The Effects of Participating in the Livestock Project on the Development of Life Skills in 4-H Youth

By

Jessica Stuttgen

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Tim Buttiles - Advisor

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Abstract

Participating in the 4-H livestock project can benefit 4-H members by providing opportunities for growth and development through hands-on experiences. 4-H alumni and parents of 4-H youth also recognize the benefits gained through participation in the 4-H program. Studies show involvement in the 4-H livestock project, which consists of participating in educational sessions and showing beef, sheep, swine, or meat goats, can increase the development of life skills in 4-H youth. Life skills can be broken up into the following categories: caring, giving, working, being, living, thinking, managing, and relating. The most common life skills gained through participation in the livestock project are responsibility, self-motivation, self-esteem, goal setting, and decision making. The least common life skills gained are communication, the ability to give oral reasons, and teamwork. As the level of participation in the 4-H project increased, so did the level of leadership life skill development. Other influencers of life skill development were age, gender, and years of involvement in the 4-H livestock project. Youth develop life skills through participation in various youth organizations, but one study found 4-H has the biggest influence on teamwork and cooperation, although each organization has different characteristics which can also influence life skill development. The life skills 4-H livestock project participants gain can help them become competent members of society and successful adults. Studies show 4-H alumni attribute the development of technical, communication, and leadership skills to their involvement in the 4-H livestock project, but the long-term impact may not be evident until the alumni reflect on their involvement in the 4-H livestock project. Parents of 4-H livestock project participants indicated the life skills their youth gained were positively enhanced by the participation in the livestock project. 4-H Extension professionals should evaluate other project
areas to determine the life skills gained by 4-H youth, and to determine if the project areas are fostering development.
Introduction

4-H is the nation’s largest youth organization, where youth ages 5 to 19 learn important life skills through involvement in engaging hands-on activities. Wisconsin alone has more than 150,000 youth participating in 4-H from urban, suburban, and rural settings (“About 4-H”, n.d., para. 1). “4-H Youth Development programs supply opportunities for youth to: (1) engage in learning activities and events that foster their skills and competencies; (2) build positive relationships with caring adults; (3) contribute to their communities; and (4) have multi-cultural experiences” (Hass, 2015).

The 4-H program is delivered by the Cooperative Extension System, which is a community of more than 100 public universities across the nation that provides experiences where young people learn by doing (“What is 4-H?,” n.d., para. 2). Youth who participate in the 4-H organization are four times more likely to make contributions to their communities and two times more likely to participate in STEM activities than youth who do not participate in 4-H (“4-H Programs at a Glance,” n.d., para. 3).

When evaluating the 4-H program, researchers find youth develop valuable life skills through the participation in engaging hands-on activities. Life skills are defined as a skill that helps a person function well in adult life, especially in social or emotional settings (Life Skills, n.d., para. 1). Some of the life skills youth learn while participating in 4-H activities are self-awareness, empathy, critical and creative thinking, decision making, problem solving, leadership, teamwork, communication, and interpersonal relationships. One event 4-H youth participate in where they develop valuable life skills is the livestock project. “The purpose of 4-H and FFA youth livestock projects is to teach youth how to feed, fit, and show their animals. The more important
The purpose is to provide an opportunity for personal growth and development of the young person” (Hammat, 1995).

As youth participate in the livestock project year after year they continue to develop and strengthen their life skills, which provides a valuable foundation for them to enhance their adult lives. “Life skills are learned competencies known to assist individuals with leading constructive and rewarding lives…” (Hendricks, 1998). Studies have shown that youth who participate in the 4-H livestock project develop more life skills than those who do not, but how big of an impact does the 4-H project really have? The objective of this paper was to determine if participating in the livestock project enhanced the development of life skills in 4-H youth.

**Discussion**

The article *Developing Life Skills in Youth* by Boyd, Herring, and Briers (1992) discusses how the 4-H program can be related to the development of leadership life skills. “The purpose of this study was to compare the leadership life skill development of 4-H club members and youth who had never participated in 4-H” (Boyd et al., 1992). A questionnaire was developed and mailed to 500 4-H members in the spring of 1991. The 4-H members were age 13 to 19 years old and were randomly selected from 19 counties in Texas. Three hundred and nine 4-H youth responded, for a response rate of 62%. Five hundred and fifty-eight non-4-H youth from 28 random schools in Texas, in grades 7 through 12, and of similar age were also chosen to take the survey.

Youth responded to questions pertaining to their leadership life skill development and participation in 4-H and non-4-H activities. The twenty-one leadership life skill statements were adapted from the Leadership and Personal Development Inventory, which was developed at Iowa State University (Boyd et al., 1992). The statements were grouped into five measurement scales,
working with groups, making decisions, understanding self, communicating, and leadership. A six-point Likert-type scale was used to measure the respondents perceived development of leadership life skills.

For the leadership life skill development, mean scores were compared, and a t-test analysis revealed 4-H members perceptions of their leadership skills were higher than non-4-H youth (Boyd et al., 1992). The 4-H members rated communicating, making decisions, understanding self, and working with groups higher than non-4-H youth, but lower on leadership than non-4-H youth. The non-4-H youth rated understanding self and working with groups higher as a group, and lower on the remaining scales. A second question was added to the 4-H members survey, which evaluated the relationship of 4-H participation to the development of leadership skills. The 4-H members were also given a list of 18 4-H activities and were asked to indicate the highest level of participation where 1 is none, 2 club level, 3 county level, 4 district level, 5 state level, and 6 at the national level. “The Pearson’s Product Moment Correlation analysis revealed a low to moderate positive and statistically significant relationship between level of participation in 4-H and perceived development of life skills” (Boyd et al., 1992). The strongest relationship between participation and leadership skills existed for communicating, working with groups, and leadership. As the 4-H members participation in 4-H activities increased their level of leadership life skill development also increased. Serving as an officer, serving on 4-H council, public speaking, serving as a committee or chair member, participating in method demonstrations and illustrated talks were activities identified as having a positive relationship to leadership life skill development. As participation increased, so did leadership life skill development.

