

**Effects of the Year-Round YMCA Middle
School Youth Institute on Technology Skills,
Educational Attitudes and Positive Youth
Development (2009 – 2010)**

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Table of Contents

	<u>Page</u>
Program Overview	3
Methods	3
Data Collection	3
Sample	4
Instrument	5
Educational Attitude Scales	6
Positive Youth Development Scales	6
Analysis	7
Results	8
Technology Use	8
Technology Competence	9
Educational Attitudes	11
Positive Youth Development	11
Planned Level of Educational Achievement	12
Conclusions	13
References	16

Program Overview

The YMCA Middle School Youth Institute (MSYI) is a school-based academic support and enrichment program that uses technology as an integral mechanism for promoting positive youth development and enhancing the academic success of low-income, culturally-diverse middle school students at Stephens Middle School in Long Beach Unified School District (LBUSD). Participants volunteer for the program and can be involved in several ways. First, some participants are part of a daily, school-based after-school program that incorporates homework assistance, recreation, technology, academic enrichment and community service/involvement. Second, some participants are accepted into a much smaller six-week summer program which includes a week-long wilderness retreat that focuses on team building and leadership skill development which is followed by three weeks of immersion into high-end technology and movie-making. Finally, some participants are involved in both components.

The three primary goals of the program are to: (a) improve technology knowledge and skills, (b) enhance positive youth development, and (c) improve attitudes toward education and academic achievement. This report investigates the effects of program participation on technology skills, positive youth development and educational attitudes among youth who attended the 2009 – 2010 school year.

Methods

Data Collection

Youth enter the MSYI on a continuous basis. At the beginning of the 2009 school year, or whenever the youth joined the program, youth and parent informed consents for research participation were included in the program registration packets that needed to be turned in prior to starting the MSYI. Once both the youth and parent informed consents had been collected, MSYI staff administered the survey, either individually or in a group setting, as soon as possible.

At the end of the school year, MSYI staff again collected surveys from available youth who had the necessary consents and had completed a pre-test survey. While this report looks at the 2009-10 school year, some youth had already been in the program in prior years.

Sample

According to program attendance data, 302 youth attended the program to some extent during the 2009-10 school year. Of these 302 youth, researchers received at least some information on 112 (37%). Of those, 94 (84%) had signed youth and parent consents to participate in the research. Unfortunately, due data collection challenges, only 46 (49%) had signed parent and youth consent forms and completed a Youth Institute Survey both when they started and at the end of the program, and were included in these analyses. As shown in Table 1, 35% attended the summer program prior to the start of the school year and 34% had participated in the program during the previous school year. Participants ranged from 10 to 14 years of age when they began. The majority were 12 to 13 (67%) years of age. Fifty-seven percent were female. Latinos (57%) were the largest ethnic group, followed by African-Americans (28%), and Asian-American/Pacific Islanders (13%). Sixty-seven percent were in 7th or 8th grade when they started. According to the attendance database, these youth attended between 80 and 184 days during the year with an average attendance of 159 days.

An attrition analysis was conducted to determine if there were any demographic differences between the youth who had all of the necessary information (analysis group) versus those who had research consents, but did not have the necessary pre- or post-test (non-analysis group). No significant differences were found for gender, ethnicity, age, or grade level. However, given that only 15% of those who participated in the program are included in these analyses, the data should be interpreted with caution. It is worth noting that the percentage of youth included in these analyses is substantially lower than in prior years.

Table 1
Description of 2009-10 Stephens Middle School Year-Round Youth Institute Participants
(N = 46)

	%	N
Summer MSYI Participant		
No	65%	30
Yes	35%	16
Attended Prior Year		
No	63%	29
Yes	34%	17
Age at Start of Program		
10	7%	3
11	24%	11
12	37%	17
13	30%	14
14	2%	1
Gender		
Female	57%	26
Male	43%	20
Ethnicity		
Latino	57%	26
African-American	28%	13
Asian-American/Pacific Islander	13%	6
Bi/Multicultural	2%	1
Grade		
6 th	33%	15
7 th	28%	13
8 th	39%	18

Instrument

The instrument used was The YMCA Youth Institute Survey which is a combined instrument measuring technology use and technology competence, educational attitudes and positive youth development. The survey is composed of four sections. The technology use and competence measure was originally created by Dr. Jo Ann Regan to evaluate this project,

however, the measure was revised recently to reflect the current technology curriculum at the MSYI. All items are used individually. The three educational attitude measures (self-perceptions, goal valuation, and motivation/self-regulation) came from The School Attitude Assessment Survey – Revised Edition (McCoach & Siegle, 2003). The positive youth development measures were created by the researchers specifically to evaluate this project based on items in The Toolkit for Evaluating Positive Youth Development (The Colorado Trust, 2004)..

