Effects of YMCA Middle School Youth Institute Participation on School Performance and Attendance Academic Year: 2009 - 2010

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

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

California State University, Long Beach
Department of Social Work
Child Welfare Training Centre
(562) 985-7372

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Introduction

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 the Long Beach Unified School District (LBUSD). Program participants can be involved in the program 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. Second, some participants are accepted into a smaller, four-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 program participants are involved in both program components.

The primary program goals are: (a) To improve the technology knowledge and skills of participants, (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 their academic achievement. The purpose of this report is to present the effects of the program on participants' academic performance including grades, tests scores and school attendance

Methods

Data Collection

All of the data used for this research was collected from secondary sources. Both youth and their parents signed consent forms agreeing to allow the YMCA and school district to release information to the research team. The YMCA provided the researchers with a computer file that contained school district identification numbers, days of attendance in the after-school program between September, 2009 and June, 2010, and whether the participant had attended the summer

program in 2009. LBUSD then provided the researchers with academic grade point average (GPA), cumulative academic grade point average, total grade point GPA, cumulative total grade point average, absences, truancies, and standardized test scores from all students enrolled at Stephens. The two files were then matched by student identification numbers so program participants could be classified for analysis.

The academic measures used in this study came from the semester prior to the start of or at the beginning of the 2009 – 2010 school year (pre-test) and the final semester of the 2009 – 2010 school year (post-test). For 6th graders, the pre-test measure was taken from the first semester of the 2009 – 2010 school year since the elementary school report card was substantially different. For 7th and 8th graders, the pre-test measure was taken from the last semester of the 2008 – 2009 school year. Given that the timing of the pre-test measures were different, the results of the study are presented separately for 6th graders. One study limitation is that youth may have been involved in the program prior to the collection of these pre-test measures since the first grading point for 6th graders may have come after they started the program and 7th and 8th graders may have been in the program the prior year as well.

Sample

Three-hundred and two youth participated in the MSYI program at least once during the 2009 – 2010 school year. However, in order to be designated as a MSYI participant for these analyses, participants had to attend at least 30 days of the after-school program. Of the 302 youth, 146 (48%); 42 (29%) 6^{th} graders and 104 (71%) 7^{th} and 8^{th} graders, met this criteria and were designated as MSYI participants. Of these, 24 (57%) of the 6^{th} graders and 53 (51%) of the 7th and 8th graders had both parent and youth consents as well as useable data and were included in these analyses.

The district also provided data on 963 Stephens students who did not participate in the MSYI program during the 2009 – 2010 school year to serve as a comparison group. Of these, 802 (83%) had useable data. Of the 802 students, 140 (17%) had attended the MSYI, but for fewer than 30 days or researchers did not have consents for them, and therefore, were removed from the comparison group. This left 662 comparison students; 218 6th graders and 444 7th and 8th graders. Prior to examining program effects, the researchers explored whether there were ethnic, gender and grade differences between MSYI participants and comparison students. No significant gender or ethnic differences were found between the academic-year MSYI group and the comparison group. However, the academic-year MSYI group had significantly more 8th graders than the comparison group. No significant demographic differences were found between the year-round (summer and academic year) MSYI group and comparison students. Table 1 presents the descriptions of the 6th grade academic year MSYI and comparison sample, Table 2 displays the descriptions of the 7th and 8th grade academic year samples, and Table 3 presents the descriptions of the year-round MSYI (7th and 8th grades only) participants and the comparison sample.

Table 1

6th Grade Sample Descriptions YMCA Middle School Youth Institute Participants and Comparison Students (Academic Year 2009-10)

	Academic Year YMCA MSYI Participants (N = 24)		Comparison Students (N = 218)	
	%	N	%	N
Gender				
Male	54%	13	53%	116
Female	46%	11	47%	102
Ethnicity				
Latino	46%	11	58%	127
African-American	33%	8	19%	41
Asian-American/Filipino/Pacific Islander	17%	4	20%	44
Caucasian	0%	0	1.5%	3
Missing	4%	1	1.5%	3

