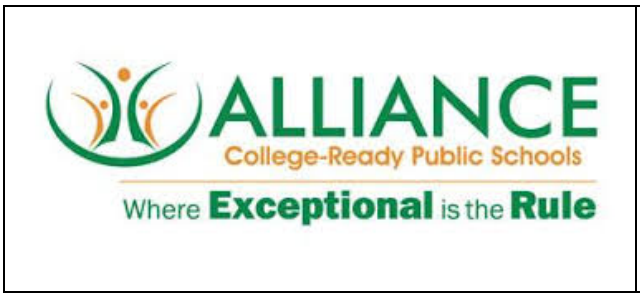

i3 Development Grant

Final Evaluation Report

Prepared by Wexford Institute

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HIGHLIGHTS OF COLLEGE YES PROGRAM OUTCOMES

The CollegeYES program is an Investing in Innovation (i3) funded development project that was implemented at 20 Alliance College Ready Public Schools. Alliance is a is a nonprofit charter management organization committed to creating small high performance middle schools and high schools within the greater Los Angeles area. Alliance-wide, nine percent of students are special needs, 17% are English Language Learners, 94% qualify for free or reduced priced lunch, and 98% are Hispanic or African American.

CollegeYES is an adaptation of the TechYES projected developed by Alliance's i3 partner, GenYES. As implemented by Alliance, this program is designed to introduce project-based learning into the science and Advisory classes of students in 6th-10th grade. Students show technology literacy by creating projects that meet the International Society for Technology in Education (ISTE) National Educational Technology Standards for Students (NETS*S). Student Technology Leaders (STL Summer Camp) at each school participate in a peer-mentoring program that is designed to assist other students as well as teachers in implementing the two project-based learning technology projects that are required for TechYES certification. CollegeYES includes four key components: STL Summer Camp, Student Technology Leaders, Professional Development, and TechYES Projects. Below are highlights of program outcomes related to these key components.

- CollegeYES had an impact on over 16,000 Alliance middle school and high school students
- Students completed over 11,000 TechYES science project and over 9,800 TechYES college and career focused projects
- STLs demonstrated growth in technology, communication, and presentation skills, which allowed them to demonstrate true leadership in a variety of ways such as:
    - Playing a critical role in the Alliance-wide deployment of iPads to students in 6th-10th grade
    - Planning and presenting Internet Safety training for their peers
    - Planning and presenting site-based and Alliance-wide technology training for teachers
    - Assessing TechYES projects
- CollegeYES had an impact on the teachers who served in the role of CollegeYES Facilitators:
    - 92% of Facilitators indicated that they are spending more time thinking about improving their technology skills
    - 83% of Facilitators indicated that they are spending more time looking for web-based tools and resources to use in their classroom, and thinking about how to integrate project-based learning into their curriculum
    - 83% of Facilitators indicated that their confidence had in using technology in the classroom had increased

INTRODUCTION

In October 2010, Alliance College Ready Public Schools (Alliance) was awarded a $5 million Investing in Innovation (i3) Development Grant funded by the U.S. Department of Education. The 5-year grant funded the implementation and research for the CollegeYES project. CollegeYES is a STEM and college/career readiness program that utilizes Student Technology Leaders (STLs) to support technology-integrated project based learning in science, Advisory, or elective courses. Alliance College-Ready Public Schools (Alliance), is a nonprofit charter management organization committed to creating small high performance, college-ready public schools in Los Angeles. Operating in 10 middle schools and 18 high schools throughout under-served communities in Los Angeles, Alliance schools consistently graduate over 90% of their students, including many of whom enter an Alliance school up to four grade levels behind in reading. Alliance-wide, nine percent of students are special needs, 17% are English Language Learners, 94% qualify for free or reduced priced lunch, and 98% are Hispanic or African American.

Year 1 of the grant, which ran through the 2010-2011 school year (SY2010-11), was focused on planning, device procurement, Facilitator orientation, and the launch of first STL Summer Camp in July 2011. The first cohort of participants, representing 9th graders in 12 Alliance high schools, officially began the program in Year 1 when the school year began in August 2011, but the majority of project activities occurred in Year 2 of the grant, which straddled SY2011-12. For reporting purposes, the activities in which the first cohort of 9th graders engaged are referred to as Year 2 activities.

Between Year 2 and Year 5 of the grant, CollegeYES expanded from one cohort of 9th graders at 12 Alliance high schools, to a cohort of 6th through 10th graders representing 13 Alliance high schools and seven Alliance middle schools. The tables shown below show the program years during which each grade level and CollegeYES school participated. Ninth graders were the first cohort of CollegeYES students in Year 2. In Year 3 the program expanded to 10th grade at the high school level and launched at Alliance middle schools, starting with 6th grade. In Year 4 the program included 6th, 7th, 9th. And 10th graders, and in Year 5 there were CollegeYES was operating in Grade 6 through Grade 10.

Table 1. CollegeYES Yearly Participation by Grade Level

Grade Level	Program/School Year			
	Year 2 2011-12	Year 3 2012-13	Year 4 2013-14	Year 5 2014-15
6th		X	X	X
7th			X	X
8th				X

Grade Level	Program/School Year			
	Year 2 2011-12	Year 3 2012-13	Year 4 2013-14	Year 5 2014-15
9th	X	X	X	X
10th		X	X	X

Twelve Alliance high schools participated in the program during Year 2 and Year 3. The program expanded to a 13th high school, Gertz-Ressler in Year 4. In Year 5, Gertz-Ressler continued in the program, but College Ready Alliance High School #16 did not participate because the school was unable to fill its vacant Facilitator spot.

Table 2. CollegeYES Yearly Participation by Alliance High School

Alliance High School	Program/School Year			
	Year 2 2011-12	Year 3 2012-13	Year 4 2013-14	Year 5 2014-15
Alliance Cindy & Bill Simon Technology Academy HS	X	X	X	X
Alliance Collins Family College-Ready HS	X	X	X	X
Alliance Gertz-Ressler High School			X	X
Alliance Marc & Eva Stern Math and Science HS	X	X	X	X
Alliance Patti & Peter Neuwirth Leadership Academy	X	X	X	X
Alliance Piera Barbiglia Shaheen Health Services Academy	X	X	X	X
Alliance Renee & Meyer Luskin Academy HS	X	X	X	X
Alliance Tennenbaum Family Technology HS	X	X	X	X
Alliance William & Carol Ouchi HS	X	X	X	X
College Ready Alliance High School #16[1]	X	X	X	
Environmental Science and Technology HS[2]	X	X	X	X
Judy Ivie Burton Technology Academy HS	X	X	X	X
Media Arts and Entertainment Design HS[3]	X	X	X	X

Six Alliance middle schools started CollegeYES in Year 3 and continued participation in Year 4. In Year 5, one new middle school, College-Ready Middle Academy 12, started the program, and two of the original school stopped participating because the schools could not fill their vacant Facilitator spots.

[1] CRAHS #16 is now named Alliance Ted K. Tajima High School
[2] ESAT is now named Alliance Leichtman-Levine Family Foundation Environmental Science High School
[3] Media Arts HS is now named Alliance Morgan McKinzie High School

Table 3. CollegeYES Yearly Participation by Alliance Middle School

Alliance Middle School	Program/School Year			
	Year 2 2011-12	Year 3 2012-13	Year 4 2013-14	Year 5 2014-15
Alliance Christine O'Donovan Middle Academy	–	X	X	X
Alliance College-Ready Middle Academy 4	–	X	X	X
Alliance College-Ready Middle Academy 5	–	X	X	X
Alliance College-Ready Middle Academy 7[4]	–	X	X	–
Alliance College-Ready Middle Academy 12	–	–	–	X
Alliance Jack H. Skirball Middle School	–	X	X	X
Alliance Richard Merkin Middle School	–	X	X	–

INVESTMENT IN INNOVATION

CollegeYES infused technology into schools that had none prior to Alliance being awarded the i3 grant. Each CollegeYES school received 16 iPads for STL use, iPads for each STL Club Facilitator, and dedicated laptop carts for student development of TechYES projects.

CollegeYES is an adapted implementation of the Generation YES TechYES Technology Literacy Certification Program. TechYES is an innovative way for schools to offer a technology certification program to middle school and high school students. Students show technology literacy by creating projects that meet the International Society for Technology in Education (ISTE) National Educational Technology Standards for Students (NETS*S). A cohort of students in a structured peer-mentoring program assist other students as well as teachers in implementing the two project-based learning technology projects that are required for TechYES certification. TechYES encourages all students to complete technology projects that are creative and personally involving. These projects are the basis for the TechYES evaluation and certification. Projects are tracked and assessed online via each school's dedicated TechYES website. TechYES includes all necessary resources: individual student guidebooks, customized teacher/advisor materials, handouts and resources, access to a fully interactive support website, and certificates of completion. CollegeYES expands upon the TechYES program, which traditionally requires students to complete two science-based technology projects, by replacing one of the science-based projects with a technology project to be completed as part of students' college/career Alliance Advisory Curriculum.

[4] ACRM #7 is now named Alliance Leadership Middle Academy

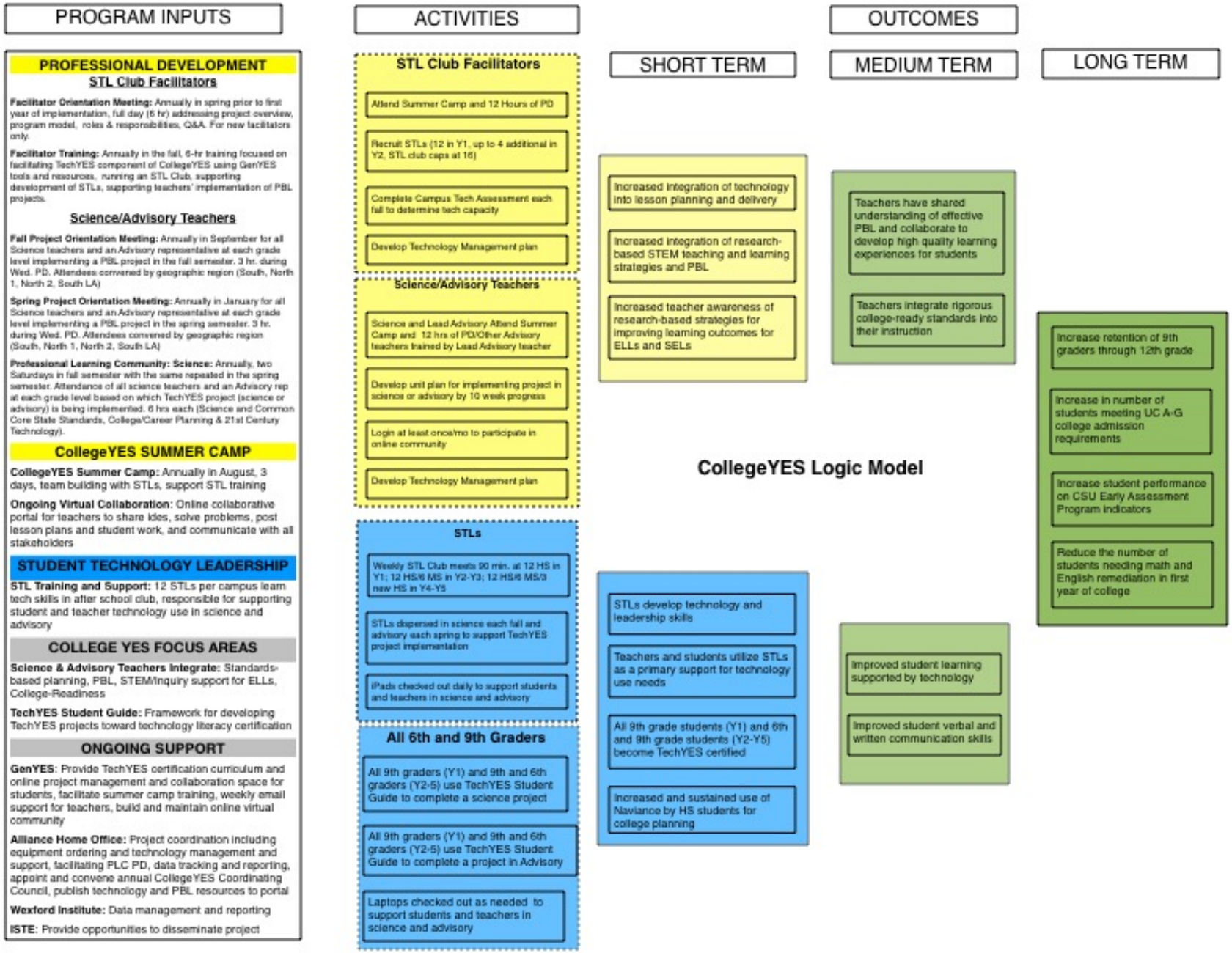
During the 2011-12 school year, 9th graders at 12 Alliance high schools completed over 2500 TechYES projects. By the end of the 2014-15 school year, nearly 21,000 projects were completed by 6^{th}-10^{th} grade students in 13 Alliance high schools and seven middle schools. Over the course of the grant period, students at CollegeYES schools were exposed to a variety of computer and web-based productivity tools. Students' projects evolved from Prezi and PowerPoint to iMovie, Weebly, and Wix websites. They completed a digital citizenship curriculum, improved their Internet searching skills, and learned how to code. Some students created Apps, blogs, and podcasts. Some learned how to use GarageBand, while others used SurveyMonkey to collect data for their projects. Students also

COLLEGE YES KEY COMPONENTS

The CollegeYES program has four key components. Key Component 1, Summer Camp, documents students' and facilitators' attendance at the requisite number of CollegeYES Summer Camp hours. Summer Camp is participants' orientation to the project. Key Component 2, Student Technology Leaders, documents STLs requisite attendance at weekly club meetings (i.e., 90 minutes per week). Key Component 3, Professional Development, documents facilitators' attendance at requisite project-based learning and technology integration training. Key Component 4, Student Projects, documents students' completion of TechYES science and TechYES college/career projects.

