

Understanding the Knowledge and Use of Experiential Learning Within Pennsylvania 4-H Clubs

Abstract

Experiential learning is incorporated into the National 4-H curriculum. However, the state 4-H staff in Pennsylvania is unsure of the current knowledge and use of experiential learning within the local 4-H clubs. An online survey was distributed to Extension educators and volunteer leaders within Pennsylvania to assess the current knowledge and use of experiential learning in the state. After reviewing the results of the study, it is recommended that additional training and resources be made available to local volunteer leaders.

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Introduction

"Learning by doing" is a concept that guides many 4-H clubs in their purpose and educational goals and emphasizes their dedication to hands-on learning (Enfield, 2001; Kress, 2006). Over the years, the National 4-H Organization has adopted an experiential learning model that divides the five-step experiential learning cycle of Pfeiffer and Jones into the three phases of Do, Reflect, and Apply. (Enfield, 2001; Enfield, Schmitt-McQuitty, & Smith, 2007). Member' experiences and activity participation are described as the "Do" component of the experiential learning model (Carlson & Maxa, 1998; Enfield, 2001). The share and process steps together build the "Reflect" segment. Generalize and apply work together to develop the phase of "Apply." Not only is experiential learning built into project curricula, but is also part of adult volunteer training materials (Martz, Mincemoyer, & McNeely, 2009).

The experiential learning model is used in 4-H because it is relatable, supports different learning styles, encourages discovery of knowledge, and helps members draw conclusions (University of Arkansas, n.d). Through experiential learning, youth control their education by experiencing the material first hand and learning how their discoveries relate to what they already know (Arnold, Warner, & Osborne, 2006). To help 4-H leaders understand the value and process of experiential

learning, training sessions should be used (McKee, Talbert, & Barkman, 2002). Pennsylvania 4-H staff offered training for 4-H volunteers approximately 5 years ago (C. Mincemoyer, personal communication, November 11, 2010). Because of the length of time since the initial training, the Pennsylvania 4-H staff sought to examine the current knowledge and use of experiential learning within 4-H clubs, as this information will guide future training of volunteers and Extension personnel.

The objectives of this survey were:

1. Describe the demographics of Pennsylvania 4-H youth Extension educators and 4-H volunteer leaders.
2. Explore the perceived knowledge of experiential learning within 4-H clubs by Pennsylvania 4-H youth Extension educators and 4-H volunteer leaders.
3. Explore the perceived use of experiential learning within 4-H clubs by Pennsylvania 4-H youth Extension educators and 4-H volunteer leaders.
4. Determine the differences, if any, in perceived knowledge and use of experiential learning between Pennsylvania 4-H Extension educators and Pennsylvania 4-H volunteer leaders.

Method

Participants and Survey Procedure

Extension educators and volunteer leaders in Pennsylvania were asked to participate in the experiential learning study. In Pennsylvania there are 76 Extension educators with a direct 4-H appointment. Due to this small number, a complete census was requested of these individuals. Volunteer leaders were surveyed using a proportional stratified random selection process. The state of Pennsylvania uses an online enrollment system with an individual's name, county, and contact information. When the contact information for the study was mined from the database, 3,444 volunteer leader entries were available. According to Krejcie and Morgan (1970), 346 individuals were needed to be randomly selected to participate in the study to ensure a representative sample of the population.

The survey was distributed following Dillman's online survey procedures (2000) with a slight modification. Due to the timeframe of the researcher, the first contact with the sample population was a recruitment email with the survey link followed by two survey reminders. A final notice was sent 7 days after the third contact to all remaining Extension educators and 10% of the non-respondent volunteer leaders. The overall usable response rate for this survey was 34.1%, Extension educators had a usable response rate of 68.4%, and the volunteer leaders had a usable response rate of 26.6%.

Survey Development, Measurement, and Analysis

At the time of the study, there was no appropriate survey instrument available to evaluate the

knowledge and use of experiential learning of Extension educators and volunteer leaders. Therefore, an online survey was developed based on a review of literature with input from Pennsylvania 4-H staff and youth development researchers. Following a review by a panel of experts from the Department of Agricultural and Extension, a pilot test was conducted and found to have no unanticipated results. The Cronbach's alpha-level for Likert-Type items was found to be 0.82.

