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TIGER WOODS LEARNING CENTER EVALUATION STUDY—PHASE 3

Assessing Student Outcomes in Sporadic and Regular Program Participants and Understanding Sources of Program Attrition

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SECTION I—INTRODUCTION

The Tiger Woods Learning Center (TWLC) offers technology-enhanced and career-oriented enrichment activities for youth in southern California. Beginning in Fall 2006, researchers from the University of California, Irvine, School of Education have served as external evaluators of the Learning Center. In a Phase 1 study (2006-2008) the UCI research team focused on the TWLC program implementation experience and student outcomes [see two-year study report at: <http://childcare.gse.uci.edu/des7.php>].

In a second phase (2008-2010), the UCI researchers worked with TWLC administration and staff to develop a robust system to collect program attendance for individual students at the center and classroom levels and also measured student and parent satisfaction with the Center's diverse course offerings. These data indicated that both parents and youth were very satisfied with the services provided by TWLC.

The Phase 3 study of the TWLC during the 2011-2012 program year seeks to build on and expand on this previous work. The Phase 3 study consisted of two components: (1) a quantitative component studying student outcomes; (2) a qualitative component studying student's experience at the TWLC and factors that contribute to program attrition.

This report of Phase 3 findings is organized as follows:

Section II reports results of the quantitative component of the study. This component included the collection of baseline and follow-up data of individual student performance across program sessions and across the academic year to measure *changes* in student functioning as a result of program participation. Robust, reliable, and valid measures of student outcomes were assessed in the areas of academic performance, task persistence, work habits, and positive social behaviors, as well as attitudes, beliefs and motivation in the STEM (Science, Technology, Engineering, and Mathematics) area. College and career orientations were also measured at baseline and at follow-up.

In addition, the post student survey included an assessment of the quality of youth's program experiences as reported by the youth, and the relations between the quality of program experiences and youth outcomes. Analyses were conducted to measure effects of program attendance on each student outcome, as well as the effects of student characteristics (e.g. gender, grade level, ELL status) on the relationship between attendance and outcomes.

Results from the qualitative component of the Phase 3 study are presented in Section III. This component consisted of interviews with students who either did not complete a TWLC session, or who did not return for additional TWLC sessions. Follow-up phone and face-to-face interviews were conducted with 7th through 12th grade students who enrolled in a session and attended at least one day of class, but then did not complete that session, and students who did not enroll in a subsequent session.

Analysis of the interview data revealed prevailing factors in why students enroll in the first place and what keeps them from completing one or more sessions at the TWLC. An understanding of the factors that contribute to student attrition within a given session (reasons for dropping out of a course before completing it) or across sessions (reasons for not enrolling in subsequent sessions) during the TWLC program year can assist the TWLC in program planning and possible program improvement.

Key findings from both the quantitative and qualitative components of the study are summarized in the Conclusions, Section IV. Measures used in the study, pre and post student surveys and interview protocol, are included in the Appendix.

SECTION II—REPORT OF QUANTITATIVE RESULTS

This section presents the results of the quantitative data collected from students who attended classes at the Tiger Woods Learning Center (TWLC) sites during the 2011-2012 school year. It includes students' scores in the areas of skill development and behavior change, based on responses obtained from the Afterschool Outcome Measures Online Toolbox (AOMOT) surveys [<http://afterschooloutcomes.org/>].

During the 2011-2012 school year, a total of 453 students completed at least one survey at a TWLC site: 423 at the TWLC in Anaheim, 22 at the TWLC in Philadelphia, and 8 at the TWLC in Washington, D.C. In the total sample, there were 257 boys and 196 girls; 305 (67%) were middle school students (grades 6-8) and 148 (33%) were high school students (grades 9-12).

The results in this section are divided into three parts:

Part A: Student Reports of Program Experiences

Part B: Student Self-Reports of Outcomes

Part C: Analyses of Pre-Post Changes in Student Outcomes

Part D: Associations Between Program Experiences and Student Outcomes

Part E: Associations Between Level of Attendance and Student Outcomes

Part F: Supporting Tables

In Parts A and B, three sets of scores are presented: (1) outcome scores for all students from all three TWLC sites combined (Anaheim, Philadelphia, Washington, D.C.), (2) outcome scores for each of the three TWLC sites, and (3) outcome scores by grade (middle and high school), from all three TWLC sites. If a student attended more than one session and completed more than one pre-participation survey, the PRE scores from the first pre-participation survey are reported; if more than one post-participation survey was completed, the POST scores from the last post-participation survey are reported.

In Part C, two sets of Matched Pair scores and analyses are presented: (1) for all students from all three TWLC sites combined, and (2) for all students, grouped by grade (middle and high school). The analyses test for significant change in outcomes from the beginning of attendance at the TWLC (PRE) to the end (POST), and include only those scores from students who completed both pre- and post-participation surveys.

In Part D, outcome scores are presented by level of quality of program experiences. Analyses test for associations between students' self-reported experiences with program activities, staff, and peers, and students' post-participation outcome scores.

In Part E, outcome scores are presented by level of student attendance at the TWLC in Anaheim. Analyses test for associations between the total number of sessions attended and the calculated change in outcome scores (the difference between pre and post scores).

PART A. STUDENT REPORTS OF PROGRAM EXPERIENCES

On the post-participation survey, TWLC students were asked to report the quality of their experiences at their TWLC site. The Student Self-Report of Program Experiences measure consists of 16 items that are rated using a four-point rating response: 1) Not at all true; 2) A little true; 3) Mostly true; 4) Really true. The measure includes two subscales, Staff & Activities and Peer Affiliation. Examples of items in the Staff & Activities experiences subscale are “I like the activities here” and “I trust the teachers here”. The Peer Affiliation subscale measures students’ experiences with other students in the afterschool program with items such as “I get to know other kids really well here”.

Table 1 summarizes the Program Experiences scores for all middle-high school students in the 2010-2011 AOMOT Field Test, and for the three TWLC sites. Scores are presented in two ways: as mean scores and as categorical scores. Mean scores are the aggregate scores of all the individual mean scores of students in a particular group (e.g. all mean scores of students who attended classes at the TWLC in Anaheim). The categorical scores are determined by ranges in mean scores. Mean scores from 1.0 to 1.9 are categorized as “Low”, scores from 2.0 to 2.9 are “Fair”, scores from 3.0 to 3.59 are “Good”, and scores from 3.6 to 4.0 are “Excellent.”

In the Field Test, 19% of all middle-high school students reported excellent quality experiences with staff and activities (mean scores of 3.6 to 4), 32% reported good quality experiences in this area (scores of 3.0 to 3.59), 39% reported fair quality experiences (scores of 2.0 to 2.9) and 10% reported low quality experiences (scores less than 2). In terms of positive experiences with peers, 27% reported excellent experiences, 33% reported good experiences, 33% reported fair experiences and 7% reported low quality experiences.

The first set of TWLC scores includes responses from all students who completed a post-participation survey at any of the TWLC sites. If a student attended more than one session and completed more than one post-participation survey, the scores from the final post-participation survey were used. The second set of scores includes responses from all the students, by each TWLC site (Anaheim, Philadelphia, Washington, D.C.), and the third set of scores include responses from students at all the TWLC sites, by grade (6-8 and 9-12).

Overall at the TWLC sites, 50% of students reported excellent quality experiences with staff and activities (mean scores of 3.6 to 4), 36% reported good quality experiences in this area (scores of 3.0 to 3.59), 13% reported fair quality experiences (scores of 2.0 to 2.9) and less than 1% reported low quality experiences (scores less than 2). In terms of positive experiences with peers, 44% reported excellent experiences, 21% reported good experiences, 30% reported fair experiences and 6% reported low quality experiences.

Table 1
Program Experiences, Student Self-Reports

	<u>N</u>	<u>Mean</u>	% <u>(1.0-1.9)</u>	% <u>(2.0-2.9)</u>	% <u>(3.0-3.59)</u>	% <u>(3.6-4.0)</u>
CALIFORNIA*						
Staff & Activities	1,840	2.91	9.9%	39.3%	31.9%	18.9%
Peer Affiliation	1,833	3.00	7.1%	32.6%	32.8%	27.4%
1. TWLC SCORES, ALL SITES						
Staff & Activities	162	3.50	.6%	13.0%	36.4%	50.0%
Peer Affiliation	162	3.20	5.6%	29.6%	21.0%	43.8%
2. TWLC SCORES, BY SITE						
<i>Anaheim</i>						
Staff & Activities	150	3.57		9.3%	36.7%	54.0%
Peer Affiliation	150	3.25	4.0%	28.7%	22.7%	44.7%
<i>Philadelphia</i>						
Staff & Activities	12	2.63	8.3%	58.3%	33.3%	
Peer Affiliation	12	2.58	25.0%	41.7%		33.3%
<i>Washington, D.C.</i>						
Staff & Activities			No post-participation surveys from this site			
Peer Affiliation						
3. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
Staff & Activities	103	3.55		11.7%	36.9%	51.5%
Peer Affiliation	103	3.30	3.9%	26.2%	20.4%	49.5%
<i>Grades 9-12</i>						
Staff & Activities	59	3.42	1.7%	15.3%	35.6%	47.5%
Peer Affiliation	59	3.03	8.5%	35.6%	22.0%	33.9%

N= number of students; Mean = average score

*Scores are from the CA Field Test of the Online Toolbox (2010-2011) and the STEM in OST Pilot Study (2011-2012)

PART B. STUDENT SELF-REPORTS OF OUTCOMES

The surveys included a total of eight measures of outcomes, in the three categories of skill development, attitudes and beliefs, and positive behaviors. Students reported their own skill development in the three areas of work habits, math efficacy, and science efficacy. Students reported their attitudes and beliefs in the three areas of science interest, science career, and view of future. Students reported their positive behaviors in two areas: social competencies and misconduct (with low levels of misconduct viewed as a positive indicator). The scales used in the Student Self-Reports are described in this section, as well as the scores for the TWLC and for other California afterschool program sites (AOMOT Field Test and the STEM in OST Pilot Study). See Part F, Tables 3-10 for a complete report of scores.

SKILL DEVELOPMENT

Work Habits

The student self-report of *Work Habits* is assessed on a 4-point scale (1 = *not at all true*, 4 = *really true*). Sample items on the work habits scale include: “I work well by myself” and “I finish my work on time.” An overall work habits score is computed as the mean of the items. Across all Field Test sites statewide, the majority of middle/high school students reported good (30% PRE and 30% POST) or excellent work habits (31% PRE and 28% POST). Less than 7% of students reported low performance in work habits.

