

The Nevada 4-H Program: Impacts on Nevada Public School Youth

Steven R. Lewis, University of Nevada Reno
Tim Murphy, Texas A&M University
Matt Baker, Texas Tech University

Abstract

This is the fifth in a series of 4-H impact evaluations conducted in Western States. Previous studies conducted in Montana, Idaho, Colorado, and Utah, were replicated in the Nevada public schools. The purpose was to measure the impact of the 4-H experience on the lives of Nevada youth, and to provide impact data for accountability and improvement for University of Nevada Cooperative Extension 4-H Programs. The 1,492 respondents were; 47.6% male and 52.4% female; 34.6% 5th grade, 28.1% 7th grade, and 37.3% 9th grade; 63.1% urban and 36.9% rural; and 11.7% 4-H and 88.3% non 4-H youth. Eight youth development constructs were measured including; extracurricular activity involvement; school leadership positions held; close relationship with adults; caring for others; amount of negative behavior; personal identity; positive identity; and self-confidence, character and empowerment. ANOVA for constructs by independent variables, age groups, gender, 4-H participation, and population density revealed that 4-H participation significantly contributed to the variance in extracurricular activity involvement ($p \leq .001$), school leadership positions held ($p = .025$), caring for others ($p \leq .001$), and self-confidence, character and empowerment ($p = .004$).

Introduction/Theoretical Framework

4-H has a rich history of helping youth grow into productive citizens. Through participation in 4-H, youth learn life skills that they can further shape and use as adults. Federal, state, and county dollars fund 4-H programs coordinated by Land Grant College and Cooperative Extension systems. Accountability of these funds is of paramount importance to ensure continued support. Furthermore, 4-H youth development programming must be evaluated to determine how it impacts youth and in what ways it needs to improve.

4-H youth development is by the National 4-H Council (2002) as the following:

4-H Youth Development Programs provide opportunities, relationships, and support for youth to help them acquire the life skills necessary to meet the challenges of adolescence and adulthood. 4-H Youth Development uses experiential, research-based educational opportunities that help youth become competent, caring, confident, connected, and contributing citizens of character (p.5).

This definition, incorporating the “6Cs” of positive youth development (Competence, Caring, Confidence, Connectedness, Character, and Contribution) provides a solid description of 4-H youth development. Initially the 5C’s of positive youth development were provided by Roth and Brooks-Gunn (2003) and Eccles and Gootman (2002). The 5Cs handily conceptualize positive youth development and integrate all characteristic indicators. Attention to youth assets and

desirable characteristics rather than deficits precipitated the creation of the 5C's, later to be known as the 6C's (contribution, becoming the sixth C). The 6Cs help us comprehend the basis for 4-H and understand why it continues to thrive. The 6C's are foundational to positive youth development.

The science of child development is foundational to the applied science of positive youth development. Bronfenbrenner and Morris (1998) describe a detailed model of child development. In the center is the child. The child affects and is affected by all that surrounds him/her. Family environment is the most important influence as that is where most time is spent and most emotions are generated. Other significant and meaningful influences include extended family, education programs, health care settings, and other community learning sites. "Child development takes place through processes of progressively more complex interaction between an active child and the persons, objects, and symbols in its immediate environment. To be effective, the interaction must occur on a fairly regular basis over extended periods of time" (Bronfenbrenner & Morris, 1998, p. 996). Bronfenbrenner and Morris' work provides well accepted fundamental concepts for human development and serves as foundational principles in the ecology of child development.

Purpose/Objectives

One of the goals of The National 4-H Strategic Plan (2001) is to "collect national impact and accountability data that fully demonstrates the impact of 4-H on youth, their families, and communities" (p. 13). 4-H program managers and administrators are continually searching for improved methods of determining impact. Efforts to measure 4-H impact are numerous, and impact measurement strategies vary in focus and approach. Collection and synthesis of existing 4-H impact data is difficult at best. The purpose of this study was to replicate a 4-H impact evaluation conducted in Montana, Idaho, Colorado, and Utah, all AAEA Western Region States. Replication of one instrument over time and across states is needed to establish consistency and bolster accountability. The objectives of the study were to: (1) measure impacts of the 4-H experience on the lives of Nevada youth, and (2) provide impact data for accountability and improvement of University of Nevada Cooperative Extension's 4-H youth development programming.

