A Snapshot of OST Programs in Philadelphia: An Evaluation of Eleven 21st Century Community Learning Center Grantees

Prepared by Research for Action

April 2014

RESEARCH for ACTION

Jian Gao, Ph.D.

Brittan Hallar, Ph.D.

Tracey A. Hartmann, Ph.D.

About RFA

Research for Action (RFA) is a Philadelphia-based nonprofit organization. We seek to use research as the basis for the improvement of educational opportunities and outcomes for traditionally underserved students. Our work is designed to: strengthen public schools and postsecondary institutions; provide research-based recommendations to policymakers, practitioners, and the public at the local, state, and national levels; and enrich the civic and community dialogue about public education. For more information, please visit our website at www.researchforaction.org.

Acknowledgments

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Table of Contents

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EXECUTIVE SUMMARY

21st Century Community Learning Center (21st CCLC) grants are designed to support out-of-school time (OST) programs that provide academic support for youth attending high-poverty, underperforming schools. The programs also offer enrichment activities such as art and music, recreation, and career and technical education. Pennsylvania has funded 21st CCLC programs since 1998, and the 2011-12 awards are Pennsylvania's sixth cohort of grantees.

Of the Philadelphia organizations awarded 21st CCLC grants, 11 OST providers selected Research for Action (RFA) as their local evaluator. [1] RFA conducted a mixed-methods evaluation that examined student demographics, elements of program quality, and important student outcomes. We report aggregated findings in this report, and provide a set of recommendations for program improvement.

Student Participation

- The 21st CCLC programs enrolled students from underperforming schools.
- The 21st CCLC programs served a predominantly African-American and Latino student population.
- Representation of students with limited English proficiency (LEP) and students with disabilities was lower in the OST programs than in the schools that they attended.[2]
- The majority of elementary school students participated in 21st CCLC programs at a meaningful level (90+ days or half of the school year).
- The majority of middle and high school students did not attend at a meaningful level (90+ days or half of the school year).

[1] Note: One OST provider served as an intermediary, subcontracting to three organizations who actually ran the OST programs.
[2] High schools were the exception. High school OST programs had a higher representation of LEP students than in the schools they served.

Elements of Program Quality

A. Alignment of Program Content to Student Academic and Behavioral Goals and Intended Outcomes

- Programs aimed to improve academic achievement through homework help and project-based learning, which comprised a majority of program time.[3]
- Programs supplemented academic support with enrichment activities such as sports or arts, but these activities varied in the degree to which they were designed for intentional skill-building.
- Programs were largely unable to provide a significant amount of one-on-one or small group academic support or align academic support to school day activities.[4]

B. Well-Prepared Staff

- Providers typically employed staff with high levels of education, but staff were relatively new to working for their provider.
- Staff reported competency in areas related to the delivery of high quality youth programs, such as developing relationships with youth and supporting homework help.
- Staff reported behavior management as an area for growth and support through professional development.
- Professional development was readily available to staff, but staff believed they could use additional support in student behavior management and parent and community communications.

C. Robust School Partnerships

- All 21st CCLC providers had goals which aligned directly or indirectly with those of schools and principals.
- The majority of OST providers reported that their relationships with principals were defined by mutual respect and consistent communication.
- A majority of providers utilized overlapping or blended staffing models which helped to ensure continuity between the school day and OST program.
- A few providers experienced challenges establishing trust and mutual respect with new principals.
- There was significant variation among providers in the depth of the partnerships they developed with schools, particularly the degree to which they developed relationships with the classroom teachers of students in their programs.

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[3] Learning activities in which students work together to investigate relevant guiding question or problem chosen by students. PBL culminates in projects that require students to use and develop new skills and content knowledge.

[4] Black, A.R., Somers, M. A., Doolittle, F., Unterman, R., and Grossman, J.B. (2009). *The Evaluation of Enhanced Academic Instruction in After-School Programs: Final Report* (NCEE 2009-4077). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education; Patricia A Lauer; Motoko Akiba; Stephanie B Wilkerson; Helen S Apthorp; et al. (2006). Out-of-School-Time Programs: A Meta-Analysis of Effects for At-Risk Students, Review of Educational Research,76;p. 275.; Moss, M., Swartz, J., Obeidallah, D., Stewart, G., Greene, D. (2001). AmeriCorps Tutoring Outcomes Study. Abt Associates. Cambridge, MA.

Student Outcomes

Research on OST programs has found that they can have an impact on school attendance; academic outcomes, including standardized test scores; and socio-emotional outcomes.[5] 21st CCLC programs were designed to improve student outcomes in the areas of school attendance, academic performance, and student behavior. Our analyses examined the potential impact of OST programs on all of these outcome areas. After taking into account the preexisting differences in academic and behavioral performance and observed background characteristics, our analyses suggest:

- Regular elementary school OST participants were less likely to have 10 or more unexcused absences than students who did not participate or participated less than 30 days of the programming.
- Regular middle school OST participants were more likely to earn higher course grades in math or reading than students who did not participate or participated less than 30 days of the program.