DATA SOURCES

During each year of the grant evaluators gathered data from a variety of sources, including feedback surveys administered at the end of the CollegeYES Summer Camps hosted in Year 1 through Year 4, and annual CollegeYES Facilitator and STL Feedback Surveys administered in the spring of each school year. Evaluators observed CollegeYES Summer Camp, CollegeYES professional development, STL Club meetings, student presentations of TechYES projects, STL facilitation of "Parent Night", and STL-led technology-related professional development for teachers. Other data sources include principal and STL Club Facilitator interviews, STL Club attendance records, and project diagnostics in the form of reports generated from the TechYES website.


PROGRAM INPUTS
PROFESSIONAL DEVELOPMENT
STL Club Facilitators
Facilitator Orientation Meeting: Annually in spring prior to first year of implementation, full day (6 hr) addressing project overview, program model, roles & responsibilities, Q&A. For new facilitators only.
Facilitator Training: Annually in the fall, 6-hr training focused on facilitating TechYES component of CollegeYES using GenYES tools and resources, running an STL Club, supporting development of STLs, supporting teachers' implementation of PBL projects.
Science/Advisory Teachers
Fall Project Orientation Meeting: Annually in September for all Science teachers and an Advisory representative at each grade level implementing a PBL project in the fall semester. 3 hr. during Wed. PD. Attendees convened by geographic region (South, North 1, North 2, South LA)
Spring Project Orientation Meeting: Annually in January for all Science teachers and an Advisory representative at each grade level implementing a PBL project in the spring semester. 3 hr. during Wed. PD. Attendees convened by geographic region (South, North 1, North 2, South LA)
Professional Learning Community: Science: Annually, two Saturdays in fall semester with the same repeated in the spring semester. Attendance of all science teachers and an Advisory rep at each grade level based on which TechYES project (science or advisory) is being implemented. 6 hrs each (Science and Common Core State Standards, College/Career Planning & 21st Century Technology).
CollegeYES SUMMER CAMP
CollegeYES Summer Camp: Annually in August, 3 days, team building with STLs, support STL training
Ongoing Virtual Collaboration: Online collaborative portal for teachers to share ides, solve problems, post lesson plans and student work, and communicate with all stakeholders
STUDENT TECHNOLOGY LEADERSHIP
STL Training and Support: 12 STLs per campus learn tech skills in after school club, responsible for supporting student and teacher technology use in science and advisory
COLLEGE YES FOCUS AREAS
Science & Advisory Teachers Integrate: Standards-based planning, PBL, STEM/inquiry support for ELLs, College-Readiness
TechYES Student Guide: Framework for developing TechYES projects toward technology literacy certification
ONGOING SUPPORT
GenYES: Provide TechYES certification curriculum and online project management and collaboration space for students, facilitate summer camp training, weekly email support for teachers, build and maintain online virtual community
Alliance Home Office: Project coordination including equipment ordering and technology management and support, facilitating PLC PD, data tracking and reporting, appoint and convene annual CollegeYES Coordinating Council, publish technology and PBL resources to portal
Wexford Institute: Data management and reporting
ISTE: Provide opportunities to disseminate project
ACTIVITIES
STL Club Facilitators
Attend Summer Camp and 12 Hours of PD
Recruit STLs (12 in Y1, up to 4 additional in Y2, STL club caps at 16)
Complete Campus Tech Assessment each fall to determine tech capacity
Develop Technology Management plan
Science/Advisory Teachers
Science and Lead Advisory Attend Summer Camp and 12 hrs of PD/Other Advisory teachers trained by Lead Advisory teacher
Develop unit plan for implementing project in science or advisory by 10 week progress
Login at least once/mo to participate in online community
Develop Technology Management plan
STLs
Weekly STL Club meets 90 min. at 12 HS in Y1; 12 HS/6 MS in Y2-Y3; 12 HS/6 MS/3 new HS in Y4-Y5
STLs dispersed in science each fall and advisory each spring to support TechYES project implementation
iPads checked out daily to support students and teachers in science and advisory
All 6th and 9th Graders
All 9th graders (Y1) and 9th and 6th graders (Y2-5) use TechYES Student Guide to complete a science project
All 9th graders (Y1) and 9th and 6th graders (Y2-5) use TechYES Student Guide to complete a project in Advisory
Laptops checked out as needed to support students and teachers in science and advisory
OUTCOMES
SHORT TERM
MEDIUM TERM
LONG TERM
Increased integration of technology into lesson planning and delivery
Increased integration of research-based STEM teaching and learning strategies and PBL
Increased teacher awareness of research-based strategies for improving learning outcomes for ELLs and SELs
Teachers have shared understanding of effective PBL and collaborate to develop high quality learning experiences for students
Teachers integrate rigorous college-ready standards into their instruction
Increase retention of 9th graders through 12th grade
Increase in number of students meeting UC A-G college admission requirements
Increase student performance on CSU Early Assessment Program indicators
Reduce the number of students needing math and English remediation in first year of college
CollegeYES Logic Model
STLs develop technology and leadership skills
Teachers and students utilize STLs as a primary support for technology use needs
All 9th grade students (Y1) and 6th and 9th grade students (Y2-Y5) become TechYES certified
Increased and sustained use of Naviance by HS students for college planning
Improved student learning supported by technology
Improved student verbal and written communication skills

KEY COMPONENTS OF COLLEGE YES

There are four key components that operationally define CollegeYES: STL Summer Camp, CollegeYES Professional Development, STL Club, and TechYES Projects. For each year of the grant, evaluators used a fidelity rubric to assign a score at the school and program level on each of the key components. Each key component is described below, along with a summary of the fidelity of implementation at the school and program level.

STL SUMMER CAMP

STL Summer Camp is the signature launch to each new year of CollegeYES. In addition to serving as a program orientation and TechYES training sessions, the Summer Camp also served as an opportunity for facilitators and STLs to establish rapport and develop a working relationship with one another. Figure 1, below, Over the course of the grant, the Summer Camp evolved from a three-day convening of all Student Technology Leaders and CollegeYES Facilitators, to a two-day, site-based planning session. The first two years of Summer Camp was planned and facilitated by the CollegeYES project director along with GenYES staff. In Year 3 the 18 schools that were already participating in CollegeYES hosted their own two-day Summer Camp. These schools received guidance on the types of activities in which they could engage during Summer Camp. Schools were allowed to set their own priorities and schedule for camp, but each returning school was required to work on preparing Internet Safety presentations, and setting up Edmodo, Skype and Club Gmail accounts. In Year 3, one additional Alliance high school became a CollegeYES school, and the STLs and Facilitators at this school participated in a 5-day Summer Camp at their school site.

During the first two Summer Camps, training was focused primarily on TechYES project development and assessment and reviewing how to use the TechYES website. In Year 3 the focus of the Summer Camp shifted to developing the STL Club to include activities that extended beyond assessing TechYES projects. In Year 4, one Alliance school joined the CollegeYES project and participated in Summer Camp. The returning schools created their own schedule and timeline for implementing a two-day site based STL Camp to prepare for the beginning of the school year.

FIDELITY OF IMPLEMENTATION FOR KEY COMPONENT 1: STL SUMMER CAMP

The fidelity of implementation criteria for STL Summer Camp were hosting the event and attending the event. In Year 1 and Year 2 scores were assigned based on whether the CollegeYES Project Director hosted the Summer Camp and in Year 3 and Year 4 scores were assigned based on whether participating schools hosted their own Summer Camp. In Year 1 through Year 4 scores were also

assigned based on Facilitator attendance and STL attendance, including the number of Facilitators and STLs who attended Summer Camp, and the number of days they attended. A fidelity score was not calculated for Year 5, because all legacy and expansion schools had already completed Summer Camp by the time the 2014-15 school year began. For each year of project implementation, the threshold for fidelity at the program level was 75% of schools scoring at high levels of implementation fidelity.

As shown in the table below, in Year 2, CollegeYES middle schools and high schools met the fidelity of implementation threshold for STL Summer Camp. Only middle school met the threshold in Year 3, and no schools met the threshold in Year 1 or Year 4. In Year 1, 50% of participating high schools had a high component score for STL Summer Camp; thus, not meeting the threshold criteria at the program level. In Year 2, 100% of participating middle schools and high schools had a high component for STL Summer Camp. In Year 3, 100% of middle schools and 67% of high schools met the threshold criteria at the program level. In Year 4, none of the middle schools or high schools had a high component score for the STL Summer Camp; 60% of the schools had a component score that equated to a moderate level of implementation fidelity.

Table 4. Fidelity of Implementation for Key Component 1: STL Summer Camp

	Met Threshold for High Fidelity of Implementation?			
	Year 1	Year 2	Year 3	Year 4
High School	No	Yes	No	No
Middle School	–	Yes	Yes	No

COLLEGE YES PROFESSIONAL DEVELOPMENT

CollegeYES professional development (PD) is designed to support the STL Club Facilitators in implementing the program at their respective school site. The school year prior to implementing the CollegeYES program at their school, Facilitators are invited to attend a CollegeYES Orientation meeting. This is followed by Summer Camp in the July prior to the start of the school year. In each year of program implementation, Facilitators who are also science teachers are required to attend two 6-hour professional development session related to using technology to implement or support the implementation project-based learning in the science curriculum. Facilitators who support an Advisory or elective period are required to attend two 6-hour professional development session on using technology to implement a college or career readiness project. Facilitators are also required to attend a 6-hour training focused on integrating technology tools and resources across the curriculum. In addition to the required professional development, beginning in Year 3, project-based learning (PBL)

sessions were integrated into Alliance-wide PD, giving teachers the option to enhance their understanding of PBL.

FIDELITY OF IMPLEMENTATION FOR KEY COMPONENT 2: PROFESSIONAL DEVELOPMENT

The fidelity of implementation criteria for professional development were hosting the requisite PD and Facilitator attendance at the PD. Facilitator participation in the required CollegeYES PD sessions was strong in the first two years of the grant and then tapered off in the last two years. The CollegeYES Facilitators tended to be teachers in multiple leadership roles at their school, which meant the often worked long work weeks and did not always want to attend training on Saturday, even if they were paid. Another factor that affected participation in the latter years of the program was Facilitator turn over. This turn over meant that by Year 4 nearly half of the Facilitators were new to CollegeYES and by Year 5 almost all of the Facilitators were new to the program. The impact of this rate of turn over was the challenge the Project Director faced in providing differentiated training for new and returning Facilitators. While new Facilitators participated in annual PD, participation by returning Facilitators began to taper off, this impacting the level at which fidelity of implementation for this key component was maintained. For each year of project implementation, the threshold for fidelity at the program level was 75% of schools scoring at high levels of implementation fidelity.

Table 2 shows that at the program level fidelity of implementation for CollegeYES professional development was maintained at a high level during Year 1 through Year 3. In Year 4, 67% of middle schools and 54% of high schools maintained a high level of fidelity to this key component. In Year 5 only 20% of middle schools and 33% of high schools had component scores that met the criteria for high levels of implementation fidelity related to Facilitator attendance at CollegeYES professional development training.