Scores for all middle/high school students at the TWLC sites indicate that about 72-79% of the students reported good (46% PRE and 49% POST) or excellent (26% PRE and 30% POST) work habits. About 21-28% of students reported fair (26% PRE and 21% POST) or low (2% PRE and 1% POST) work habits. Table 3 shows the work habits scores, by site, obtained for all middle/high school students in your program.

Math Efficacy

Math Efficacy includes items such as “I expect to do well in math” and “I am interested in math.” The response scale is a 4-point scale (1 = *not at all true*, 4 = *really true*). An overall score is computed as the mean of the items. Across all statewide Field Test sites, over 60% of middle/high school students reported good (20% PRE and 22% POST) or excellent (47% PRE and 41% POST) math efficacy. Less than 12% of students reported low efficacy in math.

Scores for all participating middle/high school students at the TWLC sites indicate that about 62-64% of the students reported good (34% PRE and 30% POST) or excellent (28% PRE and 34% POST) efficacy in math, and about 36-38% of students reported fair (32% PRE and 27% POST) or low (5% PRE and 9% POST) math efficacy. Table 4 shows the math efficacy scores, by site, obtained for all middle/high school students in your program.

Science Efficacy

Science Efficacy includes items such as “I expect to do well in science” and “I am interested in science.” The response scale is a 4-point scale (1 = *not at all true*, 4 = *really true*). An overall score is computed as the mean of the items. Across all sites in the STEM in OST Pilot Study, 53-56% of middle/high school students reported good (23% PRE and 26% POST) or excellent (30% PRE and 30% POST) science efficacy. About 15% of students reported low efficacy in science.

Scores for all participating middle/high school students at the TWLC sites indicate that about 73-78% of the students reported good (35% PRE and 33% POST) or excellent (43% PRE and 40% POST) efficacy in science, and about 21-27% of students reported fair (19% PRE and 23% POST) or low (4% PRE and 4% POST) science efficacy. Table 5 shows the science efficacy scores, by site, obtained for all middle/high school students in your program.

ATTITUDES AND BELIEFS

Science Interest (PEAR)

The student self-report of *Science Interest* was developed at the Harvard University Program in Education, Afterschool & Resiliency (PEAR), and includes items such as “I get excited about learning about new discoveries or inventions.” It is assessed on a 4-point scale (1 = *not at all true*, 4 = *really true*). An overall score is computed as the mean of the items. Across all sites in the STEM in OST Pilot Study, about 36-37% of middle/high school students reported that their interest and attitude toward science were good (25% PRE and 27% POST) or excellent (12% PRE and 9% POST). About 10-12% of students reported low interest in science.

Scores for all participating students at the TWLC sites indicate that about 60% of middle/high school students reported that their interest and attitude toward science were good (38% PRE and 35% POST) or excellent (22% PRE and 25% POST). Less than 5% of students reported low interest in science. Table 6 shows all the scores obtained from your program for the PEAR Science Interest measure.

View of Future

The student self-report of *View of Future* includes two subscales: *Science Career* and *View of Future*. Both subscales are assessed on a 4-point scale (1 = *not at all true*, 4 = *really true*). An overall score for each is computed as the mean of the items for that subscale. The *Science Career* subscale includes items such as “I will get a job in a science-related area”; the *View of Future* subscale includes items such as “I will go to college.”

Across all sites in the STEM in OST Pilot Study, over 90% of middle/high school students reported that the likelihood of being successful in the future was good (28% PRE and 29% POST) or excellent (63% PRE and 63% POST). Less than 2% of students reported low likelihood of future success. About 46% of middle/high school students viewed the likelihood of pursuing a career in science as good (29% PRE and 29% POST) or excellent (17% PRE and 17% POST). About 14-18% of students reported low likelihood of pursuing a career in science.

For all TWLC sites, about 99% of middle/high school students reported that the likelihood of being successful in the future was good (22% PRE and 22% POST) or excellent (77% PRE and 77% POST). About 1% of students reported low likelihood of future success. About 65-69% of middle/high school students viewed the likelihood of pursuing a career in science as good (39% PRE and 36% POST) or excellent (26% PRE and 33% POST). Less than 5% of students reported low likelihood of pursuing a career in science. Table 7 shows all the scores obtained from your program for *Science Career* and Table 8 shows all the scores for *View of Future*.

POSITIVE BEHAVIOR

Social Competencies

Social Competencies are assessed by items such as “I work well with other kids” and “I can tell other kids what I think, even if they disagree with me.” These skills are rated on a 4-point scale (1 = *not at all true*, 4 = *really true*) and an overall social competencies score is computed as the mean of the items. About 60% of the middle/high school students in the statewide Field Test reported good (29% PRE and 31% POST) or excellent (27% PRE and 26% POST) social competencies. Less than 8% of students reported low social competencies (8% PRE and 5% POST).

Scores for all participating students at the TWLC indicate that about 59-62% of the middle/high school students reported good (43% PRE and 39% POST) or excellent (16% PRE and 23% POST) social competencies. About % of students reported fair (38% PRE and 36% POST) or low (3% PRE and 3% POST) social competencies. Table 9 shows the social competencies scores obtained for all middle/high school students in your program.

Misconduct

The *Misconduct Scale* items are rated on a 4-point scale (0 = *never*, 3 = *more than once a week*). Sample items include “I have gotten into a fight at school” or “I have taken something that belongs to someone else.” An overall misconduct score is computed as the mean of the nine item scores. In the Field Test, over 80% of middle/high school students reported low levels of misconduct. Less than 2% of students reported high levels of misconduct.

Scores for all participating middle/high school students at the TWLC sites indicate that over 99% of the students reported low (93% PRE and 90% POST) or medium (7% PRE and 9% POST) levels of misconduct. Less than 1% of students reported high levels of misconduct. Table 10 shows the misconduct scores obtained for all middle/high school students in your program.

PART C. ANALYSES OF PRE-POST CHANGES IN STUDENT OUTCOMES

Matched Pair analyses include only those students who completed both pre and post-participation surveys at the TWLC in Anaheim (N = 257). Analyses test for significant change in outcome scores from pre to post. For students who attended more than one session, only the first completed pre-participation survey and the last completed post-participation survey were included in the analyses.

Results show a significant increase in social competencies scores ($p < .01$). Overall, students who attended at least one session at the TWLC in Anaheim reported increased competency in social skills, from the beginning of their participation in the program to the end. Analyses by grade level show that this increase was significant for middle school students but not for high school students.

Overall, results show a significant decrease in science efficacy ($p < .05$). Analyses by grade level show that this decrease was significant for high school students but not for middle school students. There was also a significant increase in misconduct for all students ($p < .01$). By grade level, this increase was significant for middle school students but not for high school students.

Scores for work habits and science career increased from pre to post for students overall, but results of these analyses were not significant. See Part F, Tables 11-18 for a complete report of scores.

PART D. ASSOCIATIONS BETWEEN PROGRAM EXPERIENCES AND STUDENT OUTCOMES

Analyses were conducted to test associations between middle/high school student reports of the quality of their program experiences and the self-reported student outcome scores that were collected in the spring (POST). For these analyses, the quality of program experiences was categorized as low/fair (ratings of 1.0 to 2.9), good (ratings of 3.0 to 3.59), and excellent (ratings of 3.6 to 4.0).

Table 19 shows student self-reported outcome scores, for each level of Staff & Activities scores. Across sites in California (Field Test or STEM in OST Pilot Study), middle/high school students' reports of higher quality experiences with program staff and activities are associated with higher outcome scores in the areas of work habits, math efficacy, and social competencies ($p < .01$), higher scores in science interest ($p < .05$), and lower scores in misconduct ($p < .01$). Results for the associations between Peer Affiliation and self-reported outcomes show that higher quality experiences with peers were associated with higher scores in science efficacy, science interest, science career, and view of future ($p < .01$), higher scores in work habits ($p < .05$), and lower misconduct ($p < .01$). Table 20 shows the student outcome scores for each level of Peer Affiliation scores.

Results for the TWLC sites show that the associations between Staff & Activities and student outcome scores were positive (Table 19). Similar to students in the Field Test, middle/high school students at the TWLC who had higher quality experiences with program staff and activities also had higher scores in the areas of science efficacy, science interest, science career, view of future, and social competencies ($p < .01$), higher scores in work habits ($p < .05$), and lower scores in misconduct ($p < .01$). Results for the TWLC also show that the associations between Peer Affiliation and student outcome scores were positive (Table 20). Similar to students in the Field Test, students at the TWLC who had higher quality experiences with peers also had lower levels of misconduct and higher scores in all four other outcomes (all associations significant at $p < .01$ level, except for math efficacy, which is significant at $p < .05$ level).

PART E. ASSOCIATIONS BETWEEN LEVEL OF ATTENDANCE AND STUDENT OUTCOMES

The TWLC in Anaheim offered three sessions of classes during the 2011-2012 school year. Of the students who completed both pre and post-participation surveys, 14 attended all three sessions, 29 attended two of the three sessions, and 214 attended just one session. Analyses were conducted to test associations between students' level of attendance (total number of sessions attended) and pre-post changes in outcome scores.

Table 2 summarizes students' pre, post, and change scores for each level of attendance. Change scores are computed as the difference between pre and post scores. Analyses of Variance (ANOVAs) were conducted for each outcome, testing for any significant differences in change scores among the three groups of students. Although some of the change scores are higher for students who attended more than one session, none of the ANOVAs had statistically significant results.

Relatively few students attended more than one session, and significant ANOVA results are difficult to obtain without a good number of cases in each group. If a larger number of students had attended two or three sessions, results may have been significant. Analyses incorporating other variables (e.g. grade level) could not be conducted for the same reason.

