

Evaluation of Leadership, Technology and Educational Attitude Outcomes for Long Beach YMCA High School Youth Institute 2006 Alumni at the End of Year One

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Introduction

The YMCA of Greater Long Beach Youth Institute is a program that uses technology as an integral mechanism for promoting positive youth development and enhancing the academic success and career readiness of low-income, culturally-diverse high school students. Classes enter each summer with an intensive eight-week program. Upon graduation from the summer program, participants become “Youth Institute Alumni,” who are then able to voluntarily participate in a wide range of year-round programs throughout their high school and, potentially, their college years. Involvement opportunities include, but are not limited to, digital art labs, homework assistance, academic advising, community service, equipment check-out, field trips, paid technology and mentoring assignments, community leadership positions and social work support.

Three of the goals of the program are: (a) To improve the technology knowledge and skills of participants by providing intensive, year-round enrichment experiences that fully integrate and emphasize state-of-the-art technology, (b) To use youth development principles and project-based learning to develop leadership and decision-making skills, and (c) to improve youth attitudes toward education and learning. This report investigates the effects of the program on achieving these goals after one-year of program participation.

Methods

Data Collection

Program staff collected self-report data from all entering 2006 YMCA Youth Institute participants on their first day of the program, and, from as many as possible, approximately one year later. Three surveys were completed. The first was the Leadership Skills Inventory (Karnes & Chauvin, 2000), a standardized leadership measure. The inventory measures nine areas of leadership skill. The instrument has been shown to have strong reliability and validity. The

second instrument, The Long Beach YMCA Technology Skills Inventory, was created by Dr. Jo Ann Regan formerly of the California State University, Long Beach, Department of Social Work, specifically to evaluate this project. The Technology Inventory measures technology competency. The third survey was the School Attitude Assessment Survey – Revised Edition (D. B. McCoach, 2002). This survey measures three areas of education attitudes. This instrument has been shown to have strong reliability and validity.

Sample

Forty-seven students entered the YMCA Youth Institute in 2006. Of these 47 entering participants, 24 (51%) returned both the beginning and end of year one surveys. Attrition analyses were conducted to determine if the participants included in the sample differed from those who did not have pre- test and post-test data. There were no significant gender differences. While the sample size was too small to do a valid chi-square analysis on ethnicity and grade at start of program, by looking at the percentages, it appears that a slightly higher percentage of Latino participants (58%) returned the one-year post-test than Asian-Americans/Pacific Islanders (50%) and African-Americans (43%). More of 10th and 11th graders (67%) also returned the end of one year survey than 8th and 9th graders (47%).

As shown in Table 1, the participants who were included in this study ranged from 13 to 17 years of age at the start of the program. Two-thirds of the youth were 13 or 14 years of age at the start of the program. Fifty percent of the participants were female. Latinos (46%) were the largest ethnic group, followed by Asian-Americans/Pacific Islanders (25%). Seventy-five percent of the sample was 8th or 9th graders when they began the program.

Table 1
Sample Description of 2006 Youth Institute Alumni
(N=24)

	%	N
◆ Gender		
Female	50%	12
Male	50%	12
◆ Ethnicity		
Latino	46%	11
Asian-American/Pacific Islander	25%	6
African-American	12.5%	3
Mixed Ethnicities	12.5%	3
Caucasian	4%	1
◆ Age at Start of Program		
13	42%	10
14	25%	6
15	17%	4
16	12%	3
17	4%	1
◆ Grade		
8 th	54%	13
9 th	21%	5
10 th	17%	4
11 th	8%	2

Analyses

Measures

Leadership Skills

Cronbach's Alpha (α) was used to examine the reliability of the leadership skill scales. Nine types of leadership skills were measured including fundamentals of leadership ($\alpha = .79$ to $.91$), written communication ($\alpha = .82$ to $.85$), speech communication ($\alpha = .82$ to $.87$), character-building ($\alpha = .71$ to $.89$), decision-making ($\alpha = .66$ to $.86$), group dynamics ($\alpha = .77$ to $.81$), problem-solving ($\alpha = .53$ to $.81$), personal skills ($\alpha = .77$ to $.84$), and planning ($\alpha = .59$ to $.84$). Participants rated themselves on engaging in each behavior on a scale ranging from 0 "Almost

Never” to 3 “Almost Always.” Higher scores indicated better self-perceived skills. Changes in skills from program entry until the end of Year One were investigated using paired t-tests.