Methods/Procedures

Although these data are part of a larger causal comparative study, this particular portion of the study was descriptive/correlational in nature. This study design use Dillman's (2007) Tailored Design Method (TDM). The in-person, in-class written questionnaire approach was the same used in previous studies (Astroth & Haynes, 2001; Goodwin, et al., 2005; Goodwin, Carroll, & Oliver, 2005; Tubbs, 2005), however, TDM principles were applied to this study to enhance response rate. Specifically, the study incorporated Dillman's recommendation regarding the order of survey questions, and the visual layout.

A stratified random sampling technique used two strata, urban and rural. Two school districts were grouped in the urban category, and 15 in the rural category. School districts in

urban and rural Nevada counties were randomly prioritized using the Research Randomizer (2006). Researchers contacted school districts and requested participation in the study in this random order.

The sampling population for the study consisted of 5th, 7th, and 9th grade students, enrolled in Nevada public schools. The sampling unit was Nevada public elementary, middle, and high schools. Schools that include 5th, 7th and 9th grade students were referred to as elementary, middle, and high schools, respectively.

The instrument consisted of 67 questions/items. The format included yes-no, multiple choice, level of agreement, fill-in-the blank, and short essay questions. The instrument collected various types of student information as follows: Extracurricular activity involvement during the school week included various types of activities such as, drama, sports teams, school clubs, spiritual activities, or hanging out with friends. Risky or negative behavior included shoplifting, smoking cigarettes, and cheating on a test. Personal identity information included information such as meeting and greeting new people, level of comfort in new situations, and care about other people's feelings. Positive identity information included level of self-satisfaction and control over life circumstances. Self confidence, character, and personal empowerment information included self-perceived ability in record keeping, managing money, giving speeches, and setting goals. Close relationship with parents/guardian and other adults information included having good and lengthy conversations with adults and being willing to talk to adults about topics such as drugs, sex, and alcohol. Information on school leadership positions held included election to a school office or service on a school committee. Information on caring for others included helping other people not as fortunate or in need of assistance. General demographics information included age, grades earned, gender, and race/ethnicity. 4-H membership information included current 4-H membership status and the impact of 4-H on those with 4-H experience.

School principals were contacted by e-mail which consisted of a brief cover letter and attachments including the questionnaire and letter of cooperation. The letter of cooperation confirmed participation by the school (indicated by the principal's signature), determined the number of English and Spanish instruments needed, and identified the approximate date the questionnaires would be administered.

Nevada school principals requested a total of 4,041 English and 327 Spanish instruments, with 1,481 English and 11 Spanish surveys returned resulting in a 36.6% English survey response and a 3.4% Spanish survey response. The overall response rate was 34.2%. The potential for error due to Dillman's (2007), Coverage and Nonresponse threats severely limit the generalizability of the findings. It was impossible to accurately differentiate the amount of coverage and nonresponse error. Principals estimated the number of students matching the sample selection criteria and selected classes they thought would provide the greatest access to students in each age group. Without direct access to the students in each school, the researchers were unable to control this source of coverage error. If a school principal over-estimated the number of students matching the selection criteria, that would artificially inflate the estimate of coverage error. If a student did not respond because the principal did not provide him/her with an instrument, that would contribute to coverage error. If the student received an instrument, but

failed to return it, that would contribute to nonresponse error. Students were anonymous at all times in this study. The potential for error due to Dillman's (2007), Coverage and Nonresponse threats severely limit the generalizability of the findings. The reader should use caution when transferring these results to other populations.