Table 2
Pre-Post Change in Outcomes, by Number of Sessions Attended

TWLC SCORES, ALL SITES	Total Number of Sessions Attended								
	One Session (n = 212-214)			Two Sessions (n = 29)			Three Sessions (n = 14)		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Work Habits	3.21	3.22	.01	3.34	3.48	.13	3.43	3.54	.11
Math Efficacy	3.11	3.08	-.03	2.94	2.91	-.03	3.18	3.20	.02
Science Efficacy	3.30	3.22	-.07	3.49	3.34	-.15	3.64	3.55	-.09
Science Interest (PEAR)	3.12	3.09	-.03	3.10	3.02	-.08	3.25	3.18	-.07
Science Career	3.09	3.14	.05	3.05	2.97	-.09	3.04	3.34	.30
View of Future	3.79	3.78	-.01	3.78	3.72	-.06	3.76	3.76	.00
Social Competencies	3.00	3.08	.08	3.17	3.26	.08	3.05	3.23	.18
Misconduct	1.33	1.42	.10	1.31	1.38	.07	1.34	1.33	-.02

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant difference between outcome scores, at Low, Medium, High program quality

PART F. SUPPORTING TABLES FOR PART B: STUDENT SELF-REPORTS OF OUTCOMES

Table 3

Work Habits, Student Self-Reports

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)			
CALIFORNIA*									
Work Habits, PRE	2,086	3.00	6.9%	32.9%	29.5%	30.6%			
Work Habits, POST	1,863	2.97	6.3%	36.2%	29.5%	28.0%			
1. TWLC SCORES, ALL SITES									
Work Habits, PRE	409	3.19	1.7%	26.2%	46.0%	26.2%			
Work Habits, POST	301	3.27	1.0%	20.6%	48.5%	29.9%			
2. TWLC SCORES, BY SITE									
<i>Anaheim</i>									
Work Habits, PRE	393	3.19	1.5%	26.2%	45.5%	26.7%			
Work Habits, POST	287	3.27	1.0%	20.9%	48.1%	30.0%			
<i>Philadelphia</i>									
Work Habits, PRE	8	3.04	12.5%	12.5%	62.5%	12.5%			
Work Habits, POST	14	3.26		14.3%	57.1%	28.6%			
<i>Washington, D.C.</i>									
Work Habits, PRE	8	3.08		37.5%	50.0%	12.5%			
Work Habits, POST				No post-participation surveys from this site					
3. TWLC SCORES, BY GRADE									
<i>Grades 6-8</i>									
Work Habits, PRE	288	3.18	1.7%	26.4%	46.5%	25.3%			
Work Habits, POST	204	3.28	1.0%	20.6%	47.5%	30.9%			
<i>Grades 9-12</i>									
Work Habits, PRE	121	3.20	1.7%	25.6%	44.6%	28.1%			
Work Habits, POST	97	3.25	1.0%	20.6%	50.5%	27.8%			

N= number of students; Mean = average score

*Scores are from the CA Field Test of the Online Toolbox (2010-2011) and the STEM in OST Pilot Study (2011-2012)

PART F. SUPPORTING TABLES FOR PART B: STUDENT SELF-REPORTS OF OUTCOMES

Table 4

Math Efficacy, Student Self-Reports

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)				
CALIFORNIA*										
Math Efficacy, PRE	2,084	3.11	10.0%	23.7%	19.7%	46.6%				
Math Efficacy, POST	1,857	3.02	11.5%	25.8%	21.9%	40.8%				
1. TWLC SCORES, ALL SITES										
Math Efficacy, PRE	408	3.08	6.1%	31.6%	33.6%	28.7%				
Math Efficacy, POST	299	3.07	8.7%	27.1%	30.4%	33.8%				
2. TWLC SCORES, BY SITE										
<i>Anaheim</i>										
Math Efficacy, PRE	392	3.08	5.9%	32.7%	33.7%	27.8%				
Math Efficacy, POST	286	3.06	8.4%	27.3%	31.8%	32.5%				
<i>Philadelphia</i>										
Math Efficacy, PRE	8	3.34		12.5%	50.0%	37.5%				
Math Efficacy, POST	13	3.29	15.4%	23.1%		61.5%				
<i>Washington, D.C.</i>										
Math Efficacy, PRE	8	3.19	25.0%		12.5%	62.5%				
Math Efficacy, POST			No post-participation surveys from this site							
3. TWLC SCORES, BY GRADE										
<i>Grades 6-8</i>										
Math Efficacy, PRE	288	3.15	4.5%	30.2%	34.4%	30.9%				
Math Efficacy, POST	203	3.09	7.4%	26.6%	32.5%	33.5%				
<i>Grades 9-12</i>										
Math Efficacy, PRE	120	2.94	10.0%	35.0%	31.7%	23.3%				
Math Efficacy, POST	96	3.04	11.5%	28.1%	26.0%	34.4%				

N= number of students; Mean = average score

*Scores are from the CA Field Test of the Online Toolbox (2010-2011) and the STEM in OST Pilot Study (2011-2012)

PART F. SUPPORTING TABLES FOR PART B: STUDENT SELF-REPORTS OF OUTCOMES

Table 5

Science Efficacy, Student Self-Reports

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)			
CALIFORNIA*									
Science Efficacy, PRE	130	2.91	15.4%	31.5%	23.1%	30.0%			
Science Efficacy, POST	217	2.91	14.7%	29.0%	26.3%	30.0%			
1. TWLC SCORES, ALL SITES									
Science Efficacy, PRE	408	3.30	4.2%	18.6%	34.6%	42.6%			
Science Efficacy, POST	299	3.25	4.0%	23.1%	33.1%	39.8%			
2. TWLC SCORES, BY SITE									
<i>Anaheim</i>									
Science Efficacy, PRE	392	3.30	4.3%	18.6%	34.4%	42.6%			
Science Efficacy, POST	286	3.26	3.8%	22.4%	34.3%	39.5%			
<i>Philadelphia</i>									
Science Efficacy, PRE	8	3.13		25.0%	50.0%	25.0%			
Science Efficacy, POST	13	3.00	7.7%	38.5%	7.7%	46.2%			
<i>Washington, D.C.</i>									
Science Efficacy, PRE	8	3.56		12.5%	25.0%	62.5%			
Science Efficacy, POST				No post-participation surveys from this site					
3. TWLC SCORES, BY GRADE									
<i>Grades 6-8</i>									
Science Efficacy, PRE	288	3.30	4.5%	19.1%	33.0%	43.4%			
Science Efficacy, POST	203	3.29	3.9%	20.7%	34.5%	40.9%			
<i>Grades 9-12</i>									
Science Efficacy, PRE	120	3.31	3.3%	17.5%	38.3%	40.8%			
Science Efficacy, POST	96	3.17	4.2%	28.1%	30.2%	37.5%			

N= number of students; Mean = average score

*Scores are from the CA Field Test of the Online Toolbox (2010-2011) and the STEM in OST Pilot Study (2011-2012)

PART F. SUPPORTING TABLES FOR PART B: STUDENT SELF-REPORTS OF OUTCOMES

Table 6

Science Interest (PEAR), Student Self-Reports

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)			
CALIFORNIA*									
Science Interest (PEAR), PRE	128	2.83	10.2%	53.1%	25.0%	11.7%			
Science Interest (PEAR), POST	217	2.79	12.0%	51.6%	27.2%	9.2%			
1. TWLC SCORES, ALL SITES									
Science Interest (PEAR), PRE	408	3.10	2.7%	36.8%	38.2%	22.3%			
Science Interest (PEAR), POST	299	3.09	4.7%	35.5%	35.1%	24.7%			
2. TWLC SCORES, BY SITE									
<i>Anaheim</i>									
Science Interest (PEAR), PRE	392	3.10	2.8%	36.2%	38.5%	22.4%			
Science Interest (PEAR), POST	286	3.10	4.5%	35.3%	35.0%	25.2%			
<i>Philadelphia</i>									
Science Interest (PEAR), PRE	8	2.91		62.5%	25.0%	12.5%			
Science Interest (PEAR), POST	13	3.03	7.7%	38.5%	38.5%	15.4%			
<i>Washington, D.C.</i>									
Science Interest (PEAR), PRE	8	3.21		37.5%	37.5%	25.0%			
Science Interest (PEAR), POST				No post-participation surveys from this site					
3. TWLC SCORES, BY GRADE									
<i>Grades 6-8</i>									
Science Interest (PEAR), PRE	288	3.10	2.8%	35.4%	40.6%	21.2%			
Science Interest (PEAR), POST	203	3.09	4.4%	36.5%	33.0%	26.1%			
<i>Grades 9-12</i>									
Science Interest (PEAR), PRE	120	3.10	2.5%	40.0%	32.5%	25.0%			
Science Interest (PEAR), POST	96	3.09	5.2%	33.3%	39.6%	21.9%			

N= number of students; Mean = average score

*Scores are from the CA Field Test of the Online Toolbox (2010-2011) and the STEM in OST Pilot Study (2011-2012)

PART F. SUPPORTING TABLES FOR PART B: STUDENT SELF-REPORTS OF OUTCOMES

Table 7

Science Career, Student Self-Reports

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)				
CALIFORNIA*										
Science Career, PRE	126	2.64	17.5%	37.3%	28.6%	16.7%				
Science Career, POST	216	2.70	14.4%	39.8%	29.2%	16.7%				
1. TWLC SCORES, ALL SITES										
Science Career, PRE	404	3.07	4.2%	31.2%	39.1%	25.5%				
Science Career, POST	298	3.13	4.0%	27.5%	35.9%	32.6%				
2. TWLC SCORES, BY SITE										
<i>Anaheim</i>										
Science Career, PRE	389	3.07	4.4%	31.4%	38.8%	25.4%				
Science Career, POST	286	3.14	3.8%	27.3%	36.4%	32.5%				
<i>Philadelphia</i>										
Science Career, PRE	7	2.86		42.9%	42.9%	14.3%				
Science Career, POST	12	2.92	8.3%	33.3%	25.0%	33.3%				
<i>Washington, D.C.</i>										
Science Career, PRE	8	3.28		12.5%	50.0%	37.5%				
Science Career, POST			No post-participation surveys from this site							
3. TWLC SCORES, BY GRADE										
<i>Grades 6-8</i>										
Science Career, PRE	286	3.04	4.9%	32.2%	39.2%	23.8%				
Science Career, POST	203	3.10	3.9%	31.0%	34.0%	31.0%				
<i>Grades 9-12</i>										
Science Career, PRE	118	3.16	2.5%	28.8%	39.0%	29.7%				
Science Career, POST	95	3.20	4.2%	20.0%	40.0%	35.8%				

N= number of students; Mean = average score

*Scores are from the CA Field Test of the Online Toolbox (2010-2011) and the STEM in OST Pilot Study (2011-2012)