The survey had questions in the format of yes/no, multiple choice, Likert-Type items, and open-ended responses. Online survey data were analyzed using means, frequencies, standard deviations, and independent t-tests in SPSS version 19. Write-in responses were coded based on themes found in the literature by the researcher. The write-in responses were evaluated on two separate occasions and were coded identically both times. Question responses were also compared across the two survey groups to check for differences in the perceived knowledge and use of experiential learning.

Results

Demographics

The demographic results indicate that the typical 4-H Extension educator is a white (94.1%, n=48) female (78.4%, n=40) with a four-year college or masters degree (84.3%, n=43) between 25 and 67 years of age. The years of experience as an Extension educator clumped between 1 and 15 (65.4%, n=34), and most Extension educators were members of 4-H as youth (62.7%, n=32). In terms of project work, Extension educators have experience with multiple project types within their counties.

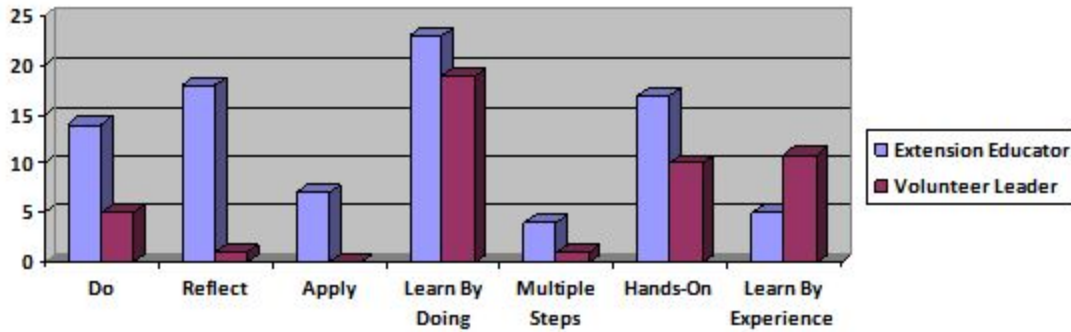
The 92 volunteer leaders who responded were predominately white (100%, n=89) females (79.8%, n=71) with a high school or four-year degree (56.2%, n=50). In terms of experience, 42.4% (n=39) have been associated with the 4-H program for 1 to 5 years, and approximately 60% (n=54) of the volunteer leaders were members of 4-H as a youth. While all project types were represented by respondents, animal-based projects were the most popular.

Knowledge of Experiential Learning

Of the Pennsylvania Extension educators who responded to the survey, approximately 96% (n=49) were familiar with the term "experiential learning." However, only 47.8% (n=44) of volunteer leaders indicated familiarity with the experiential learning term. To further investigate the understanding of the term experiential learning, respondents who were familiar with the term were asked to provide their own definition. As reported in figure 1, the most popular theme identified for both groups was Learn by Doing.

Figure 1.

Distribution of Themes Identified within Definitions of Experiential Learning



To further evaluate the knowledge of participants in regards to experiential learning, both groups were asked to indicate their level of agreement with five statements from the experiential learning model (Table 1).

Table 1.

Based on Knowledge of Experiential Learning, Extension Educator, and Volunteer Leader's Level of Agreement with the Following Statements