In conclusion, Boyd et al. (1992), found participation in the 4-H program is positively related to perceived leadership life skill development. The level of leadership life skill development
increased as the level of 4-H participation increased. Boyd et al. (1992) also found the relationship between 4-H participation and leadership life skill development measures were low for the scales on communicating, working with groups, making decisions, and understanding self which were all statistically significant. Two explanations were possible one being the relationship between the four scales and the development of leadership life skills were low, and the second possibility being the survey lacked precision (Boyd et al., 1992). Further research is required to understand the relationship between 4-H participation and leadership life skill development.

The article, *The Effects of Age, Gender, and 4-H Involvement on Life Skill Development* by Haas, Mincemoyer, and Perkins (2015) examines the effects of age, gender, and 4-H involvement on the development of life skills in youth, and the relationship between 4-H involvement and life skill development overtime. A total of 5,946 youth participated in 4-H clubs in Pennsylvania and completed the pre-survey between 2003 and 2013. Post-surveys were collected from 1,901 youth, for a response rate of 32%, one year after the pre-survey. The post-survey was used to assess the changes in life skill development over time.

Haas et al. (2015) used a life skill instrument which was developed by Perkins and Micemoyer in 2005. The life skill instrument used 26 items, which assessed decision making, communication, critical thinking, problem solving, and goal setting. An exploratory factor analysis was run to assess if there were multiple constructs as theorized using the 5,946 pre-surveys and the 1,901 post-surveys. After the exploratory factor analysis was completed, a generalized least square with promax rotation was used due to previous results, which showed the items and constructs have correlations. The results of the factor analysis, which used the pre-survey and post-survey data suggested that multiple constructs appear within life skills of the Skills of Everyday Living.
Instrument (Haas et al., 2015). Decision making, communication, and critical thinking stood alone, while problem solving, and goal setting tended to group together. Theoretical constructs were calculated and used as the basis for dependent variables.

Reliabilities were completed on the items for the five theorized constructs using the 5,946 pre-surveys and the 1,901 post-surveys. The reliabilities are as follows: decision making (alpha 0.76 and 0.78), critical thinking (alpha 0.75 and 0.73), communication (alpha 0.79 and 0.78), goal setting (alpha 0.82 and 0.81), and problem solving (alpha 0.86 and 0.85) (Haas et al., 2015). A set of step-wise regressions was ran on the 5,946 pre-surveys to determine the relationships between the life skill constructs and age, gender, and 4-H involvement. Two groups were created from the data and they are less than 3 years of 4-H involvement and more than 3 years of 4-H involvement. “A set of analyses involving a sub-set of 1,901 with watching pre-surveys and post-surveys used to create change scores of constructs as the dependent variables in the step-wise regressions” (Haas et al., 2015).

As Haas et al. (2015) evaluated the data they found the largest age group to be 12 years old, with an age range of 8 to 18 years old, with a mean age for the pre-survey being 12.74 years old and the mean age for the post-survey being 12.5 years old. No significant difference was found between the two data sets, but an interesting result was life skills increase with age. Another surprising result was in 10 years, means shift for each life skill was less than 0.5 on a scale from 1 to 5. Age was found to be significantly related to all five life skills (Haas et al., 2015).

Evaluating gender, Haas et al. (2015), found 64.7% of the pre-surveys and 61% of the post-surveys were completed by females, and no significant difference was found between the two data sets. The results also show females started the program with the five life skill areas were significantly higher and changed significantly more during the year than the male respondents.
The difference between genders was consistent across all age groups. Years of 4-H involvement at the time of the pre-survey ranged from 0 to 10 years, with an average of 2.7 years for both data sets. There was no significant difference found between the data sets pertaining to 4-H involvement.

Haas et al. (2015), found years of involvement highly correlated with age in both data sets ($r = 0.674$ and 0.70). This finding is one of the primary reason’s pre-surveys were used for both the independent variable in the regressions assessing change and the dependent variables when assessing all three primary independent variables (Haas et al., 2015). Two groups were created for years of 4-H involvement and they were under two years of involvement and more than two years of involvement. The results for the One-Way ANOVA’s, which compared the two groups found 4-H involvement significantly affected all five life skills ($P < 0.000$) (Haas et al., 2015).

Results were also evaluated for the effects of age, gender, and 4-H involvement on pre-scores. To evaluate the results, regressions were run, because the youth started the programs at varying ages, with varying involvement. The regressions were used to assess the relationships between age, gender, and 4-H involvement. “In this model, age and gender significantly related to all five life skill constructs, with older youth and females scoring higher” (Haas et al., 2015). 4-H involvement was found to be significantly related to three life skills, which were decision making, communication, and critical thinking. The results show females are significantly more likely to change on all five life skills. Also, pre-survey scores were found to be significant on all five life skill change scores, which accounted for over 90% of the regression and was a major factor in seeing the effects of gender and 4-H involvement (Haas et al., 2015). An interesting result was, the lower pre-survey scores had the greatest change.
While evaluating the effects of project type and gender on life skills changes, Haas et al. (2015), found the greatest change to life skills occurred in participation in the international and diversity projects followed by science and technology, citizenship, and family/consumer science. While examining the gender differences in life skills changes in science and technology projects, females significantly changed more in communication and critical thinking compared to males. There was no significant difference between males and females when examining the results for consumer and family science projects (Haas et al., 2015). While examining gender specific projects, Haas et al. (2015) found males and females life skills may change more when projects are gender specific.

