42-04-32.pdf

Fahey, C., Walker, J., & Lennox, G. (2003). Flexible, focused training: Keeps volunteer ambulance officers. Australasian Journal of Paramedicine, 1(1). https://ajp.paramedics.org/index.php/ajp/article/view/74

Fan, X., Miller, B. C., Park, K., Winward, B. W., Christensen, M., Grotevant, H. D., et al. (2006). An exploratory study about inaccuracy and invalidity in adolescent self-report surveys. Field Methods, 18, 223–244. http://fmx.sagepub.com/content/18/3/223.short

Fletcher, K. B. (1987). 9 keys to successful volunteer programs. Taft Group.

Fox, J., Hebert, L., Martin, K., & Bairnsfather, D. (2009). An examination of the benefits, preferred training delivery modes, and preferred topics of 4-H youth development volunteers. Journal of Extension, 47(1). https://www.joe.org/joe/2009february/rb2.php

Fuller, J. M., & Friedel, C. R. (2017). Developing Volunteer Leaders: Let Their Intentions Guide the Way. Journal of Leadership Education, 16(3). https://journalofleadershiped.org/wp-content/uploads/2019/02/16_3_Friedel.pdf

Gay, L. R., Mills, G. E., & Airasian, P. W. (1996). Educational research: Competencies for analysis and application. Merrill Publishing Company.

Hauk, N., Hüffmeier, J., & Krumm, S. (2018). Ready to be a silver surfer? A meta-analysis on the relationship between chronological age and technology acceptance. Computers in Human Behavior, 84, 304-319. https://doi.org/10.1016/j.chb.2018.01.020

Heck, K., Subramaniam, A., & Carlos, R. (2009). Use of the PRKC tool in assessment of staff development needs and experiences from California. Journal of Extension, 47(3). https://www.joe.org/joe/2009june/pdf/JOE_v47_3a7.pdf

References

Hechinger, F. M. (1992). Fateful choices: Healthy youth for the 21st century. Hill and Wang.

Hong, S. I., & Morrow-Howell, N. (2013). Increasing older adults' benefits from institutional capacity of volunteer programs. Social work research, 37(2), 99-108. https://academic.oup.com/swr/article-abstract/37/2/99/1675934

Hoskins, R. (2012, March 3). The dangers of self-report. [Web blog post]. https://www.sciencebrainwaves.com/the-dangers-of-self-report/

Hutchins, J.K., Seevers, B.S. & Van Leeuwen, D. (2002). Value of adult volunteer leaders in the New Mexico 4-H program. Journal of Extension, 40(2). https://www.joe.org/joe/2002april/rb4.php

Jamison, I. B. (2003). Turnover and retention among volunteers in human service agencies. Review of public personnel administration, 23(2), 114–132. https://doi.org/10.1177/0734371X03023002003

Jolliffe, I. (2011). Principal component analysis. Springer Berlin Heidelberg.

Kaslon, L., Lodl, K., & Greve, V. (2005). Online leader training for 4-H volunteers: A case study of action research. Journal of Extension, 43(2). https://www.joe.org/joe/2005april/a4.php

Kish, J., Jayaratne, K. S. U., Flowers, J., & Kistler, M. J. (2014). Characteristics and motivational factors of effective extension advisory leaders: implications for building strong extension advisory councils. Journal of Human Sciences and Extension, 2(3). https://www.jhseonline.com/article/view/733/634

Langellotto, G. A., & Dorn, S. (2016). An online resource site for extension master gardener coordinators. Journal of Extension, 54(3). https://www.joe.org/joe/2016june/tt3.php

Lobley, J., & Ouellette, K. L. (2017). Using videoconferencing to create authentic online learning for volunteers. Journal of Extension, 55(5). https://www.joe.org/joe/2017october/tt8.php

Lockett, L. L., & Boyd, B. (2012). Enhancing leadership skills in volunteers. Journal of leadership education, 11(1). https://journalofleadershiped.org/wp-content/uploads/2019/02/11_1_Lockett-and-Boyd.pdf

Morrison, C. C., & Greenhaw, L. L. (2018). What skills do volunteer leaders need? A Delphi study. Journal of Leadership Education, 17(4). https://journalofleadershiped.org/wp-content/uploads/2019/02/17_4_morrison.pdf

Morrison, C. C., Greenhaw, L. L., & Pigg, J. (2019). Is it worth it? A case study exploring volunteers' perceptions of leadership training. Journal of Leadership Education, 18(2), 81-94. https://journalofleadershiped.org/jole_articles/is-it-worth-it-a-case-study-exploring-volunteers-perceptions-of-leadership-training/