"It is important to provide opportunities for youth..."			Strongly Disagree	Disagree	Agree	Strongly Agree	Don't Know	Total
To have actual experiences	Educator	Count	2	0	5	45	0	52
		Percentage	3.8%	0.0%	9.6%	86.6%	0.0%	100%
	Volunteer	Count	1	1	11	72	7	92
		Percentage	1.1%	1.1%	12.0%	78.2%	7.6%	100%
To share their understanding of the experience	Educator	Count	2	0	11	39	0	52
		Percentage	3.8%	0.0%	21.2%	75.0%	0.0%	100%
	Volunteer	Count	1	1	23	60	7	92
		Percentage	1.1%	1.1%	25.0%	65.2%	7.6%	100%
To reflect on an experience	Educator	Count	2	0	11	39	0	52
		Percentage	3.8%	0.0%	21.2%	75.0%	0.0%	100%
	Volunteer	Count	2	2	23	54	10	91
		Percentage	2.2%	2.2%	25.3%	59.3%	11.0%	100%
To generalize the content to other situations	Educator	Count	2	0	16	33	0	51
		Percentage	3.9%	0.0%	31.4%	64.7%	0.0%	100%
	Volunteer	Count	2	3	34	39	12	90
		Percentage	2.2%	3.4%	37.8%	43.3%	13.3%	100%

To apply the content	Educator	Count	2	0	6	44	0	52
		Percentage	3.8%	0.0%	11.6%	84.6%	0.0%	100%
	Volunteer	Count	1	2	20	59	8	90
		Percentage	1.1%	2.2%	22.2%	65.6%	8.9%	100%

To check for significant differences in knowledge between the groups, an independent t-test of the five statements related to experiential learning was used. After calculating a mean score for each respondent and evaluating the two groups with an independent t-test, there was no significant difference found between the survey respondent groups; p-value = 0.542.

The final evaluation for perceived knowledge was completed by asking the Extension educators to estimate how many of the volunteer leaders they work with are aware of the 4-H learning process Do, Reflect, Apply. Approximately 60% (n=31) of the Extension educators believed that Most or Nearly All of the leaders were aware of the Do, Reflect, Apply process. The volunteer leaders were asked if they had heard Do, Reflect, Apply in association with the 4-H learning process. The survey results showed that 37.5% (n=33) of volunteer leaders are familiar with Do, Reflect, Apply, and 4-H learning. When the volunteer leaders were asked to rank the following statement "I understand what the terms Do, Reflect, Apply mean related to the 4-H learning" on a scale of Strongly Disagree to Strongly Agree, the category with the most responses was Agree (42.9%, n=39).

Use of Experiential Learning

To establish a means of comparison for experiential learning, the use of hands-on learning was first evaluated. Survey results show that 100% (n=52) of Extension educators encouraged the use of hands-on learning by volunteer leaders, and nearly all (93.5%, n=86) volunteer leaders incorporated hands-on learning. Then, the majority of Extension educators indicated that they believe Most (44.2%, n=23) or Nearly All (25%, n=13) of their volunteer leaders incorporated experiential learning into club activities. This aligned with the responses of the volunteer leaders as the majority (68.1%, n=62) self-reported using of experiential learning in club activities. Of the volunteer leaders who reported using experiential learning, 45.2% (n=28) said they use this learning method on a frequent basis in 4-H club activities.

To further understand how these volunteer leaders use experiential learning within the 4-H clubs, they provided written examples of incorporation. There were 47 volunteer leaders who provided examples, and the majority (57.4%, n=27) focused on some type of animal project.

The steps of experiential learning were broken down into statements to evaluate perceived use within 4-H clubs. Both groups were to evaluate the steps on a scale of Almost Never to Always. Extension educators were asked to report what they believed happened in their county clubs, while volunteer leaders self reported. The most common response for Extension educators was Sometimes, and volunteers reported Frequently providing opportunities of experiential learning. The responses to this question are presented in Table 2. The response to the statements, "My 4-H volunteer leaders (or I) provide opportunities . . . At 4-H meetings that include formal reflective opportunities for

youth to draw conclusions and My 4-H volunteer leaders (or I) provide opportunities . . . At 4-H meetings that include an opportunity for youth to reflect on what they learned" had nearly 20 percentage points difference between Extension educators and volunteer leaders. In both cases, the Extension educators perceived the volunteer leaders to provide opportunities for reflection less often than what was self reported by the volunteer leaders.

This Likert-Type item was then evaluated with an independent t-test to check for a significant difference between what was perceived by Extension educators and self-reported by volunteer leaders. After a mean was calculated for each respondent and the two groups analyzed with an independent t-test, no significant difference was found; p-value = 0.253.