Technology Use

Technology use was measured by participants’ self-report of their frequency of use of 12 types of technology. Items included “create web pages” and “use digital video equipment.” Participants rated themselves on a scale ranging from 1 “Never” to 4 “Daily.” Higher scores indicated greater frequency of use.

Technology Competencies

The Technology Inventory investigated changes in technology competencies. These items were looked at individually. Questions included: “I can use technology to locate, evaluate, and collect information from a variety of sources,” and “I can use technology in the development of strategies for solving world problems.” The response categories ranged from “1” No Knowledge to “4” Excellent Knowledge.

Educational Attitudes

Cronbach’s Alpha (α) was used to examine the reliability of the school attitude scales. Three areas of attitudes toward education were measured including academic self-perceptions ($\alpha = .88$ to $.89$), goal valuation ($\alpha = .77$ to $.79$), and motivation/self-regulation ($\alpha = .92$ to $.93$). Participants rated their attitudes on a scale ranging from 1 “Strongly Disagree” to 7 “Strongly Agree.” Higher scores indicate better attitudes toward education. Examples of questions from the academic self-perceptions scale include “I feel that I can learn new ideas quickly” and “I feel intelligent.” Examples of questions from the goal valuation scale include “It is important for me to get good grades” and “I spend a lot of time on my schoolwork.” Examples of questions from the motivation/self-regulation scale include “I check my assignments carefully before turning them in” and “I work hard in school.”

Results

Extent and Type of Program Involvement

As shown in Table 2, there were different types as well as levels of involvement, among the Class of 2006, in the YI Alumni Program during the year immediately following their graduation. The Digital Arts Lab and Community Service Projects had the highest levels of participation among this group. Due to a data collection challenges, the attendance for May, 2007 was missing and not included in this report.

Table 2
Extent and Type of Involvement in Program Activities
2006 Youth Institute Alumni
August, 2006 – April, 2007

Class of 2006				
Activity	N	Mean	SD	Range
Digital Arts Lab	24	61	46	8-155
Community Service Projects	24	5	3	1-17
Equipment Checkout	24	4	4	1-12
Fall Meeting	20	1	0	1
Holiday Party	18	1	0	1
Open House	5	1	0	1
Total	24	72	50	16-171

Comparison between Program Start and After Year One

Leadership Skills

As shown in Table 3, study participants reported significant improvements on Fundamentals of Leadership, $t(23) = 3.63, p < .05$, Written Communication Skills $t(23) = 4.42, p < .05$, Speech Communication Skills, $t(23) = 4.33, p < .05$, Character Building Skills, $t(23) = 2.73, p < .05$, Group Dynamic Skills, $t(23) = 2.42, p < .05$, and Decision-Making Skills, $t(24) =$

2.44, $p < .05$, and somewhat of an improvement in Personal Skills, $t(23) = 1.95$, $p < .10$, after their first year of program participation. Prior to attending the program, these teens rated themselves lowest on speech communication, written communication and fundamentals of leadership and highest on character building and problem solving skills. The greatest gains were found in speech communication, fundamentals of leadership and written communication skills.

Table 3
Participant Report of Changes in Leadership Skills
2006 Youth Institute Alumni

Scale	Beginning of Program			End of Year One		Difference
	Mean	SD	N	Mean	SD	
Fundamentals of Leadership	2.23	.60	24	2.68	.31	.45**
Written Communication	2.11	.52	24	2.50	.34	.39**
Speech Communication	2.00	.62	24	2.52	.34	.51**
Character Building	2.55	.37	24	2.73	.19	.19**
Group Dynamics	2.33	.58	24	2.62	.26	.29**
Decision-Making	2.47	.41	24	2.68	.25	.21**
Problem-Solving	2.54	1.22	24	2.68	.29	.14
Personal	2.52	.54	24	2.67	.27	.15*
Planning	2.47	.57	24	2.56	.33	.09

** $p < .05$

* Approaching significance, $p < .10$

Technology Use

As shown in Table 4, study participants reported significantly more frequent use of accessing the Internet, $t(23) = 2.33$, $p < .05$, creation of graphic designs with computer software and code applications, $t(21) = 3.25$, $p < .05$, use of data processing software applications for

databases or spreadsheets, $t(20) = 3.54, p < .05$, use of digital video equipment, participation in Internet chat rooms/discussion boards, $t(22) = 2.44, p < .05$, and use of the Internet to buy things, $t(21) = 3.52, p < .05$, and somewhat of an improvement in creating web pages, $t(21) = 1.75, p < .10$, and using digital video equipment, $t(22) = 1.86, p < .10$, at the end of year one. Prior to entering the program, participants rated their frequency of use highest on using computers at home and school, accessing the Internet and using computers to complete schoolwork. The greatest gains in frequency of technology use were found on using data processing software for databases or spreadsheets and creating graphic designs with computer software applications.