Educational Attitude Scales

Three educational attitude scales were created to measure academic self-perceptions ($\alpha = .86$ to $.91$), goal valuation ($\alpha = .89$ to $.91$), and motivation/self-regulation ($\alpha = .93$ to $.94$). The academic self-perception scale consisted of 7 items that measured the perception/confidence that students had in their own skills. Questions included “I feel that I can learn new ideas quickly” and “I feel intelligent.” The goal valuation scale consisted of 6 items that measured how much students valued a task. Questions included “It is important to me to get good grades” and “I want to do my best in school.” The motivation/self-regulation scale consisted of 10 items and measured how self-motivated students were and how good they were at self-monitoring. Questions included “I use a variety of strategies to learn new material in high school” and “I am a responsible student.” Participants rated their agreement with each statement on a scale ranging from 1 “Strongly Disagree” to 7 “Strongly Agree.” Higher scores indicated more positive attitudes. Changes in attitudes were investigated using paired t-tests.

Positive Youth Development Scales

The cultural competence scale ($\alpha = .80$ to $.84$) consisted of 7 items measuring respect for and comfort with their own and others’ cultures. Questions included “I have respect for teens of other cultures, races or ethnic groups” and “I feel pride for my own culture, race or ethnic group.” The life skills scale ($\alpha = .86$ to $.88$) consisted of 11 items measuring proficiencies that

allow youth to transition into and achieve successful adulthood. Questions included “I am good at making friends” and “I make good decisions.”

The positive core value scale ($\alpha = .81$) consisted of seven items measuring caring, empathy, integrity, honesty, responsibility, equality and fairness. Questions included “I am good at taking responsibility for my actions” and “I am good at speaking up for people who have been treated unfairly.” The sense of self scale ($\alpha = .68$ to $.81$) consisted of 5 items measuring how youth view themselves and their abilities to cope with the basic challenges of life. Questions included “I can handle whatever comes my way” and “I feel that I can make a difference.”

The social competency/responsible choices scale ($\alpha = .81$ to $.82$) consisted of 6 items measuring good behavior, hard work, personal responsibility and fairness. Questions included “I can identify the positive and negative consequences of my behavior” and “I think I should work to get something if I really want it.” The community involvement scale ($\alpha = .72$) consisted of 4 items measuring feelings of connectedness to the community and volunteer activities. Questions included “I feel a strong connection to my community” and “I feel good about myself because I help others.” The positive adult relationships scale ($\alpha = .80$ to $.82$) consisted of 3 items measuring amount of perceived social support received from adults outside of the family. Questions included “There is a caring adult outside my family in my life who is around when I need him/her” and “There is a caring adult outside of my family in my life who cares about my feelings.”

Analysis

Frequencies and descriptive were used to describe the sample. Paired t-tests were used to explore changes in the four areas.

Results

Technology Use

Technology use was measured by participants' self-report of their frequency of use of 12 types of technology. Participants rated themselves on a scale ranging from 1 "Never" to 4 "Daily." Higher scores indicated greater frequency of use. As shown in Table 2, these MSYI youth reported significantly more frequent use of creating web pages using computer software and code applications, $t(43) = 2.09, p < .05$, using data processing software applications for databases or spreadsheets, $t(45) = 2.05, p < .05$, and using digital music creation software, $t(45) = 2.40, p < .05$, at the end of the year-round program. They also reported somewhat higher use of using digital editing software, $t(45) = 1.80, p < .10$, at the end of the school year.

