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College Transition Study Shows 4-H Helps Youth Prepare for and Succeed in College

Abstract

Many young adults enter college without the knowledge and skills necessary to succeed. The purpose of the study reported here was to determine if 4-H helps develop life skills needed for the transition to college and overall college success. An online survey was sent to college-attending 4-H alumni and a comparison group, with a final sample size of 268 students. Results showed 4-H alumni rated significantly higher than the comparison group on six life skills constructs. These findings can be used to show 4-H program impact and how 4-H participation helps young people prepare for and succeed in college.

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Introduction/Theoretical Framework

Increasing college enrollment rates have become a national focus as the need for a better educated and skilled workforce becomes widely recognized. Currently fewer than 35% of Michigan's working-age adults (25-64 years old) have an associate degree or higher (U.S. Census, 2012 American Community Survey), even though Michigan is a college-rich state with 93 colleges and universities, including 15 public universities and 28 community colleges. Studies show that 65% of Michigan jobs will require postsecondary education by 2020 (Complete College America, 2011). Getting enrolled in post-secondary education, however, doesn't guarantee credential completion. Sadly, many students drop out because they enter college without the knowledge and skills necessary to succeed. The College Readiness Rate for Michigan high school graduates is 21%; nationally, it's 26% (Alliance for Excellent Education, 2014). This results in many students entering college without the knowledge and skills necessary to fulfill postsecondary education academic requirements. More young people entering college need to be ready to successfully navigate the demands, challenges and rigor of college life.

The Tufts 4-H Study of Positive Youth Development has shown that youth development programs can play a major role in helping young people develop needed skills (Lerner, & Lerner, 2013). Positive youth development emphasizes the strengths, resources, and potential of young people and, as a result, holds positive expectation regarding the contributions youth can make to society and to their immediate environments (Durlak et al., 2007). Positive youth development as a strategy is an

effective way to support the academic achievement and well-being of children and youth (Hall, YohalemTolman, & Wilson, 2003). Although approaches vary, all youth development organizations aim to help youth develop into responsible, productive adults. When seeking to answer how 4-H alumni compare 4-H with other youth organization in contributing to the development of life skills, Maass and colleagues (2006) found that 4-H as well as other youth-serving organizations positively influenced the development of 36 life skills.

4-H is the only youth program connected to land-grant universities and geared to develop social and academic skills needed for a successful transition to college and adulthood. These opportunities adhere to the "Big Three" features of effective youth-serving programs described in the Tufts 4-H Study of Positive Youth Development, which are:

- Positive and sustained relationships between youth and adults
- Activities that build important life skills
- Opportunities for children to use these life skills as both participants and as leaders in valued community activities.

Research conducted by Flynn, Frick, & Steele (2010) showed that participation in 4-H did contribute to the success of alumni in adulthood.

Purpose and Objectives

Life Skills and College Transition

The study reported here measured life skills developed through Michigan 4-H that assist the successful transition to college and result in positive college performance and persistence. It also compared the college success of 4-H alumni to young adults who participated in other youth-serving organizations and those without any youth-serving organization involvement. The study defines college success as adjusting to a new environment, responsible independence, thriving academically and socially, and staying enrolled in college (persistence). Life skills are those competencies that assist people in functioning well in the environments in which they live.

Research Questions

Questions we sought to answer were:

1. Does involvement in Michigan 4-H help young people thrive and persist toward degree obtainment in college?
2. Do Michigan 4-H-involved youth fulfill college academic requirements and persist (stay enrolled through degree completion) more than youth who were not involved in 4-H?
3. Is there a difference in college success between 4-H alumni and same-age students who were involved in other youth-serving programs but not 4-H?

4. Is there a difference in college success between 4-H alumni and same-age students who had no involvement in a youth-serving program?

5. Among Michigan 4-H alumni, are former 4-H pre-college program participants more successful in college than those who didn't attend a 4-H pre-college program? (Michigan 4-H pre-college programs are 4-H Exploration Days, 4-H Great Lakes and Natural Resources Camp, 4-H Capitol Experience, 4-H Renewable Energy Camp and Michigan 4-H Youth Conservation Council.)