Lindner, Murphy, and Briers (2001) methods for statistically controlling nonresponse were considered and rejected due to the nature of the data collection process, the inaccessibility and anonymity of the respondents, and the fact that "late" respondents to this study were not truly "late respondents" in that they did not procrastinate but were simply provided the instruments at a date later than early respondents. The researchers were not able to sustain the required logical proposition by Lindner, Murphy, and Briers (2001) that "late respondents" in this study were more like non-respondents than "early respondents."

Age groups, gender, 4-H participation, and population density were the independent variables. Age groups consisted of 10-12 year olds representing 5th grade students, 13-14 year olds representing 7th grade students, and 15-18 year olds representing 9th grade students. Survey question #50, *are you female or male*, determined gender. Survey question #56, *have you ever belonged to a 4-H club that meets formally outside of school*, determined 4-H participation. The of each respondent's school was used to determine population density, rural or urban.

Results/Findings

Over one-half, 50.9%, of the 1,492 survey participants, were female, and 46.3% were male, while 63.1% of the survey respondents were from the urban school district, and 36.9% were from the rural districts. One hundred sixty six students, 11.1% of the respondents, indicated they had been involved in 4-H. The majority of students, 83.5%, never belonged to 4-H.

The sample population was composed of 40.0% 9th grade students, 27.0% 7th grade students and 33.0% 5th grade students. Age of respondents ranged from 10 to 18 years. The mean age was 13.04 years and the median age was 13.0 years. Whites were the largest race/ethnic group represented by 56.6% of the students in the study, followed by 22.4% Hispanic, 11% other, 3.8% Native American, and 2.3% African American. A majority of the students lived in town (62.0%), while others lived in a large city (22.1%), in the country not on a farm (5.5%), and on the farm (4.2%). Most of the student respondents, 60.6% lived with both parents, while 12.2% lived with just their mother, 11.1% lived with one parent and one step-parent, and 8.1% lived sometimes with mother or father. One-quarter of the youth (25.1%) claimed to earn an equal proportion of A's and B's, 24.5% earned mostly A's, and 20.1% reported earning an equal percentage of B's and C's

Spending time with friends without anything special to do (81.2%, n = 1,135) was the most commonly practiced extracurricular activity of students during the school week. The next most commonly practiced activity was spending time on school or community sports teams (51.9%, n = 720). 4-H club activities or projects was reported to occupy the time of the fewest number of students (10.8%, n = 145). Within the past year, 13.8% of the students held some type of school leadership position. Twelve and a half percent of students held elected positions, while 10.5% participated as a committee member and 6.1% served as a committee chairperson. Most

respondents (85.9%) indicated that within the last month, they had a good conversation with one parent/guardian that lasted 10 minutes or more. The discussion between child and parent/guardian on the topic of sex was the relationship indicator practiced by the fewest number of students (57.5%, $n = 817$). Most students (85.8%, $n = 1,264$) claim to have helped others at school in the past year. Fewer than one-half the students indicated they have been involved in a project to make life better for other people (48%, $n = 696$), and to have given money or time to a charity or organization that helps people (49.9%, $n = 723$). The fewest number of students (39.3%, $n = 566$) claimed to have spent time helping people whom are poor, hungry, sick or unable to care for themselves.

Negative behaviors included cheating on a test, drinking alcohol without parents permission, shoplifting, using drugs, riding in a car with a driver who has been drinking or using drugs, damaging property just for the fun of it, smoking cigarettes, using smokeless tobacco, participating in any type of sexual activity, and skipping or cutting class without parent permission. Responses were on a frequency scale of 1 through 4, where 1 = never, 2 = once, 3 = a few times, and 4 = frequently. The most commonly practiced negative behavior was cheating on a test ($M = 1.91$, $SD = .97$). The least practiced negative behavior was the use of smokeless tobacco ($M = 1.12$, $SD = .50$).