Table 4
Participant Report of Changes in Technology Use
2006 Youth Institute Alumni

	Beginning of Program			End of Year One		
	Mean	SD	N	Mean	SD	Difference
Use the computer at home/school	3.57	.79	23	3.65	.78	.09
Send e-mail	3.05	1.09	22	3.09	.92	.05
Access the Internet	3.52	.85	23	3.96	.21	.43**
Create web pages	1.41	.96	22	1.82	.73	.41*
Create graphic designs with computer software applications	1.64	1.05	22	2.45	.96	.82**
Use word processing software applications to write text	3.22	.85	23	3.39	.78	.17
Use data processing software for databases or spreadsheets	1.86	1.11	21	2.71	.90	.86**
Use digital video equipment	2.39	1.08	23	2.83	.94	.43*
Participate in Internet chat rooms/listservs	2.39	1.20	23	3.00	1.09	.61**
Play computer games	2.27	.93	22	2.50	1.10	.23
Buy things on the Internet	1.36	.58	22	2.00	1.15	.64**
Use the computer to complete school assignments	3.26	.75	23	3.43	.73	.17

**p<.05

* Approaching significance, p<.10

Technology Competence

As shown in Table 5, study participants reported significant improvements in their competencies with: (a) using input and output devices to successfully operate computers, VCRs, audiotapes, etc., $t(21) = 3.48, p < .05$; (b) using a variety of media and technology resources to

create knowledge products for audiences inside and outside the classroom, $t(20) = 2.75, p < .05$;

(c) creating multimedia products with support from teachers, family members, or student partners, $t(21) = 2.54, p < .05$; (d) using technology tools to locate, evaluate, and collect information from a variety of sources, $t(21) = 3.81, p < .05$; (e) using technology tools to process data and report results, $t(21) = 2.24, p < .05$; (f) using technology in the development of strategies for solving problems in the world, $t(21) = 3.85, p < .05$; (g) using technology tools for managing and communicating personal/professional information, $t(21) = 7.09, p < .05$; and (h) using a variety of media and formats to communicate information and ideas effectively to multiple audiences, $t(21) = 4.39, p < .05$, at the end of year one. Prior to entering the program, participants rated their technology competence lowest in the areas of using technology tools for managing and communicating personal/professional information, and using technology in the development of strategies for solving problems in the world. The greatest knowledge gains were found on the use of technology for managing and communicating personal/professional information, the use of technology in the development of strategies for solving problems in the world, and the use of a variety of media and formats to communicate information and ideas effectively to multiple audiences.

Table 5
Participant Report of Changes in Technology Competencies
2006 Youth Institute Alumni

	Beginning of Program			End of Year One		Difference
	Mean	SD	N	Mean	SD	
Use input and output devices to successfully operate computers, VCR's, audiotapes, etc.	3.14	.89	22	3.73	.46	.59**
Use a variety of media and technology resources to create knowledge products for audiences	2.71	1.10	21	3.43	.60	.71**
Work collaboratively with others to use technology to compile, synthesize, produce, and disseminate information.	3.05	.84	22	3.36	.66	.32
Create multimedia products with support from teachers, family members, or student partners.	2.77	1.07	22	3.41	.67	.64**
Use technology tools to locate, evaluate, and collect information from a variety of sources.	2.91	.75	22	3.45	.67	.55**
Use technology tools to process data and report results.	2.73	.93	22	3.27	.63	.55**
Use technology in the development of strategies for solving problems in the world.	2.36	.95	22	3.27	.55	.91**
Use technology tools for managing and communicating personal/professional information.	1.91	.81	22	3.27	.70	1.36**
Use a variety of media and formats to communicate information and ideas effectively.	2.45	.91	22	3.36	.66	.91**

**p<.05

* Approaching significance, p<.10

Educational Attitudes

As shown in Table 6, study participants reported somewhat lower Goal Valuation, $t(23) = 1.98, p < .10$, at the end of year one.