Table 2
Participant Report of Changes in Technology Use
Stephens MSYI 2009-10 Year-Round Program

Technology Use	Start of Program			End of Program		
	Mean	SD	N	Mean	SD	Difference
I currently use the computer at home and school.	3.17	.82	46	3.35	.74	.17
I send email.	2.20	1.16	45	2.38	1.11	.18
I access the Internet (websites, surf the web).	3.27	.94	45	3.49	.69	.22
I create web pages using computer software and code applications (HTML, Dreamweaver, etc.).	1.50	.73	44	1.89	1.19	.39**
I use word processing software (Word) applications to write text.	2.60	.99	45	2.87	.84	.27
I use data processing software applications for databases or spreadsheets.	2.04	.89	46	2.35	1.02	.30**
I use digital video equipment (cameras/video).	2.41	1.07	46	2.63	1.10	.22
I participate in Internet chat rooms/discussion boards/listservs.	2.24	1.23	46	2.39	1.20	.15
I use the computer to complete school assignments.	2.80	.98	46	2.89	.88	.09
I use digital music creation software (GarageBand, Reason, Logic Pro).	2.13	.98	46	2.54	.96	.41**
I use presentation software (PowerPoint, Keynote, Inspiration).	2.26	1.08	46	2.43	.89	.17
I use digital editing software (iMovie, Final Cut).	1.93	1.06	46	2.26	1.00	.33*

* $p < .10$

** $p < .05$

Technology Competence

Technology competence was measured by self-report of knowledge in seven areas. Participants rated themselves on a scale ranging from 1 “No knowledge” to 4 “Excellent knowledge.” As shown in Table 3, participants reported a significant improvement on using a variety of media and technology resources to create presentations, $t(44) = 2.85, p < .05$, working

in a group to use technology to produce and share information, $t(43) = 2.50, p < .05$, creating multimedia products with support from staff or student partners, $t(44) = 3.08, p < .05$, using technology tools to locate, evaluate and collect information, $t(44) = 3.25, p < .05$, using technology tools to process data and report results, $t(44) = 2.09, p < .05$, using technology tools for managing schedules, addresses, etc., $t(44) = 2.97, p < .05$, at the end of the year-round program. Participants also reported somewhat higher competency in using input and output devices to successfully operate computers and other technologies, $t(45) = 1.96, p < .10$.

Table 3
Participant Report of Changes in Technology Competencies
Stephens MSYI 2009-10 Year-Round Program

Technology Competence	Start of Program			End of Program		
	Mean	SD	N	Mean	SD	Difference
I can use input devices (mouse, keyboard, remote control) and output devices (monitor, printer) to successfully operate computers, VCRs, audiotapes, etc.	2.80	.97	45	3.11	.88	.31*
I can use a variety of media and technology resources (Word, PowerPoint) to create presentations.	2.71	1.01	45	3.24	1.00	.53**
I can work in a group to use technology to produce and share information (presentations, reports).	2.68	1.05	44	3.20	.98	.52**
I can create multimedia products (digital videos, movies, newsletters) with support from staff or student partners.	2.31	.97	45	2.93	1.07	.62**
I can use technology tools to locate, evaluate, and collect information from a variety of sources.	2.31	.95	45	2.93	1.12	.62**
I can use technology tools to process data and report results.	2.40	.91	45	2.82	1.07	.42**
I can use technology tools for managing my schedules, addresses, etc.	2.16	.90	45	2.73	1.12	.58**

* $p < .10$

** $p < .05$

Educational Attitudes

As shown in Table 4, these MSYI youth did not report any significant improvements in educational attitudes at the end of the year.

Table 4
Participant Report of Changes in Educational Attitudes
Stephens MSYI 2009-10 Year-Round Program

	Start of Program			End of Program		Difference
	Mean	SD	N	Mean	SD	
Educational Attitude Scale						
Academic Self-Perceptions	5.51	1.16	45	5.64	.94	.13
Goal Valuation	6.40	.82	46	6.37	.72	-.03
Motivation/Self-Regulation	5.63	1.08	46	5.76	.96	.13

*p < .10

**p < .05

Positive Youth Development

As shown in Table 5, these youth did not report any significant improvements on any of the positive youth development scales at the end of the year-round program.