Personal identity included indicators such as; *I am good at planning ahead; I care about other people's feeling; and I feel really sad when one of my friends is unhappy*. Students were asked to indicate a level of agreement to the personal identity statements on a Likert scale of 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree. Agreement or strong agreement was indicative of high personal identity. The statement receiving the highest score, or the strongest personal identity characteristic was, saying no when asked to do something wrong ($M = 4.16$, $SD = 1.05$). The personal identity statement receiving the lowest score was, volunteer in class to lead activities ($M = 2.80$, $SD = 1.12$). Positive identity included indicators such as; *when things don't go well for me, I am good at finding a way to make things better; I have little control over the things that will happen in my life; and on the whole, I like myself*. Students were asked to indicate a level of agreement to the positive identity statements on the same Likert scale of 1 = strongly disagree, through 5 = strongly agree. Four of the seven statements were negatively phrased. Disagreement or strong disagreement to negatively phrased statements was indicative of high positive identity. Agreement or strong agreement to the three positively phrased statements was indicative of high positive identity. The highest positive identity mean of the positively phrased statements was, all in all, I am glad I am me ($M = 4.14$, $SD = .96$). The lowest mean of the four negatively phrased statements was, *I feel I do not have much to be proud of* ($M = 2.19$, $SD = 1.17$).

Self-confidence, character, and empowerment included indicators such as; *I can do things on my own; I set goals; ten years from now, I think I will be very happy; and I am responsible for my actions*. Students indicated their level of agreement to the self-confidence, character and empowerment statements. One statement was negatively phrased; *adults in my town or city don't care about people my age*. Disagreement or strong disagreement to this statement was indicative of high self-confidence, character and empowerment. The positively phrased statement receiving highest level of agreement was, *I am responsible for my actions* ($M = 4.18$, $SD = .83$). The

lowest level of agreement of the positively phrased statements was for the statement, *I have good written record keeping skills* ($M = 2.50$, $SD = 1.22$).

Summated Construct Index and Scale Scores

Summated construct scores were calculated for extracurricular activity involvement; school leadership positions held; close relationships with adults; caring for others; amount of negative behavior; personal identity; positive identity; and self-confidence, character and empowerment. Data were transformed and recoded into new variables that represented composite dependent construct variables as both index and scale scores which are described in more detail below.

Index Scores

Constructs, extracurricular activity involvement, school leadership positions held, close relationships with adults, and caring for others, were dichotomous response scale questions. Dichotomous scale data were inputted using 1 = no, and 2 = yes. These summated constructs were referred to as index scores and analyzed by comparing sums.

Scale Scores

Constructs, amount of negative behavior, personal identity, positive identity, and self-confidence, character and empowerment, were multiple level response scale questions. Multiple scale data were inputted using 1 = never, 2 = once, 3 = a few times, 4 = frequently for amount of negative behavior, and 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree for dependent variables personal identity, positive identity, and self-confidence, character and empowerment. Negatively phrased question responses were recoded as 5 = strongly disagree, 4 = disagree, 3 = neutral, 2 = agree, and 1 = strongly agree. These summated constructs were referred to as scale scores and analyzed by comparing means.

Analysis of Variance (ANOVA) determined the influence of age groups, gender, 4-H participation, and population density upon the eight constructs referred to above. ANOVA serves to avoid experiment-wise error since the pooled variance in ANOVA produces a more valid test than individual t-tests.

ANOVA for the extracurricular activities construct by age groups, gender, 4-H participation, and population density is displayed in Table 1. Significance was found in variables, age groups ($F = 3.974$, $p = .019$), 4-H participation ($F = 49.881$, $p \leq .001$), and population density ($F = 7.826$, $p = .005$), in the amount of extracurricular activities youth engage in during the school week. Although the ANOVA showed these mean differences, the effect size was very small. The partial Eta squared was .007 for age groups, .022 for 4-H participation, and .007 for population density, demonstrating a very low contribution to the overall variance in predicting the amount of extracurricular activities youth engage in during the school week, by each of these factors alone.