Table 5. Fidelity of Implementation for Key Component 2: CollegeYES Professional Development

	Met Threshold for High Fidelity of Implementation?				
	Year 1	Year 2	Year 3	Year 4	Year 5
High School	Yes	Yes	Yes	No	No
Middle School	–	Yes	Yes	No	No

STL CLUB MEETINGS

The CollegeYES model calls for STL Clubs to meet for 90 minutes per week. In Year 2, schools were required to hold their STL Club meetings after school; however this was not feasible for all sites, and in Year 3 schools were allowed to schedule meetings according to facilitator and STL availability. As a

result of this flexibility, Clubs scheduled their meetings after school, during lunch period, and during Advisory. The schools at which STL Clubs met during Advisory created a special section just for the STLs. This was one of the first signs that the CollegeYES project was being integrated into school culture. In Year 4 and Year 5, some middle schools also enrolled their STLs in an elective in which they conducted the STL TechYES project assessment work as well as used that class period to push into other classes and provide technology support to students and teachers.

FIDELITY OF IMPLEMENTATION FOR KEY COMPONENT 3: STL CLUBS

The fidelity of implementation criteria for key component three were recruiting STLs, hosting weekly 90-minute STL club meetings and STL attendance at the meetings. Based on the academic year calendar, STL Clubs could have meet a total of 40 times during the school year. Meeting dates and STL attendance was documented in weekly attendance rosters that CollegeYES Facilitators provided to evaluators. An STL Club that met 31-40 times received a high implementation score. An STL Club where 80-100% of the STLs attended at least 80% of the meetings received a high implementation score.

Middle school STL Clubs, more so than high school Clubs were able to implement this component of the CollegeYES program with high levels of fidelity. One explanation for this outcome is the fact that middle school CollegeYES Facilitators were more willing to allow STLs to take the lead on running the club. High school facilitators not only tended to be more reluctant to hand over meeting responsibilities such as attendance to the STLs, but they were also more likely to view attendance taking as a burdensome task. As a result, CollegeYES Facilitators at a number of schools did not regularly record attendance data, even when prompted by the project director to do so. As a result, the evaluator measured fidelity based on available data. Many schools missed the cut for high fidelity because they recorded attendance for 20 or fewer meetings. While we know that Clubs met more often than that, only data gathered through the established reporting protocol were used in calculating fidelity for this component of the program.

Table 6. Fidelity of Implementation for Key Component 3: STL Clubs

	Met Threshold for High Fidelity of Implementation?				
	Year 1	Year 2	Year 3	Year 4	Year 5
High School	Yes	No	No	No	No
Middle School	–	–	Yes	Yes	Yes

TECHYES PROJECTS

Student completion of TechYES projects is the fourth key component of the CollegeYES program. It is through completion of these projects that students are able to demonstrate the extent to which they are technology literate and eligible for TechYES Technology Certification. During each year of program implementation, the criteria was for students in each participating grade to complete one TechYES project in their science class and one TechYES project in their Advisory or elective period that was focused on college and/or career readiness. In most cases, one of the CollegeYES Facilitators at each school was also a science teacher or an Advisory/elective teacher at 6th or 9th grade, which are the entry points for program participation. As the program expanded across grade levels, the number of teachers required to implement the program increased from 24 in Year 2 to over 230 teachers in Year 5. CollegeYES maintained a train-the-trainer model, which meant that CollegeYES professional development was delivered to Facilitators who were then expected to support the other teachers at their school in disseminating information about project requirements and deadlines. This level of support occurred to varying degrees at each of the schools. In some cases, teachers who were not direct recipients of CollegeYES professional development embraced the TechYES project and met all requirements for the grade level and content area. In other cases, teachers viewed the TechYES project as a forced-compliance add-on activity, and in doing so they often pushed the TechYES projects to the "back burner." As a result, while the majority of targeted students had exposure to CollegeYES, they did not all have adequate time to complete the project cycle (gather, organize, construct, share) in time to upload their projects, and thus have them included in the count of completed projects. This more than technical issues that affected project upload, affected the implementation fidelity of this key component.

For the purpose of measuring fidelity of implementation this key component, standardized criteria were used to determine whether a TechYES project was completed. In order to be counted as a completed project, a TechYES project had to be: (1) started on the TechYES website (a project is counted as "started" if it is linked to a class and has a project title and description); uploaded to the TechYES website (i.e., upload an electronic file or submit a URL to a web-based project); (2) self-assessed, STL-assessed, and teacher-assessed using the TechYES assessment criteria; and (3) teacher approved. Utilizing these standardized criteria means that some schools are not recognized for the work that students did, but the decision to standardize the criteria is based on a need to have a common quantifiable metric by which to gauge schools' participation in the CollegeYES project. In using common criteria, it was not the evaluator's intent to minimize or ignore the contextual factors that affect a school's ability to implement the program as intended. Rather, gauging levels of implementation by the same standard allowed the evaluator and project director to examine data points that shed light on why the program was implemented as intended in some schools and less so in other schools.

FIDELITY OF IMPLEMENTATION FOR KEY COMPONENT 4: TECHYES PROJECTS

The fidelity of implementation criteria for key component four were 6th and 9th grade science teachers' implementation of a TechYES science project, 6th and 9th grade Advisory or elective period teachers'' implementation of a TechYES college and/or career readiness (CCR) project, 6th and 9th grade student completion of a TechYES science and TechYES CCR project, and STL assessment of the TechYES science and CCR projects at their respective school.

Table 7. Fidelity of Implementation for Key Component 4: TechYES Projects

	Met Threshold for High Fidelity of Implementation?			
	Year 2	Year 3	Year 4	Year 5
High School	YES	NO	YES	NO
Middle School	–	NO	YES	NO

ANNUAL FIDELITY OF IMPLEMENATION SCORE BY COLLEGE YES SCHOOL

When

Table 8. Yearly Fidelity of Implementation Score for Key Component 1 by School

School	Fidelity of Implementation Score				
	Year 1	Year 2	Year 3	Year 4	Year 5
Burton Tech	High	High	High	Moderate	–
Collins HS	Moderate	High	Moderate	Moderate	–
CRAHS #16	High	High	Low	No data	–
ESAT HS	High	High	High	No data	–
Gertz-Ressler HS	–	–	–	Moderate	–
Health Services Academy	Moderate	High	High	Moderate	–
Luskin Academy HS	High	High	High	Moderate	–
Media Arts HS[5]	Moderate	High	High	Moderate	–
Neuwirth Leadership Academy	Moderate	High	High	Moderate	–
Ouchi HS	High	High	High	Moderate	–
Simon Tech	Moderate	High	High	Low	–
Stern Math and Science HS	High	High	Moderate	No data	–
Tennenbaum HS	High	High	Moderate	High	–
ACR[6] Middle Academy 4	–	High	High	Moderate	–

[5] Media Arts HS is now named Alliance Morgan McKinzie High School

School	Fidelity of Implementation Score				
	Year 1	Year 2	Year 3	Year 4	Year 5
ACR Middle Academy 5	–	High	High	Moderate	–
ACR Middle Academy 7[7]	–	High	High	Low	–
ACR Middle Academy 12	–	–	–	High	–
Merkin MS	–	High	High	Low	–
O'Donovan Middle Academy	–	High	High	Moderate	–
Skirball MS	–	High	High	Moderate	–
Number High Fidelity	7	18	13	2	–
% High Fidelity	58%	100%	72%	12%	–

Table 9. Yearly Fidelity of Implementation Score for Key Component 2 by School

School	Fidelity of Implementation Score				
	Year 1	Year 2	Year 3	Year 4	Year 5
Burton Tech	High	High	High	High	Moderate
Collins HS	High	High	High	High	High
CRAHS #16	High	Moderate	Moderate	Moderate	–
ESAT HS	High	High	High	Moderate	Moderate
Gertz-Ressler HS	–	–	–	High	Moderate
Health Services Academy	High	Moderate	Moderate	High	High
Luskin Academy HS	High	High	High	High	Moderate
Media Arts HS[8]	High	Moderate	High	High	Moderate
Neuwirth Leadership Academy	High	High	Moderate	Moderate	High
Ouchi HS	High	High	High	Moderate	High
Simon Tech	High	High	High	Moderate	Moderate
Stern Math and Science HS	High	High	Moderate	Moderate	Moderate
Tennenbaum HS	High	High	High	High	Moderate
ACR[9] Middle Academy 4	–	High	High	Moderate	Moderate
ACR Middle Academy 5	–	High	High	High	High
ACR Middle Academy 7[10]	–	High	High	High	–

[6] ACR stands for Alliance College-Ready
[7] ACRM #7 is now named Alliance Leadership Middle Academy
[8] Media Arts HS is now named Alliance Morgan McKinzie High School
[9] ACR stands for Alliance College-Ready
[10] ACRM #7 is now named Alliance Leadership Middle Academy

School	Fidelity of Implementation Score				
	Year 1	Year 2	Year 3	Year 4	Year 5
ACR Middle Academy 12	–	–	–	–	Moderate
Merkin Middle School	–	High	High	Moderate	–
O'Donovan Middle Academy	–	High	High	High	Moderate
Skirball Middle School	–	High	High	High	Moderate
Number High Fidelity	12	15	14	11	5
% High Fidelity	100%	83%	78%	58%	29%

Table 10. Yearly Fidelity of Implementation Score for Key Component 3 by School

School	Fidelity of Implementation Score				
	Year 1	Year 2	Year 3	Year 4	Year 5
Burton Tech	High	High	High	Low	High
Collins HS	High	High	High	High	High
CRAHS #16	High	Moderate	Low	Low	–
ESAT HS	High	High	Moderate	Moderate	Low
Gertz-Ressler HS	–	–	–	High	High
Health Services Academy	High	High	Low	Moderate	High
Luskin Academy HS	High	Low	Low	High	Low
Media Arts HS[11]	High	Moderate	Moderate	Moderate	Moderate
Neuwirth Leadership Academy	High	High	High	High	Low
Ouchi HS	High	High	Moderate	High	Moderate
Simon Tech	High	Moderate	Moderate	Low	Low
Stern Math and Science HS	High	Moderate	High	Low	Low
Tennenbaum HS	High	Moderate	Low	Low	Moderate
ACR[12] Middle Academy 4	–	–	High	High	Low
ACR Middle Academy 5	–	–	High	Moderate	High
ACR Middle Academy 7[13]	–	–	High	Moderate	–
ACR Middle Academy 12	–	–	–	–	High
Merkin Middle School	–	–	No Data	Low	–
O'Donovan Middle Academy	–	–	High	High	High
Skirball Middle School	–	–	High	Moderate	Moderate

[11] Media Arts HS is now named Alliance Morgan McKinzie High School
[12] ACR stands for Alliance College-Ready
[13] ACRM #7 is now named Alliance Leadership Middle Academy

School	Fidelity of Implementation Score				
	Year 1	Year 2	Year 3	Year 4	Year 5
Number High Fidelity	12	6	9	7	7
% High Fidelity	100%	50%	50%	37%	41%

Table 11. Yearly Fidelity of Implementation Score for Key Component 4 by School

School	Fidelity of Implementation Score				
	Year 1	Year 2	Year 3	Year 4	Year 5
Burton Tech	–	High	High	Moderate	Moderate
Collins HS	–	Moderate	Moderate	High	High
CRAHS #16	–	High	Moderate	Low	–
ESAT HS	–	High	High	High	Moderate
Gertz-Ressler HS	–	–	–	High	High
Health Services Academy	–	High	High	High	Low
Luskin Academy HS	–	High	Moderate	High	Moderate
Media Arts HS[14]	–	High	High	High	High
Neuwirth Leadership Academy	–	Moderate	High	High	Moderate
Ouchi HS	–	High	Low	High	High
Simon Tech	–	High	Low	Moderate	Low
Stern Math and Science HS	–	High	High	High	High
Tennenbaum HS	–	High	Low	High	Low
ACR[15] Middle Academy 4	–	–	High	High	High
ACR Middle Academy 5	–	–	High	High	High
ACR Middle Academy 7[16]	–	–	Moderate	Moderate	–
ACR Middle Academy 12	–	–	–	–	High
Merkin Middle School	–	–	Low	Moderate	–
O'Donovan Middle Academy	–	–	Moderate	High	Moderate
Skirball Middle School	–	–	High	High	High
Number High Fidelity	–	10	9	14	9
% High Fidelity	–	83%	50%	74%	53%

[14] Media Arts HS is now named Alliance Morgan McKinzie High School
[15] ACR stands for Alliance College-Ready
[16] ACRM #7 is now named Alliance Leadership Middle Academy

COLLEGEYES FACILITATORS

ROLE AND RESPONSIBILITIES

CollegeYES Facilitators oversee the operation of the STL Club activities, manage their school's TechYES website, and support other teachers in implementing their TechYES project. They are responsible for: setting a meeting schedule that provides STLs at least 90 minutes per week to meet; keeping track of STL attendance; managing a schedule for STLs to assess students' TechYES projects, attending CollegeYES professional development, and implementing the train-the-trainer model to orient teachers to project-based learning and the TechYES website. Facilitators receive an extra duty stipend. A number of contextual factors influenced the extent to which Facilitators were able to fully meet their obligations. These include some schools having just one Facilitator, Facilitator turnover due to internal promotions and departures from Alliance, scheduling conflicts with other site-based responsibilities, and scheduling conflicts with the Alliance master calendar. While these situations affected some school, other CollegeYES Facilitators went above and beyond to create meaningful experiences for students.