Haas et al. (2015) looked at the limitations of the study, and they determined a quasi-experimental study would strengthen the findings. When they evaluated the change variable, it only included 32% of the youth in the pre-survey, which showed no significant difference between the two data bases on the independent variables. Also, adding in more states and more variables like race, club involvement, and urban or rural living may also help strengthen the results.

In conclusion, the results support the influence of 4-H in the life skill development of youth, and suggests age and gender also influence the development of life skills. Females tend to have higher levels of competencies in life skills at the start of the program and are more likely to change during the year and are more likely to endorse healthy habits (Haas et al., 2015). Females also had an increase in decision making. Certain projects may influence life skill development and gender specific projects may have a bigger effect than mixed projects. A pre-survey may be helpful when it comes to understanding youth. When planning future programs
age and gender should be considered and new strategies should be implemented to keep boys and girls engaged for longer periods of time, need to be addressed.

*The Impact of Livestock Exhibition on Youth Leadership Life Skill Development: Youth Agricultural Organizations* by Anderson, Bruce, Jones, and Flowers (2015) examines the differences between youth who exhibit livestock and youth who did not on the development of leadership life skills. “The first purpose of the study was to determine the impact of livestock exhibition on youth leadership life skill development from the participants’ perspective” (Anderson et al., 2015). This study had a second purpose, which was to determine if there is a difference in the development of leadership life skills in youth who have participated in agricultural organizations and those who have not participated in a youth agricultural organization (Anderson et al., 2015). Anderson et al. (2015) evaluated two objectives, the first being the youth’s description of self-perceived development of leadership life skills of livestock exhibitors at the fair using the youth leadership life skill development scale, and the second objective was to compare the leadership life skill development level of 4-H and FFA participants to exhibitors who do not participate in 4-H (Anderson et al., 2015).

The study used an ex post facto design and occurred at the North Carolina State Fair in 2010. The fair office provided a list of 201 4-H and FFA exhibitors, age 16 to 21. A two-part survey was used to acquire demographic data and the second part used the Youth Leadership Life Skills Development Scale (YLLSDS), developed by Seevers, Dormody, and Clason (1995) to evaluate the impact of youth organizations on the development of leadership life skills. The survey had a Cronbach’s Alpha of 0.98. One hundred and thirty-nine surveys were returned for a response rate of 69%. Twenty non-respondents were contacted to determine if a difference occurred between respondents and non-respondents. No statistically significant difference was found
between the two response groups. The data was analyzed using a statistical package for social sciences, and individual t-tests were used to find differences with YLLSDS scores.

Of the respondents 60.9% were female, 42% were between the age of 17 and 18 years old, 37% were between the age of 19 and 21 years old, 66.7% resided on a farm, and 89.1% were currently participating in 4-H or FFA. The findings for objective 1, which evaluated the development of leadership life skills using the YLLSDS, found the mean score was 73.68, with a standard deviation of 13.14, and a low score of 35 and a max score of 90 (Anderson et al., 2015). The top three scoring life skills were can set goals with a mean of 2.77, show a responsible attitude with a mean of 2.76, and can set priorities with a mean of 2.67. The lowest three scoring life skills were: am sensitive to others with a mean of 1.83, can express feelings with a mean of 2.06, and trust other people with a mean score of 2.20. While examining objective 2 the independent t-test was used to determine the differences between the YLLSDS scores, and to determine if differences were present between the participants involved in 4-H or FFA and those who have not. Anderson et al. (2015) found the mean scores for livestock exhibitors who had participated in 4-H or FFA were only slightly higher at 73.90 compared to non-participants at 71.60, which is not statistically significant.

In conclusion, no difference was found in the life skill development of those who have participated in youth agricultural organizations and those who didn’t. Anderson et al. (2015) found two factors that influenced the results, and they were the number of participants and the type of population chosen for the study. In North Carolina, 4-H and FFA livestock exhibition isn’t very prevalent. A few recommendations were made by Anderson et al. (2015), with one being the 4-H and FFA programs should be evaluated to make sure the ultimate goal is to develop life skills. Another recommendation is to consider adding a “senior-plus” division to
add an older age group to the program. Also, more detailed research should be done, and continually done to evaluate the effects of livestock exhibition on the development of leadership life skills.

Holmgren and Reid’s (2007) article, *4-H and FFA Livestock Projects: Life Skills Gained and Knowledge Learned* evaluated the development of life skills in 4-H youth who exhibit livestock in Utah. “The purpose of this study is to access the value of these projects for youth development as well as help extension educators and FFA advisors identify opportunities to develop quality programs for youth with livestock projects” (Holmgren & Reid, 2007). Three objectives were considered during the study. The first being, what values and life skills are youth developing as a result of their 4-H and/or FFA livestock project, the second being what 4-H and FFA projects other than livestock and horse projects are youth enrolled in, and the third being what are 4-H and FFA youth learning as a result of the livestock projects (Holmgren & Reid, 2007).

A survey was developed, which asked youth to share what they learned as a result of their livestock project. Data was collected from two separate livestock shows held in 2001. Group 1 consisted of 131 4-H and FFA youth who attended the Southwest Junior Livestock Show (SWJLS) in Cedar City, Utah. Group 2 consisted of 282 4-H and FFA youth who attended the Box Elder County Junior Livestock Show (BEJL) in Tremonton, Utah. Of the respondents from both groups, 63% resided in non-production farm residence (Holmgren & Reid, 2007). The respondents from the SWJLS were 57.5% male and 42.5% female, and 17 counties participated in the survey. The respondent for the BEJL show were 47.4% male and 52.6% female. Between both shows 66.3% of the youth were involved in 4-H for less than four years.
Holmgren and Reid (2007) found 97% of 4-H and FFA youth who participated in the livestock show were very confident in showing, and 35% explored careers in agriculture. They also found some values were learned or reinforced significantly by participation in the livestock show.