Table 2 shows the ANOVA for leadership positions construct by age groups, gender, 4-H participation and population density variables. Statistical significance was found for the

variables; age groups ($F = 6.459, p = .002$), 4-H participation ($F = 5.009, p = .025$), and population density ($F = 4.287, p = .039$). Partial Eta squared shows that variation in the construct may be explained by age groups (1%), population density (0.3%), and 4-H participation (0.4%).

Table 1
ANOVA for Extracurricular Activity Involvement Construct Index Scores by Age Groups, Gender, 4-H Participation, and Population Density ($n=1,492$)

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
A	14.995	2	7.477	3.974	.019	.007
B	1.695	1	1.695	.901	.343	.001
C	49.881	1	49.881	26.512	<.001	.022
D	14.725	1	14.725	7.826	.005	.007
A x B	.003	2	.001	.001	.999	.000
A x C	5.020	2	2.510	1.334	.264	.002
B x C	.001	1	.001	.000	.985	.000
A x B x C	.236	2	.118	.063	.939	.000
A x D	2.136	2	1.068	.568	.567	.001
B x D	2.089	1	2.089	1.110	.292	.001
A x B x D	21.332	2	10.666	5.669	.004	.010
C x D	4.765	1	4.765	2.532	.112	.002
A x C x D	1.832	2	.916	.487	.615	.001
B x C x D	1.956	1	1.956	1.040	.308	.001
A x B x C x D	11.977	2	5.989	3.183	.042	.005
Error	2174.994	1156	1.881			
Corrected Total	2370.149	1179				

A = Age groups 10-12 years, 13-14 years, 15-18 years
 B = Gender
 C = 4-H participation
 D = Population density

The ANOVA for caring for others construct by age groups, gender, 4-H participation, and population density is shown in Table 3. One variable was found to be significant in predicting the likelihood of youth helping others in need, 4-H participation ($F = 13.198, p \leq .001$). 4-H participation (1%) attributes to variance in the caring for others construct.

Table 4 illustrates the ANOVA for self-confidence, character and empowerment construct by age groups, gender, 4-H participation, and population density variables. This construct is composed of youth responses to statements such as; *I can do things on my own; I set goals; and adults in my town or city make me feel important*. One variable, 4-H participation, was found to be statistically significant ($F = 8.155, p = .004$) and contribute 0.6% to the variance in the self-confidence, character and empowerment construct.

Table 2

ANOVA for School Leadership Positions Held Construct Index Scores by Age Groups, Gender, 4-H Participation, and Population Density (n=1,492)

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
A	9.062	2	4.531	6.459	.002	.010
B	2.569	1	2.569	3.663	.056	.003
C	3.513	1	3.513	5.009	.025	.004
D	3.007	1	3.007	4.287	.039	.003
A x B	.336	2	.168	.239	.787	.000
A x C	3.177	2	1.588	2.264	.104	.004
B x C	.063	1	.063	.090	.764	.000
A x B x C	.395	2	.198	.282	.755	.000
A x D	3.594	2	1.797	2.562	.078	.004
B x D	.048	1	.048	.069	.793	.000
A x B x D	3.716	2	1.858	2.649	.071	.004
C x D	2.045	1	2.045	2.915	.088	.002
A x C x D	1.367	2	.683	.974	.378	.002
B x C x D	.333	1	.333	.475	.491	.000
A x B x C x D	3.941	2	1.970	2.809	.061	.004
Error	872.662	1244	.701			
Corrected Total	942.874	1267				

A = Age groups 10-12 years, 13-14 years, 15-18 years

B = Gender

C = 4-H participation

D = Population density

Conclusions/Recommendations

Results indicate that youth who have been involved in Nevada 4-H programming have some character and behavior traits that differ from youth who have never been involved in 4-H. In particular, youth involved in 4-H are more likely to engage in other organized activities in and out of school, participate in more school leadership roles, care and contribute to the well-being of more people in need and have higher self-confidence, character and empowerment than youth that have never been involved in 4-H. The findings also show that the 4-H involved respondents do not differ from non 4-H respondents with regard to amount of negative behavior practiced, closeness of relationship with adults, and levels of personal and positive identity. One could conclude that 4-H programming is making a notable impact on the lives of Nevada youth, but there is room for improvement.

