Evaluation of the Effects of the 2014 San Diego Mission Valley YMCA Youth Institute Summer Program on Leadership and Technology Skills, Educational Attitudes and Positive Youth Development

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Introduction

The Youth Institute (YI) is an intensive, year-round 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 youth. The goals of the Youth Institute are to: (a) improve the technology, career, leadership and decision-making skills of these youth to promote readiness for higher education or career entry after graduation; (b) improve academic achievement and stimulate interest in higher education among low-income, culturally-diverse, urban high school youth; and (c) promote bonding to pro-social adults and community attachment among urban youth to ensure that they remain engaged in their schools and communities. The program is divided into two components, the intensive summer technology program and the year-round academic support program. During the summer of 2014, the San Diego Mission Valley Youth Institute (SDYI) served both middle and high school students.

Intensive Technology Summer Program

Incoming youth participated in a full-time (35 hours per week), eight-week summer program. The first week was spent at a wilderness retreat which focused on team building, cultural diversity training, decision-making and life sciences. Participants were assigned to project teams that were maintained throughout the summer so there was an ethnic and gender mix. Initiative games and a low-ropes course were used to promote group cohesion and leadership skills while improving problem-solving and communication skills. Cultural awareness and tolerance activities were also integrated and life sciences were introduced. This week was designed to help participants develop the group and problem-solving skills they would need to successfully work in groups to accomplish their summer tasks.

During the remaining weeks, the program used project-based learning to teach information technology skills. Projects included: (a) digital story telling/movie-making, (b) graphic design, (c) web site creation, (d) presentation and office software, (e) 3D animation, and (f) use of peripheral hardware (scanner, DV cameras, etc). A wide range of the latest software is used including Cinema 4D, Adobe Illustrator, Adobe Photoshop, iMovie, Final Cut Pro, PowerPoint, Keynote, PageMaker, Flash, Extensis InDesign, GarageBand and Macromedia Dreamweaver. Participants also learned how to connect, troubleshoot and use computer networks. All classes had a curriculum description that identified the pedagogical approach and linked the skill sets to be learned to school content standards. Products included animated logos, five to ten minute movies, a magazine focused on teen issues, and a website. All projects were designed to help participants gain literacy, math and higher level thinking skills and were completed in teams. Participants were paid a $200 stipend for the summer.

This is the first summer YI program that was provided in San Diego. One of the staff members was a Youth Institute Consultant, an alumnus of the YI in Long Beach, and two staff members were hired by the Mission Valley YMCA. The cohort attended the wilderness retreat and then continued for seven weeks at the Mission Valley YMCA in San Diego. In addition to traditional YI activities, they also had a Microsoft programming workshop, a Lego robotics workshop, and a field trip to Cymer Technologies, a local engineering company. This report presents the outcomes of the intensive summer YI program.

Methods

Data Collection

Self-report survey data was collected from all entering 2014 SDYI Summer Program participants prior to the start and during the last week of the program. One survey was completed by the youth that measured leadership skills, technology skills, educational attitudes and positive youth development. The leadership skills questions came from a revised version of

the Leadership Skills Inventory (Karnes & Chauvin, 2000), a standardized leadership instrument which measures nine areas of leadership skills. The positive youth development measures were created by the researchers to evaluate this project based on The Toolkit for Evaluating Positive Youth Development (The Colorado Trust, 2004). The technology skills section was created by the research team and the items reflected the current YI technology curriculum. The three educational attitude measures came from The School Attitude Assessment Survey – Revised Edition (McCoach & Siegle, 2003), a standardized measure with strong reliability and validity.

Sample

All (100%) of the 16 San Diego Youth Institute (SDYI) participants who completed the 2014 summer program had both pre- and post-assessment data and were included in these analyses. As shown in Table 1, a little over half of the participants (56%) were male. European-American youth (50%) was the largest ethnic group, followed by Latino and Asian-American/Pacific Islanders (20% each). Participants ranged in age from 13 to 16, with an average age of 14. Half (50%) of the participants were in the 9th grade at the start of the program.