PART F. SUPPORTING TABLES FOR PART B: STUDENT SELF-REPORTS OF OUTCOMES

Table 8

View of Future, Student Self-Reports

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)
CALIFORNIA*						
View of Future, PRE	126	3.58	1.6%	7.9%	27.8%	62.7%
View of Future, POST	216	3.58	.9%	7.9%	28.7%	62.5%
1. TWLC SCORES, ALL SITES						
View of Future, PRE	405	3.78		1.2%	22.2%	76.5%
View of Future, POST	298	3.78		1.3%	21.8%	76.8%
2. TWLC SCORES, BY SITE						
<i>Anaheim</i>						
View of Future, PRE	390	3.79		1.0%	22.7%	76.2%
View of Future, POST	286	3.78		1.3%	21.8%	76.9%
<i>Philadelphia</i>						
View of Future, PRE	7	3.63			42.9%	57.1%
View of Future, POST	12	3.87		8.3%		91.7%
<i>Washington, D.C.</i>						
View of Future, PRE	8	3.71			25.0%	75.0%
View of Future, POST				No post-participation surveys from this site		
3. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
View of Future, PRE	287	3.78		1.4%	22.3%	76.3%
View of Future, POST	203	3.78		1.5%	22.2%	76.4%
<i>Grades 9-12</i>						
View of Future, PRE	118	3.79		.8%	22.0%	77.1%
View of Future, POST	95	3.78		1.1%	21.1%	77.9%

N= number of students; Mean = average score

*Scores are from the CA Field Test of the Online Toolbox (2010-2011) and the STEM in OST Pilot Study (2011-2012)

PART F. SUPPORTING TABLES FOR PART B: STUDENT SELF-REPORTS OF OUTCOMES

		N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)				
CALIFORNIA*											
Social Competencies, PRE	2,084	2.97	7.8%	36.6%	29.1%	26.6%					
Social Competencies, POST	1,853	3.01	5.4%	37.6%	30.7%	26.3%					
1. TWLC SCORES, ALL SITES											
Social Competencies, PRE	408	3.04	3.4%	37.5%	42.9%	16.2%					
Social Competencies, POST	299	3.11	2.7%	35.5%	38.5%	23.4%					
2. TWLC SCORES, BY SITE											
<i>Anaheim</i>											
Social Competencies, PRE	392	3.04	3.6%	37.2%	43.1%	16.1%					
Social Competencies, POST	286	3.12	2.8%	35.7%	37.4%	24.1%					
<i>Philadelphia</i>											
Social Competencies, PRE	8	2.95		62.5%	25.0%	12.5%					
Social Competencies, POST	13	2.98		30.8%	61.5%	7.7%					
<i>Washington, D.C.</i>											
Social Competencies, PRE	8	3.25		25.0%	50.0%	25.0%					
Social Competencies, POST				No post-participation surveys from this site							
3. TWLC SCORES, BY GRADE											
<i>Grades 6-8</i>											
Social Competencies, PRE	288	3.03	3.8%	38.5%	42.0%	15.6%					
Social Competencies, POST	203	3.12	3.0%	35.5%	36.0%	25.6%					
<i>Grades 9-12</i>											
Social Competencies, PRE	120	3.07	2.5%	35.0%	45.0%	17.5%					
Social Competencies, POST	96	3.09	2.1%	35.4%	43.8%	18.8%					

N= number of students; Mean = average score

*Scores are from the CA Field Test of the Online Toolbox (2010-2011) and the STEM in OST Pilot Study (2011-2012)

PART F. SUPPORTING TABLES FOR PART B: STUDENT SELF-REPORTS OF OUTCOMES

Table 10

Misconduct, Student Self-Reports

	N	Mean	% <u>(0.0-0.9)</u>	% <u>(1.0-1.9)</u>	% <u>(2.0-3.0)</u>
CALIFORNIA*					
Misconduct, PRE	2,086	0.47	86.9%	11.6%	1.4%
Misconduct, POST	1,859	0.55	81.9%	16.2%	1.9%
1. TWLC SCORES, ALL SITES					
Misconduct, PRE	408	1.37	92.6%	6.9%	.5%
Misconduct, POST	299	1.42	90.3%	9.3%	.3%
2. TWLC SCORES, BY SITE					
<i>Anaheim</i>					
Misconduct, PRE	392	1.36	93.4%	6.1%	.5%
Misconduct, POST	286	1.40	90.9%	8.7%	.3%
<i>Philadelphia</i>					
Misconduct, PRE	8	1.85	50.0%	50.0%	
Misconduct, POST	13	1.75	78.6%	21.4%	
<i>Washington, D.C.</i>					
Misconduct, PRE	8	1.43	100.0%		
Misconduct, POST			No post-participation surveys from this site		
3. TWLC SCORES, BY GRADE					
<i>Grades 6-8</i>					
Misconduct, PRE	288	1.35	94.4%	5.6%	
Misconduct, POST	203	1.39	91.1%	8.9%	
<i>Grades 9-12</i>					
Misconduct, PRE	120	1.42	88.3%	10.0%	1.7%
Misconduct, POST	97	1.47	88.7%	10.3%	1.0%

N= number of students; Mean = average score

*Scores are from the CA Field Test of the Online Toolbox (2010-2011) and the STEM in OST Pilot Study (2011-2012)

PART F. SUPPORTING TABLES FOR PART C: ANALYSES OF PRE-POST CHANGES IN OUTCOMES

Table 11

Work Habits, Matched Pre-Post Scores

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)
1. TWLC SCORES, ALL SITES						
Work Habits, PRE	257	3.23	1.2%	21.4%	47.9%	29.6%
Work Habits, POST	257	3.27		24.5%	47.9%	27.6%
2. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
Work Habits, PRE	187	3.25		24.1%	48.1%	27.8%
Work Habits, POST	187	3.28	1.1%	20.9%	47.1%	31.0%
<i>Grades 9-12</i>						
Work Habits, PRE	70	3.20		25.7%	47.1%	27.1%
Work Habits, POST	70	3.22	1.4%	22.9%	50.0%	25.7%

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant change between PRE and POST outcome scores

Table 12

Math Efficacy, Matched Pre-Post Scores

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)
1. TWLC SCORES, ALL SITES						
Math Efficacy, PRE	255	3.09	4.7%	32.4%	36.3%	26.6%
Math Efficacy, POST	255	3.06	8.6%	27.0%	32.0%	32.4%
2. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
Math Efficacy, PRE	186	3.14	3.7%	31.6%	36.9%	27.8%
Math Efficacy, POST	186	3.09	7.5%	25.8%	33.9%	32.8%
<i>Grades 9-12</i>						
Math Efficacy, PRE	69	2.95	7.2%	34.8%	34.8%	23.2%
Math Efficacy, POST	69	2.97	11.4%	30.0%	27.1%	31.4%

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant change between PRE and POST outcome scores

PART F. SUPPORTING TABLES FOR PART C: ANALYSES OF PRE-POST CHANGES IN OUTCOMES

Table 13

Science Efficacy, Matched Pre-Post Scores

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)
1. TWLC SCORES, ALL SITES						
Science Efficacy, PRE	255	3.34	3.5%	18.0%	34.4%	44.1%
Science Efficacy, POST*	255	3.26	2.0%	36.3%	37.9%	23.8%
2. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
Science Efficacy, PRE	186	3.32	3.7%	19.3%	33.2%	43.9%
Science Efficacy, POST	186	3.27	1.6%	35.8%	39.6%	23.0%
<i>Grades 9-12</i>						
Science Efficacy, PRE	69	3.39	2.9%	14.5%	37.7%	44.9%
Science Efficacy, POST**	69	3.21	2.9%	37.7%	33.3%	26.1%

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant change between PRE and POST outcome scores

Table 14

Science Interest (PEAR), Matched Pre-Post Scores

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)
1. TWLC SCORES, ALL SITES						
Science Interest (PEAR), PRE	255	3.12	2.0%	36.3%	37.9%	23.8%
Science Interest (PEAR), POST	255	3.09	5.1%	34.4%	35.9%	24.6%
2. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
Science Interest (PEAR), PRE	186	3.12	1.6%	35.8%	39.6%	23.0%
Science Interest (PEAR), POST	186	3.09	4.8%	34.9%	34.4%	25.8%
<i>Grades 9-12</i>						
Science Interest (PEAR), PRE	69	3.13	2.9%	37.7%	33.3%	26.1%
Science Interest (PEAR), POST	69	3.07	5.7%	32.9%	40.0%	21.4%

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant change between PRE and POST outcome scores

PART F. SUPPORTING TABLES FOR PART C: ANALYSES OF PRE-POST CHANGES IN OUTCOMES

Table 15

Science Career, Matched Pre-Post Scores

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)
1. TWLC SCORES, ALL SITES						
Science Career, PRE	252	3.08	4.3%	30.0%	40.3%	25.3%
Science Career, POST	252	3.13	3.9%	28.1%	35.5%	32.4%
2. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
Science Career, PRE	184	3.03	4.9%	33.0%	38.9%	23.2%
Science Career, POST	184	3.10	3.8%	30.6%	34.9%	30.6%
<i>Grades 9-12</i>						
Science Career, PRE	68	3.23	2.9%	22.1%	44.1%	30.9%
Science Career, POST	68	3.21	4.3%	21.4%	37.1%	37.1%

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant change between PRE and POST outcome scores

Table 16

View of Future, Matched Pre-Post Scores

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)
1. TWLC SCORES, ALL SITES						
View of Future, PRE	253	3.78		1.2%	22.8%	76.0%
View of Future, POST	253	3.77		1.2%	22.7%	76.2%
2. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
View of Future, PRE	185	3.80		1.1%	21.5%	77.4%
View of Future, POST	185	3.77		1.6%	21.5%	76.9%
<i>Grades 9-12</i>						
View of Future, PRE	68	3.75		1.5%	26.5%	72.1%
View of Future, POST	68	3.75			25.7%	74.3%

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant change between PRE and POST outcome scores

PART F. SUPPORTING TABLES FOR PART C: ANALYSES OF PRE-POST CHANGES IN OUTCOMES

Table 17

Social Competencies, Matched Pre-Post Scores

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)
1. TWLC SCORES, ALL SITES						
Social Competencies, PRE	255	3.02	4.3%	37.9%	41.0%	16.8%
Social Competencies, POST**	255	3.11	3.1%	35.5%	37.5%	23.8%
2. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
Social Competencies, PRE	186	3.04	4.8%	38.0%	39.6%	17.6%
Social Competencies, POST*	186	3.12	3.2%	34.9%	36.6%	25.3%
<i>Grades 9-12</i>						
Social Competencies, PRE	69	2.99	2.9%	37.7%	44.9%	14.5%
Social Competencies, POST	69	3.09	2.9%	37.1%	40.0%	20.0%