Table 5
Participant Report of Changes in Positive Youth Development Scales
Stephens MSYI 2009-10 Year-Round Program

Development Scale	Start of Program			End of Program		Difference
	Mean	SD	N	Mean	SD	
Cultural Competence	3.40	.49	46	3.47	.47	.07
Life Skills	3.12	.48	46	3.13	.52	.01
Positive Core Values	3.18	.49	46	3.16	.49	-.03
Sense of Self	3.31	.50	46	3.22	.46	-.09
Social Competency/Personal Responsibility	3.30	.49	45	3.33	.45	.03
Community Involvement	2.89	.53	41	2.94	.59	.05
Positive Adult Relationships	3.37	.61	44	3.33	.63	-.05

*p < .10

**p < .05

Planned Level of Educational Achievement

Participants were also asked what level of education they planned to complete. As shown in Table 6, 74% of these participants said that they planned to attain at least a Bachelor's Degree or higher, at the end of the year.

Table 6
Planned Highest Level of Educational Achievement
2009-10 Stephens Middle School Year-Round Youth Institute Participants
(N = 46)

	%	N
Doctorate or Professional Degree (6+ years)	37%	17
Master's Degree (5 years)	20%	9
Bachelor's Degree (4 years)	17%	8
Associate's Degree (2 years)	4%	2
Specialized Training Program/Technical/Trade School (less than 2 years)	7%	3
High School Diploma	7%	3
Less than a High School Diploma	4%	2
Undecided	4%	2

Conclusions

This research investigated the effects of one year of participation in the year-round MSYI program on technology use and competency, educational attitudes, and positive youth development. In order to be included in these analyses, youth and parents needed to sign consents and youth had to have completed a survey at program entry and at the end of the 2009-2010 school year. Unfortunately, due to numerous and unexpected data collection challenges, only 15% of MSYI participants were actually included in these analyses, thus the outcomes should be viewed with caution and may not be representative of the larger group. Clearly, in the coming year, new strategies to ensure that data collection is ongoing and effective will be critical to ensuring that the evaluation is an accurate measure of the program. It is also worth noting that many youth will likely continue the program in the coming year which may lead to additional growth and development.

The only significant changes found this year were in the area of technology use and competence, particularly in the area of technology competence. These youth reported that they

were significantly more likely to create web pages using computer software and code applications, use databases or spreadsheets, and use digital music creation software at the end of the school year. They were also somewhat more likely to use digital editing software. They further reported significantly more technology competence in the use of a variety of media and technology resources to create presentations, the ability to work in a group to use technology to produce and share information, the creation of multimedia products (videos, movies, newsletters), the use of technology tools to locate, evaluate and collection information from a variety of sources, the use of technology tools to process data and report results, and the use of technology tools for managing schedules/addresses. There were also somewhat more likely to report they were competent in the use of input and output devices. It appears, as hypothesized, that involvement in the MSYI helped youth to develop their technology skills in some areas. Given the competence improvements noted, it is possible, that in the long run, the development of these skills will prove useful to these youth in meeting their academic requirements at school, as well as for their future employment. These are important skills given they are one of the areas identified as necessary 21st century skills (Partnership for 21st Century Learning, 2003).

Although it was anticipated that MSYI involvement would positively influence educational attitudes, like last year, there were no significant changes on any of these three measures. As previously suggested MSYI staff should consider implementing strategies related to enhancing commitment to education and developing academic goals and motivation. It may also be useful to begin looking at college readiness and helping youth to see the relationship between their long-term academic aspirations, which appear quite high, and their current school performance. It may also prove useful to integrate self-monitoring and rewards into homework time to encourage youth to do their best. MSYI staff might also positively impact this area by

consulting or collaborating with school staff to better understand and support educational aspirations.

The effects of MSYI participation on seven measures of positive youth development were also explored. There were no significant findings in this area. Over the last three years, this has been an area of some concern for the program, particularly since the MSYI prides itself on the use of strategies that have been shown to promote positive youth development. MSYI might also want to carefully review and continually monitor the program environment to ensure that positive youth development principles are incorporated into all program areas. They might also consider introducing some cultural or tolerance content as well as some interpersonal skill-building activities and look at how they might promote bonding between staff and youth. It is also possible that it might prove beneficial to have other YMCA staff members, that have expertise in this area, provide training or coaching at the site to ensure that the program is meeting this proposed goal. Finally, opportunities for these youth to be involved in their communities may also yield positive results.

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