Leadership & Technology Evaluation of the 2006 Long Beach Stephens YMCA Youth Institute Intensive Summer Program

Sandra L. Kirkner, M.A.-R.
Research Associate

Julie O'Donnell, Ph.D., M.S.W.
Professor and Director of Research

Child Welfare Training Centre
Department of Social Work
California State University, Long Beach

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Methods

Data Collection

Self-report survey data was collected from all entering 2006 Stephens YMCA Youth Institute Summer Program (SYI) participants on their first and last day of the program. 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 of the California State University, Long Beach, Department of Social Work, specifically to evaluate this project. The Technology Inventory consists of two sections, one on frequency of technology use and one on technology competency. The third survey was the School Attitude Assessment Survey – Revised Edition (D. B. McCoach, 2002). This survey measures five areas of school attitudes. This instrument has been shown to have strong reliability and validity.

Sample

As shown in Table 1, the participants of the 2006 Stephens YMCA Youth Institute Intensive Summer Program ranged from 11 to 14 years of age. The majority of youth were in the 12 to 13 year age range (77%). Exactly half (50%) of the participants were female. Latinos (46%) were the largest ethnic group, followed by Asian-American/Pacific Islanders (31%), and African-Americans (23%). Over half (54%) of the sample were 7th graders when they began the SYI program.

Table 1
Sample Description of Summer 2006 Youth Institute Participants
(N = 26)

	%	N
♦ Age at Start of Program		
11	19%	5
12	42%	11
13	35%	9
14	4%	1
♦ Gender		
Female	50%	13
Male	50%	13
♦ Ethnicity		
Latino	46%	12
Asian American/Pacific Islander	31%	8
African-American	23%	6
♦ Grade		
6^{th}	35%	9
7^{th}	54%	14
8^{th}	11%	3

Analysis

Leadership Skills

Nine types of leadership skills were measured including fundamentals of leadership (α = .78 to .82), written communication (α = .83 to .86), speech communication (α = .85 to .88), character-building (α = .79 to .81), decision-making (α = .79 to .81), group dynamics (α = .86 to .87), problem-solving (α = .70 to .80), personal skills (α = .90 to .92), and planning (α = .85 to .87). 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 were investigated using paired t-tests.

School Attitude Scales

Five different areas of school attitudes were measured including academic self-perceptions (α = .85 to .93), attitudes toward teachers (α = .80 to .90), attitudes toward school (α = .75 to .92), goal valuation (α = .67 to .93), and motivation/self-regulation (α = .89 to .94).

Results

As shown in Table 2, youth who participated in the 2006 YMCA SYI Summer Program reported significant improvements in all nine areas of leadership skills. Significant improvements were found on Fundamentals of Leadership, t (24) = 6.45, $p < .05$, Written Communication, t (25) = 5.02, $p < .05$, Speech Communication Skills, t (25) = 4.31, $p < .05$, Character-Building, t (25) = 3.30, $p < .05$, Group Dynamic Skills, t (25) = 2.95, $p < .05$, Decision-Making Skills, t (25) = 2.82, $p < .05$, Problem-Solving Skills, t (25) = 3.09, $p < .05$, Personal Skills, t (25) = 3.90, $p < .05$, and Planning Skills, t (25) = 3.59, $p < .05$. Prior to attending the program, these teens rated themselves lowest on fundamentals of leadership, speech communication and written communication and highest on character building, personal skills and decision-making. The greatest gains were found in fundamentals of leadership, written communication and speech communication.

Table 2
Participant Report of Changes in Leadership Skills

	Before Summer			After Summer		
Skills	Mean	SD	N	Mean	SD	Difference
Fundamentals of Leadership	1.96	.58	25	2.65	.36	.69**
Written Communication	2.03	.58	26	2.54	.39	.51**
Speech Communication	1.98	.57	26	2.45	.42	.46**
Character Building	2.39	.41	26	2.60	.30	.21**
Group Dynamics	2.29	.41	26	2.50	.36	.21**
Decision-Making	2.35	.47	26	2.56	.40	.21**
Problem-Solving	2.24	.48	26	2.54	.48	.29**
Personal	2.37	.50	26	2.64	.32	.27**
Planning	2.24	.46	26	2.52	.37	.28**

**p<.05

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. Prior to entering the program, participants rated their frequency of use highest on using computers to complete schoolwork, accessing the Internet and playing computer games. Their least frequent use was in the areas of creating web pages and buying things on the Internet.