Life skills with the greatest relevance to successful college transition were identified by a team of Michigan State University pre-college experts. The term "pre-college" refers to college access and preparation programs. After identification, the most relevant life skills were grouped into categories and subcategories based on the four H's (head, heart, hands, and health) and Iowa State University Extension Targeting Life Skills Model (Hendricks, 1998) to show how college transition skills cut across all four H's of the 4-H program. This is shown in Table 1:

Table 1.
Life Skills with Greatest Relevance to Successful
College Transition

H's of 4-H	Core Life Skills	Broader Life Skills
Head	Managing	Resiliency
		Resourcefulness/Ability to seek out resources
	Thinking	Problem-solving
		Decision-making
		Critical thinking
Heart	Relating	Accepting differences
		Communication
	Caring	Nurturing relationships
Hands	Giving	Responsible citizenship
Health	Being	Self-responsibility/Independence
		Self-discipline
		Self-esteem
	Living	Healthy lifestyle choices

Methods

Assessment Instrument Review and Selection

Assessment instruments that pertained to the identified life skills were reviewed. No single source provided constructs for all the life skills we sought to measure. Instruments were selected from the following four sources as shown in Table 2:

Table 2.
Selected Assessment Instruments

Life skill to be measured	Instrument
Nurturing relationships	Program Evaluation Network (PEN), (The University of Tennessee Extension, 2007)
Healthy lifestyle choices	
Self-responsibility	
Team work	
Critical thinking	Adapted from National On-line Youth Life Skills Evaluation System (Mincemoyer & Perkins, 2005):
Problem-solving	
Decision-making	
Communication	
Resiliency	The Brief Resilience Scale: Assessing the Ability to Bounce Back (Smith, Dalen, Wiggins, Tooley, Christopher, & Bernard, 2008):
Accepting Differences/Cultural Awareness	4-H College Transition Study (Almerigi & Edwards, 2008)
Self-motivation	
Self-esteem	
Responsible citizenship	
<i>Resourcefulness or the Ability to Seek Out Resources</i>	Suitable construct wasn't found; we developed our own question set

Four experts reviewed the instrument for survey structure. Their suggestions to improve the clarity, readability, content, and layout of the questionnaire were incorporated into the final version. The 39-

question survey asked respondents questions regarding the following:

- Student profile
- Life skills assessment
- Youth and pre-college program involvement
- Michigan 4-H involvement, including one open-ended question for 4-H alumni

4-H Alumni Selection

We targeted Michigan 4-H alumni who had completed two to four semesters of college. That cohort was early enough in their college career to recall their initial college transition experience yet be removed from it enough to have mature perspective. 4-H program alumni were selected for the College Transition Study from National Student Clearinghouse StudentTracker reports that identified 3,278 Michigan 4-H alumni from the Classes of 2011 and 2012 who were currently attending college somewhere in the United States. These StudentTracker reports were generated from 4-H enrollment records for county 4-H seniors and Michigan 4-H pre-college programs: 4-H Exploration Days, 4-H Capitol Experience and 4-H Great Lakes and Natural Resources Camp.

To obtain a cross section of students to survey, students were first sorted by college and then by 4-H seniors and 4-H pre-college program involvement to ensure a representative from each. Student email addresses were sought from the 25 institutions with the highest number of 4-H alumni. Student email addresses were obtainable from 19 institutions across Michigan and the U.S. A stratified sample of 731 4-H alumni was successfully sent an email request to take the survey from each of those institutions. (Emails that were undeliverable are not part of this count.) The first wave of surveys was sent to 510 4-H alumni in April 2013. A second wave was sent to an additional 221 4-H alumni in October 2013 due to a lower than desired response from the spring survey. Three reminder requests were also sent to each group.

Comparison Group Selection

A comparison group of comparable size across a number of different college majors was also identified over the same two semesters. These were primarily second year college students from a variety of Michigan State University (MSU) courses that draw many students outside their department major as general elective courses and for which the instructors agreed to promote the survey. (Other courses taken by a wide variety of student majors were sought but were unwilling to assist because they had their own online student surveys and did not want survey competition.) MSU faculty and teaching assistants from 11 courses provided the survey link to 710 students. Reminder requests were also given by the instructors, but the number of times varied by course. Additionally, some students from other 2-year and 4-year colleges and universities were also reached due to MSU faculty and students sharing the survey link with others.