Twenty-one life skills were evaluated, the top 5 were to accept responsibility for doing a job with a mean score of 4.48, value the contributions of others with a mean score of 4.48, be friends with people who are different than me with a mean score of 4.45, follow instructions as they are given to me with a mean score of 4.41, and understand what was required to have a successful livestock or horse project with a mean score of 4.39. An interesting result was that both parents and youth perceive accepting responsibility as the number one life skill gained. The members agreed or strongly agree that learned responsibility, leadership, communication, positive interactions with other youth and adults, and personal development skills, were gained from their experiences with the livestock project (Holmgren & Reid, 2007). The results show the livestock projects effectively help youth develop critical life skills. Several attributes are derived from the livestock projects and they were following instructions, money management, saying “no” to things they don’t want to do, and gaining confidence. The bottom five activities 4-H and FFA members participated in were officer training, science and technology, communication, committees, and demonstrations. The top five learned skills were show an animal (97.01%), care for animal (96.77%), feed animal (95.77%), grooming (95.77%), and keeping healthy (91.79%) (Holmgren & Reid, 2007). Participants indicated they didn’t learn oral reasons and about careers in agriculture.

In conclusion, Holmgren and Reid (2007) found participating in the livestock project was an excellent opportunity to develop life skills in 4-H and FFA youth. Some emphasis should be placed on leadership and communication development by encouraging youth to be active
members of the county 4-H and FFA livestock and horse committees, junior club leaders, etc. Extension Youth Development Agents can conduct their own surveys to evaluate and determine the value of other projects.

In *The Impact of Raising and Exhibiting Selected 4-H Livestock Projects on the Development of Life and Project Skills* by Rusk, Summerlot-Early, Machtmes, Talbert, and Balschweid (2003) evaluated the project skills and development of life skills in 4-H youth who participated in the livestock project in Indiana. Three objectives were evaluated for this study. The first objective was to compare the perceived levels of project skill development by Indiana 4-H beef, sheep, and swine members who exhibited at the county fair only and those who exhibited at the county and Indiana state fair (Rusk et al., 2003). The second objective was to describe the ways 4-H members utilize project skills learned in the livestock projects to develop life skills, and the third objective was to identify the ways 4-H livestock project members are using these life skills in their everyday lives (Rusk et al., 2003).

Four hundred and twenty 4-H youth were identified to participate in the study. Two hundred and ten participated in the county fair only, and the other 210 participated in both the county fair and the Indiana State Fair. A stratified sample was taken, with an equal species distribution for the study. Of the 420 identified youth, 410 could participate in the study, 28% exhibited all three species, and 41% exhibited two species (Rusk et al., 2003). There was no comparison made between the species, instead all the data was collapsed into one data set. A survey was created, and it asked 7 demographic questions, and two questions pertaining to the perceived life skills gained and how they use the skills in their everyday lives. Nineteen items were grouped into 5 project skill areas including animal health care, selection of animals, animal grooming, safety of people and animals, and the sportsmanship of the exhibitor (Rusk et al., 2003). A Likert-type
scale was used, but the neutral option was excluded so the respondents had to choose one of the options given. Five open-ended questions were added to the survey to discover how respondents were using life skills developed from raising and exhibiting in the 4-H animal project (Rusk et al., 2003). The Dillman’s Tailored Design was used to collect the data. Twenty random non-respondents were contacted by telephone to complete the survey, and a t-test revealed no significant difference between the mailed responses and the telephone responses. One hundred and seventy-six surveys were returned, for a response rate of 41.9%. The Mann-Whitney test was used to measure the statistical significance between the two groups, and the qualitative data was typed verbatim and organized by theme (Rusk et al., 2003).

Rusk et al. (2003) found 53% of the respondents were female and 47% were male, with a mean birth year of 1984, and the mean grade completed was 10th with 45% of the respondents completing an animal science course. All 176 of the respondents exhibited at the local county fair and 114 of the respondents also exhibited at the Indiana State Fair. The mean years for exhibiting at the county fair was 7.16 years, and the mean years exhibiting at the Indiana State Fair was 6.18 years. Ninety-one percent of respondents competed in showmanship at the county fair with an average of 5.69 years, and 72% competed in showmanship at the Indiana State Fair with an average of 3.63 years. Rusk et al. (2003) found the state fair participants were more likely to take an animal science course, join FFA, play sports, and more likely to enroll in all three livestock projects.

The participants responses for project skill development, show they only need little help to complete their project. Participants also had to rank skills which pertained to animal health care, grooming, and animal selection. Grooming had the highest mean score and animal health care had the lowest mean score, with participants needing assistance to take the animals temperature.
Participants who exhibited at the Indiana State Fair ranked skill levels in areas of animal grooming, animal health care, and animal selection higher than the participants who only exhibited at the county fair. One hundred and forty-nine respondents provided qualitative comments. Fifty-one percent said they had an increase in self-confidence, 44% indicated the animal projects helped them commit to projects they started, 62% gained decision making skills, and 33.5% witnessed or knew of cheating (Rusk et al., 2003).

In conclusion, Rusk et al. (2003) found acquiring knowledge and developing skills to be the most important part of the livestock project. Participants are not confident in animal health care and need assistance with disease identification and taking the animals temperature. No difference was found between the two groups to perform project skills in sportsmanship and safety. Overall, participants of the livestock project use the project skills they have gained to enhance the development of life skills. Raising animals increases the participants self-confidence, improves their people skills, decision making, and problem solving (Rusk et al., 2003). State fair participants may gain more from the livestock project because they want to compete at a higher level, which drives them to learn more.