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant change between PRE and POST outcome scores

Table 18

Misconduct, Matched Pre-Post Scores

	N	Mean	% Low (1.0-1.9)	% Fair (2.0-2.9)	% Good (3.0-3.59)	% Excellent (3.6-4.0)
1. TWLC SCORES, ALL SITES						
Misconduct, PRE	255	1.33	94.5%	5.5%		
Misconduct, POST**	255	1.41	91.0%	8.6%	.4%	
2. TWLC SCORES, BY GRADE						
<i>Grades 6-8</i>						
Misconduct, PRE	186	1.31	95.2%	4.8%		
Misconduct, POST**	186	1.40	91.4%	8.6%		
<i>Grades 9-12</i>						
Misconduct, PRE	69	1.35	92.8%	7.2%		
Misconduct, POST	69	1.45	90.0%	8.6%	1.4%	

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant change between PRE and POST outcome scores

PART F. SUPPORTING TABLES FOR PART D: ASSOCIATIONS BETWEEN PROGRAM EXPERIENCES AND OUTCOMES

Table 19

Student Self-Reports of Outcomes, by Quality Level of Staff & Activities

	Staff & Activities Experiences		
	Low or Fair Quality <u>Mean</u>	Good Quality <u>Mean</u>	Excellent Quality <u>Mean</u>
CALIFORNIA (N = 213-1,833)			
Work Habits**	2.70	3.13	3.39
Math Efficacy**	2.73	3.20	3.47
Science Efficacy*	2.76	3.06	3.30
Science Interest (PEAR)**	2.66	2.90	3.17
Science Career	2.62	2.78	2.93
View of Future	3.53	3.59	3.79
Social Competencies**	2.84	3.13	3.26
Misconduct**	1.70	1.45	1.30
TWLC SCORES, ALL SITES (N = 162)			
Work Habits*	3.08	3.25	3.42
Math Efficacy	2.93	2.98	3.26
Science Efficacy**	2.78	3.17	3.49
Science Interest (PEAR)**	2.82	2.98	3.30
Science Career**	2.70	3.09	3.30
View of Future**	3.51	3.74	3.88
Social Competencies**	2.78	3.08	3.26
Misconduct**	1.70	1.39	1.32

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant difference between outcome scores, at Low, Medium, High program quality

PART F. SUPPORTING TABLES FOR PART D: ASSOCIATIONS BETWEEN PROGRAM EXPERIENCES AND OUTCOMES

Table 20

Student Self-Reports of Outcomes, by Quality Level of Peer Affiliation

	Experiences with Peers		
	Low or Fair Quality <u>Mean</u>	Good Quality <u>Mean</u>	Excellent Quality <u>Mean</u>
CALIFORNIA (N = 213-1,833)			
Work Habits**	2.75	3.00	3.26
Math Efficacy**	2.77	3.06	3.33
Science Efficacy**	2.64	3.10	3.09
Science Interest (PEAR)**	2.57	2.96	2.93
Science Career**	2.46	2.86	2.89
View of Future**	3.44	3.59	3.76
Social Competencies**	2.64	3.10	3.44
Misconduct**	1.64	1.53	1.43
TWLC SCORES, ALL SITES (N = 161)			
Work Habits**	3.16	3.09	3.54
Math Efficacy*	3.00	2.88	3.32
Science Efficacy**	3.08	3.16	3.49
Science Interest (PEAR)**	2.85	3.10	3.35
Science Career**	2.87	3.21	3.33
View of Future**	3.71	3.64	3.90
Social Competencies**	2.81	3.00	3.45
Misconduct*	1.43	1.52	1.31

N= number of students; Mean = average score

*p<.05, **p<.01 = statistically significant difference between outcome scores, at Low, Medium, High program quality

SECTION III—REPORT OF QUALITATIVE RESULTS

UNDERSTANDING SOURCES OF PROGRAM RETENTION AND ATTRITION

In order to identify reasons why students stop attending classes at the TWLC interviews were conducted with students who 1) enrolled in a session but did not complete the session; 2) enrolled and completed all or most of a course but did not enroll in the following session. An understanding of the factors that contribute to student attrition within a given session (reasons for dropping out of a course before completing it) or across sessions (reasons for not enrolling in subsequent sessions) emerged from individual student interviews. This information is presented below to inform TWLC administrators and staff in their program planning and possible program improvement efforts toward better serving participating youth at the Center and expanding its unique program opportunities to others.

The qualitative component of this study consisted of semi-structured interviews with TWLC participants during the 2011-2012 program year about their experience at the center and reasons for completing or enrolling in courses offered in the Fall/Winter, Spring I and or Spring II sessions. Phone interviews and face-to-face individual interviews were carried out with a total of 30 students, grades 7-12, who attended but did not complete classes in the Fall/Winter session (6), Spring I session (8) and Spring II session (16), including students who had re-enrolled from previous sessions. Interviews ranged from 10 to 20 minutes in duration [see Appendix for sample interview protocol].

Students in the study sample were limited to those who completed and returned consent forms agreeing to be contacted and interviewed. Although focus group interviews were originally planned, it proved too difficult to schedule students who had dropped from the center to come back and conduct interviews. Hence interviews were scheduled individually face-to-face or were conducted by phone, whichever was most convenient for the student. Most students chose to do the phone interview. Six students did a face-to-face interview.

Digitally recorded interviews were transcribed and analyzed. The interview data were organized and coded in order to identify themes and issues around the following key questions for students in relation to their participation in the TWLC:

1. How they came to know about the TWLC programs
2. Reasons for enrolling and/or selecting a course
3. Experiences—positive or negative—with the course(s) they attended
4. Perception of the instructor's level of knowledge of the course content
5. Whether or not the course(s) they took met their expectations
6. Main challenges or reasons for not attending all sessions or completing the course

7. Reasons for not enrolling in a subsequent session
8. Suggestions for improving courses or program at TWLC
9. What motivates or is an incentive for them to continue to participate

Thirty-five codes emerged from the data that fell under one of three broad categories: (1) student experience with the TWLC and future intentions to participate; (2) reasons for dropping or not re-enrolling; (3) student input on improving program recruitment and retention.

This process of data analysis, organization and coding described above allows for the structured presentation of the interview data that follows highlighting key findings around (A) Program Enrollment (how and why students join the TWLC); (B) Program Experience (what makes students want to stay or come back); (C) Retention (challenges to maintaining student participation); and (D) Suggestions for Improvement. Key findings of the qualitative study are summarized in the following Section IV, Conclusions.

A. PROGRAM ENROLLMENT—*How and Why Students Join the TWLC*

Students stated a variety of ways they came to know about the TWLC and why they decided to join. Most stated that they found out from their school, either through a general announcement made to students or more direct referral by a teacher or counselor. These referrals came from local public and private schools, including a “probation school” in Norwalk. In some cases, students decided to join because of personal connections, indicating that their parent or another adult or friend told them about the Center. Three students stated that an outside agency referred them. One student, a newcomer from Mexico, joined the center upon arriving to his new home.

Students express how they got involved with the TWLC in their own words:

- *I first found out about it at the end of sixth grade year, because they sent the letters to us, those little packages offering all those classes and telling you to get ready to know what career you're going to choose. My mom convinced me to go.*
- *I found out [about the TWLC] through a parent meeting, at my school.*
- *My friend and I go to Oxford, a private school. They offered the program at the school, so my mom decided I should join as well.*
- *At school [I found out] when they made an announcement about the forms for signing up for the TWLC.*
- *I found out about the program through my school. It was a probation school and they found it online.*

- *My dance teacher from Sycamore Jr. High gave us papers. I think she only gave it to Advanced Dance. She was telling us about it, and I signed up to go.*
- *I got it from Boys & Girls' Club, [...]. They wanted to take me because they saw my grades and how active I am in all the programs at the Boys & Girls' Club.*
- *How I found out was from STAR, the program coordinator told us about the TWLC and that we were chosen to go and if we wanted to go to fill out the forms.*
- *I was in the STAR program at my school; it's an afterschool program where I go at Paramount Park.*
- *One of mom's friends from work told me about it, one of her kids goes there. My mom asked if I wanted to be in it and I said, "Alright."*
- *My aunt told me about it, I live with her nearby [TWLC]. I just arrived this year to the United States. I came because the first class I took was about computers and I like computers a lot. [Translated from Spanish]*
- *I was at home and they called and mentioned that Tiger Woods had classes that were free.*

Students' reasons for joining TWLC and enrolling in a session were mostly because they were interested in the courses offered and wanted to keep busy, learn something new, have fun and be with friends. High school students were more apt to state that they were interested in exploring their career interests.

Some students stated they had come to the TWLC in 5th or 6th grade and participated in the Day Program, or Career Orientation Program (COP). The COP currently opens up the TWLC technology rich learning resources to 5th grade students and their teachers and operates during the school day. In partnership with local school districts, 5th graders and their classroom teachers participate for a week at TWLC in COP programming featuring interactive Crime Lab or Marine Science enrichment classes and technology workshops as well as other activities, including an introduction to golf. Meanwhile, teachers engage in intensive professional development workshops aimed at equipping them with the skills and strategies for integrating hands-on science activities in their own classrooms and for incorporating a youth development approach—a hallmark of the TWLC—into their own classroom practice.

Students interviewed recalled positively their COP experiences—they remembered how much they enjoyed being engaged in hands-on science learning and spoke to how this initial induction into the TWLC served to spark a college-bound mindset. Students noted how this early TWLC experience motivated them to return:

- *We took a field trip to the TWLC when I was in the 5th grade... for a week. When I went to my counselor's office in the 7th grade, she told me again about TWLC. I told her that I had already gone, and then she said that if I would like to go again. I said yeah.*
- *I went in fifth grade and decided to join because I want to keep myself busy.*
- *I came in the 5th grade. We did hands-on stuff, used microscopes, did the saliva test to see our own DNA, and colors to see fingerprints. It got me more excited doing it because it was neat and cool, and everything we did got me more enthusiastic about the future.*
- *The first time I went in 5th grade, it made me feel so happy because I was like, "Is this how college is going to look like?"*

Another student who had come to the Day program in 6th grade explained that he returned to TWLC when his peers in High School decided to come:

Some friends were actually coming [to the TWLC]. I entered a new school, a high school, and I was meeting new people and they were like, "Oh, we're going to the program too." And I'm like, "Oh, really?" [...] One of the friends I'd met before I'd come into the school was there. I knew that she and other people, who were her friends that I'd met before, were coming. So I decided to come as well.