National 4-H Council. (2019). What is 4-H? https://4-h.org/about/what-is-4-h/

Nestor, P., McKee, R. K., & Culp III, K. (2006). Core competencies for 4-H volunteer leaders differentiated by occupation, level of education, and college major: Implications for leadership education. Journal of Leadership Education, 5(1). https://journalofleadershiped.org/wp-content/uploads/2019/02/5_1_Nestor_McKee_Culp.pdf

References

Oliver, J. D. and Hinkle, D. E. (1981). Selecting Statistical Procedures for Agricultural Education Research. Paper Presented at the Eighth Annual National Agricultural Education Research Meeting, Atlanta, GA.

Ouellette, K. L., Lesmeister, M. K., Lobley, J., & Gross, K. M. (2014). E-Learning for 4-H volunteers: Who uses it, and what can we learn from them? Journal of Extension, 52(1). https://www.joe.org/joe/2014february/a5.php

Paton, R., Mordaunt, J., & Cornforth, C. (2007). Beyond nonprofit management education: Leadership development in a time of blurred boundaries and distributed learning. Nonprofit and Voluntary Sector Quarterly, 36(4), 148S-162S. https://doi.org/10.1177%2F0899764007305053

Posner, B. Z. (2015). An investigation into the leadership practices of volunteer leaders. Leadership & Organization Development Journal, 36(7), 885-898. https://www.emerald.com/insight/content/doi/10.1108/LODJ-03-2014-0061/full/html

Proctor, J., (2012, December 5). How to teach baby boomers [Web log post]. http://boomersnextstep.com/careers/how-to-teach-baby-boomers/

Radhakrishna, R., & Ewing, J. C. (2011). Relationships between 4-H volunteer leader competencies and skills youth learn in 4-H programs. Journal of Extension, 49(4), 1-9. https://www.joe.org/joe/2011august/rb2.php

Rasmussen, W. D. (2002). Taking the university to the people: Seventy-five years of Cooperative Extension. Purdue University Press.

Rauner, J. (1980). Helping people volunteer. Marlborough.

Richard, R., & Verma, S. (1984). Sharing the 4-H job with leaders. Journal of Extension, 22(6) http://www.joe.org/joe/1984november/a4.php

Rose, P. (2010). Transformational leadership and its relationship to adult 4-H volunteers' sense of empowerment in youth development settings. Journal of leadership education, 9(2), 58-71. https://journalofleadershiped.org/wp-content/uploads/2019/02/9_2_Rose.pdf

Safrit, R. D., Schmiesing, R. J., Gliem, J. A., & Gliem, R. R. (2005). Competencies for contemporary volunteer administration: An empirical model bridging theory with professional best practice. Journal of volunteer administration, 23(3), 5.

Seevers, B. S., Baca, J. S., & Van Leeuwen, D. (2005). Training methods and needs related to volunteer management competencies of Extension 4-H youth development agents. Journal of Extension, 43(6), 2-10. https://www.joe.org/joe/2005december/rb3.php

Serafino, A. (2001). Linking motivation and commitment through learning activities in the volunteer sector. Journal of Volunteer Administration 19(4).

Sinasky, M., & Bruce, J. (2007). Volunteers' perceptions of the volunteer management practice of county Extension 4-H educators. Journal of Extension, 45(3). https://www.joe.org/joe/2007june/tt5.php

References

Smith, S. S., & Finley, J. C. (2004). Targeted recruitment of 4-H volunteers involves understanding who currently volunteers and why. Journal of Extension, 42(4). https://joe.org/joe/2004august/a6.php

Stevenson, J. L., Moore, D. A., Newman, J., Schmidt, J. L., Smith, S. M., Smith, J., ... & BoyEs, P. (2011). Assessing the need for an on-line educational module for volunteer leaders on bio-security in Washington State 4-H livestock projects. Journal of Extension, 49(3). https://www.joe.org/joe/2011june/a9.php

The Council of 1890 Presidents/Chancellors. (2000). Strategically approaching the future: 1890 land-grant system. Washington, D.C.: National Association of State Universities and Land-Grant Colleges

Werisma, W., and Jurs, S.G. (2005). Research Methods in Education: An Introduction. (8th ed.). Allyn & Bacon.

White, A. J., & Scanga, L. H. (2019). Volunteer Research and Knowledge Competency Codebook: A Tool for Identifying Volunteer Needs. Journal of Extension, 57(1). https://www.joe.org/joe/2019february/tt3.php