An Amazon.com gift card incentive was offered for completing the survey. The spring semester pool

could enter a drawing for a \$25 gift card. The fall semester pool had a chance to win a \$100 gift card.

Data Collection

A 39-question mixed methods survey was created in SurveyMonkey, a commercially available on-line survey company. Questions were grouped in sections: Student Profile, Life Skills Assessment, Youth Program Participation, an open-ended question for those who identified themselves as 4-H alumni, and Demographics. Most of the questions were multiple choice using a 5-point Likert scale ranging from 1 = a very negative behavior/attitude to 5 = a very positive behavior/attitude. Other questions were yes/no and check-all-that-apply.

Data Analysis

Our experimental research used SPSS for descriptive and inferential statistics analysis. Independent samples t-tests were used to compare the mean scores of the 4-H alumni and comparison group to determine the differences, if any, of the construct and single-item questions with significance of $p < .05$.

The sample size of the comparison group was small ($n = 57$), limiting our statistical analysis, but it still provided useful data. A poor comparison rate should not negate the usefulness of the findings and can clarify the validity of a study, even in problematic cases (Baruch, 1999).

Theme mapping was used to sort the open-ended responses to the question "How did your involvement in 4-H contribute to the person you are today?" The first review counted the number of references to each life skill mentioned. The second review grouped them into themes, and the final review helped understand the relationship between themes and the quantitative data. The second researcher participated independently and collaborated with the primary researcher to ensure reliability and validity of results.

Results

Although the low response rate from the comparison group provided results more likely to be inconclusive and not statistically significant, the findings did answer some of the research questions and can contribute to the scholarship in this area.

The response rate was 211 4-H alumni (29%) and 57 comparison group (8%). An additional 29 students began the survey but didn't complete it and are not included in the response rate. Of those who indicated their gender, there were 202 females and 61 males. The average age of the sample was 19.33 ($n = 263$), with the 4-H alumni mean age of 19.21 years ($sd = .67$) and the non-4-H group mean age of 19.81 years old ($sd = 1.15$). The race/ethnicity of the survey respondents was mostly White, at 86.9%.

Fifty-nine percent of the 4-H alumni said they participated in 4-H for 8 or more years, 18% were involved for 5-7 years, 18% were involved 2-4 years, and only 5% said they were involved for a year or less. Forty-two percent said they were very active in 4-H, 43% said active, and 16% selected slightly active.

Does 4-H involvement help alumni thrive and persist toward degree obtainment in college?

Seventy-five percent of 4-H alumni answered the open-ended question *How did your involvement in 4-H contribute to the person you are today?* Of those comments, 97% (n=160) were extremely favorable. The first review counted the number of references to each life skill deemed significant to college success. This is shown in Table 3.

Table 3.
Most Mentioned Life Skills/Characteristics

Percentage	Life Skills
32%	Responsibility
25%	Friendships/Social skills
24%	Work ethic
20%	Accepting of others/Diversity
19%	Community involvement
19%	Self-esteem/Confidence
15%	Leadership
11%	Independence/Self-responsibility
10%	Team work
10%	Academic skills
9%	Goal setting

The second review grouped the comments into themes related to the life skills measured by the quantitative data. The top three themes, number of comments received, and example comments from each follow:

Self-Efficacy (50)

- 4-H taught me responsibility towards myself and others and instilled a desire to always be improving. It also taught me compassion, resiliency, personal work ethic, and to set goals.
- It helped me build skills like responsibility, ethics, self-reliance, and a willingness to work with others. It taught me the value of working hard to reach a goal and always striving to improve.
- 4-H made me more responsible and encouraged me to try harder in everything I did.
- 4-H helped me with a strong and steady work ethic, fiscal responsibility, and determination to set

and reach goals.

- I learned self-motivation, initiative, discipline, time management and to be accountable.