Table 2.

Frequency of Ways Volunteer Leaders Provide Experiential Learning Opportunities as Perceived by Extension Educators and Reported by Volunteer Leaders

"My 4-H volunteer leaders (or I) provide experiential learning opportunities..."							
		Almost Never (0-24%)	Rarely (25-49%)	Sometimes (50-74%)	Frequently (75-99%)	Always (100%)	Total
In the 4-H Program	Educator	0	4	22	21	1	48
		0.0%	8.3%	45.8%	43.8%	2.1%	100%
	Leader	2	6	17	30	6	61
		3.3%	9.8%	27.9%	49.2%	9.8%	100%
At 4-H meetings that include an actual experience	Educator	0	4	16	28	1	49
		0.0%	8.2%	32.7%	57.1%	2.0%	100%
	Leader	4	4	21	28	5	62
		6.5%	6.5%	33.9%	45.1%	8.0%	100%
At 4-H meetings that include an opportunity for youth to reflect on what they learned	Educator	0	8	25	14	1	48
		0.0%	16.6%	52.1%	29.2%	2.1%	100%
	Leader	3	4	21	30	4	62
		4.8%	6.5%	33.9%	48.3%	6.5%	100%
At 4-H meetings	Educator	3	17	18	9	1	48
		6.2%	35.4%	37.5%	18.8%	2.1%	100%

that include formal reflective opportunities for youth to draw conclusions	Leader	3 4.8%	13 21.0%	22 35.5%	22 35.5%	2 3.2%	62 100%
At 4-H meetings that include discussions about how to use their new knowledge for future situations	Educator	2 4.2%	10 20.8%	17 35.4%	18 37.5%	1 2.1%	48 100%
	Leader	4 6.5%	6 9.8%	22 36.1%	27 44.3%	2 3.3%	61 100%
Total	Educator	5 2.1%	43 17.8%	98 40.7%	90 37.3%	5 2.1%	241 100%
	Leader	16 5.2%	33 10.7%	103 33.4%	137 44.5%	19 6.2%	308 100%

The final evaluation for the perceived use of experiential learning was conducted by volunteer leaders identifying the frequency, Almost Never to Always, at which different techniques of experiential learning were used within club activities. The overall majority (41.8%, n=342) response was the use of these experiential learning techniques Frequently, or 75 to 99% of the time within club activities. The statements that had over 45% of volunteer leaders indicate Frequently were: "I provide hands-on activities for youth; I support youth as they direct their own learning; I ask youth questions during activities such as who, what, why, when, where; I encourage you to have group discussions about experiences" (Table 3).

Table 3.
Frequency of Use for Activities Related to Experiential Learning as Reported by Volunteer Leaders.

	Almost Never (0- 24%)	Rarely (25- 49%)	Sometimes (50-74%)	Frequently (75-99%)	Always (100%)	Total
I provide hands-on activities for youth	2 2.2%	6 6.5%	21 22.8%	49 53.3%	14 15.2%	92 100%

I arrange field trips, guest speakers, and other outside sources of learning for youth	4 4.4%	13 14.3%	39 42.8%	29 31.9%	6 6.6%	91 100%
I encourage youth to try new ideas and methods at club meetings	4 4.4%	7 7.6%	35 38.0%	35 38.0%	11 12.0%	92 100%
I support youth as they direct their own learning	2 2.2%	2 2.2%	18 19.8%	54 59.3%	15 16.5%	91 100%
I ask youth questions during activities such as who, what, why when, where	4 4.4%	6 6.5%	25 27.2%	44 47.8%	13 14.1%	92 100%
I encourage youth to have group discussions about experiences	5 5.5%	6 6.6%	27 29.7%	44 48.3%	9 9.9%	91 100%
I utilize think, pair, share techniques within my club	17 19.5%	15 17.2%	22 25.3%	28 32.2%	5 5.8%	87 100%
I ask youth to find similarities between the experience and real life situations	12 13.2%	16 17.6%	24 26.4%	34 37.3%	5 5.5%	91 100%
I provide opportunities for youth to practice	6 6.6%	22 24.2%	33 36.2%	25 27.5%	5 5.5%	91 100%

their new skills in another setting						
Total	56 6.8%	93 11.4%	244 29.8%	342 41.8%	83 10.2%	818 100%