Table 1

Description of Summer 2014 SDYI Participants

(N = 16)

	%	N
Gender		
Male	56%	9
Female	44%	7
Ethnicity		
European-American (White)	50%	8
Latino	19%	3
Asian American/Pacific Islander	19%	3
African-American	6%	1
Bi-Cultural/Mixed	6%	1
Age at Start of Program		
13	31%	5
14	37.5%	6
15	19%	3
16	12.5%	2
Grade		
8th	37.5%	6
9th	50%	8
10th	12.5%	2

Analysis

Measures

Leadership Skill Scales

Eight types of leadership skills were measured. The fundamentals of leadership scale (α = .77 to .86) consisted of five items measuring general leadership skills. Questions included, "I understand the meaning of the term leader" and "I am able to identify the various styles of leadership. The speech communication scale (α = .72 to .73) consisted of seven items. Questions

included, "I can speak in a clear and concise manner" and "I can summarize the ideas of the group and express them." The character-building scale (α = .63 to .75) consisted of ten items. Questions included, "I understand my own feelings" and "I care about others and treat others fairly."

The decision-making scale (α = .60 to .62) consisted of five items. Questions included, "I can accept advice from others" and "I can analyze facts before making a decision." The group dynamics (α = .87) consisted of 11 items. Questions included, "I can lead a group discussion" and "I can lead a group so that people feel safe expressing their opinions." The problem-solving (α = .77 to .88) consisted of five items. Questions included, "I know and use the elements of problem-solving" and "I can select the best way to solve a problem."

The personal skills (α = .83) consisted of 12 items. Questions included, "I am self-confident," and "I feel comfortable in most situations." The planning skills (α = .66 to .88) consisted of 11 items. Questions included, "I have organizational skills," and "I set reachable goals." Participants rated themselves 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-samples t-tests.

Educational Attitude Scales

Three educational attitudes were measured including academic self-perceptions (α = .71 to .87), goal valuation (α = .95 to .97), and motivation/self-regulation (α = .89 to .94). The academic self-perception scale consisted of six 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 six items that measured how much students valued education. 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 (α = .61 to .66) consisted of seven items measuring respect for and comfort with their own and others' cultures. Questions included, "I have respect for teens of other cultures or ethnic groups" and "I feel connected to and proud of my own culture." The life skills scale (α = .74 to .82) consisted of six items measuring proficiencies that allow youth to transition into and achieve successful adulthood. Questions included, "I am good at making friends" and "I am good at taking care of problems without fighting or violence."

The positive core value scale (α = .63 to .64) consisted of five 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 (α = .75 to .81) consisted of five 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 believe I can make a difference."

The social competency/responsible choices scale (α = .62) consisted of four items measuring good behavior, hard work, personal responsibility and fairness. Questions included, "I make decisions to help achieve my goals" and "I think I should work to get something if I really want it." The community involvement scale (α = .77 to .86) consisted of five 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 (α = .94 to .96) consisted of five items measuring the 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 who I can talk to about my problems."

Results

Leadership Skills

As shown in Table 2, SDYI summer participants self-reported significantly higher skill levels in all eight leadership skill areas including, fundamentals of leadership, $t(15) = 3.47$, $p < .05$; speech communication, $t(15) = 5.44$, $p < .05$; character-building, $t(15) = 4.42$, $p < .05$; decision-making, $t(15) = 3.72$, $p < .05$; group dynamics, $t(15) = 3.34$, $p < .05$; problem-solving, $t(15) = 4.29$, $p < .05$; personal, $t(15) = 5.13$, $p < .05$; and planning skills, $t(15) = 6.72$, $p < .05$, at the end of the summer program.

Table 2

Summer 2014 SDYI Participant Report of Changes in Leadership Skills

Skills	Before Summer			End of Summer		
	Mean	SD	N	Mean	SD	Difference
Fundamentals of Leadership	2.27	.52	16	2.69	.46	.41**
Speech Communication	1.97	.54	16	2.53	.38	.55**
Character Building	2.31	.34	16	2.59	.31	.27**
Decision-Making	2.15	.48	16	2.50	.38	.35**
Group Dynamics	2.14	.58	16	2.56	.45	.42**
Problem-Solving	1.97	.61	16	2.55	.53	.57**
Personal	2.09	.48	16	2.52	.39	.43**
Planning	1.91	.40	16	2.56	.46	.64**