Rather than focusing on weaknesses, another strategy might be to concentrate on and further develop the program areas in which are strengths. Safrit and Auck (2003) make sound recommendations to improve our 4-H programming by capitalizing upon those areas in which 4-H seems to excel, leadership and community service. Their recommendations include:

1. Encourage volunteers to conduct community service and connect project work with service opportunities. 4-H programming typically encourages community service but thought is seldom given to making the connection between project and service. Community service that makes this connection may promote more enthusiastic participation by 4-H members. Making this connection may require more creative brainstorming on the part of members, parents, and leaders. More time spent on the front end of community service produces added benefits in the long term. When youth understand that their involvement in a particular field has application to the larger community, a feeling of contribution should result.

Table 3
ANOVA for Caring for Others Construct Index Scores by Age Groups, Gender, 4-H Participation, and Population Density (n=1,492)

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
A	8.430	2	4.215	2.692	.068	.004
B	3.010	1	3.010	1.922	.166	.001
C	20.665	1	20.665	13.198	<.001	.010
D	1.771	1	1.771	1.131	.288	.001
A x B	2.887	2	1.444	.922	.398	.001
A x C	4.885	2	2.443	1.560	.211	.002
B x C	.215	1	.215	.137	.711	.000
A x B x C	1.074	2	.537	.343	.710	.001
A x D	.962	2	.481	.307	.736	.000
B x D	3.876	1	3.876	2.476	.116	.002
A x B x D	4.377	2	2.189	1.398	.247	.002
C x D	.001	1	.001	.001	.978	.000
A x C x D	1.357	2	.679	.433	.648	.001
B x C x D	.153	1	.153	.098	.755	.000
A x B x C x D	2.102	2	1.051	.671	.511	.001
Error	2030.790	1297	1.566			
Corrected Total	2172.012	1320				

A = Age groups 10-12 years, 13-14 years, 15-18 years

B = Gender

C = 4-H participation

D = Population density

2. Youth development professionals develop and share community service learning materials. 4-H leaders need help understanding the value of community service and the inherent educational opportunity. Community service should not be thought of as just another Extension office expectation but a purposeful means of youth development. Materials must be developed and made available to 4-H leaders describing how community service optimizes learning. Also, materials training should increase the likelihood of community service learning material use.

3. Link statewide events to learning opportunities in volunteerism, community service, and service learning. State events can set the standard for community service learning and be a model for county programs to emulate.

4. Develop partnerships with schools and youth organizations by sharing curriculum and community service opportunities and essentially bring community service learning to all youth not just those identified as 4-H members. 4-H programs can expand their reach and collaborate with other youth entities within the community. Opportunity to identify service related to community needs, and opportunity to involve a more diverse youth work force spanning various interest groups, may result in more impact full service projects.

In addition to Safrit and Auck's (2003) recommendations, study results should be summarized and made available to legislators, school officials, and community leaders. It is the responsibility of the University of Nevada Cooperative Extension to disseminate accountability information. It is critical that community decision-makers are aware of how 4-H programming investments pay long term dividends in the growth and development of our youth.

Finally, the AAAE Western Region should consider providing leadership in this attempt to produce more defensible, methodologically sound, evaluation data for 4-H accountability efforts. Other western states can be encouraged to replicate this study and add more data sets. Composite analyses will need to be coordinated. Furthermore, these analyses could potentially investigate other youth development influences such as, race/ethnicity differences.