Conclusions

Experiential learning is a critical part of learning within 4-H, and it is integrated into project books offered through the National 4-H Curriculum program. Extension educators, when compared to volunteer leaders, are typically more familiar with experiential learning terminology and its value in the youth learning process. Less than 50% of volunteer leaders are familiar with the term of experiential learning or understand how the phrase Do, Reflect, Apply relates to 4-H learning.

Even though the volunteer leaders expressed a low level of knowledge about experiential learning, they responded with a robust use of experiential learning within club activities. Extension educators perceived a lower level of use of experiential learning techniques by their volunteer leaders in comparison to the level of use reported by the volunteer leaders. Volunteer leaders were asked how frequently they incorporate different experiential learning techniques and activities within their 4-H clubs. The majority of survey respondents reported Sometimes or Frequently using these types of learning activities within 4-H club activities. It appears that volunteer leaders and Extension educators need to make certain that they both understand the experiential learning cycle, and are able to communicate effectively with one another when the process is being utilized.

In order to increase the knowledge and use of experiential learning within Pennsylvania 4-H volunteer leaders, Extension educators need to train the volunteer leaders within their counties to help ensure that members are receiving a high quality educational experience. Through effective training, volunteers are motivated and encouraged to work towards the mission and vision of the association with which they work (Fox, Hebert, Martin, & Bairnsfather, 2009). The survey by Fox et al. (2009) revealed that the top two ways volunteers preferred to receive information was group training and email. The use of online trainings or short handouts is a small step to reduce this lack of knowledge among volunteer leaders. The Pennsylvania 4-H staff should also conduct case studies and other direct observations to determine if experiential learning is being correctly utilized within 4-H club activities.

References

Arnold, S., Warner, W. J., & Osborne, E. W. (2006). Experiential learning in secondary agricultural education classrooms. *Journal of Southern Agricultural Education Research*, 56(1) 30 – 39.

Carlson, S., & Maxa, S. (1998). Pedagogy applied to nonformal education. *The Center*, 48 – 53.

Dillman, D. (2000). *Mail and Internet surveys. The tailored design method* (2nd ed.). New York, NY: John Wiley & Sons, Inc.

Enfield, R. P. (2001). Head, heart, hands, and health: "Experience and Education" by Dewey's

Criteria? 2001 AERA Conference .

Enfield, R. P., Schmitt-McQuitty, L. S., & Smith, M. H. (2007). The development and evaluation of experiential learning workshops for 4-H volunteers. *Journal of Extension*, [On-line], 45(1) Article 1FEA2. Available at: <http://www.joe.org/joe/2007february/a2.php>

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*, [On-line], 47(1) Article 1RIB2. Available at: <http://www.joe.org/joe/2009february/rb2.php>

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size in research activities. *Educational and Psychological Measurement*, 30, 607-610.

Kress, C. (2006). Twenty-first century learning after school: The case of 4-H. *New Directions for Youth Development*, 110, 133 – 140.

Martz, J., Mincemoyer, C., & McNeely, N. N. (2009). *Essential elements of 4-H youth development programs*. Retrieved from: <http://www.4-h.org/resource-library/professional-development-learning/national-learning-priorities/essential-elements.html>

McKee, R. K., Talbert, B. A., & Barkman, S. J. (2002). The challenges associated with change in 4-H/youth development. *Journal of Extension*, [On-line], 40(2) Article 2FEA5. Available at: <http://www.joe.org/joe/2002april/a5.php>

University of Arkansas, Division of Agriculture. (n.d.). *4-H volunteer leaders' series: Experiential learning in 4-H project experiences*. Little Rock, Arkansas: Zurcher, T. D.

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