Table 2

7th and 8th Grade Sample Descriptions of YMCA Middle School Youth Institute Participants and Comparison Students (Academic Year 2009-10)

	Academic Year YMCA MSYI Participants (N = 53)		Comparison Students (N = 444)	
	%	N	%	N
Gender				
Male	43%	23	52%	231
Female	57%	30	48%	213
Ethnicity				
Latino	62%	33	68%	300
African-American	23%	12	14%	62
Asian-American/Filipino/Pacific Islander	13%	7	16%	72
Caucasian	2%	1	2%	8
Other	0%	0%	0%	2
Grade*				
7th	34%	18	53%	235
8th	66%	35	47%	209

* Significant differences between groups at the .05 level

Table 3

Descriptions of 7th and 8th Grade Year-Round YMCA Middle School Youth Institute Participants and Comparison Students for the (Academic Year 2009-2010)

	Year-Round MSYI Participants (N = 18)		Comparison Students (N = 444)	
	%	N	%	N
Gender				
Male	44%	8	52%	231
Female	56%	10	48%	213
Ethnicity				
Latino	66%	12	68%	300
African-American	17%	3	14%	62
Asian American/Filipino/Pacific Islander	17%	3	16%	72
Caucasian	0%	0	2%	8
Other	0%	0	0%	2
Grade				
7th	39%	7	53%	235
8th	61%	11	47%	209

Measures

The first grade measure was academic grade point average (GPA) which was the mean of the four academic courses required of all middle school students (Language Arts, Math, History, Science) for a specific semester. The second grade measure was total grade point average (GPA) which was the mean of all courses taken for the semester. The third and fourth grade measures, for 7th and 8th graders only, were cumulative academic GPA and cumulative total GPA. These

measure combined GPA across semesters. Absenteeism was measured using the number of days the student missed during that semester. Truancy was the number of unexcused absences from school during that semester. Test scores were measured using the standardized scores from the district content standards tests for English Language Arts (ELA) and Math.

Analyses

Chi square tests were used to compare the demographic differences between the two groups. Multivariate analysis of co-variance (MANCOVA) was used to compare outcome differences between MSYI participants and comparison students while controlling for baseline.

Results

Comparisons between 6th Grade Middle School Youth Institute and Comparison Students on Academic Measures for the Academic year Program

As shown in Table 4, MSYI sixth graders showed somewhat lower absences, F (1, 225) = 3.81, $p < .10$, and somewhat higher English Language Arts content standard scores, F (1, 221) = 3.04, $p < .10$, than comparison students.

GPA difference scores were also calculated to determine the percentage of 6th grade academic-year MSYI youth whose academic GPAs increased over the academic year. Six (25%) of the 24 academic year MSYI 6th graders improved their academic GPAs over the year.

Table 4

Comparisons of School Performance between 6th Grade MSYI Academic-Year Participants and Comparison Students for 2009-2010

	Academic Year MSYI Participants		Comparison Students		
Measure	Adjusted Mean	N	Adjusted Mean	N	F-Value
Academic GPA	2.25	24	2.28	218	.10
Total GPA	2.47	24	2.49	218	.04
Absences	5.41	20	8.70	208	3.81*
Truancies	2.36	20	3.75	208	2.18
Content Standards					
English Language Arts	330.21	20	316.57	204	3.04*
Math	340.76	20	323.46	203	2.61

* Approaching significance at the .10 level.
** Significant differences between groups at the .05 level

Comparison between 7th and 8th Grade Middle School Youth Institute and Comparison Students on Academic Measures for the Academic Year Program

As shown in Table 5, 7th and 8th grade YMCA MYSI academic-year participants scored significantly higher in the math content standards than comparison students, F (1, 466) = 10.57, $p < .05$, and had somewhat higher cumulative academic GPAs, F (1, 490) = 3.70, $p < .10$, and cumulative total GPAs, F (1, 490) = 2.97, $p < .10$, than comparison students. Twenty-nine (56%) of the academic-year MSYI 7th and 8th graders improved their academic GPAs over the course of the year.