Table 4
ANOVA for Self-Confidence, Character and Empowerment Construct Scale Scores by Age Groups, Gender, 4-H Participation, and Population Density (n=1,492)

Source	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
A	.164	2	.082	.007	.993	.000
B	3.221	1	3.221	.275	.600	.000
C	95.479	1	95.479	8.155	.004	.006
D	2.641	1	2.641	.226	.635	.000
A x B	11.238	2	5.619	.480	.619	.001
A x C	.457	2	.229	.020	.981	.000
B x C	.206	1	.206	.018	.895	.000
A x B x C	6.891	2	3.445	.294	.745	.000
A x D	24.584	2	12.292	1.050	.350	.002
B x D	2.083	1	2.083	.178	.673	.000
A x B x D	20.076	2	10.038	.857	.425	.001
C x D	.131	1	.131	.011	.916	.000
A x C x D	11.962	2	5.981	.511	.600	.001
B x C x D	7.323	1	7.323	.625	.429	.000
A x B x C x D	36.370	2	18.185	1.553	.212	.002
Error	14670.102	1253	11.708			
Corrected Total	15034.572	1276				

A = Age groups 10-12 years, 13-14 years, 15-18 years

B = Gender

C = 4-H participation

D = Population density

References

- Astroth, K.A., & Haynes, G.W. (2001). *Final report of the Montana public school students' out-of-school time study*. Bozeman, MT: Montana State University, 3-22.
- Bronfenbrenner, U., & Morris, P. (1998). The ecology of developmental processes. In W. Damon (Series Ed.) & R.M. Lerner (Vol. Ed.), *Handbook of child psychology: Vol. 1. Theoretical models of human development* (5th ed.). 993-1028). New York: Wiley.
- Dillman, D. (2007). *Mail and Internet surveys: The tailored design method 2007 update with new Internet, visual, and mixed-mode guide*, 2nd Ed. Pullman, WA: Washington State University.
- Eccles, J., & Gootman, J.A. (2002). *Community programs to promote youth development*. Washington, DC: Committee on Community-Level Programs for Youth. Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences Education, National Research Council and Institute of Medicine.
- Goodwin, J, Barnett, C., Pike, M., Peutz, J., Lanting, R., & Ward, A. (2005). Idaho 4-H impact study. *Journal of Extension*, 43(4). Retrieved on October 17, 2007, from: <http://www.joe.org/joe/2005august/a4.shtml>.
- Goodwin, J., Carroll, J.B., & Oliver, M. (2005). *Public school students' out-of-school time study: Measuring the impact of Colorado's 4-H youth development program*. Unpublished manuscript, Fort Collins, CO: Colorado State University.
- Lindner, J.R., Murphy, T.H. & Briers, G.F. (2001). Handling nonresponse in social science research. *Journal of Agricultural Education*, 42(4), 43-52.
- National 4-H Council. (2002). *4-H youth development facts in brief – 2002*. Retrieved on October 18, 2007, from: http://www.national4-hheadquarters.gov/about/poe/2002/About_4-H.pdf
- National 4-H Strategic Plan. (2001). *The power of youth in a changing world*. Retrieved On October 17, 2007, from: <http://www.national4-Hheadquarters.gov/library/strategic.pdf>.
- Research randomizer. (2006). Retrieved on October 17, 2007, from: <http://www.randomizer.org>
- Roth, J.L., & Brooks-Gunn, J. (2003). What exactly is a youth development program? Answers from research and practice. *Applied Developmental Science*, 7, 94-111.
- Safrit, R.D. & Auck, A.W. (2003). Volunteerism, community service, and service-learning by Ohio 4-Her's in grades 4-12. *Journal of Extension*, 41(4). Retrieved on October 17, 2007, from: <http://www.joe.org/joe/2003august/rb6.shtml>.

Tubbs, T.M. (2005). *Utah public school students' out-of-school time study to measure the impact of the Utah 4-H program*. Unpublished Master of Science Thesis, Utah State University, Logan.