The article *Urban Youth Develop Life Skills Raising Livestock* by Cummins and Nash (2014) evaluated the Cattle Kids program in Southeast Idaho, which was developed to give youth living within the city limits the opportunity to develop life skills by participating in a cattle project.

Specific outcomes were developed for the Cattle Kids program; to help youth understand the cattle industry, gain responsibility from caring for an animal on a daily basis, learn basic record keeping and communication skills, to learn basic cattle management skills.
without a significant financial investment, and to learn proper livestock management skills. (Cummins & Nash, 2014)

A target audience was identified living within the city limits, and recruited through news articles, county newsletters, and flyers. The participants were youth, who were 4-H members or non-4-H members. To be able to participate in the program the parents and the youth had to sign an agreement form, pay a $50 fee to encourage ownership and reinforce the level of commitment needed to care for an animal, and if youth couldn’t afford to pay the fee, they could have the fee subtracted from their auction check (Cummins & Nash, 2014). At the end of the program the youth were paid based on the fair market value for bucket calves. An educational program was developed for the youth and their parents covering the topics of general calf care, proper nutrition, and fair readiness (Cummins & Nash, 2014). The youth who participated in the program learned hands on experience like feeding and watering calves, taking the calves temperature, cleaning stalls, and exercising the calves for about three months. The youth had to participate in showmanship as one of the requirements of the program. After the completion of the project a post-test and retrospective survey were administered to the youth to evaluate the knowledge they gained during the Cattle Kids program. A questionnaire was also developed and administered to the parents at the completion of the program. One county has run the Cattle Kids program for 5 years and another county had been running it for 2 years, and between the two counties 188 youth raised 258 calves and only lost one calf. For this study 70 youth and 36 parents participated (Cummins & Nash, 2014).

Cummins and Nash (2014) found a significant increase in the development of life skills in the youth who participated in the program. The participants also gained knowledge specific to the care of a calf and demonstrated having an impact on the way they acted at home.
In conclusion, this study successfully demonstrated the way experiential learning can help develop life skills in youth (Cummins & Nash, 2014). The Cattle Kids program helped to foster a relationship between the 4-H, farmers, and local businesses. The programs also had a unique ability to engage youth in life skill development in a way their physical circumstances would not otherwise allow (Cummins & Nash, 2014). More work should be done to expand the program to other counties and even states. Further research is also needed to examine the impact the Cattle Kids program made.

_A Comparison of 4-H and Other Youth Development Organizations in the Development of Life Skills_ written by Maass, Wilken, Jordan, Cullen, and Place (2006) evaluated the long-term effects of 4-H participation on the development of life skill competencies among 4-H alumni. No research has been done on 4-H alumni to identify and describe the influence of both 4-H and other youth organizations on life skill development. A cross-sectional, quasi-experimental research design was used for this study. A survey was mailed to 444 alum of the Oklahoma 4-H program, and following Dillman’s recommendations a Thank You and a reminder were sent 2 weeks following the initial mailing, and a replacement survey was sent to the non-responders 2 weeks later. Two hundred and twenty-three surveys were returned with a response rate of 58%, but 50% surveys were undeliverable, and 9 surveys were unusable. The dependent variable for this study was the life skills, which were measured using the life skills inventory (LSI). The life skills inventory was comprised of 36 items from the Indiana Impact Study, the Targeting Life Skills Model, the National 4-H Impact Study, the Cooperative Extension, the Washington State University, the Life Skills Eval System, and public speaking (Maass et al., 2006).

The survey asked questions about the alum’s 4-H career, demographics, 4-H experiences, participation in other group organizations, influential aspects of 4-H, life skill development
gained through participation in 4-H and other youth development organizations, and current community involvement. This article reports specifically on the comparison of perceived life skill development attained through participation in 4-H and other youth development organizations (OYDO) (Maass et al., 2006). The life skill index yielded a Cronbach’s Alpha of 0.96, which indicated the items on the index measured a single unidimensional latent construct. The alumni were considered high achieving if they participated in one or more of the following events: National 4-H Congress, National 4-H Conference, Oklahoma 4-H Key Club, State 4-H ambassador, State project winner, and State or District office (Maass et al., 2006). All the data was run through SPSS for analysis. The average age of the respondents was 37.5 years, and more than 90% of the respondents participated in 4-H for 8 years or more. The majority of the alumni held multiple 4-H offices at the local, county, and state levels, and they participated in activities from the local to the national level. Of the respondents almost 90% were White and 10.5% were Native American, with 62% from a rural residence. Female respondents made up 67.3% and males made up 32.7%, and 90% of the respondents completed some education after high school.

Maass et al. (2006) found 92.6% of alumni reported being a member of an OYDO in addition to 4-H. Participation in religious organizations made up 65.9%, 58.3% participated in athletics, and 21.1% participated in FFA. The top five life skills influenced by 4-H were public speaking, self-discipline, community service, teamwork, and self-responsibility (Maass et al., 2006). The least influenced life skills by 4-H were stress management, conflict resolution, healthy lifestyle choices, disease prevention, and personal safety. The top five life skills influenced by OYDO were character, accepting differences, self-discipline, cooperation, and social skills (Maass et al., 2006). The least influence life skills by OYDO were healthy lifestyle choices, keeping records,
A paired t-test compared the influence of 4-H with the influence of OYDO. A significant difference was seen between the influence of 4-H and OYDO in 30 of 36 life skills. The t-test scores for the highest life skills influenced by 4-H were keeping records (t= 17.30), public speaking (t= 17.08), healthy lifestyle choices (t= 11.99), learning to learn (t= 10.80), and leadership (t= 10.46). The t-scores which favored OYDO were stress management (t= -3.46), character (t= -2.5), personal safety (t= -2.12), and resiliency (t= -0.76) (Maass et al., 2006). The paired t-test was used to compare the 4-H LSI summary score with the OYDO LSI summary score, and the results of the analysis suggest a significantly higher attribution to life skill development to 4-H than to OYDO (t= 9.925, P ≤ 0.001) (Maass et al., 2006).