$*p < .10$, $**p < .05$

Technology Skills

Technology skills were measured by self-report of skill level with 13 types of technology. Participants rated themselves on a scale ranging from 1 "No Skills" to 4 "Excellent Skills." Higher scores indicated greater skill level. As shown in Table 3, these youth reported significantly higher skills in Internet use, $t(15) = 2.78$, $p < .05$; web design, $t(15) = 4.14$, $p < .05$; using word processing software, $t(15) = 2.41$, $p < .05$; digital video filming, $t(15) = 2.78$, $p < .05$; digital music creation, $t(15) = 5.37$, $p < .05$; digital video editing software, $t(15) = 3.58$, $p < .05$; graphic design, $t(15) = 4.39$, $p < .05$; and digital photography, $t(15) = 4.14$, $p < .05$, after summer program participation. Participants also reported some improvement in the technology areas of using email, $t(15) = 1.86$, $p < .10$; and in using presentation software, $t(15) = 1.96$, $p < .10$, at the end of the summer program.

Table 3

Summer 2014 SDYI Participant Report of Changes in Technology Skills

Technology	Before Summer			End of Summer		
	Mean	SD	N	Mean	SD	Difference
Email use.	3.38	.72	16	3.75	.58	.37*
Internet use (visit websites/surf web).	3.50	.63	16	3.94	.25	.44**
Web design (construction, layout, domain registration, maintenance, applications, Dreamweaver, Photoshop, HTML, peripheral configuration).	2.13	1.02	16	3.13	.88	1.00**
Word processing software (Word) to write reports and/or letters.	3.38	.62	16	3.81	.54	.44**
Data processing software (Excel) for databases or spreadsheets.	2.06	.93	16	2.63	1.15	.56
Digital Video Filming (Camera, lighting, etc.)	2.38	.96	16	3.19	.83	.81**
Using the computer to complete school assignments.	3.50	.89	16	3.81	.40	.31
Digital music creation (GarageBand, Reason, Logic Pro).	1.88	1.02	16	3.25	.86	1.37**
Presentation software (Powerpoint, Keynote, Inspiration).	3.31	.70	16	3.75	.45	.44*
Digital Video Editing (Final Cut Pro, iMovie, After Effects, etc.).	2.31	1.25	16	3.50	.63	1.19**
Graphic Design (Photoshop, Illustrator, InDesign).	2.13	1.09	16	3.44	.63	1.31**
Digital Photography (DSLR camera, lighting, memory card, Photoshop, etc.).	2.13	1.02	16	3.13	.81	1.00**
Animation (Cinema 4D, After Effects, Stop Motion).	1.88	1.02	16	2.38	1.31	.50

*$p < .10$, **$p < .05$

Educational Attitudes

As shown in Table 4, participants self-reported significant improvement in academic self-perception, t (15) = 2.77, $p < .05$; and motivation/self-regulation, t (15) = 2.77, $p < .05$, at the end of the summer program.

Table 4

Summer 2014 SDYI Participant Report of Changes in Educational Attitudes

Educational Attitude Scale	Before Summer			End of Summer		
	Mean	SD	N	Mean	SD	Difference
Academic Self-Perceptions	5.77	.70	16	6.16	.69	.39**
Goal Valuation	6.54	.98	16	6.48	1.01	-.06
Motivation/Self-Regulation	5.45	1.03	16	5.87	1.05	.42**

*p < .10, **p < .05

Positive Youth Development

As shown in Table 5, participants self-reported significant improvement in life skills, t (15) = 3.16, $p < .05$; positive core values, t (15) = 2.21, $p < .05$; sense of self, t (15) = 3.10, $p < .05$; social competency/personal responsibility, t (15) = 2.86, $p < .05$; and community involvement, t (15) = 3.35, $p < .05$, at the end of the summer program.

Table 5

Summer 2013 SDYI Participant Report of Changes in Positive Youth Development Scales

Development Scale	Before Summer			End of Summer		
	Mean	SD	N	Mean	SD	Difference
Cultural Competence	3.67	.31	16	3.78	.27	.11
Life Skills	3.24	.51	16	3.46	.44	.22**
Positive Core Values	3.25	.42	16	3.41	.39	.16**
Sense of Self	2.99	.56	16	3.31	.47	.32**
Social Competency/Personal Responsibility	3.34	.46	16	3.63	.35	.29**
Community Involvement	2.92	.57	16	3.29	.53	.36**
Caring Adult Relationships	3.20	.89	16	3.35	.81	.15