Table 5

Comparisons of School Performance between 7th and 8th Grade MSYI Participants and Comparison Students for the Academic year Program 2009-2010

	Academic year MSYI Participants		Comparison Students		
Measure	Adjusted Mean	N	Adjusted Mean	N	F-Value
Academic GPA	2.62	52	2.47	436	2.18
Total GPA	2.73	53	2.62	440	1.74
Cumulative Academic GPA	2.45	53	2.38	440	3.70*
Cumulative Total GPA	2.61	53	2.55	440	2.97*
Absences	7.34	53	9.12	444	2.45
Truancies	4.05	53	4.27	444	.10
Content Standards					
English Language Arts	336.90	53	334.19	411	.39
Math	360.27	53	341.00	416	10.57**

* Approaching significance at the .10 level.
** Significant differences between groups at the .05 level

Comparison between 7th and 8th Middle School Youth Institute and Comparison Students on Academic Measures for the Year-Round Program

As shown in Table 6, among seventh and eighth graders, year-round MSYI participants had significantly higher academic GPAs, F (1, 451) = 4.73, $p < .05$, total GPAs, F (1, 455) = 4.21, $p < .05$, and cumulative academic GPAs, F (1, 455) = 4.05, $p < .05$, than comparison students. They also had somewhat higher cumulative total GPAs, F (1, 455) = 3.50, $p < .10$, than comparison students. Thirteen (72%) of the 18 year-round MSYI 7th and 8th graders had improved academic GPAs over the course of the year.

Table 6

Comparisons of School Performance between 7th and 8th Grade Year-Round MSYI Participants and Comparison Students for the Academic Year 2009-2010

	MSYI Year-Round Participants		Comparison Students		
Measure	Adjusted Mean	N	Adjusted Mean	N	F-Value
Academic GPA	2.87	18	2.51	436	4.73**
Total GPA	2.98	18	2.68	440	4.21**
Cumulative Academic GPA	2.63	18	2.51	440	4.05**
Cumulative Total GPA	2.78	18	2.68	440	3.50*
Absences	5.48	18	7.82	444	1.45
Truancies	2.78	18	3.75	444	.67
Content Standards					
English Language Arts	345.52	16	338.68	362	.91
Math	357.98	18	346.91	416	1.27

* Approaching significance at the .10 level.
** Significant differences between groups at the .05 level.

Discussion

One of the primary goals of the YMCA Middle School Youth Institute is to promote academic success for low-income, culturally-diverse youth. The findings here indicate that program participation did, to some extent, positively influence academic achievement. Among 6th graders, MYSI participants evidenced somewhat higher English Content Standard scores and somewhat fewer absences than comparison students. Among 7th and 8th graders, academic year MYSI participants had significantly higher Math Content Scores and somewhat higher cumulative academic and cumulative total GPAs than their comparison counterparts. These findings represent a substantial improvement over results from the last two years of the program

which showed no impact on any of the academic measures investigated with the academic-year group.

As has been seen in past analyses of this program, participation in the year-round (summer and academic-year) program again appeared to contribute to even more positive school-related outcomes for youth. This year, the effects of program participation on academic achievement were even more apparent within the year-round MYSI sample, although it was a substantially smaller group. Year-round participants evidenced significantly higher academic GPA, total GPA, and cumulative academic GPA as well as somewhat higher cumulative total GPA. In addition, 72% of year-round participants (as opposed to 56% of academic-year) improved their academic GPAs during the year. Although the additional benefits of year-round participation have varied (attendance, truancy, GPA) over the past three years, there is a consistent trend indicating that participation in both the summer and academic-year program is more effective in influencing positive school changes. Thus, the YMCA should continue to seek funding to implement the summer program, and, perhaps, even expand it to serve more youth.

The findings here provide support for the idea that the MSYI can, as hypothesized, positively contribute to academic achievement. Although these findings are quite positive, they should be interpreted with some caution given that only 52% of program participants were included in these analyses, and, while the samples were comparable, the results may not be generalizable to the larger sample of participants. The small sample sizes may also have contributed to the Type II error rate, given the limited power of the tests to discern differences. It will be important, as the evaluation continues, that a larger proportion of youth become part of the evaluation. This will allow for more confidence in the outcomes found.