Relationships (30)

- My 4-H involvement made me more accepting of others and encouraged my involvement in other groups.
- 4-H made me a better leader and active member of the community while helping me build relationships and learn new skills.
- 4-H taught me personal responsibility, how to work cooperatively with others, and that it's important to give back to one's community.
- I learned social skills and how to not be a sore loser or a bad winner.

College/Career Influence (18)

- 4-H programs at MSU helped me discover my passion and find out what I wanted as my career.
- 4-H provided my first "class" at MSU and then I decided to go there for college.
- 4-H helped me obtain professional work experience which helped me know I belong in the major I'm pursuing.
- 4-H strongly contributed to what my interests are and helped me determine my college and career field.

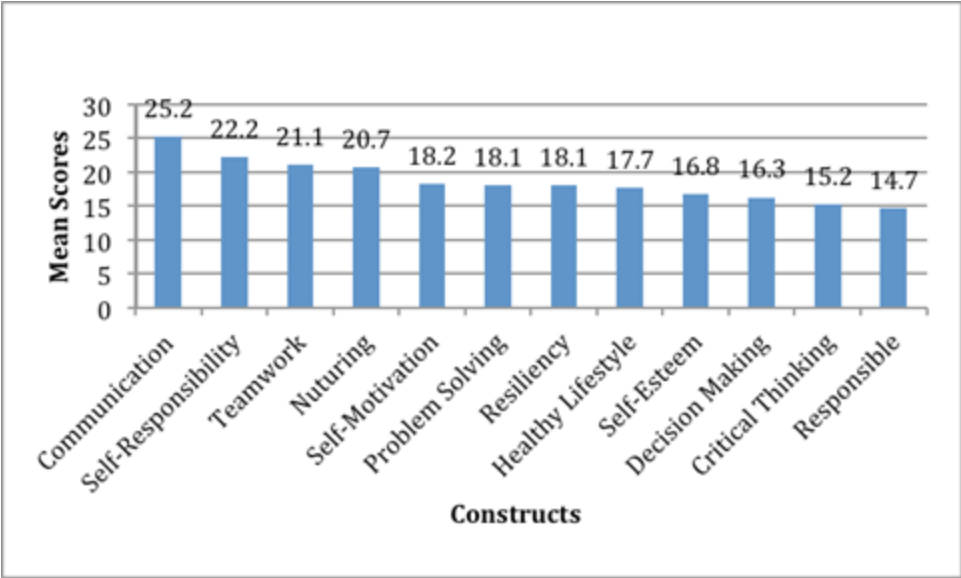
When asked if 4-H influenced their decision to attend college or a specific college, and choice of major alumni responses were:

- 54% said it influenced their decision to attend college (17% strong influence, 15% moderate, 22% slight).
- 41% said it influenced their decision to attend a specific college or university (12% strong influence, 11 moderate, 18% slight).
- 47% said it influenced their choice of major (16% strong influence, 12% moderate, 19% slight).

Only 8% had to take remedial classes when they began college, compared to more than 50% of students entering 2-year colleges and nearly 20% of those entering 4-year universities nationwide (Complete College America, 2012). Seventy-three percent of 4-H alumni had a GPA of 3.0 or above, while 42% had GPAs of 3.5-4.0. Sixty-two percent of 4-H alumni were also employed while going to college. Although these findings can't be directly attributed to 4-H, they could be related to the responsibility, work ethic, motivation, and other life skills gained through 4-H involvement.

Life skills constructs for 4-H alumni were scored based on the number of questions per construct and their scale. For example, on a 5-point scale with five questions, a respondent had the ability to score 25 points (all Strongly Agree) or 5 points (all Strongly Disagree). Figure 1 is a representation of the average score of 4-H alumni in each life skill construct. Any construct that had a missing response to a question was deemed incomplete and is not reflected in the mean scores shown.

Figure 1.
4-H Alumni Life Skills Construct Means



Do 4-H alumni transition and persist in college better than youth not involved in 4-H?

Results of paired t-tests found statistically significant differences between the 4-H and non-4-H groups in 6 of the tested life skills as shown below.