As shown in Table 3, study participants reported significantly more frequent use in creating graphic designs with computer software and code applications, t (23) = 3.09, p < .05, using word processing software to write text, t (25) = 3.49, p < .05, using data processing

software applications for databases or spreadsheets, t (21) = 2.63, $p < .05$, and using digital video equipment, t (21) = 3.32, $p < .05$, at the end of the SYI summer program. Participants also reported somewhat greater frequency of use in using the computer at home and school, t (24) = 1.90, $p < .10$, accessing the Internet, t (25) = 1.81, $p < .10$, and creating web pages, t (18) = 1.76, $p < .10$.

The greatest gains in frequency of technology use were found on using digital video equipment, creating graphic designs with computer software and code applications, and using word processing programs to write text.

Table 3
Participant Report of Changes in Technology Use

Technology Use	Before Summer			After Summer		
	Mean	SD	N	Mean	SD	Difference
I currently use the computer at home and school.	2.76	.88	25	3.20	.96	.44*
I send email.	2.18	1.05	22	2.18	1.14	.00
I access the Internet (websites, surf the web).	2.85	.92	26	3.08	.93	.23*
I create web pages.	1.16	.50	19	1.42	.77	.26*
I create graphic designs with computer software and code applications (HTML, Dreamweaver, etc.).	1.87	1.23	24	2.58	1.25	.71**
I use word processing software applications to write text.	2.46	.99	26	3.15	1.01	.69**
I use data processing software applications for databases or spreadsheets.	1.73	.94	22	2.32	.95	.59**
I use digital video equipment (cameras/video).	2.18	1.33	22	3.18	1.05	1.00**
I participate in Internet chat rooms/discussion boards/listservs.	2.16	1.11	25	2.20	1.22	.04
I play computer games.	2.77	1.11	26	3.08	.98	.31
I buy things on the Internet.	1.35	.78	23	1.48	.90	.13
I use the computer to complete school assignments.	2.96	1.04	26	3.38	.90	.42

**p<.05
*Approaching significance, p<.10

Technology Competence

Technology competence was measured by participants' self-report of knowledge in nine different areas. Participants rated themselves on a scale ranging from 1 "No knowledge" to 4 "Excellent knowledge." Prior to program participation, teens reported their highest levels of knowledge in the area of working collaboratively with others to use technology to compile, synthesize, the use of input and output devices to successfully operate computers, VCRs, audiotapes, etc, and the use of a variety of media and formats to communicate information and

ideas effectively. Their lowest levels of knowledge were in the areas of the use; (a) technology tools for managing and communicating personal/professional information, (b) technology in the development of strategies for solving problems in the world, and (c) technology to create multimedia products with support from teachers, family members, or student partners.

As shown in Table 4, youth who participated in the 2006 YMCA SYI summer program reported significant improvements in their competencies with: (a) the use of input and output devices to successfully operate computers, VCR's, audiotapes, etc., t (24) = 3.17, $p < .05$; (b) a variety of media and technology resources to create knowledge products for audiences, t (23) = 3.09, $p < .05$; (c) creation of multimedia products with support from teachers, family members or student partners, t (22) = 4.48, $p < .05$; (d) the use of technology in the development of strategies for solving problems in the world, t (24) = 4.27, $p < .05$; (e) the use of technology tools for managing and communicating personal/professional information, t (23) = 5.01, $p < .05$; and (f) the use of a variety of media and formats to communicate information and ideas effectively to multiple audiences, t (23) = 2.50, $p < .05$. Participants also reported somewhat greater technology competencies in the areas of working collaboratively with others to use technology to compile, synthesize, produce, and disseminate information, t (24) = 1.98, $p < .10$, using technology to locate, evaluate, and collect information from a variety of sources, t (25) = 1.99, $p < .10$, and using technology to process data and report results, t (25) = 1.99, $p < .10$.

The greatest knowledge gains in technology competency were found on the use of technology for managing and communicating information, creating multimedia products with teacher, family or student partners, and using technology in the development of strategies for solving problems in the world.