$*p < .10$, $**p < .05$

Conclusions

This study investigated the impact of the San Diego Mission Valley YI Summer Program on leadership and technology skills, educational attitudes and positive youth development. Overall, the results were extremely positive and encouraging. Participants' self-reported significant growth in the all areas hypothesized to be influenced by the YI model. Although the absence of a control group makes it difficult to definitively conclude that these changes were completely the result of program participation, it is unlikely that such changes, in so many domains, would occur without some type of intervention. In terms of leadership skills (fundamentals of leadership, speech communication, character building, decision-making, group dynamics, problem-solving, personal & planning), significant improvement was found in all of the leadership skills measured. Thus, it appears that program participation helped youth develop a diverse range of leadership skills that should prove beneficial in school, the larger community,

and in the future. This is particularly true since many of the leadership skills measured here are similar to the skills that have been identified as necessary to compete in the 21st century (The Partnership for 21st Century Learning Skills, 2003). It is likely that these skill gains may be related to the YI wilderness retreat and the project-based learning experiences.

These youth also evidenced significant (Internet, web design, word processing, digital video filming, digital music creation, digital video editing, graphic design, digital photography) or some (email, presentation software) improvement on 77% of the technology skills measured. Not surprisingly, the greatest gains were found in the areas most emphasized in the summer program. These findings suggest that the summer program, with its intensive technology focus, was able to teach participants a wide variety of high-end digital media skills. This is encouraging since people with strong technological skills are becoming more highly valued in the workforce (Baron, 2002). These findings are also very positive given low-income youth have been shown to have lower levels of technology access and skill, both of which are critical for school and productive adult employment (Morse, 2004; Warschauer & Matuchniak, 2010). It may prove beneficial to offer workshops on data processing, presentation software, and animation during the year-round program.

Another anticipated outcome of the YI is improved educational attitudes, although this area has, in the past, been found to be more difficult for the summer program to influence. Thus, it is quite encouraging that SDYI participants reported significant improvement in academic self-perceptions (confidence in their skill) and motivation/self-regulation. These changes are important given research has indicated that higher academic self-perceptions are both related to, and predictive of, better academic outcomes (Erkman, Caner, Sart, Borkan & Sahan, 2010; Pershey, 2010); and motivation/self-regulation has been found to be related to higher levels of achievement among high school students (Suldo, Shaffer & Shaunessy, 2008; McCoach &

Siegle, 2003). Thus, these attitude improvements may help participants to achieve better academically in the coming years. While these gains are very positive, it will be important for SDYI, in the year-round program, to continue to support academics, possibly with an emphasis on academic commitment given the lack of change in goal valuation, and also to expose youth to higher education to further increase the likelihood of positive academic achievement, high school graduation, and entry into higher education.

The YI is designed to incorporate positive youth development strategies into all aspects of the program since participation in youth development programs has been shown to enhance academic success (Hall, Yohalem, Tolan & Wilson, 2003) while reducing involvement in adolescent problem behaviors (Roffman, Pagano & Hirsch, 2001; Meltzer, Fitzgibbon, Leahy & Petsko, 2006). The findings here indicate that the program was quite successful in promoting positive youth development as participants evidenced significant gains in five (71%) of the seven youth development areas measured including life skills, positive core values, sense of self, social competency/personal responsibility and community involvement. Community involvement, as well as some of the other variables measured here, have been linked to better academic achievement, increased self-efficacy, better attitudes toward school and education, higher levels of community involvement, and better leadership and empathy skills (Celio, Durlak & Dymnicki, 2011). These findings indicate that program involvement helped participants to develop protective factors that should reduce the likelihood of future involvement in problem behaviors. Continuing to work on establishing positive adult relationships may prove particularly meaningful given such relationships have been shown to predict more successful adolescent development (Serido, Borden & Perkins, 2011; Dubois, Portillo, Rhodes, Silverthorn & Valentine, 2011), higher levels of school commitment and achievement, and less involvement in delinquency and other problem behaviors (Paxton, Valois, Huebner & Drane, 2006).

Overall, the findings here are quite positive, particularly given the relatively small sample size, and indicate that the program, as hypothesized, made meaningful contributions to the development of leadership, technology skills, educational attitudes, and positive youth development. These results also provide additional evidence that the YI model can be successfully replicated in diverse locations. Since these youth will continue to be involved in the year-round program, it will be interesting to see if these improvements are maintained and if other gains in technology, educational attitudes and positive youth development will be seen. The information gathered in the focus groups should also help to identify the mechanisms which contributed to these impressive gains and, hopefully will further reinforce the outcomes identified here.

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