Table 6
Participant Report of Changes in Educational Attitudes
2006 Youth Institute Alumni

Scale	Beginning of Program			End of Year One		
	Mean	SD	N	Mean	SD	Difference
Academic Self-Perceptions	5.43	.95	24	5.60	.77	.17
Goal Valuation	6.46	.61	24	6.25	.80	-.21*
Motivation/Self-Regulation	5.41	1.01	24	5.57	.86	.17

**p<.05

* Approaching significance, p<.10

Correlations between Participation and Outcomes

To determine if participation at the YI was related to changes in leadership skills, technology use, technology competence, and attitudes toward education, correlations were run between levels of participation and outcome measures. The technology use ($\alpha = .64$ to $.80$) and the technology competence ($\alpha = .79$ to $.84$) questions were scaled for this analysis. Significant correlations were found between participation in the digital arts lab and technology competence, $r(22) = .52, p < .05$; and participation in all classes and technology competence, $r(22) = .53, p < .05$. There were no significant correlations between participation in Youth Institute activities leadership skills, technology use, and attitudes toward education.

Conclusions

While evaluations of the summer program are completed yearly, it is also important to explore whether short-term program effects are maintained over a longer period of time and persist even in the context of participants' "typical" school and social lives. It is, however, worth noting that the end of the year does not mark the end of participation in the Youth Institute Alumni program, and, thus, may not accurately reflect the potential of the program to positively influence the skills and attitudes of these youth.

Extent and Type of Program Involvement

The types and extent of activities offered, and involvement by Youth Institute participants, in most activities has remained relatively stable throughout the three years of program evaluation. However, this was the first year that academic advising was not documented and that no field trips were offered. There was also a slight decline in the number of times the 1st District Youth Council met. The Digital Arts Lab and Community Service Projects remain the two most attended activities in the program.

Leadership Skills

At the end of one year of Youth Institute involvement, these participants evidenced significant skill gains in the areas of fundamentals of leadership, written communication, speech communication, character-building, group dynamics, and decision-making. In addition, they reported some improvement in the area of personal skills, something not found at the end of summer. These results are quite similar to the findings from prior years, in that the vast majority of leadership skill areas continued to show significant improvement after one year. However, as was found at the end of the summer, there continued to be no significant changes in self-reports of problem-solving or planning skills. In part, this finding, which is different than in past years, may have been influenced by the low reliability of the scale at program entrance. It is also possible that these youth were involved in fewer activities that required these skills (e.g., scavenger hunt in San Francisco) than in past years. Youth Institute staff may want to develop strategies to ensure that youth have the opportunity to be fully engaged in planning and problem-solving around activities such as the Haunted House or carnival so they continue to hone these skills which will be important to their future.

Technology Use

At the end of one year, participants showed significant increases in accessing the Internet, creating graphic designs with computer software applications, using data processing software for

databases or spreadsheets, participating in Internet chat room/listservs, and buying things on the Internet. Participants also reported somewhat of an increase in creating web pages and using digital video equipment. In comparison with the end of summer findings, it appears that, at the end of one year, alumni were more likely to access the Internet, participate in Internet chat rooms/listserve, and buy things on the Internet.

Technology Competence

At the end of one year, participants showed significant increases in the media and/or technology competencies related to: 1) successfully operating computers, VCRs, audiotapes, etc., 2) creating knowledge products for audiences, 3) creating multimedia products with support from teachers, family members, or student partners, 4) locating, evaluating, and collecting information from a variety of sources, 5) processing data and reporting results, 6) developing strategies for solving problems in the world, 7) managing and communicating personal/professional information, and 8) communicating information and ideas effectively. Thus, the gains in all of the technology competency areas except working collaboratively with others to use technology, remained significantly improved at the end of year one.

Educational Attitudes

Participants reported somewhat lower goal valuation scores and no changes in academic self-perceptions or motivation/self-regulation at the end of one year. These results are quite different from the end of summer findings that showed significantly more positive academic self-perceptions and motivation/self-regulation as well as higher levels of goal valuation. Unlike prior years, no data was collected on the amount of academic advising that occurred during the past year, so it is not possible to determine whether declines in this activity are related to these outcomes. However, if a goal of the Youth Institute is to improve educational attitudes and possibly school involvement (e.g., motivation, assignment completion), then it may be useful to formalize the program's approach to supporting the academic achievement and long-term

commitment to college for all participants. For example, program staff could meet each semester with participants to discuss course schedules and progress in school, or workshops could be held with youth and/or their parents to encourage college readiness and/or study skills. Overall, these findings suggest that the YMCA Youth Institute is helping youth to develop long-term gains in both leadership and technology competence. However, additional interventions may need to be implemented to address educational attitudes.