Table 4
Participant Report of Changes in Technology Competencies

Technology Competency	Before Summer			After Summer		
	Mean	SD	N	Mean	SD	Difference
Use input and output devices to successfully operate computers, VCR's, audiotapes, etc.	2.92	1.00	25	3.68	.69	.76**
Use a variety of media and technology resources to create knowledge products for audiences	2.58	1.02	24	3.33	.76	.75**
Work collaboratively with others to use technology to compile, synthesize, produce, and disseminate information	2.92	.81	25	3.28	.89	.36*
Create multimedia products with support from teachers, family members, or student partners.	2.30	1.11	23	3.39	.84	1.09**
Use technology tools to locate, evaluate, and collect information from a variety of sources.	2.54	1.07	26	3.15	.88	.62*
Use technology tools to process data and report results.	2.54	.95	26	3.12	1.03	.58*
Use technology in the development of strategies for solving problems in the world.	2.16	.90	25	3.08	.95	.92**
Use technology tools for managing and communicating personal/professional information.	1.92	1.14	24	3.29	.75	1.37**
Use a variety of media and formats to communicate information and ideas effectively.	2.62	1.10	24	3.29	.69	.67**

**p<.05
*Approaching significance, p<.10

School Attitudes

As shown in Table 6, there were no significant differences found between the before and after summer scores for any of the school attitude scales.

Table 6
Participant Report of Changes in School Attitudes

	Before Summer			After Summer		
School Attitude Scale	Mean	SD	N	Mean	SD	Difference
Academic Self-Perceptions	5.64	.98	26	5.79	1.23	.15
Attitudes Toward Teachers	5.35	1.02	26	5.79	1.14	.43
Attitudes Toward School	5.65	1.10	26	5.92	1.09	.26
Goal Valuation	6.62	.59	26	6.32	.97	.31
Motivation/Self-Regulation	5.92	1.55	26	5.84	1.13	.08

**p<.05

Conclusions

Participants in the 2006 YMCA Stephens Youth Institute Summer Program self-reported significant improvements in all nine leadership areas. These results suggest that the wilderness retreat, project-based learning and other program components helped participants develop a diverse range of leadership skills. This further suggests that participants are developing skills that should prove very useful in both the school and work arenas. The large gains in speech and written communication may be particularly helpful to students as they continue in middle school or move on to high school.

Participants self-reported significant increases in technology use in graphic design software, word processing applications for text and databases, and digital video equipment. These findings are not surprising given that each of these areas was emphasized during the summer program. They also evidenced some greater use of computers at home and school, the Internet and web page creation, suggesting the program may have increased access to or provided at least an introduction to these areas. The areas where there were no significant

improvements in use; e-mail, chat-rooms, computer games, Internet buying; were clearly not program foci, while using the computer to complete school assignments was likely unaffected since the youth were not in school during the time of the program. The findings here are slightly different than those generated by the high school Youth Institute. The fact that the middle school Youth Institute was three weeks shorter was probably at least partially responsible for some these differences in outcomes. If the program wants to increase technology use in some of these other areas, curriculum review, reconsideration of the program length, or purposeful inclusion of this content in the year-round after-school program may be useful.

Participants also self-reported significant or somewhat significant knowledge gains in all areas of technology competency. These findings suggest that participants gained competency in a broad range of state-of-the-art technology and the effective use of this technology to produce and disseminate products. The breadth of the material covered by the summer program is clearly evident given the broad range of competency gains found here. These competency gains should help participants to do better in school and groups as well as to prepare them for a variety of professional fields.

No significant improvements were found in any of the five School Attitude areas. One possible explanation for there being no significant changes in school attitudes could be due to the fact they were not currently in school. However, if a goal of the SYI is to improve school attitudes (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 or their parents to encourage college readiness and/or study skills.

Overall, the SYI summer program appears to have helped participants to gain multiple new skills and competencies as theorized in the model. In addition, many of the leadership growth may also serve as proxy indicators of improvement in the sense of self-efficacy and self-confidence. Taken together these finding are exciting and suggest the program is achieving most of its stated goals. They also suggest that "technology" programs, when delivered thoughtfully, are able to positively impact other areas in the lives of youth.