Spotlight on Exceptional CollegeYES Implementation

Simon Tech: 9th graders at Simon Technology Academy High School engaged in project based learning guided by the driving question, "Will I be likely to face job discrimination in the career of my choice based on my gender, race, or my community?" Students researched the academic and/or training requirements needed to enter their dream career and also researched statistics related to the number of people in their chosen field who look like them. It was a very eye opening experience for some students to discover, for example, that Hispanic females make up less than one percent of employees in their field of interest. Tenth graders at Simon Tech used appshed.com to develop a mobile app that focused on navigating the process of filling out the Common App college admissions application. The apps they developed were focused on responding to the driving question, "How does my personal life affect my pathway to college?"

CRMA #5: College Ready Middle Academy 5 represents the vision of CollegeYES integrating seamlessly into the school culture. Prior to the end of Year 3, the first in which the school participated in CollegeYES, plans were underway to create a CollegeYES enrichment course. Students who enroll in this course are exposed to digital citizenship and technology training. Health Services has also integrated the ISTE Standards for Students into their Advisory curriculum, where students in college and career readings activities.

Health Services: The facilitators at Health Services Academy organized a health fair during which students presented their TechYES projects. Alliance home office, parents, and community members

Spotlight on Exceptional CollegeYES Implementation

were invited to attend the event and serve as judges. Students' projects were developed around creating a product prototype to address an unmet need. Evaluators attended the health fair and observed students dressed professionally and given very professional presentations. Most students worked in groups to solve a health-related problem in their community such as teen drug use. The base requirements were to build the prototype and also produce a digital presentation. Students developed movies, websites, and other multimedia to describe the problem, present details about their prototype, and discuss how their proposal would solve the problem.

COLLEGE YES PROFESSIONAL DEVELOPMENT

Participating in CollegeYES professional development (PD) was a stated requirement of the CollegeYES Facilitator position. CollegeYES PD was provided in Year 2 through Year 5 of the grant. The primary focus areas for PD were project-based learning and technology integration. The 6-hour PD sessions were held on Saturdays and Facilitators received extra duty pay for attending. Over the course of the grant, the PD evolved from being delivered exclusively by the CollegeYES Project Director to including sessions hosted by other Alliance Home Office Staff and CollegeYES Facilitators. The PD also expanded into Alliance-wide teacher PD, where the Project Director began providing project-based learning workshops at the multi-day, all staff training days.

Initial project-based learning PD focused on utilizing essential questions to guide student inquiry within the framework of the TechYES Student Guide, which directs students' project development through a process of gathering information, organizing information, constructing the project, and sharing the project. Over time, the project-based learning PD incorporated more rigorous elements of project-based learning as prescribed by the Buck Institute for Education. Technology integration PD introduced Facilitators to Mac OS and web-based tools and provided guidance on how these tools could be used to promote 21st century skills. Technology integration PD included sessions such as "Integrating Web Tools into the Classroom," "Web Tools and the 21st Century Classroom," and "Utilizing Technology to Demonstrate Student Learning."

CollegeYES had an annual performance measure of 80% attendance at each professional development session. Evaluators tracked attendance to assist in reporting this data in the annual grant performance reports required by the U.S. Department of Education. Participation rates varied across program years, with higher rates of attendance in Year 2 and Year 3 and lower rates in Year 4 and Year

5. Table 9 shows that in Year 2 the performance measure was met for participation at project-based learning PD. In Year 3 the performance measure of an 80% attendance rate was met for the technology integration PD.

Table 12. Facilitator Rates of Participation in CollegeYES Professional Development

	Participation Rate			
	Year 2	Year 3	Year 4	Year 5
Project-Based Learning	84%	75%	53%	55%
Technology Integration	71%	83%	50%	45%

One explanation for why the Facilitators did not meet the attendance target for professional development is found in the profile of the typical Facilitator. In addition to the fact that Facilitators work in schools that have a longer school day and school year in comparison to the local district, they were also contracted for an extended workday that included mandatory after school tutoring. Many of the CollegeYES facilitators were also teacher leaders at their school (leading various student groups, serving as department chairs, and mentoring new teachers). Given this context, even with the incentive of extra duty pay, it remained a perpetual challenge to get full participation in CollegeYES PD. The lower participation rates in Year 4 and Year 5 are explained by Facilitator turn over in those years. In some instances, the turnover was due to internal promotion (i.e., leaving the classroom for a position in the Alliance Home Office) and in other instances it turnover was a result of teachers leaving Alliance. As a result of this turnover, the PD session in Year 4 and Year 5 often had a 50/50 split between new and returning facilitators. The Project Director had to present sessions for the new Facilitators that the veteran Facilitators had already attended, and as a result a number of veteran Facilitators stopped attending PD.

Ideally the PD should have been differentiated to meet the needs of new and veteran Facilitators; however, addressing the need to differentiation PD was challenging because there were limited days on the Alliance-wide calendar during which the Project Director could schedule CollegeYES PD, and because access to additional staff to present differentiated PD was limited. In an effort to address this problem, the Project Director enlisted the assistance of veteran Facilitators to lead some project planning and technology skills sessions for newer Facilitators, which they found useful, but this solution did not address the need for the Saturday PD session to meet the needs of Facilitators who had been implementing the program for three or four years.

COLLEGE YES FACILITATOR FEEDBACK AND OUTCOMES

PROFESSIONAL DEVELOPMENT FEEDBACK

Throughout the grant, CollegeYES Facilitators provided feedback on the professional development as well as the overall program. This section of the report provides a snapshot of the PD and program feedback that evaluators gathered through surveys and interviews. Overall, one of the aspects that teachers liked most about the CollegeYES PD was the opportunity to learn from and collaborate with each other. As one Facilitator stated, "The collaboration component of the session was extremely useful because we were able to share best practices on how to engage and retain STLs through the year and involve them in all processes of school activities." Overall, the feedback on CollegeYES professional development is positive. Facilitators report that various aspects of the training are useful, that their expectations are met, and that attending the training is a good use of their time. In particular, they enjoy having time to communicate with one another to get suggestions, sometimes to commiserate, but often to share best practices. They also appreciate the time to learn new technology skills, but want a lot more time to do so.

Table 13. Facilitators' Feedback on CollegeYES Professional Development

	Agree/ Strongly Agree (N=24)
My expectations for the training were met.	83%
There was an adequate balance between information and hands-on activity.	86%
There were adequate opportunities to ask questions.	92%
Participating in the training was a good use of my time.	84%
I learned things about technology integration that I didn't know before.	84%
The PD activities provided you with new ideas about how to integrate technology into the teaching and learning experiences in your classroom.	87%
Overall, the training was of high quality.	87%

The project director perpetually experienced time constraints imposed by the Alliance-wide master calendar, which limited the number of days and amount of time available to schedule CollegeYES professional development. One of the ways that the project director addressed the need to provide more and differentiated PD was to fund teachers' attendance at conferences. In Year 3, a number of Facilitators attended the Buck Institute Project-Based Learning Institute where they learned how to design, assess, and implement project-based learning in their classrooms. Additionally, in Year 4, five Facilitators attended the International Society for Technology in Education (ISTE) Conference, where they had the opportunity to attend multiple workshops, presentations, and keynote events.

Participation in these additional training activities was based on self-selection and assurance that the participants would present an overview of what they had learned.

FACILITATORS' PROGRAM OUTCOMES

Evaluators administered surveys to capture outcome data related to Facilitators' technology use behavior. The outcomes were positive, with the majority of Facilitators indicating that they were proactively integrating technology into their classroom. For example, 83% of teachers agreed that as a result of being a Facilitator, they were spending more time looking for web-based tools, resources, and digital content to use in their classroom. The majority of Facilitators also agreed that being a Facilitator increased the time they spend thinking about how to improve their technology skills (92%), thinking about how to use technology to teach their content standards (88%), and thinking about how to integrate project-based learning into their curriculum (83%).

Table 14. Teachers' Technology Use Behavior Attributed to Being a CollegeYES Facilitator

Being a CollegeYES Facilitator has increased the amount of time I spend…	Agree/ Strongly Agree (N=24)
Looking for web-based tools/resources that I want to use in my classroom	83%
Looking for web-based tools/resources I want my students to use	79%
Looking for web-based content to supplement my lessons	83%
Thinking about how I can use technology to teach my content standards	88%
Thinking about how to improve my technology skills	92%
Thinking about how to integrate project-based learning into my curriculum	83%

When asked to indicate if there were increases in certain technology use behaviors as a result of being a CollegeYES Facilitator, 83% of teachers indicated that their confidence in using technology and the frequency with which they share information about technology resources with their colleagues had increased. Over 70% of teachers indicated that the frequency with which they create opportunities for their students to create rather than consume digital content had increased as a result of being a CollegeYES Facilitator.

Table 15. Teachers' Increase in Technology Use as a Result of Being a CollegeYES Facilitator

Being a CollegeYES Facilitator has increased…	Agree/ Strongly Agree (N=24)
My confidence in using technology more frequently in my classroom	83%
My productivity because my basic technology skills have improved	75%
My creativity because I spend more time using technology tools/resources I never used before	79%
The frequency with which I share information about technology tools/resources with my colleagues	83%
The frequency with which I create opportunities for my students to be digital creators rather than digital consumers	71%
The time I spend collaboratively planning with content area colleagues around the use of technology	67%

FACILITATOR SUGGESTIONS

Facilitators provided feedback and offered suggestions about how to improve the CollegeYES program. The suggestions are related to three of the four key components of CollegeYES: Student Technology Leaders, TechYES projects, and Professional Development. Below are some of the suggestions and the extent to which they were addressed.

Student Technology Leaders		
Facilitator Suggestion	Basis for Suggestion	Program Response
Develop criteria for selecting STLs	Some STL Clubs had STLs with persistently low attendance at club meetings as well as poor behavior	The program provided guidance on selecting STLs via an application and interview process. Guidance was also provided regarding establishing STL Club participation rules and consequences for violating the rules, including expulsion from the club.
Provide an opportunity for STLs across sites to share best practices face-to-face	CollegeYES faced a perpetual challenge in creating a virtual community of participants. Regardless of the platform (i.e., Ning, Edmodo)	The Project Director requested quarterly reports from participating schools, which were used to disseminate information regarding site-based program

Student Technology Leaders		
Facilitator Suggestion	Basis for Suggestion	Program Response
	maintaining a robust communication forum was difficult, thus inhibiting cross-site sharing.	successes via email to all participants.
Provide a checklist of technology skills STLs should learn by the end of the year	The initial cohort of participants (SY2011-12) wanted guidance on how STLs should be using their meeting time when they were not assessing TechYES projects.	In Year 3, the TechYES website was updated to include an ISTE NETS*S (National Educational Technology Standards for Students) tracker. This allowed students and teachers to easily identify which skills had been met and which had not.

TechYES Projects		
Facilitator Suggestion	Basis for Suggestion	Program Response
Provide examples of rubrics that can be used to assess project-based learning projects	The TechYES Student Guide provides guidelines on how to assess projects; Facilitators wanted additional guidance in the form of a rubric.	The program responded to this need by adding a feature to the TechYES website that allowed teachers to create rubrics for student projects. Facilitators also attended a CollegeYES PD session that was focused specifically on the Buck Institute PBL Rubric.
Provide a monthly guidebook for activities and deliverables, with particular attention to structured activities that STLs can do when they are not assessing projects	Many schools experienced extended periods of "down time" in the beginning of each term and Facilitators were unsure of how to fill the meeting time.	The program did not provide Facilitators with monthly guidance, but the Project Director did develop an STL Club Guidebook that included required and suggest STL activities. An example a required activity was to plan and present Internet Safety training. An example of a suggested activity was to plan and present teacher training.
Have the project director provide	The CollegeYES program	While the Project Director did not

TechYES Projects		
Facilitator Suggestion	Basis for Suggestion	Program Response
face-to-face support for project-implementing teachers	uses a train-the-trainer model for teacher PD; however, as the program expanded across grade levels, this model was not sufficient to meet the needs of all science and Advisory teachers who were required to implement TechYES projects.	have the capacity to provide in person training at every school, a triage system was used to provide face-to-face training at schools at the greatest risk for not completing TechYES projects without this additional support.