In conclusion, the triangulation of the data collected, and the LSI used strengthens and deepens our understanding of the data. Maass et al. (2006) found participation in various youth organizations influenced the development of life skills. 4-H is attributed to the development of 26 of the 36 identified life skills, and OYDO attributed to the development of 4 of the 36 identified life skills. There was no significant difference found between 4-H and OYDO in attribution of several emotional and interpersonal life skills. Additional research is required to further evaluate the effects of 4-H and OYDO on the development of life skills. The cooperative extension system should develop 4-H promotional materials that emphasize the development of life skills in youth. Also, 4-H programming could be enhanced by developing collaborations with other youth organizations (Maass et al., 2006).

*Life Skill Development Through 4-H Clubs: The Perspective of 4-H Alumni* by Fox, Schroeder, and Lodl (2003) evaluated the perceived life skills gained by 4-H alumni through 4-H club experiences and if so to what extent. The study evaluated 32 life skills, which were divided up
into 4 groups: technical skills; communication skills; leadership skills; and personal or social skills. A descriptive, mixed model survey was created, and the survey had a Cronbach’s Alpha of 0.796. The 4-H alumni who were chosen to participate came from 17 counties in southeast Nebraska and had participated in 4-H from 1982 to 1988. The Extension staff selected individuals from a wide variety of 4-H involvement. Two hundred and sixty-four alumni were chosen to complete the survey. Qualitative data was gained through open-ended questions (Fox et al., 2003).

One hundred and ninety-six alumni responded, for a response rate of 74%. The alumni participated in 4-H for 3 to 13 years, with an average participation of 9.2 years. Fox et al. (2003) found that less than a quarter of the respondents were currently involved with 4-H as a volunteer. The alumni rated the influence of their 4-H club experience on life skill development on a 4-point scale. They also found 4-H club membership did have a primary or some influence on the development of all 32 life skills (Fox et al., 2003). 4-H club involvement had the highest impact on responsibility (58.8%), but also had a primary influence on product production skills, ability to handle competition, and gaining the ability to meet new people. The development of leadership skills were primarily influenced by engagement in 4-H activities (46.3%), while 46% primarily gained project skills through their 4-H experience. 4-H club membership also attributed to developing self-confidence and a willingness to try new things (43.8%). The alumni were also allowed to list other skills they learned, 85% indicated other leadership skills, 66.7% technical life skills and communication skills, and 60% indicated other personal and relationship life skills (Fox et al., 2003). The technical skills gained were consumer science, animal science, science and technology, and environmental education and plant science. The communication skills the alumni gained were asking questions, ability to meet others outside of the country, and
developing friendships that lasted into and past college (Fox et al., 2003). Alumni indicated gaining one personal or social skills, which was learning to teach others, and the leadership skills gained were citizenship skills, ability to take orders, and networking skills (Fox et al., 2003).

In conclusion, Fox et al. (2003) found the 4-H club experience does affect the development of life skills, and 4-H is a viable avenue for the Cooperative Extension System in developing young people to become capable, competent adults. Future research is needed to investigate the relationship among 4-H club membership, life skill development and participation by ethnicity and gender; to find other predictors of life skill development; and to replicate the research (Fox et al., 2003).

Fitzpatrick, Gagne, Jones, Lobley, and Phelps (2005) created a study to measure the long-term impact of Maine 4-H Youth Development programs by surveying recent 4-H alumni to determine if they had learned specific life skills and published their findings in the article Life Skills Development in Youth: Impact Research in Action. A qualitative study was created and used telephone interviews with 4-H alum and adult volunteers. Data was collected in two separate phases. The interview questions were drawn from a study which was done in New York on 4-H clubs (Fitzpatrick et al., 2005). Two questions were chosen from the areas of Head, Heart, Hands, and Health. The participants were asked open-ended and multiple-choice questions, while a criterion sampling strategy was used to gather an informative rich study. Forty-eight 4-H alumni who were interviewed indicated they had been involved with the 4-H program for more than 7 years, and 97% lived on a farm in the country or a small town. Thirteen adult volunteers indicated being involved with 4-H programs for more than 10 years, 22 adult volunteers involved for 1 to 6 years, and 75% live on a farm in the country or a small town (Fitzpatrick et al., 2005).
Phase one of the study involved the 4-H alumni. All the extension offices in Maine provided names of high school graduates from the previous 5 years (1999-2003). Sixty-three alumni were contacted to participate in the survey. The number contacted was small due to address changes, and 3 declined to participate. A graduate assistant conducted the telephone interviews with 8 males and 52 females, and each participant was asked the multiple-choice questions first and the open-ended questions second (Fitzpatrick et al., 2005). The data was analyzed by the QSR NVivo version 2.0.161 qualitative research software to identify common themes. Phase two of the study looked at the adult volunteers. Forty-three adult volunteers were identified in 6 of Maine’s 16 counties. The interview questions were selected from a corresponding set of questions asked of the 4-H alum (Fitzpatrick et al., 2005). County officials conducted the interviews with the adult volunteers by telephone and face-to-face. A cross case analysis was completed to analyze the common themes between the interviews of the 4-H alumni and the adult volunteers (Fitzpatrick et al., 2005).