The reasons students gave for selecting a class or wanting to re-enroll in an upcoming session at the TWLC were either because they were interested in a particular topic (e.g. robotics, aerospace, dance), enjoyed a class they took and wanted to finish next time, or go to the next level, or they heard about another class that they were interested in taking. Some students indicated that they took a class in order to explore a particular career interest. Others just wanted something to do and to expand their learning and future opportunities. Examples of statements students made to this effect are as follows:

- *I always thought engineering was a really fun career and it was one of the most interesting integral classes they have there.*
- *[I choose Robotics because...] I'm interested in programming and machinery and stuff like that.*
- *[I choose Communications because...] It will help me learn more about how to communicate with people.*
- *The class I took had something to do with engineering. I came just because I thought it would be fun. I like that we got to do a lot of projects.*
- *I liked [Health & Nutrition] because I got a bunch of info that I needed to know about how to be healthy, eat good yogurt, healthy yogurts that you can make and that got me into eating more healthy.*

- [I took Hip-Hop because...] *I like to dance. I thought it was going to be fun, and it was. After Hip-hop, I've taken Nutrition & Fitness and Forensic Science. When I was in 3rd or 4th, I wanted to be a Forensics scientist and a medical examiner too. Now, I want to be in CSI, like scrub all the forensic and all the evidence. I was like, "I want to see how they do it." That's why I took the class.*
- *I [took a science class because] I couldn't go into a doctor one. It's not a doctor class that would show you heart surgeries and more about the doctors. I had to take this one first, so I took it.*
- *My favorite of both classes was Health. I like that they thought of a lot of things, and I eat healthier now. They help me stay fit. My mom likes to keep us healthy because of her job. I just took it because I do it at home; it keeps me healthy.*
- *Golf was really fun and efficient; I like working out and moving about.*
- *I just wanted to get out of the house, I guess [and] because they [the TWLC classes] sounded interesting.*
- *It seemed like something you can do to have fun and you can learn. And it can help you later on and stuff, and I felt that I wanted to do that.*

Almost all students indicated that they intended to re-enroll or at least stated that they would like to re-enroll in TWLC courses in the future. For the most part, students affirmed their intention to return to the Center if given the opportunity, making statements such as, “*I would come back,*” or “*Yes I would like to come to another class to learn more things.*”

However, some students did not seem to be aware of the deadlines or procedures for signing up for the next session or were not versed in the range of course offerings and resources available to them at the Center. When asked if they intended to re-enroll they stated they missed the deadline or were not sure when or how they could re-enroll. A few students directly asked the interviewer how they could sign up again. They were told that they could either go online to the TWLC website where the information is available or go directly to the TWLC and inquire. These students responded that they planned to do so.

In summary, students come to know about the TWLC and enroll through a variety of ways: formal and informal. The Center seems to have established a reputation in the community as a place where students can have access to quality extended learning experiences and other types of support. The Career Orientation Program also proves to be a valuable entry point for many students, providing an initial exposure to the types of learning experiences offered at the TWLC and motivating them to return in the future for more.

The next section shows how the quality of the learning experiences students have at the TWLC and the positive relationships they are able to establish with staff and peers are key to keeping them coming back.

B. PROGRAM EXPERIENCE—*What Makes Students want to Stay or Come Back*

Students interviewed almost unanimously stated that they liked going to the TWLC, found the instructors friendly and supportive and enjoyed the kinds of activities offered. In addition to conveying a general satisfaction with staff and activities and expressing a general interest in the courses offered, students' narratives about different aspects of their experience at the TWLC spoke to: (a) a high level of engagement with the course content and activities; (b) recognition of the skill development and content knowledge acquired; (c) an appreciation for the opportunities for positive relationship building with both peers and adults; (d) an awareness of the supportive and safe learning environment afforded at the TWLC; (e) and the relationship of a particular course to their career interests and the opportunity for college preparedness. Examples of statements to this effect are provided below.

Students candidly shared what they “liked” about the TWLC and how they had fun in their classes, but also, they were able to talk about specific skills and content knowledge they learned and the ways they were challenged by the activities in the courses they took, as illustrated in the following statements:

- *Well, I liked it. We did a video about how technology has advanced. I liked how we made the video and learning the program on how to edit movies.*
- *You got to learn how to use the computers, how to design websites. You got to learn how to use the cameras. You got confident to speak in front of a lot of people.*
- *It was not different from what I expected but it was a lot of hard work. I didn't expect to do so much work. But it was fun.*
- *They're really fun. I was never bored. I learned a lot.*
- *I liked that we did lots of experiment that we got to meet new people, and the games.*
- *I liked it because I did what I love to do. I like to dance, so I thought it was fun. [...] I liked everything about the class.*
- *I like how you can actually experience and do things like building robots and making something.*
- *That I get to build stuff out of Legos and make them work. It was pretty cool. [...] It was a lot of fun, like how to build them and how to make them move and do all these stuff.*
- *I really liked it because the teacher was nice and I knew people. Also, I actually wanted to build something new with Legos. When I was little, I had Lego pieces and building it was fun. So I wanted to keep going.*
- *It was a new experience I learned a lot of new stuff I didn't know. I watched on TV lots of Forensic Science shows, like CSI. I thought it would be good to see what it was like.*

- *We had a visitor who came and he talked to us. Although I watch a lot of CSI and all that, he made it different. He said that what they shot in TV is a lot different from what they do in real life and everything. I like how we got to do all the experiments, and we got to use the microscopes—see the different fibers, how they look like, and all the pieces of hair. I liked it. It was really fun.*
- *I liked it because it also made me think. She [Health and Nutrition Instructor] said the stuff you eat, the hot Cheetos and chips, is really bad. I don't eat a lot of junk food, but my friends eat a lot. So I try to tell them, when I took the class, that those things were bad for you and you shouldn't be eating those things, "Why don't you eat an apple instead?" So I liked it.*
- *I liked when we learned about food, the bad food, the good food, what to eat and not eat. That's what I learned, about fat and vitamins, and all that stuff. When we worked out, I would learn new regimes; I learned new ways to work out.*
- *It was a real nice class. I learned a lot. I learned that to make the first step you have to have specific instructions, to [make a] plan that is simple and specific. [In] engineering you have to make everything correct. You can't make a mistake. It made me more specific in what I do in my school and my words. So if a teacher asked me a question then my answer is more specific than before. Also, [I learned that it is important] to participate in class more, and to do projects with other students.*

Students were able to speak in detail about the ways that instructors supported their learning and were knowledgeable and competent in the topics they were teaching.

- *The teacher was good and what we learned, and built, was really cool too. [...] He supported us, which was okay, and he was nice. He gave us a lot of fun stuff to do instead of just testing robots; he had like competitions and everything. [...] A lot of time was spent constructing and using my learning to make my own robot. He didn't just say, "Okay, here's what you're going to do. Here's the stuff. Here's the instructions and just go do it. You guys just do that over there, and I'll see what you guys are doing at the end of class." So [instead], he helped us. And if we needed help, he'd explain to us. That was the good part about it.*
- *She taught and explained things well – very friendly. Like a normal teacher but different, and not like a school environment. You can be more open, you don't have the teacher saying, "Be quiet" or you have do this, you have do that. It's more flexible. [...] Normally in a class [at school], you have some people that are disruptive so sometimes you have to be quiet or something like that. But here, people aren't like that. There are all kinds of people here. She explained everyone's questions clearly. She wasn't confusing.*
- *They're nice. I also like how the teacher would give us one-on-one sessions.*
- *The instructor was really nice. He was very knowledgeable and if we didn't understand something he would explain it to us.*

- [The dance instructor] had taken a class like that before in College [and was able to] show us the choreography and variations of hip hop music as well.
- [The instructors taught us] to talk to them more, don't be shy around them.
- She was very nice. The helpers were nice as well.
- It was a good class because the teacher was really good. He explained everything really good. He would then let us try it and after that all of us starting getting skills and it was really cool.
- She knew everything. She had to teach several things, not just Aerospace engineering. There was also Forensic science, there was engineering, the actual building of the houses and stuff. And I think there was video gaming, video production, or something like that. She had to teach that too.
- He would tell us the basics to what we were going to take in the course. [...] Everything was fine. He gave us our space, gave us a chance to think on what we wanted to do.
- I liked her personality. She'll bring about the games, and we'll just make up games.

A student finishing his junior year of high school explained how the instructor was supportive in this particular stage in his academic development and offered to provide guidance on his future college options:

He was a real fun and nice, calm teacher. He was able to teach me a lot. He asked me because I am the oldest in class, if I wanted any college info to come to him. I came in a couple times before class started and he told me to look into community college Cal State or another university.

One student valued the opportunity to work collaboratively with peers while doing new activities and developing new skills:

The first thing is, normally, you don't sit with your friends. They actually separate you into groups, where you want to go accordingly. Aerospace engineering was just one category of the whole [class], and they grouped you with different people. You had to work with those people; whatever you came up with those people, you would put together those final projects. And for us, it was a rocket. It was really cool to work on these new things. And you would work in partners, so you would interact with those people and at the same time, learn about the new things and learn how to make other things and learn how to make little things to construct the bigger things. That was very interesting.

Similarly, other students commented on the value of the opportunities to build positive relationships and develop social networks and valuable workforce skills provided to them at the TWLC:

- *Well, I liked it. There's really not a negative side to it. I really liked the teacher and the classmates there. [...] I actually look forward to it, everyday, to [seeing] the people there. It was really easy to make friends; I just love socializing.*
- *I liked it because I made friends. One of them, I got pretty close to her. I took that class to be close to her too.*
- *I like how it didn't make you feel awkward; everyone was friendly with each other.*
- *You have to open yourself because in the real world, you won't be with the people you know. Eventually, you have to force yourself to work with other people and like more complicated things.*

A student described his overall experience with two courses he took as highly positive, noting the opportunity to build relationships and skills while learning real-world subject matter; but, at the same time the student expressed regret for not being able to finish the projects he started because he was unable to attend during the final part of the session.