CollegeYES Professional Development		
Facilitator Suggestion	Basis for Suggestion	Program Response
Provide facilitators with more hands-on, tech-focused PD	Facilitators were concerned about being able to lead the STLs if their own technology skills were basic.	Beginning in Year 3, multiple technology-focused PD sessions were offered to introduce Facilitators to new tools and resources they could use right away. Additionally, some schools provided time for their STLs to lead teacher training on a particular technology resource.
Differentiate PD for teachers who have been in the project multiple years	While some schools experienced Facilitator turnover, other schools maintained the same Facilitators throughout the grant.	To address the need to differentiate PD for experienced Facilitators, the program supported Facilitator attendance at off-site conferences and invited those who attended these conferences to present at CollegeYES PD sessions.
Provide an exemplary PBL project to help Facilitators and STLs improve their understanding of well-developed PBL	Project-based learning was a new concept to many Facilitators who supported CollegeYES.	The program addressed this need in two ways. First, the ability to "showcase" a student project was added to the TechYES website. This created a repository of well-developed projects to which Facilitators and STLs across sites could refer. Second, the Project Director

CollegeYES Professional Development		
Facilitator Suggestion	Basis for Suggestion	Program Response
		selected a group of Facilitators who attended the Buck Institute PBL training to serve as PBL leads and generate exemplar models of science and college/career focused PBL project to which Facilitators could refer.

STUDENT TECHNOLOGY LEADERS

Student Technology Leaders are a critical component of the CollegeYES project. They receive training in the summer, they meet weekly during the school year, and they are regarded as leaders by students and faculty on their respective campus. During the 2011-12 school year, there were 131 STLs across 12 high school campuses. By the 2014-15 school year there were 295 STLs across middle school and high school, including STLs from one expansion middle school and one expansion high school.

Table 16. Number of STLs by School Level and Project Year

	Number of STLs			
	Year 2 (2011-12)	Year 3 (2012-13)	Year 4 (2013-14)	Year 5 (2014-15)
High School	131	175	183	184
Middle School	–	87	84	111
Total	131	262	267	295

STL RESPONSIBILITIES

The STL role evolved over the course of the grant, but their core responsibilities remained the same throughout the grant. One STL responsibility is to assist teachers and students with the technology support they need to complete the TechYES projects. This support is given in the form of technical assistance, assistance with the TechYES website, and training on technology tools used to develop the projects. The other project-related activity for which STLs are primarily responsible is assessing students' TechYES projects. During their Club meetings, the STLs learn how to assess projects based on the TechYES rubric and they also practice role-playing how to give peer feedback.

The process by which STLs "claim" students' projects from the TechYES website, peer review them, and provide written and face-to-face peer feedback, are signature aspects of the TechYES program after which CollegeYES is modeled. STL project assessment has an impact on all program stakeholders. For STLs it builds organizational, project management, and communication skills; for teachers, it frees up their time to focus on assessing projects for content because the STLs have already checked for things such as broken hyperlinks, appropriate design elements, and appropriate use and citing of copyrighted materials; for students, the feedback provides an opportunity to improve their work to meet the ISTE standards required to earn technology certification.

STL CLUB MEETINGS

Each participating CollegeYES school operates an STL Club that should include two facilitators and at least 12 Student Technology Leaders. Most schools met or exceeded the recommended number of SLTs, but a few (CRAHS #16, Simon Tech, and Luskin) had less than 12 STLs. One of the reasons it is important for STL Clubs to maintain at least 12 members is that having fewer than 12 creates an unmanageable burden on STLs during the time they are assessing students' TechYES projects.

STL CLUB ACTIVITIES

During Year 2 and Year 3, STL Club activities consisted primarily of claiming students' TechYES projects, assessing them, and providing peer feedback. While STL roles and responsibilities expanded, their primary responsibility to oversee the assessment of TechYES projects remained the same throughout. In survey feedback collected by the evaluator, most STLs indicated that they felt that they were spending enough time during Club meetings to meet their TechYES responsibilities.

Table 17. STLs' Rating of the Amount of Time They Spent Doing Various Club Activities

STL Club Activity	Percent Who Responded "Just Right"
Learning how to use new technology	83%
Learning how to use the TechYES website	80%
Working on your own TechYES Science Project	82%
Working on your own TechYES College/Career Project	78%
Going into other classes to help students with their projects	71%
Planning how to assess all of the other students' projects	79%

STL Club Activity	Percent Who Responded "Just Right"
Assessing student projects	70%

In the first year of implementation Facilitators were concerned that there was a lot of down time during the STL Club meetings. The Clubs were operating with limited guidance regarding activities and goals for the year beyond facilitating the TechYES project process. During this phase of implementation, participating schools were still trying to figure out if and how they were going to utilize the STLs beyond TechYES project support. During Year 3, schools, to varying degrees, began to define the role and function of their STL Clubs. In some regard, the middle schools, new to the project, were more willing to have a "take the ball and run" approach to defining what they wanted their STLs to do and how they wanted the club to function at their school. As STL roles became defined and Facilitators began sharing how they were managing their STL Clubs, the activities in which STLs were engaged expanded to include the following:

- Preparing class/school presentations to introduce the STL Club to teachers and students
- Planning Internet safety presentations
- Planning technology training for teachers
- Developing iMovie videos
- Creating/maintaining school website
- Laptop/laptop cart maintenance
- Reviewing expectations for STL conduct
- Learning new technology skills
- Debriefing on status of student projects and STL project-related tasks

OUTCOMES FOR STLS

STL experiences varied across campuses, but overall, the experience was rewarding. The majority of middle school (88%) and high school (91%) STLs indicated that being an STL met or exceeded their expectations. One of the reasons so many STLs hold their experience in high regard is likely because of the leadership role STLs had on campus. Year 3 of the CollegeYES program coincided with the launch of an Alliance-wide 1:1 iPad initiative in 6^{th}-10^{th} grade. During Year 3 Summer Camp, the STLs were trained on the Common Sense Media Digital Citizenship curriculum and worked on preparing internet safety presentation for their peers. When schools launched their iPad deployment, STLs stepped in and took a prominent role in assisting with device deployment of over 9700 iPads and training students on how to use the devices. Prior to the iPad roll out, the STLs were responsible for maintain the laptop cart, so they were already familiar with being responsible stewards of the school's technology.

In addition to taking on this significant leadership responsibility, STLs also exhibited leadership in the following ways:

- Checking out/checking in laptops
- Taking club attendance
- Leaving advisory/elective period to assist teachers/students with TechYES projects
- Managing student logins and passwords for TechYES site
- Setting agenda for club meeting
- Providing technology training/presentations to teachers
- Providing technology support to parents
- Running a lunch time or after school computer lab
- Presenting at Alliance-wide teacher professional development days

TECHNOLOGY AND 21ST CENTURY SKILLS

By performing the duties of their role as Student Technology Leaders, the STLs were able to develop technology skills and 21st century skills. The figure below shows the software and web 2.0 tools that STLs learned how to use as well as the self-reported 21st century skills they developed.

Technology Skills	21st Century Skills
• Keynote, PowerPoint, Prezi • Microsoft Word, Google Apps • Coding (HTML, CSS, JavaScript) • iMovie (creating, editing, uploading) • Garageband, Photoshop. Illustrator • Web sites (Weebly, Wix, Google Sites) • Glogster, Padlet, Screencast-o-matic	• *I learned how to properly cite sources* • *I learned how to be more open minded* • *I learned how to organize my ideas* • *I learned how to manage time wisely* • *I learned how to work with all grade levels* • *I became better at communicating and speaking publicly*

STL FEEDBACK

STLs provided feedback on the aspects of being an STL which they enjoyed most as well as feedback on their experience as STLs. The majority of middle school (94%) and high school (95%) STLs indicated that they were glad they had the opportunity to be an STL. Among high school STLs, 91% identified being part of a school club as one of the reasons they liked being an STLs. Many of the high school STL

clubs included students who, for various reasons, were not traditionally involved in other school activities. The STL Club gave these students, some of whom had IEPs, an opportunity to engage with their peers and faculty in ways they might not otherwise have been able to do. For example, 80% and 87% of high school and middle school STLs, respectively, indicated that they liked helping other students with technology. STLs also reported that their technology and communication skills had improved, along with their confidence and self-esteem.

Table 18. What Students Liked about Being an STL

	Percent of Respondents	
	High School (N=174)	Middle School (N=123)
Being part of a club at my school	91%	73%
Working with technology	86%	94%
Being recognized as an STL by teachers	73%	61%
Being recognized as an STL by my peers	63%	63%
Helping other students with technology	80%	87%
Helping teachers or administrators with technology	67%	62%
Helping with iPad distribution	58%	63%
Getting to do things on campus that other students didn't get to do	73%	69%
Becoming friends with STLs in other grades	77%	68%

Table 19. Student Feedback on Their STL Experience

	Percent Who Agree/Strongly Agree	
	High School (N=174)	Middle School (N=123)
Being an STL was fun	91%	93%
I'm glad I had the opportunity to be an STL	95%	94%
I learned things about technology that I didn't know before	91%	91%
I felt respected by my STL Club Facilitators	92%	93%
I felt respected by my peers	91%	85%

	Percent Who Agree/Strongly Agree	
	High School (N=174)	Middle School (N=123)
I felt respected by teachers	95%	92%
Being an STL improved my technology skills	88%	93%
Being an STL improved my communication skills	86%	80%
Being an STL increased my interest in careers I hadn't considered before	79%	81%
Being an STL increased my confidence	85%	78%
Being an STL improved my self-esteem	79%	76%
Activities I did as an STL helped me take school more seriously	81%	86%

TECHYES

TECHYES STUDENT GUIDE

Alliance's i3 partner, GenYES, provided the foundation for the project-based learning and student technology certification components of the CollegeYES project. These components of the project were supported by the TechYES Student Guide and the TechYES website, each of which facilitated student' ability to engage in the primary intervention of CollegeYES, developing TechYES science and TechYES college and career related projects.

The TechYES Student Guide is a guidebook designed by GenYES to help students navigate the process toward earning their technology literacy certification. The Guide provides students with samples that demonstrate the Gather, Organize, Construct, and Share project-based learning framework upon which the projects are built and assessed. CollegeYES students and teachers used the samples as a guide, but each class worked on projects based on their own guiding questions. The Guide also includes a project evaluation form that mimics the form found on the TechYES website.

TECHYES WEBSITE

Over the course of the five-year grant, the TechYES site evolved to meet the needs of teachers and students. The TechYES website is the hub of all TechYES activity. It is the place where teachers manage their classes and push out lesson plans; where students upload their project plans and links to their completed projects; and where student technology leaders and teachers access projects in order to

evaluate them. The websites also house the database that tracks students' progress toward earning technology certification, provides access to various aggregated and disaggregated data reports, and provides a framework for teachers to develop Common Core aligned lesson plans and rubrics.

Each participating school accessed the TechYES website through a unique URL assigned to their respective school. Within the TechYES site a teacher can create a lesson plan with the option to include: Project Title, Project Purpose, Student Instructions, Resources, Common Core and Next Generation Science Standards Addressed, and Performance Objectives. A teacher can also create an Assessment Rubric that may include the following: Academic Content, student's Project Plan, Content Accuracy, Originality, Information Sources, Oral Presentation, Language Mechanics, Self-Assessment, Working with a Team, and Technology Integration. Once the lesson has been set up, students assigned to the teacher's class can create a new project. The student's online project plan should include the following: Project Description, Due Date, Technologies Used, Project Purpose, Project Audience, Why the Project Will Be Creative, Data Collection, and How Technology Will Be Used to Gather, Organize, Construct and Share.

The TechYES website is designed to support an 8-step process for developing, completing, assessing, and showcasing projects. The 8-step process is as follows: (1) Create a lesson plan (teacher); (2) Create an Assessment Rubric (teacher); (3) Plan and Create Student Projects (students, including STLs); (4) Align Projects to Standards (teachers, which then populates students' Project Plan with appropriate standards addressed); (5) Store Projects in Student Portfolios (students, including STLs); (6) Assess Academic Achievement (students self-assess, teachers); (7) Assess ISTE NETS proficiency (STLs, teachers); and (8) Showcase Exemplary Projects (teacher).