Fitzpatrick et al. (2005) evaluated the questions they asked the 4-H alum and the adult volunteers. The first question they looked at was “Did 4-H help you learn this life skill,” and the results indicated that 60-90% of youth indicated they learned skills pertaining to accepting people who are different, community service, making healthy choices, and learning job skills. The results also show that 75-90% of the adults indicated that youth learned community service, making decisions, keeping records, communicating, making healthy choices, and learning job skills (Fitzpatrick et al., 2005). The common themes that arose from evaluating the open-ended questions were: self-esteem, teamwork, responsibility, cooperation, and planning/organizing (Fitzpatrick et al., 2005). Fifty-six percent of the alumni rated themselves as above or much above average for doing well in school.
Some limitations became evident for this study, with one of them being the inability to contact 4-H alumni because there isn’t a system in place to track those who exit the program, which led to a limited sample size. The data collection varied due to the county staff interviewing the volunteers and the graduate assistant interviewing the 4-H alumni. Another limitation may have been the multiple-choice questions being asked first, which may have limited the responses to the open-ended questions.

The life skills learned through 4-H participation can be tracked through the use of project records, fair exhibits, 4-H stories, testimonial and interviews with alumni (Fitzpatrick et al., 2005). The long-term impact of 4-H participation may not be known until the member reaches adulthood and can reflect back on their experience. One recommendation made by Fitzpatrick et al. (2005) was a way to track 4-H alum needs to be developed, so the impacts of 4-H on the development of life skills can be tracked. A dramatic difference was found between the youth and adult responses to the questions about what life skills were learned as a result of participation in the programming. A significant difference was found in the following areas: accepting people who are different, keeping records, communication skills, and making decisions (Fitzpatrick et al., 2005).

In conclusion, the results of the study lead us to believe with some confidence that involvement in 4-H youth development programs does help youth learn and use specific life skills (Fitzpatrick et al., 2005). The results show both youth and adults involved in 4-H do display a high degree of satisfaction with the program. Further research is required to evaluate if the amount of time youth participate in 4-H has an impact on the development of life skills, which they carry into adulthood.
Parental Perceptions of Participation in 4-H Beef, Sheep and Swine Livestock Projects and the Fostering of Life Skill Development in Youth written by Heavner, Hicks, and Nicodemus (2011) evaluated the life skill development gained by 4-H members who participated in the 4-H beef, sheep, or swine projects in West Virginia. Two objectives were identified, the first being to determine the life skills gained by youth participation in 4-H livestock projects as addressed by their parents, and the second being measuring the relationship between individual life skills and years of youth participation in 4-H livestock projects (Heavner et al., 2011).

The parents of youth who were participating in the 4-H livestock project, were the target population for this study. All 55 of West Virginia’s counties were invited to participate, and a 10% random sample was drawn from the 55 counties. A questionnaire was mailed out to the participants and evaluated 13 life skills (Heavner et al., 2011). The questionnaire was modified and updated from the instrument Boleman et al created in 2004. The parents/caregivers were asked to offer their perceptions on the level of life skill development, which resulted from their child raising a 4-H livestock project (Heavner et al., 2011). The years of youth participation in the 4-H project and demographics were asked later in the questionnaire.

Two hundred and seven parents returned the questionnaire. The average years in the project was 4.74 years, with a range of 1 to 16 years, a mean age of 13.75 years old, with a range of 6 to 24 years old, and 44.9% were male and 55.1% female. The parents had to specify how many shows their youth participated in from January 2006 to August 2006, and 85.6% responded 1 to 4 shows and 1.4% identified their youth hadn’t shown yet (Heavner et al., 2011). 4-H membership ranged from 2 to 16 years, with a mean of 5.30 years. Looking at objective 1 pertaining to the youth’s livestock experience, Heavner et al. (2011) found all life skills ranked moderately influential and above, which indicates the impact was significant on the development of life
skills. While evaluating the impact of the 4-H livestock experience they found the life skills ranked highly influential and above. The highest-ranking life skill was accepting responsibility (91.3%) and the lowest was developing oral communication (58.3%) (Heavner et al., 2011). The Pearson’s correlation was used to evaluate objective 2, and to find a correlation between at least two continuous variables. Heavner et al. (2011) found accepting responsibility didn’t significantly correlate with the demographics. They also found as self-motivation increases, less time was spent working with their livestock projects.

In conclusion, parents indicated the development of life skills is positively enhanced by the participation in the 4-H livestock projects. 4-H plays a major role in life skill development along with the cultivation of productive youth, who can be a contributing member to society. A high correlation was found between the 4-H members who exhibited in the livestock project and the life skills of: accepting responsibility, building positive self-esteem, self-motivation, setting goals, and developing organizations skills (Heavner et al., 2011). Heavner et al. (2011) said it best, “as agents of positive change, it is our responsibility to focus on the development of life skills and what 4-H projects, programs, etc., and foster their development” (pg. 85).

Boleman, Cummings, and Briers (2004) evaluated the life skills gained by youth participating in the 4-H beef project in Texas by asking parents to address the life skill development of their children and published their findings in the article Parents’ Perceptions of Life Skills Gained by Youth Participating in the 4-H Beef Project. Three objectives were identified by Boleman et al. (2004) and they were: determine the life skills gained by youth participating in the 4-H beef projects as perceived by their parents; measure the relationship between individual life skills and days of ownership of their 4-H beef project; and measure the relationship between individual life skills and years of participation in the 4-H beef project.
An ex post facto approach and correlational design were used to evaluate the relationship between variables by using the correlational statistics. Names of 6,347 youth were compiled from the 4-H enrollment in the beef project in Texas. The youth were aged 8 to 19 and enrolled in grades 3 through 12. A 5% random sample was drawn from the names that were compiled. The questionnaire was mailed to the parents of 4-H youth participating in the beef project. Thirteen life skills were measured on a scale of 1 to 5, which indicated the parent’s perceptions of the life skills their youth gained from participating in the beef project (Boleman et al., 2004). Before the questionnaire was mailed a notice was sent followed by the questionnaire and a cover letter. Thirty parents were chosen randomly for a non-response data set and then compared to the responses, which no significant difference was found. Boleman et al. (2004) used descriptive statistics to summarize the data collected.