The first class I went to was Marine Biology, which was with Miss Kelly. It was a very good experience; I learned a lot. I had fun because she was a good teacher, and the people I interacted with were really sociable, easy to interact with.

The second class I took was Aerospace Engineering. [...] It was also the same experience but at the same time, it was different. It's a different topic...very interesting to learn about complicated things that are actually out there in the world. It was interesting to learn those new things you wouldn't have thought about before. And if I would've stayed longer, I would've been able to make the models that I couldn't make.

Several students were able to identify reasons why they would return to the center even though they had not completed a course or re-enrolled in another one. Students stated they would return because they wanted to benefit from the support they would get toward preparing to go to college.

- *The Center may be able to help me to go with the classes they teach and showing me how to get to college or get a scholarship.*
- *TWLC can support me towards college: motivating me to take more classes about what I want to do [in the future].*
- *I know they offer scholarships. Every time you take a course, they take you to the auditorium and they give you presentations on what you need for college, what you need to do, what classes you need to take. [...] It's not really where they tell you what to do – they just inform you. They give you the information you need but they don't really tell you. Because that's more of what you have to do, you have to do your own thing. You need the information but you can't let others do the job for you.*

C. ATTRITION—*Unmet Expectations and Lack of Engagement*

Several students did indicate that the courses they enrolled in did not meet their expectations. One student said that he had expected that there'd be more technology at the Center. Similarly, two high school boys talked about how they expected their multimedia and robotics classes to have provided a higher level of technical training:

- *In Robotics, it wasn't really what I expected it was to be but it was still fun. [...] It was Legos, and I expected it to be that they give us tools and we would build a robot.*
- *I expected that there'd be more technology [...] because then you can expand your learning computer skills and software.*

In some cases, students did not have a clear understanding of the subject matter or had a preconceived notion of what they would be doing and hence were surprised or disappointed with the actual experience as reflected in the following statements:

- *I thought it was going to be more hands-on. We were going to learn more about how we can build and design with the software, but all we really did was watch the videos and then we had to write our designs on paper and then we would do the project. Which actually seemed pretty cool because we got to project what we were doing.*
- *[The instructor] met my expectations, but when it came to the actual course, I was expecting something different. But I think everything that I actually expected besides the course was normal. [...] It was Aerospace engineering. I didn't really know what that meant when I first came in. All I knew was that it had to do with building, that means airplanes and that stuff. I know it's complicated, but I didn't think there was going to be so many parts to it. That's what I didn't expect.*

Similarly, another high school student said that she stopped going to her engineering class because it was not what she expected; it was too much like school and it took too long to get to the hands-on component. She explained:

What I didn't like is that we had to take notes on what we were coming up with to construct the bigger things...the notes...the quizzes to test what we were doing. I would rather do hands-on work. And it took a long time to actually get to the model. I know that's something you have to get used to, because things don't happen like that; you have to wait. But I didn't like that we waited so long for the final thing to come along.

On another note, one student enrolled in golf was pleasantly surprised, not realizing that students were allowed to use the golf course at the Tiger Woods Learning Center. In this case, the student's expectations were exceeded:

It wasn't what I was expecting. I just thought that he would just show us on the computer. I didn't think we would get to go outside and try the new things that he was showing us [in golf]. I saw the golf course but I didn't know we would be able to use it.

A newly immigrated high school student explained in Spanish how he considered golf as a viable sport for him to pursue only after coming to the Center and attending a computer class. The prospect of learning golf is what motivated him to come back:

I liked coming here and I wanted to learn how to play golf. I had never thought about learning to play golf because before I would only play basketball. But because I can't play basketball now, I wanted to learn a new sport. I like it a lot.
[Translated]

To summarize, a few students were able to identify specific aspects of their experience at the TWLC that made them less satisfied with the program: the classes they took were too much like school or did not have the level of technology and skill development they expected. However, most students talked about all the positive aspects they experienced: the supportive learning environment the instructors provided, the opportunities to meet new people, work collaboratively and learn about new areas of knowledge, and develop skills relevant to their academic work at school, their career aspirations and other interests.

D. RETENTION—*Challenges for Maintaining Student Participation*

Almost all students expressed interest and engagement in the courses they took, but their reasons for missing a class or not completing a session varied. The most common reason for dropping or not finishing a course was due to a ***conflict in schedule with other extracurricular or school activities*** such as team sports' practice and games, a dance recital or other school/family event. Students also mention their ***workload at school*** as well as ***getting home too late*** as prohibitive factors in their continuing to attend their course at TWLC, regardless of their level of interest or desire to finish. Along these lines, students offered the following explanations:

- *One the last day of the program I couldn't go because I had to go to work at an art show. My mom told me I had to go, but I wanted to go to class 'cause our teacher told us we were going to play a golf game. I really wanted to go, but my mom said I couldn't.*
- *I missed two classes [...] one of them was because I had a science fair, so I had to participate in that. The other was because my best friend had an event at his school, so I had to go.*
- *I had [other] extracurricular activities at school.*
- *I think I had soccer practice.*

- *I didn't have enough time.*
- *I missed one day. I had a soccer game at my school.*
- *Busy with dance performances coming up in the month of May and I will be receiving tutoring in chemistry in algebra [at school].*
- *I was having a lot of busy work, like a lot of homework at school. It kind of interfered. And I won my party at school. [It had] nothing at all [to do with the class]. It was interesting, but like I said, it was time management. I didn't leave because I wasn't uninterested. I actually left because I had some time management issues.*
- *I couldn't finish because I had dance rehearsals that month at the end of spring [for my dance performance at school]. Dancing is my passion and I really wanted to go to perform cause all family was going to go and see me perform because most my family have never seen me dance. I went [to the TWLC] for 4 or 3 and 1/2 weeks. I left because we had another performance that I had to attend, and I had the solo. [Rehearsals] started as soon as school ended and I had to change into dance clothes and head over to auditorium and it ended most days at 6:00 pm and sometimes at 8:30 because of all the staging and cleaning choreography.*
- *Getting into choir in my high school, I didn't really have time. Right now I am really busy with my homework and next year [as a Junior] I am going to have more stuff to do.*

One student explained that even though she was at the Center regularly she did not always attend class because she had homework assignments to complete and needed to use the computers available to her at the TWLC:

I have a lot of computer homework. I took computer skills class at school, and our teacher would give us computer skills homework. I don't have a computer at home, so I used it over there.

Another reason for dropping or not returning for the next session was the **distance and time** it took to get to the center, or **lack of transportation**. Some students used the bus transportation provided by their school in collaboration with the TWLC. However several students pointed out that they got back home too late after getting dropped off at school and getting picked up or walking home. Others lived far and relied on a parent for transportation and the drive proved to be too much for their parents. Students gave several scenarios regarding issues of time, distance and transportation:

- *I didn't really go because my mom wanted me to be home. We would come back late and she didn't have a car to go pick me up at the school, so she would have to come walking. She told me that when I come home, it'd be late*

and she wanted me to eat dinner with them. So she had me stop going. That was the only reason.

- *For me and my parents, it's hard for them to take me, because it's a long drive. We live in Paramount. We have to take the freeway; before I took it with STAR and that's the only way I know how to get there.*
- *I do have some problems because I take the bus. The bus will drop me off to school, and I always I get home pretty late. Then I have to sleep late because I have other homework to do. [It's hard to come] because the students that take the bus home, they get home late, like around 6:55 pm.*
- *I live in Santa Ana. The other thing would be what time I would come out of school. It takes like an hour to get over there.*
- *[It would be easier] if there was school bus that goes there.*
- *Sometimes the classes were 4 hours long and bus ride home is another hour so it takes a lot of my time as well.*
- *[I am not enrolling again] not until next year at least. There was also a driving issue, like if I didn't have a ride and stuff. But I got my license, so I can drive now.*

One female student stated that she did not continue because she was dissatisfied with the course she took. She was not engaged by the computer-based instructional approach and therefore decided to drop it and has not since re-enrolled. Another male student was similarly disappointed in the course he chose. Both explain why the TWLC courses in which they enrolled did not meet their expectations causing them to drop out:

- *[I dropped the class] for many reasons. One, I didn't really find the course interesting. Also, I had to come home and take care of my sister and just kind of be there. It was engineering. It felt like school; you're just learning more math, and it was basically based off the computer. To me, I could do that at home; so why don't I just go home and take care of my sister and I could learn this at home as well instead of having to come here? It wasn't for me.*
- *I took Aerospace [because] when they described it and it sounded really cool. I liked that we were like building stuff. [But], I didn't like that we were on the computers all day and that the teachers didn't show us anything or that much. I thought it was going to be different. I thought it would be a teacher showing us step-by-step not just the computer. That was one of the reasons [I stopped coming].*

In addition to reasons for dropping a class, students provided the following explanations for not re-enrolling in a subsequent session:

- *I didn't know when we had to enroll.*
- *Because I forgot to return the paper [enrollment form] in. That was the only reason.*
- *It was because I wanted to see how the classes were going to be first, if it's just going to be not worth it or something not what I hoped for. But I hope I can sign up for the next session. I just wanted to take a class to see if I liked it. Then in our next session, I would find out for something new or the same class.*
- *I'm not [enrolling] in the summer. But, I'm planning on doing golf again when school starts. [...] It's too hot to do golf[in the summer].*

Students interviewed often did not seem to have a clear understanding of the range of TWLC programming and the process for signing up for the next session, or even of the option to go back after dropping out. As one student—unaware that re-enrollment was an option—remarked:

I liked the classes but we didn't know that we could enroll again. We thought it was the only time we could go. If I had known I would have thought about it.

One student—in addition to a heavy academic load at school—communicated clearly that other options existed at his school that he felt better matched his academic needs and career interests. Still, he was considering enrolling at the TWLC during the summer program. He explained:

They sent the letters like always but I just didn't want to come. At home [I had other things going on]. Actually, I wasn't planning to do it during the school year. Next time if I do join, I'll do it during the summer because I have more time and I don't have school. Because like I said, I was here before. At that time, it was normal because you know when you get to those quarters of the school where you have to do more work, you have to prepare for midterms and all that stuff.