TECHYES WEBSITE BARRIERS TO IMPLEMENTATION

Students were required to submit a plan prior to creating their projects. While most students met this requirement, many submitted their plans offline, and this practice which occurred during each year of implementation had implications for program outcomes. When a project plan does not exist and/or a project is not self-assessed, it affects the STLs ability to claim a student project. Unclaimed projects do not get peer and teacher assessed, and consequently, un-assessed projects do not get counted as completed projects.

TECHYES CERTIFICATION

The International Society for Technology in Education (ISTE) National Educational Technology Standards (NETS) for students are the criteria by which projects are evaluated to determine students' eligibility for TechYES certification. A TechYES certification is a nationally recognized indicator that

students have successfully met performance-based criteria to show that they are technology literate. During Year 2 of the CollegeYES project, students received TechYES certification if they completed one science and one college/career project. At that time, certifying students as technology literate if they had completed two projects following the TechYES Student Guide protocol of "gather, organize, construct, and share" was the standard procedure for Alliance's partner, GenYES.

At the end of Year 2 and transitioning into Year 3, GenYES, in consultation with ISTE, decided to make the TechYES certification process more rigorous by requiring that students' projects, collectively, satisfy 21 of the 24 ISTE NETS. GenYES worked on upgrading the TechYES website to include descriptions of the 24 ISTE NETS as well as a tracking system to monitor which standards had been met as students completed their projects.

Unfortunately, the updates were not completed prior to convening the facilitators and STLs at the CollegeYES Summer Camp in July 2012. This was a missed opportunity to provide training on the new tools and how to apply them. In the absence of formal training on the new tools, many teachers, facilitators, and STLs did not utilize them during Year 3. The outcome of this is reflected in the number of students who were technically eligible for TechYES certification in Year 3. Because the change to the site occurred after the project year started, the project director determined that it was unfair to penalize students who were expecting to be certified after completing two projects, as their peers had been in the previous school year.

While Year 3 students were grandfathered into the old assessment system, thus solving the certification problem temporarily, the fact remains that there is still uncertainty among participants about how students become TechYES certified. Not enough training has gone into explaining the process. As one facilitator shared during her end-of-year interview, "If [the student summary is] green indicating that they completed two projects, does that mean a certificate is automatically generated? A lot of the students are asking about the number in terms of how many standards they have to meet. They are wondering why some students have the colors [associated with the standard] shaded and some don't. I don't know how to answer that. Can we remove the numbers and colors because I don't know what it means and the students are freaked out about it." Teachers should be aware of how the system tracks students' progress toward achieving the ISTE NETS standards, they should be aware that they can monitor students' progress in meeting the standards, and that the system is designed for them to use these data to guide student projects so that subsequent projects can meet the standards that have not yet been met. For example, if a student is showing that she met 10 out of 24 ISTE NETS standards by completing her science project, then her advisory teacher should be guiding her to develop a college/career project that helps her meet at least 11 more standards that she still needs to become TechYES certified.

The information is readily available on the TechYES website, but there is not a good indication that teachers are aware of this resource, how to use it, or why it is important to use it. One indicator that the resource is not being used is the number of teachers in Year 3 who should have implemented a TechYES science or college/career project, compared to the number who actually created a TechYES site login to track and monitor their students' projects. Only 51 (30%) out of a possible 170 6th, 9th, or 10th grade teachers who should have guided students in a TechYES project, actually had a TechYES account. Note that this indicator does not mean that student projects did not get done (when teachers did not create accounts, facilitators managed student projects on the TechYES website), but it does support facilitators' contention that there is not school-wide buy in for the TechYES projects. It also means that students and teachers are not getting the maximum benefits that are available by using the tools and resources that the TechYES site provides.

MEETING THE ISTE NETS

There are six domains in the ISTE NETS: Creativity and Innovation; Communication and Collaboration; Research and Information Fluency; Critical Thinking, Problem Solving, and Decision Making; Digital Citizenship; and Technology Operations and Concepts. Each of the six domains has four standards. Ninth grade students need to meet 21 out of 24 standards by the time they complete their two TechYES projects in order to receive TechYES certification at the end of the school year. Beginning in Year 3 (SY 2012-13), high school students who did not meet at least 21 standards were able to carryover their progress-to-date into the next school year and work towards meeting additional standards as they continued to work on TechYES projects in subsequent grade levels. The expectation for middle school students is that they would have until the end of 8th grade to meet 21 of the 24 standards, though some earned their certification prior to 8th grade.

Beginning in Year 3, the TechYES website included the capability to track students' progress toward meeting the ISTE NETS*S. Other functionality included the ability to generate reports that showed the percentage of projects that met each of the ISTE standards, disaggregated by school site, as well as the aggregated (middle school and high school) percentage of students who met each of the standards.

CREATIVITY AND INNOVATION

The majority of middle school and high school student projects met two of the four standards under the Creativity and Innovation domain. On average, 85% of middle school projects and 86% of high school projects met the standards, "Apply existing knowledge to generate new ideas, products or processes." Eighty-five percent of middle school and high school projects met the standard, "Create

original works as a means of personal or group expression." The two standards in this domain that were met by a much smaller percentage of middle school and high school students were, "Use models and simulations to explore complex systems and issues," and "Identify trends and forecast possibilities." This outcome reflects the project-based learning focus of CollegeYES projects. In both their science classes and their Advisory or elective classes, students developed TechYES projects around a central guiding question of concern to them and utilized newly acquired technology skills to produce the projects. At the aggregate student level, meaning all middle school and high school students who submitted projects during Year 3-Year 5 of the grant, 60% of students met standard 1a, 60% met 1b, 23% met 1c, and 18% met 1d.

Table 20. Average Percentage of CollegeYES Projects Meeting ISTE Standards in the Creativity and Innovation Domain

		Average Percentage of Projects Meeting Standard	
NETS*S Standards		Middle School (n=7)	High School (n=13)
1a	Apply existing knowledge to generate new ideas, products, or processes	85%	86%
1b	Create original works as a means of personal or group expression	85%	85%
1c	Use models and simulations to explore complex systems and issues	17%	32%
1d	Identify trends and forecast possibilities	10%	23%

COMMUNICATION AND COLLABORATION

Of the four standards under the Communication and Collaboration domain, an average of 96% of middle school and high school students met the standard, "Communicate information and ideas effectively to multiple audiences using a variety of media and formats." Fewer students met the standards associated with engaging with learners from other cultures and contributing to a team project, because CollegeYES projects were focused on solving problems affecting the local community and most students worked on their projects individually rather than in groups. At the student level, 39% of students met standard 2a, 62% met standard 2b, 16% met 2c, and 27% met 2d.

Table 21. Average Percentage of CollegeYES Projects Meeting ISTE Standards in the Communication and Collaboration Domain

		Average Percentage of Projects Meeting Standard	
NETS*S Standards		Middle School (n=7)	High School (n=13)
2a	Interact, collaborate, and publish with peers, experts, or others employing a variety of digital environments and media	37%	41%

2b	Communicate information and ideas effectively to multiple audiences using a variety of media and formats	96%	96%
2c	Develop cultural understanding and global awareness by engaging with learners of other cultures	9%	21%
2d	Contribute to project teams to produce original works or solve problems	25%	30%

RESEARCH AND INFORMATION LITERACY

The CollegeYES project created a structure within which students could engage in project-based learning to solve authentic problems of their choosing. Engaging in this process required students to apply key 21st century learning skills such as gathering, organizing, and evaluating sources of information. Over 75% of middle school and high school projects met the standards under the Research and Information Literacy domain that are associated with critical thinking skills. At the student level, 30% of students met standard 3a, 58% met standard 3b, 60% met standard 3c, and 38% met standard 3d.

Table 22. Average Percentage of CollegeYES Projects Meeting ISTE Standards in the Research and Information Literacy Domain

		Average Percentage of Projects Meeting Standard	
NETS*S Standards		Middle School (n=7)	High School (n=13)
3a	Plan strategies to guide inquiry	45%	25%
3b	Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media	76%	78%
3c	Evaluate and select information sources and digital tools based on the appropriateness of specific tasks	86%	85%
3d	Process data and report results	31%	47%

CRITICAL THINKING, PROBLEM SOLVING, AND DECISION MAKING

This domain includes standards related to identifying authentic problems, project management, generating problem solutions based on data analysis, and exploring alternate solutions. Most of the student projects met the standard, "Plan and manage activities to develop a solution or complete a project." A higher percentage of middle school projects compared to high school projects met the standard, "Collect and analyze data to identify solutions and/or make informed decisions." At the student level, 43% of students met standard 4a, 59% met standard 4b, 29% met standard 4c, and 36% met standard 4d.

Table 23. Average Percentage of CollegeYES Projects Meeting ISTE Standards in the Critical Thinking, Problem Solving, and Decision Making Domain

		Average Percentage of Projects Meeting Standard	
NETS*S Standards		Middle School (n=7)	High School (n=13)
4a	Identify and define authentic problems and significant questions for investigation	41%	57%
4b	Plan and manage activities to develop a solution or complete a project	83%	84%
4c	Collect and analyze data to identify solutions and/or make informed decisions	43%	25%
4d	Use multiple processes and diverse perspectives to explore alternative solutions	31%	41%

DIGITAL CITIZENSHIP

The CollegeYES project evolved to include the Common Sense Media digital citizenship curriculum. Student Technology Leaders (STLs) were introduced to the curriculum during their summer training and then worked together to prepare digital citizenship presentations for their peers. As a result of this effort to ensure that students made safe and legal decisions, most of the middle school and high school projects met the standards for responsible use of information technology and exhibiting digital citizenship. At the student level, 58% of students met standard 5a, 34% met standard 5b, 31% met standard 5c, and 59% met standard 5d.

Table X. Average Percentage of CollegeYES Projects Meeting ISTE Standards in the Digital Citizenship Domain

		Average Percentage of Projects Meeting Standard	
NETS*S Standards		Middle School (n=7)	High School (n=13)
5a	Advocate and practice safe, legal, and responsible use of information and technology	77%	77%
5b	Exhibit a positive attitude toward using technology that supports collaboration, learning, and productivity	53%	31%
5c	Demonstrate personal responsibility for lifelong learning	49%	29%
5d	Exhibit leadership for digital citizenship	80%	81%

TECHNOLOGY OPERATIONS AND CONCEPTS

The standards in this domain include making effective and productive use of technology, troubleshooting, and transferring knowledge to the use of new technologies. Most middle school and high school projects met the standard, "Transfer current knowledge to learning of new technologies," but few projects met the troubleshooting standard or the standard related to understanding and using technology systems. At the student level, 37% of students met standard 6a, 39% met standard 6b, 24% met standard 6c, and 58% met standard 6d.

Table X. Average Percentage of CollegeYES Projects Meeting ISTE Standards in the Technology Operations and Concepts Domain

		Average Percentage of Projects Meeting Standard	
NETS*S Standards		Middle School (n=7)	High School (n=13)
6a	Understand and use technology systems	57%	34%
6b	Select and use applications effectively and productively	38%	44%
6c	Troubleshot systems and applications	21%	22%
6d	Transfer current knowledge to learning of new technologies	77%	77%

TECHYES PROJECTS

Over the course of four project implementation years, students in grades 6-10 created nearly 21,000 TechYES science and college/career focused projects. In the first year of project implementation, virtually all 9th grade students at the 12 participating high schools completed two projects. As the project expanded into multiple grades and more teachers were participating in the project, it became more challenging to get 100% participation at all school sites. The primary reason for this is that the train-the-trainer model that CollegeYES hoped to implement did not get the traction that had been hoped for. As a result of limited training on how to facilitate a project-based learning (PBL) lesson, all of the teachers who could have facilitated projects did not do so.

There were also a number of site-based contextual factors that affected project completion, such as changes in school leadership, staff departures, and transitions to new school buildings. Another factor that affected the total number of reportable project completions is that fact that more students did projects than actually uploaded them on the TechYES site. Each year we had schools encounter technical issues that prohibited them from uploading projects on the TechYES site, which maintains the database that we use to track project completion. For example, some students developed iPad Apps, but were not able to upload them onto the site. Second, at every school except Health Services, the 6th or 9th grade science teacher was also a CollegeYES facilitator. This means the teacher

responsible for project implementation was exposed to CollegeYES PD on project-based learning and technology integration. This would be the case for at least one of the Advisory teachers at each school as well, but it should be noted that the majority of 6th-10th grade teachers responsible for implementing either a TechYES science or college/career project, did not participate in CollegeYES PD. We maintained a train-the-trainer model throughout the grant because as we've mentioned in previous APRs, the Alliance-wide PD and site-based PD calendars made it difficult for us to expand CollegeYES-focused PD to other teachers. The days were just not on the calendar and over the course of the grant, only a few project-implementing teachers who were not facilitators attended our CollegeYES Saturday PD sessions. Third, some teachers saw project completion as a forced-compliance add-on activity and in doing so they often pushed the TechYES projects to the "back burner." As a result, while the majority of targeted students had exposure to CollegeYES, they did not all have adequate time to complete the project cycle (gather, organize, construct, share) in time to upload their projects, and thus have them counted.