One hundred and thirty-three surveys were returned, for a response rate of 41.9% but only 89 were used for the data analysis. Of the respondents 43.3% were male and 51.7% were female, with a mean age of the youth being 14.92 years old, mean years of participating of 5 years, the mean projects purchased being 2.38, on average the projects were owned for 287.66 days, and 51.2% of the youth worked on their projects for 5-8 hours or 9-12 hours/week (Boleman et al., 2004). Looking at objective 1, which evaluated the 13 life skill son a scale of 1 to 5, found the top 5 life skills as accepting responsibility (mean=4.48), setting goals (mean=4.28), development of self-discipline (mean=4.24), self-motivation (mean=4.17), and knowledge of the livestock industry (mean=4.16) (Boleman et al., 2004). The second objective used the Pearson product moment correlation to measure the relationship between the days of ownership of their beef project and the development of life skills. No significant difference was found. When evaluating objective 3, Boleman et al. (2004) found 7 of the 13 life skills yielded a significant
relationship between the beef project and the development of life skills. A moderate positive relationship was found for developing self (0.348) and self-motivation (0.300). A low positive relationship was found for developing and maintaining records (0.296), accepting responsibility (0.292), work in teams (0.283), ability to relate to others (0.267), and setting goals (0.267) (Boleman et al., 2004).

In conclusion, life skills are being enhanced by the participation in the Texas 4-H beef project. Although, Boleman et al. (2004) found a low to moderate positive relationship between the years of participation in the beef project and the development of life skills. Seven of the 13 life skills evaluated in this study are being developed by the participation in the Texas 4-H beef project. The life skills being developed are accepting responsibility, setting goals, the development of self-discipline, self-motivation, knowledge of the livestock industry, building positive self-esteem, and decision making (Boleman et al., 2004). Additional research is required and should measure the effects of other 4-H projects on the development of life skills.

**Conclusion**

In conclusion, participating in the livestock project does affect the development of life skills in 4-H youth. All the research above used a survey to collect the data which was used for the studies. Hass et al. (2005), found the development of life skills increased with age, which led to the finding that age was significantly related to all five life skills being evaluated. A pre-survey may be beneficial when evaluating a program before sending out the survey, so the youth and the researchers have a better understanding of the impact 4-H livestock projects have on the development of life skills. Boyd et al. (1992), found as the 4-H members participation in 4-H activities increased their leadership life skill development also increased. The relationship
between 4-H participation and leadership life skill development measures were low for the scales on communicating, working with groups, making decisions, and understanding self was statistically significant. Anderson et al. (2015), found the mean scores for livestock exhibitors who had participated in 4-H or FFA were only slightly higher 73.90 compared to non-participants at 71.60, which is not statistically significant. With their findings Anderson et al. (2015), determined there was no difference between the life skill development of those who participated in youth agricultural organizations and those who did not. They also recommend the 4-H and FFA programs should be evaluated to make sure the ultimate goal is to develop life skills. Holmgren and Reid’s (2007) results found participating in the livestock project was an excellent opportunity to develop life skills in 4-H and FFA youth. The members and their parents agreed accepting responsibility as the number one life skill gained. Although, the findings show emphasis should be placed on the development of leadership and communications skills. Acquiring knowledge and developing skills were found to be the most important part of the livestock project as results show from the research done by Rusk et al. (2003). Results also show, participants of the livestock project use the project skills they gained to enhance the development of life skills.

Cummins and Nash (2014), successfully demonstrated the way experiential learning can help develop life skills in youth. The Cattle Kids program gave youth living within city limits the opportunity to exhibit livestock, gain knowledge of the livestock industry, and develop life skills. Maass et al. (2006), conducted research which looked at the long-term effects of participation on the development of life skills in 4-H alumni. The results showed the life skill index strengthens and deepens our understanding of the data collected. Participation in youth organizations does develop life skills. Fox et al. (2003), found the 4-H club experience does affect the development
of life skills, and 4-H is a viable avenue for the Cooperative Extension in developing young people to become capable, competent adults. Also, 4-H club membership did have a primary or some influence on the development of 32 life skills. The results of the study by Fitzpatrick et al. (2003), lead us to believe that involvement in 4-H youth development programs does help youth learn and use specific life skills. Although multiple limitations arose due to a small sample size because there isn’t a system in place to track 4-H alumni. Heavner et al. (2011), study evaluated the perceived life skill development in youth as seen by their parents. The results indicated the development of life skill sis positively enhanced by participation in the livestock project. Boleman et al. (2004), also found that life skill development is being impacted by the participation in the livestock project. Results also showed a low to moderate positive relationship between the years of participation and the development of life skills.

With the given results of the studies listed above, exhibiting livestock does affect the development of life skills in 4-H youth, although the true impact of the youth’s participation in the livestock project may not become evident until they are adults and reflect back on their 4-H involvement. 4-H youth who participate in the livestock project are developing and honing their life skills, which will make them successful adults in the future. A method also needs to be developed to keep record of 4-H alumni, since they often move and don’t update their address with their county Extension office. Further research is required to fully understand the impact of exhibiting livestock on the development of life skills, and the impact it makes on 4-H alumni and their success after their 4-H participation. Also, more current research needs to be done to evaluate life skill development in youth participating in other project areas besides the livestock project. “Because the development of these life skills among members is the ultimate goal, we
must further examine other 4-H projects and strive to determine if life skill development is occurring" (Heavner et al., 2011).

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