Table 4.
Life Skills Statistics for 4-H Alumni & Non-4-H Comparison Group

Life Skill Construct Variables	4-H Alumni			Non 4-H Comparison Group			df	t	p
	n	M	SD	n	M	SD			
Nurturing relationships	209	20.73	2.96	55	18.35	4.15	262	4.86	.000*
Team work	207	21.07	2.83	55	19.31	3.66	260	3.83	.000*
Self-responsibility	209	22.21	2.37	57	21.12	2.98	264	2.89	.004*
Responsible citizenship	209	14.68	3.04	56	13.39	3.59	263	2.72	.007*

Communication	210	25.17	2.72	57	24.07	3.63	265	2.51	.013*
Healthy lifestyle	210	17.62	5.23	56	15.70	6.26	264	2.34	.020*
Critical thinking	210	15.20	2.34	57	14.68	2.58	265	1.46	.146
Decision-making	210	16.53	2.67	57	16.19	3.22	265	.804	.422
Problem-solving	210	18.09	2.78	57	17.54	3.65	265	1.23	.221
Resiliency	206	18.12	1.76	55	18.07	2.20	259	.155	.877
Self esteem	209	16.82	2.74	57	16.96	2.76	264	-.346	.729
Self-motivation	210	18.21	1.82	57	18.33	1.98	265	-.447	.656
Note. *p<.05 (2-tailed)									

Is there a difference in college success between 4-H alumni and same-age students involved in other youth programs?

A t-test of the responses to "How likely or unlikely did your youth program participation help in the development of the following life skills?" found that all youth organizations developed valuable life skills. Although statistically significant differences weren't found, a commonality among the non 4-H'ers was the likelihood that their youth program helped develop a healthy lifestyle, while 4-H'ers indicated civic responsibility as a life skill more likely developed because of their 4-H participation. This supports the findings of Maass and colleagues (2006), who found that while 4-H alumni credited 4-H with influencing the development of many life skills, other youth organizations were found to influence the development of different life skills.

Is there a difference in college success between 4-H alumni and same-age students who had no involvement in a youth program?

Results were inconclusive due to small comparison group size of only six with no involvement. Those six, however, had much lower scores on all life skill measures.

Does 4-H pre-college program experience make a difference among 4-H'ers?

Seventy-three percent of 4-H alumni attended 4-H pre-college programs intentionally designed to increase college interest, access, and preparation. A descriptive statistics analysis of life skills construct means between alumni who did and did not attend a 4-H pre-college program found their mean scores to be roughly the same. Some of the qualitative data, however, cited 4-H pre-college program involvement as a key source for life skill development and said their pre-college program influenced their college and career choices.

Conclusions and Recommendations

4-H can help meet the need of preparing students to navigate the demands, challenges, and rigor of college life. These findings can be used to show how 4-H participation helps young people prepare for and succeed in college. This is supported in research by Hall et al., (2003), which found that positive youth development as a strategy is an effective way to support the academic achievement and well-being of children and youth. It also builds on the findings of other Extension professionals. Astroth and Haynes (2002) found that 4-H members are more likely than non-members to be able to make their own decisions, set goals, and take responsibility for their actions. Radhakrishna and Doamekpor (2009) showed participation in 4-H contributes to the success of alumni in adulthood by teaching life skills including how to handle challenges and responsibilities.

It was unexpected that the life skill construct scores of the 4-H alumni who attended pre-college programs were observed to be about the same as those who did not attend a pre-college program. Further research in this regard is recommended to see if future results would differ.

Future research should also be conducted to seek answers to the research questions that couldn't be reliably addressed due to the low number of comparison group responses.

Other topics for further study are:

- Assess the influence that 4-H has on development of self-discipline, time management, planning and organization since the open-ended responses by 4-H alumni included many references to these life skills.
- Assess if 4-H alumni stay on-track with their class levels and graduate college sooner or on time (i.e., 4th year = senior followed by undergraduate graduation) more often than their same age peers who are not 4-H alumni.

Extension staff must document and report to funders and decision-makers, volunteers, parents, and potential members that 4-H develops life skills needed for college transition, persistence and matriculation and workforce readiness.

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