TECHYES SCIENCE PROJECTS

As the name implies, the TechYES science project was developed in students' grade specific science class. In the first year of project implementation (SY2011-12), in an attempt to be prescriptive for the purposes of the research design, schools were required to introduce and complete the science project in the fall semester and the college/career project in the spring. Based on feedback from CollegeYES facilitators and teachers implementing the project, this requirement was relaxed in subsequent years and teachers were allowed to implement the TechYES project based on when they thought it best fit into their curriculum. During SY2011-12, the project was implemented in 9th grade Biology and Earth Science classes, and all of the teachers required to implement the project were also CollegeYES facilitators. Alliance schools are small by design and typically there is only one teacher assigned to each grade level content area, so the 9th grade science teacher facilitated TechYES project completion for all 9th graders in a given school year. In theory, this implementation model was intended to hold true for subsequent years when the project expanded into multiple grades. However, at the 10th grade level the CollegeYES project saw an ebb and flow with 10th grade science teachers' level of participation. This is primarily attributable to 10th grade teachers' access to and participation in project-based learning professional development. Over the course of the grant, 56 6th through 10th grade science teachers facilitated the completion of TechYES science projects.

The rate at which students completed TechYES science projects was the highest in Year 4 and lowest in Year 3. For the purposes of reporting, a project was considered "complete" if it had gone through the entire design process, which includes submitting a project plan, creating a project, documenting a self-assessment, which then triggers the STL and teacher assessment. There was limited capacity to

upload projects in Year 2, but in Year 3-5, project completion also required uploading the project or a link to the project on the TechYES website. Based on these criteria, completion rates dropped from 73% in Year 2 to 58% in Year 3. In Year 3 the completion rate was affected by the fact that many students and teachers were not familiar with how to manage projects on the TechYES site, as the site redesign was launched after the Year 3 CollegeYES Summer Camp kickoff. As a result, many students did not self-assess their projects on the website. This is not only an important step in the instructional process, but also in the project evaluation process. If a student does not self-assess, the TechYES site does not trigger an alert to STLs and teachers that the project is uploaded and ready to be claimed for ISTE NETS evaluation purposes. While a student may have received a class grade for completing the project, the project was not counted as completed according to CollegeYES/TechYES requirements. Unfortunately, students' whose projects were not uploaded to the site because of bandwidth issues and TechYES site capacity (i.e., students who developed iMovies and iPad apps) were also not included in the count of completed projects because they had not triggered the TechYES evaluation process, which is critical to the model. This explanation is intended to provide context for the project completion data tables shared below, and to indicate that far more students worked on and completed projects, than what we are able to accurately report on below. The TechYES science project completion rates for Year 2 through Year 5 is as follows, with "n" indicating the total number of students across participating grades in each year: Year 2, 73% of students (n=1748); Year 3, 58% of students (n=4196); Year 4, 778% of students (n=5422); and Year 5, 60% of students (n=5381).

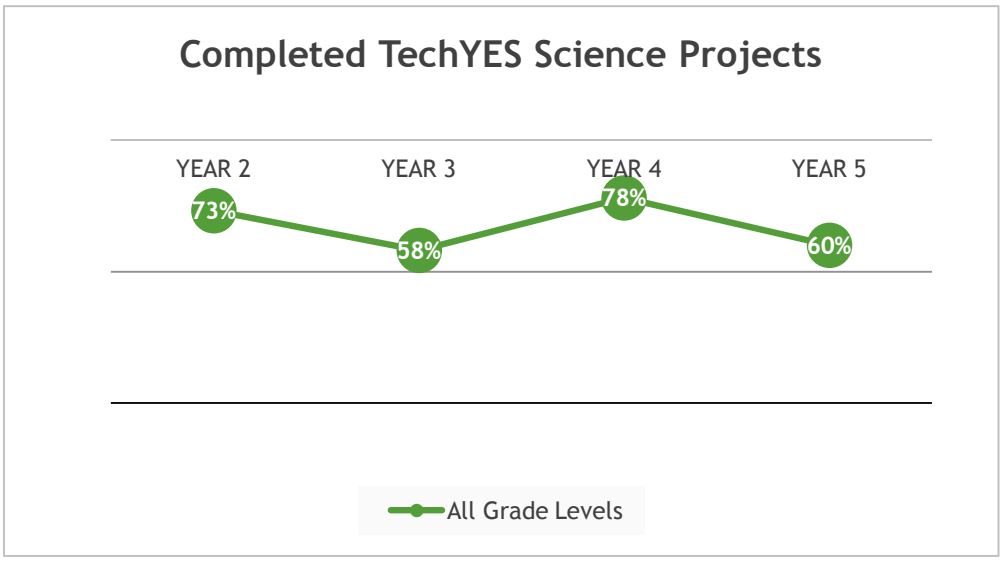


Figure 1. TechYES Science Project Completion by Project Year

When project completion data are disaggregated across grade level, we see completion for 6th through 9th grade at a low of 71% for 9th graders across Year 2 through Year 5 and a high of 76% for

grades six through eight. The TechYES science project completion rate for 10th grade was 52% in Year 2 through Year 5.

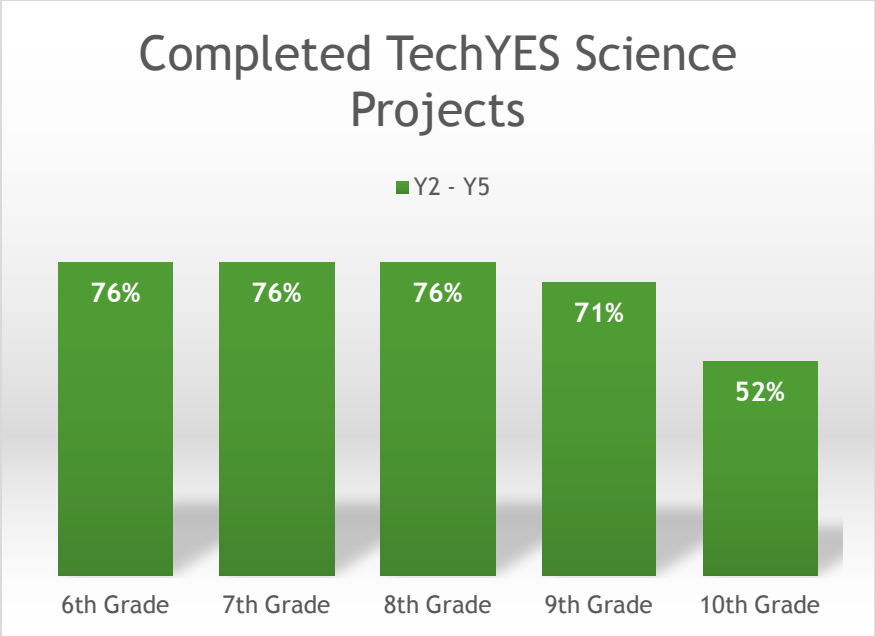


Figure 2. TechYES Science Project Completion by Grade Level

TECHYES COLLEGE AND CAREER PROJECTS

Students developed college or career focused projects primarily in their Advisory class or an elective class; however, when Alliance adopted a 1:1 iPad program for all 6th through 11th grade students, a number of schools utilized the Advisory period to hand out and collect iPads. As a result, participating schools creatively managed completion of the college or career project in English, health and other class periods. Unlike science classes where only one teacher is assigned the content area per grade level, there are multiple Advisory teachers per grade level, and some Advisory teachers' primary teaching assignment is in a core content area at another grade level. For example, an 12th grade English teacher could be a 9th grade Advisory teacher. Over the course of the grant, the college and career project was completed in classes taught by over 280 teachers. In some cases, the Advisory or elective class teacher facilitated the TechYES project, and in other cases the CollegeYES facilitator pushed into the class to facilitate the project.

The rate at which students completed the TechYES college and career project was greatest in Year 2, when 73% of participating students completed the project. Completion of the college and career project declined in subsequent years, dropping to 60% in Year 3 and 56% in Year 4 and Year 5. A

number of factors contributed to the completion rate for college and career projects, including limited capacity for CollegeYES facilitators to train all Advisory teachers on how to plan and implement a project-based learning project, competing academic priorities within a shortened Advisory class period, and technology access issues. CollegeYES provided participating schools with iPads for Student Technology Leaders and CollegeYES facilitators, and each school received 30 laptops. Thirty laptops were not sufficient to meet demand as the project expanded into multiple grades. Also, since most Advisory teachers did not attend CollegeYES professional development, some of them lacked buy-in and perceived the requirement to facilitate a college and career project as a matter of compliance, rather than an opportunity to engage students in project-based learning. In those instances, where teachers approached participation from a compliance standpoint, the effort put forth to ensure completion of the projects according to the TechYES model, was diminished. There was a trickle effect to addressing project participation from a compliance standpoint. Most notably was the fact that insufficient time was allocated to working on the projects and there was typically a scramble to get them completed before the end of the term. This created a backlog of students waiting for access to laptops, which resulted in projects not being completed and/or completed, but not uploaded to the TechYES website for review by Student Technology Leaders. Projects that were not uploaded onto the TechYES site, were not counted as completed, even if the student received a grade for their course work. Completion rates shown in the figures below are based on the number of completed projects among the total number of participating students.

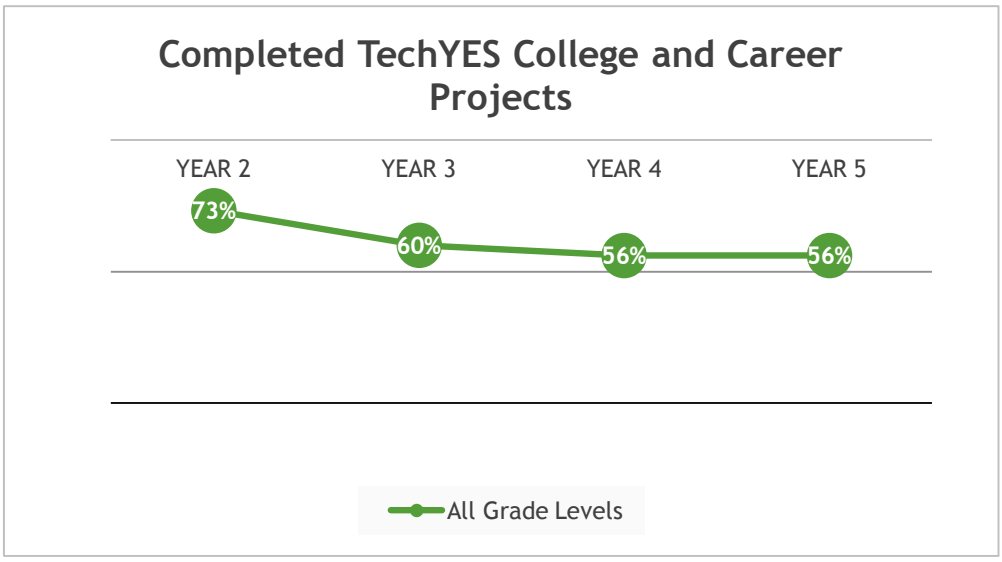


Figure 3. TechYES College and Career Project Completion by Project Year

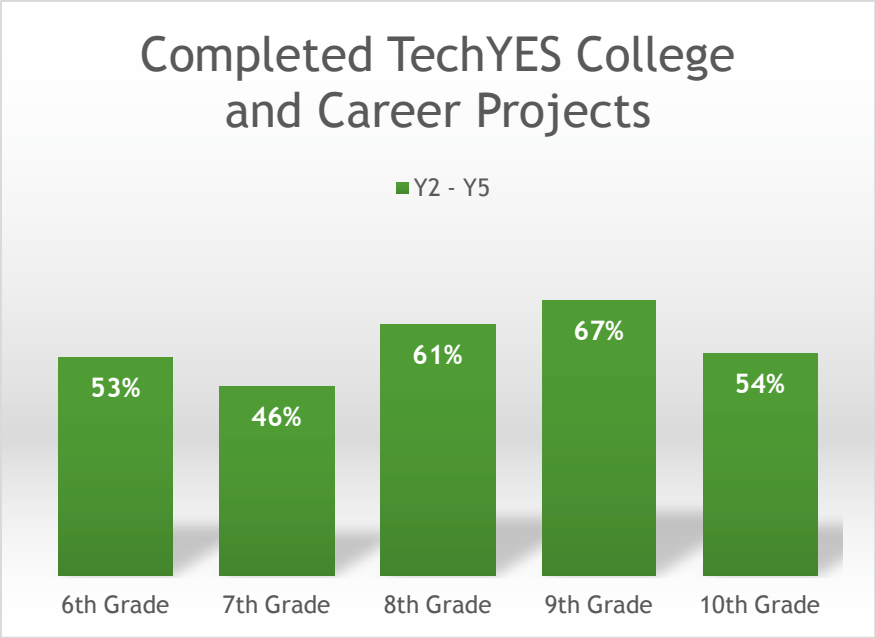


Figure 4. TechYES College and Career Project Completion by Grade Level

TOTAL NUMBER OF COMPLETED TECHYES PROJECTS

Over the course of the grant, students in 6th through 10th grade completed 20,893 TechYES projects. This includes 11,106 science projects, and 9,787 college and career projects. By school level, middle school students in 6th through 8th grade completed 3 ,569 TechYES science project and 2,477 TechYES college and career projects. High school students in 9th and 10th grade completed 7,537 TechYES science projects, and 7,310 TechYES college and career projects.