I haven't decided [if I will enroll at TWLC again] yet because I'm also taking [other] courses. My school offers some summer programs where you can take classes to enrich your learning and get ahead. It's called the Summer Enrichment Program. I'm taking some classes right now. I'm in geometry. There's math classes, English classes, science classes. [...] We're learning about colleges, and what we want to be when we grow up and what we have to be. Since I want to be a pediatrician, I'm planning to volunteer at Kaiser Permanente.

The same student continued to explain that he might enroll in the summer when his schedule is more open:

[Later in the summer] I know I will have time [to enroll at the TWLC. Although it's four days a week, I think it's only two hours for the whole span of the summer. I think it's from June to August, like at the beginning of August. I know I'll have enough time, because it's only for two hours.

To summarize, the overwhelming majority of students voiced a firm desire to continue attending courses and activities at the TWLC. If they dropped or did not re-enroll in the following session most stated that it was not due to lack of interest or engagement in the courses offered, but was often due to the inconvenience of course scheduling during the immediate hours after school when they have homework and other obligations at home or at school. A few students did express dissatisfaction with the particular course they chose but in general were happy with the environment at the TWLC. Finally, a concrete stumbling block for many students living in communities outside the immediate vicinity of the Center was the distance and lack of transportation to and from the TWLC.

E. SUGGESTIONS FOR IMPROVEMENT

When asked what the TWLC could do to make the program better or to make it easier for them to participate, nearly all students expressed a general satisfaction with the program, making statements such as, “It’s fine the way it is”, “I think that the center is good the way it is. It’s all okay”, “It was a really good place and a really awesome experience”, “It was a smooth program” and, “I think it’s a very good environment.” One student added: “I think there’s always room for more improvement, but they’ve done the best they could.”

Given their general satisfaction with how the Center operates and the quality of their experiences with activities and relationships with staff and peers at the TWLC, few students had concrete suggestions for program improvement. One student, however made an interesting proposition: she suggested that alumni return to the TWLC to serve as mentors or perhaps guest speakers, supporting the learning of current students and sharing about what it is like going to college. She explained:

Have some volunteers that have been here in the program before, having their experience and helping us go through it too. [...] Teachers here could ask them how do they like your college experience and classes.

A few students offer suggestions for addressing some of the challenges they experienced completing a course or enrolling in the next session. One student, for example, would have liked to been able to enroll for both Spring I and Spring II sessions at the same time.

I think that they should have two sign-up sessions [at the same time], like one for the first spring and then one for the next spring enrollment. So that way you can know if you want to retake the class or if you want to try something new without having to do it at that precise moment. Like one for the first spring and then one step over, there'll be another enrollment for the second spring.

Some of the students with a busy calendar of activities during the week suggested scheduling some enrichment classes on weekends, which would allow them to attend when their schedule is more flexible:

- *If they could have Saturday or Sunday classes as well that would be good. I think I would go back because it's just really a fun place to go to and learn about other things.*
- *Weekend classes would be easier to take and to come. I would come to Saturday morning [classes]. If they had more variety of dance classes, like tap or jazz, I would attend those.*

This same student noted that the Summer Session is a more attractive option given his busy schedule during the school year:

For Forensic Science, during the summer it would be easier to come over. It would fit in my plans because I only have dance in mornings two or three times a week in the summer so that would definitely be a good idea to have.

In addition to requesting more flexible scheduling, a few students expressed concern about outreach and “sharing around to other schools” to give more students the opportunities at the TWLC. As one student explained:

I don't know if they only take people from our school district, but it's a good experience for everyone to come. I mean, if they can come. The teachers are friendly; the people you meet are also, even though you haven't met them. Once you start interacting with them in classes, it's really cool. The experience you have here is educative but you also get to have fun at the same time.

Finally, several parents—answering the phone when scheduling and conducting interviews—offered their input on the experiences of their children at the center. Parents affirmed that their child really enjoyed the Center but that transportation or a conflict of scheduling kept them from continuing. One mother explained why she did not re-enroll her two daughters after attending one session. She insisted that she and her daughters loved it at the TWLC; but, because they lived relatively far—30-minute drive each way—it was a hardship for her take to them to the Center by 4:00 pm and pick them up after 6:00 pm, by the time she got home after taking them, she would have to turn around and pick them up. In order to open access to students in the broader Orange County area, this parent suggested the establishment of one or more centralized drop-off/pick-up points, such as a West Side Orange County point, with buses provided by either the Garden Grove or Westminster school districts, the TWLC or other supportive agencies, to transport students to and from the Center. This way parents could drop-off and pick their student up from a more convenient location.

SECTION IV—CONCLUSIONS

This section summarizes key findings from the preceding Sections II and III which outline in detail the results from the TWLC Phase 3 quantitative study of student outcomes for regular program participants and the qualitative component focused on understanding the sources of program attrition and identifying factors that may work to increase retention. Highlights of quantitative findings are presented first and followed by key insights from the qualitative study.

Key Quantitative Findings

Student outcomes were measured quantitatively through administration of the Afterschool Outcome Measures Online Toolbox (AOMOT) surveys. Students at three TWLC sites completed pre-participation surveys at the beginning of each session and post-participation surveys at the end of each session. A total of 453 students completed at least one survey: 423 students at the TWLC in Anaheim, 22 at the TWLC in Philadelphia, and 8 at the TWLC in Washington, D.C. Pre and post outcome scores were obtained for eight measures, in the following three areas: skill development, attitudes and beliefs, and positive behavior.

Overall, survey results for all three TWLC sites were positive. For all of the measures, the majority of all students' scores were categorized as good or excellent. Over 70% of students had good or excellent scores in work habits and science efficacy. Over 60% of students had good or excellent scores in math efficacy and interest in science, over 65% reported they were likely to pursue a career in science, and almost all of the students (99%) reported they were likely to be successful in their future endeavors. In the area of positive behavior, about 60% of students reported good or excellent social competencies, and less than 1% of students reported high levels of misconduct. A matched pair analysis, which included only those students at the TWLC in Anaheim who completed both pre- and post-participation surveys, showed a statistically significant increase in social competencies scores (from the beginning to the end of their participation in TWLC classes).

Two measures of students' program experiences were included on the post-participation survey. The majority of students at the three TWLC sites reported that the quality of their experiences were good or excellent. 86% of students reported good or excellent quality experiences with staff and activities at the TWLC, and 65% reported good or excellent experiences with peers. Associations between students' program experiences and their outcome scores were all positive and statistically significant. Students who had higher quality experiences with program staff, activities, and peers had lower levels of misconduct and higher scores in all other outcomes.

Key Qualitative Findings

The qualitative component of the study consisted of the collection and analyses of interview data from thirty 8th through 12th grade students who had enrolled and attended the TWLC for at least one session but did not complete a session and/or did not re-enroll in a subsequent session during the 2011-2012 academic year. These data revealed the following key issues affecting student

attrition and retention. In addition students and a few parents shared suggestions about how to address some of the identified issues.

In summary, although students in general were satisfied with course content and activities, a number indicated unmet expectations, boredom and disappointment. This candid youth input provides a valuable insight on how students experience the TWLC curriculum and points to possible areas for improvement. A potential strategy to address this issue may include a review and revamping of some course curricula to ensure that they are indeed what they are advertised to be, that students are consistently offered engaging hands-on activities and challenged sufficiently to keep their interest and to advance their skills and knowledge in the course content areas. If this is not the case, then youth—particularly older high school students with competing demands on their time—will opt out. In particular older students voiced a more keen concern for spending time learning things that were connected to their academic and career goals.

The issues of time and distance seemed to be the most prevalent challenges for students to maintain consistent attendance during a session and ongoing participation across sessions at the TWLC. From interview responses it is clear that some students want to attend classes, however, even if they are physically able to get to the Center, they do not have the time because of other obligations during the weekday afternoon hours.

The current structure of the TWLC offerings [two hours, two days a week for each course] makes it difficult for some students to commit to and complete the required hours given the ongoing demands of homework, family and other extracurricular activities. Student feedback suggests that they might be able come to the Center if activities if more flexible scheduling of activities and courses were offered. Perhaps weekend classes or shorter-term workshops and activities, which students could complete without having to make an eight-week commitment, would make it more feasible for a larger number of students to maintain an ongoing and more consistent relationship with the TWLC.

Students and their parents, who lived far from the TWLC—not in walking distance or those who attend schools in districts without bus transportation arrangements to the Center—express frustration at not being able to attend despite their strong desire to do so. Establishing partnerships with other districts to offer transportation from centralized locations in the broader surrounding areas was a suggestion offered to open access to more students. Another possibility would be to establish partnerships with other youth serving agencies in the larger Orange County area, where TWLC could then provide direct classes to students at their locations.

Finally, students in general seemed to have a limited knowledge of the range of activities and services available to them at the Center. Many students interviewed seemed unaware of the enrollment procedures, the range of course offerings, any weekend and summer programming that might be occurring, as well as the homework assistance and college information and support available at the Center. Perhaps a more strategic and comprehensive youth-oriented—or even youth-lead—communication approach, as part of both the ongoing recruitment of new students and the retention of students who are already at the Center, would help make students more aware of their options and the many ways they can take advantage of the resources and educational opportunities that the Tiger Woods Learning Center has to offer.

APPENDIX—STUDY MEASURES

A. TWLC STUDENT INTERVIEW PROTOCOL, 2012

B. TWLC PRE SURVEY, 2012 [See attached Pdf. file]

C. TWLC POST SURVEY, 2012 [See attached Pdf. file]

A. TWLC STUDENT INTERVIEW PROTOCOL, 2012

INTERVIEW QUESTIONS FOR TWLC STUDENTS:

1. Tell about how you first found out about the TWLC?
2. Have you attended TWLC classes *before* this past session?
If yes;
 - a. Which classes did you take before this past session?
 - b. Did you complete any of them?
3. Why did you enroll in the TWLC this past session?
 - a. What class or classes did you enroll in this past session?
 - b. Why did you choose them?
4. Tell me about your experience in the class(es);
 - a. What was good about the class?
 - b. What things about the class did you not like?
 - c. Did you like the instructor?
 - d. Was the instructor knowledgeable about the class topic?
 - e. Did the class meet your expectations or was it different from what you expected?
5. Why did you stop coming to the TWLC class(es) this past session?
6. Is there anything that the instructor could have done to make the class better?
7. Is there anything that the TWLC could have done to make it easier for you to keep coming to class?
8. Do you have any other comments or suggestions you would like to make to help the TWLC improve its program?

Thank you for your time. Your feedback is very important and very much appreciated.