There was a substantially higher number of 9th graders who completed TechYES projects compared to other grades, because 9th grade was the entry point for CollegeYES participation. Over 1200 9th graders completed projects in Year 2 when the program was first introduced to participating schools, so this grade level has the highest number of completed projects because the total number includes four years of TechYES projects at the 9th grade level. Similarly, the number of projects completed at the 8th grade level is lowest because there was only one cohort of middle school students who completed projects in 6th, 7th, and 8th grade, but three years of project implementation at the 6th grade level and two years of implementation at the 7th grade level.

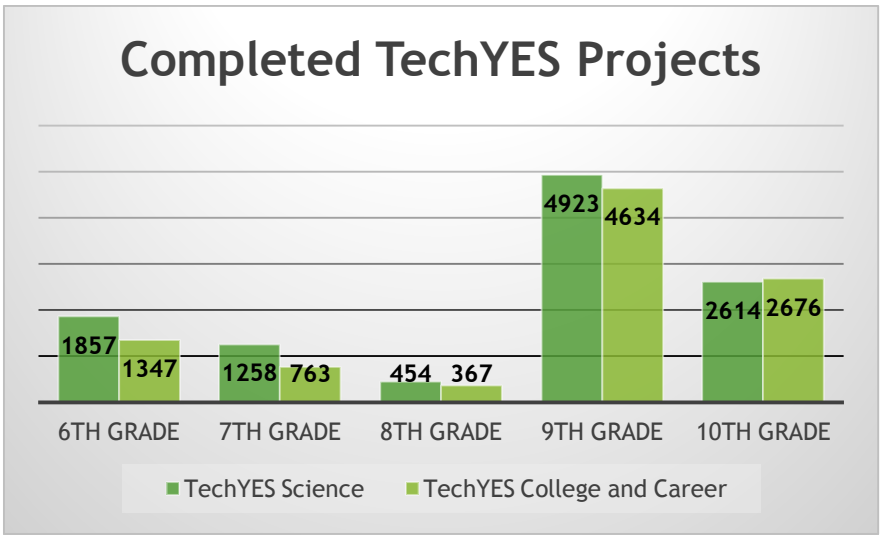


Figure 5. Total Count of Completed TechYES Projects by Grade Level

TECHYES TECHNOLOGY CERTIFICATION

One of the goals of the CollegeYES project was to increase the capacity of students to use technology to build 21st century learning skills. As a measure of progress toward reaching this goal, students worked toward earning their technology literacy certification as measured by the number of ISTE NETS*S their TechYES projects met. Students needed to meet 21 out of 24 ISTE standards in order to receive technology certification. The capability to track progress was a feature added to the TechYES website in Year 2 of the grant, and implemented at school sites during the 2012-13 school year. As such, there are three years of program data (Year 3-Year 5) upon which to report the number and percent of students who earned their certification.

Students at 16 of the 20 participating CollegeYES schools earned technology certification. The percentage of students at each school who earned certification ranged from a low of less than one percent, to a high of 71 percent. Overall, 1,161 (16%) students met a cumulative 21 out of 24 ISTE NETS*S. One reason this percentage is not higher is that teachers and students did not fully understand what was required to meet the ISTE standards. As such, many students created multiple projects (science and college/career in 9th and 10th grade) in which they repeatedly met the same standards rather than increasing the number of standards met with subsequent project submissions. Another reason the percentage of technology certified students is not higher is related to the issue mentioned previously in this report regarding all projects not being uploaded to the TechYES site. If a project was not uploaded to the site, it did not get assessed by STLs or a teacher and subsequently, the system generated tracking system that helps teachers and students monitor students' progress toward meeting the ISTE standards was not triggered. It is possible that student projects that did not

get uploaded to the TechYES site demonstrated evidence of meeting the standards, but there was no way to verify this, so the outcome is based on available data.

While less than one-fifth of students earned their technology certification, nearly 50% were close to earning certification. It is important to share this outcome because CollegeYES was implemented in schools where the grant-provided access to technology was the students' only touch with iPads and laptop computers. Data were tracked for students who met 15-20 of the ISTE NETS*S during Year 3 through Year 5 of the project. In Year 3, 305 6th, 9th, and 10th graders met 15-20 of the ISTE NETS*S on their TechYES science project and 365 students met 15-20 of the ISTE NETS*S on their TechYES college and career project. In Year 4, the number of students meeting 15-20 ISTE NETS*S increased significantly to 771 TechYES science projects and 472 TechYES college and career projects. There was also an increase from Year 4 to Year 5. In Year 5, 852 students met 15-20 ISTE NETS*S on their TechYES science project and 698 students met 15-20 ISTE NETS*S on their TechYES college and career project.

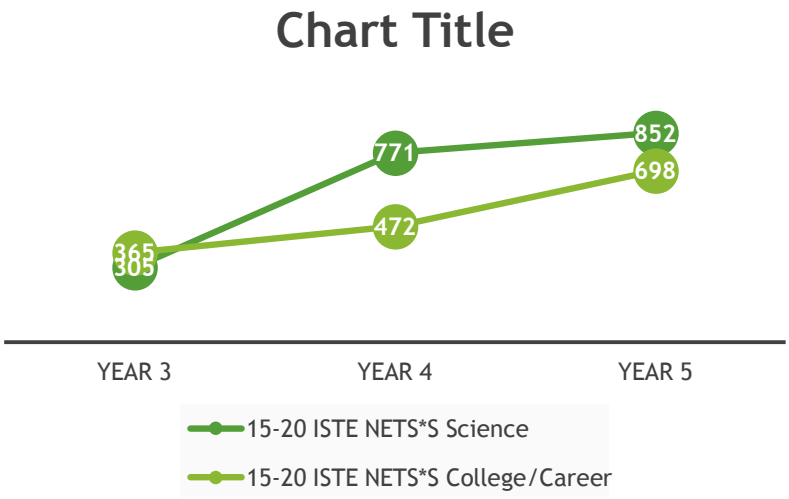


Figure 6. Number of Students Who Met 15-20 ISTE NETS*S

COLLEGEYES IMPACT STUDY

REASEARCH DESIGN

The study used a quasi-experimental design to assess the impact of CollegeYES on the science achievement and college readiness of participants. The impact study was based on four cohorts of 9th grade students enrolled in Alliance high schools. The treatment students were the three cohorts of ninth graders who enrolled after the CollegeYES program was implemented—the 9th graders in school years 2011-12, 2012-13 and 2013-14. The comparison students were the cohort of students who entered 9th grade in the same high schools in 2010-11, the year prior to the implementation of CollegeYES.

RESEARCH QUESTIONS

The CollegeYES impact study sought to answer two research questions:

1. For three cohorts of 9th grade students who receive CollegeYES during the i3 grant period (school years 2011-12, 2012-13, and 2013-14), performance on the Biology CST and end of course grade in the 9th grade biology course will be compared with the performance on the same measures of the cohort of 9th graders who were in the same schools in 2010-11, the year prior to the implementation of CollegeYES in high school.

2. For the first cohort of 9th grade students who receive CollegeYES in school year 2011-12, who will reach the 11th in the 2013-14 school year, the college-preparation behaviors (e.g., score on the California State University 11th grade early entrance assessment) will be compared with the performance on the same measure of the cohort of 9th graders who were in the same schools in 2010-11, the year prior to the implementation of CollegeYES in high school.

COMPARISON GROUP CONDITIONS

During Year 3, under the guidance of Abt Associates, the company conducting the national evaluation of i3 projects and providing technical assistance to i3 project evaluators, the CollegeYES research design was modified. In the original design submitted to Abt, the research design compared the outcomes of the CollegeYES project on the 2012-13 9th grade cohort with the 2010-11 9th graders who did not participate in CollegeYES. After review by Abt and guided by the research criteria set forth by the U.S. Department of Education's What Works Clearinghouse, it was determined that the strongest quasi-experimental design for CollegeYES was one in which outcomes were compared

between the 2011-12 9th graders (the first cohort to receive the CollegeYES "treatment") and the 2010-11 "untreated" 9th graders.

SAMPLE SELECTION

Eight out of 13 participating CollegeYES high schools were included in the treatment group. Three schools were eliminated because they did not offer Biology in the 9th grade, one school was eliminated because it was newly opened and 8th grade CST science scores could not be obtained for measures of baseline equivalence, the last high school was not included because it was one of our expansion schools that began the program in 2013-14. The included student-level demographic covariates were sex, free or reduced price lunch eligibility, and English Language Learner status (i.e., an indicator for current status and an indicator if the student was ever classified as ELL). The included student-level academic covariates were students' eligibility for special education services, students' 8th grade Science CST Scale Score, 8th grade ELA CST Scale Score, and 8th grade Math CST Scale Score. The school-year level covariates were the treatment indicator and an indicator of whether or not the school was identified as an Alliance BLAST (blended-learning model) school. For the purposes of analysis, Alliance generated a de-identified student data file that included student demographic data as well as outcome data.

CONFIRMATORY AND EXPLORATORY IMPACT FINDINGS

Participating in CollegeYES did not have an impact on students' outcomes for any of the dependent variables in the study. There were no significant differences between CollegeYES 9th graders, compared to Alliance 9th graders who did not participate in CollegeYES on the biology achievement domain: scale score on the Biology California Standards Test (CST), Biology CST proficiency indicator, Biology end-of-course grade. There were also no significant differences between CollegeYES participants and non-participants on the college readiness domain measured in 11th grade: California State University (CSU) early entrance assessment indicator in mathematics, and CSU early entrance assessment indicator for English.

Table 24. Impact Estimates for CollegeYES Confirmatory and Exploratory Contrasts for Cohort 1[17]

Contrast	CollegeYES (SY 2011-12)	No CollegeYES	Estimated Difference	Effect Size	P-Value
Confirmatory: Biology CST Scale Score	336.9	332.4	4.5	-.21	.951
Exploratory: Biology CST Proficiency	.38	.36	.02	.005	.886

[17] Cohort 1 is all students who were 9th graders during the 2011-12 school year

Contrast	CollegeYES (SY 2011-12)	No CollegeYES	Estimated Difference	Effect Size	P-Value
Exploratory: Biology Grade A or B	.47	.54	-.07	-.064	.266
Exploratory: College Readiness Math	.04	.06	-.02	-.019	.370
Exploratory: College Readiness English	.12	.09	.03	.010	.221
Sample Size	8 school level units				

Table 25. Impact Estimates for CollegeYES Exploratory Contrasts for Cohort 2[18]

Contrast	CollegeYES (SY 2012-13)	No CollegeYES	Estimated Difference	Effect Size	P-Value
Exploratory: Biology CST Scale Score	345.9	332.4	13.5	-0.62	.907
Exploratory: Biology CST Proficiency	.44	.36	.08	-0.041	.274
Exploratory: Biology Grade A or B	.45	.54	-.09	-0.149	.013
Sample Size	8 school level units				

Table 26. Impact Estimates for CollegeYES Exploratory Contrasts for Cohort 1 and Cohort 2[19]

Contrast	CollegeYES	No CollegeYES	Estimated Difference	Effect Size	P-Value
Exploratory: Biology CST Scale Score	340.6	332.4	8.2	.40	.907
Exploratory: Biology CST Proficiency	.41	.36	.05	-0.011	.689
Exploratory: Biology Grade A or B	.46	.54	-0.08	-0.099	.083
Sample Size	8 school level units				

[18] Cohort 2 is all students who were 9th graders during the 2012-13 school year
[19] Cohort 1 and Cohort 2 are all students who were 9th graders during the 2011-12 and 2012-13 school year