Furthermore, **higher levels of participation were associated with better outcomes in many, but not all, behavioral and academic performance indicators.** More specifically**:**

For **elementary participants**, high levels of participation are associated with:

- A smaller chance of having 10 or more unexcused absences or out-of-school suspensions
- Higher reading course grades
- Higher PSSA reading and math scores
- A higher chance of reading at grade level for 1st-3rd grade students

For **middle school participants**, high levels of participation are associated with:

- A smaller chance of having 10 or more unexcused absences or out-of-school suspensions
- Higher reading, math, and science course grades
- Higher PSSA reading scores

For **high school participants**, high levels of participation are associated with:

- A smaller chance of having 10 or more unexcused absences or out-of-school suspensions
- A higher chance of earning all the credits attempted in ELA and math

Recommendations

A. For Program Providers

- Focus on increasing participation, particularly for middle and high school students.

[5] Durlack, R. & Weissberg, R. (2012). After-school programs that follow evidence-based practices to promote social and emotional development are effective. Expanded Learning and After-school: Opportunities for Student Success. http://www.expandinglearning.org/docs/Durlak&Weissberg_Final.pdf; Little, P., Wimer, Christopher, Weiss, H. B. (2008). After School Programs in the 21st Century; Their Potential and What it Takes to Achieve it. *Issues and Opportunities in Out of School-Time Evaluation: Issue 10*. Cambridge, MA: Harvard Family Research Project

- Focus on increasing the percentage of program staff with bachelor's degrees and explore ways to increase the percentage of certified teachers for programs serving high school students.
- Continue to develop relationships with school personnel, particularly teachers, to facilitate linking of program activities to school day activities.
- Consider blended or overlapping staffing models and leverage their potential to provide additional opportunities for OST staff to build relationships with the school and ensure the alignment of the school day to the OST program.
- Enhance STEM programming to ensure that students have the opportunity to participate in hands-on, inquiry-based activities that are known to impact student interest, awareness, and achievement in STEM.
- Consider ways to provide more one-on-one and small group tutoring efforts.
- Consider engaging in reciprocal data sharing so OST providers can better target their individual or collective support for participants.
- Focus on leveraging 21st CCLC advisory councils to build staff competencies as staff reported that building relationships with parents and utilizing community resources were their most challenging tasks.

B. For Philadelphia's OST System

Continue to support citywide professional development of OST staff in the following areas:

- Build the capacity of providers to support their front-line staff with behavior management through train the trainer professional development or other resources.
- Support providers in identifying ways to build skills and knowledge related to their neighborhoods, community resources and parents.
- Provide professional development and coaching on best practices to implement hands-on and inquiry based activities for providers that have STEM programming.
- Support providers in thinking about how to better engage middle and high school students.

Work with the School District of Philadelphia (SDP) to develop school-level support for OST-school partnerships. The SDP could strengthen OST programs in the following ways:

- Encourage principals to deepen the partnerships between OST and school staff and create opportunities for further communication between OST staff and teachers.
- Encourage schools to have common professional development or common planning time with their OST providers about the curriculum and the academic improvement needs of their students.
- Make student data accessible to program providers in real time so that they can target academic interventions for program participants.

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Introduction

21st Century Community Learning Center (21st CCLC) grants are designed to support out-of-school time (OST) programs that provide academic support for youth attending high-poverty, underperforming schools. The programs also offer enrichment activities such as art and music, recreation, and career and technical education. Pennsylvania has funded 21st CCLC programs since 1998, and the 2011-12 awards are Pennsylvania's sixth cohort of grantees.

Pennsylvania has funded 21st CCLC programs since 1998, and awarded two rounds of grants in 2011-12 to its sixth cohort of grantees. The first round of Cohort 6 grants focused primarily on providing academic and enrichment programming for elementary school students while the second round (Cohort 6A grants) focused primarily on providing middle school STEM and high school credit recovery programming.

Of the Philadelphia organizations awarded 21st CCLC grants, 11 organizations representing 12 OST providers selected Research for Action (RFA) as their local evaluator.[6] As part of a citywide effort to create a cohesive system for OST programs, RFA agreed to aggregate the data from these local evaluations to provide an overview of OST programming and student outcomes in Philadelphia. While these providers represent a third of all Cohort 6 and 6A 21st CCLC grantees in Philadelphia, the analysis and results presented in this report provide useful insights into the potential impact and needs of OST programs in Philadelphia and help inform the development of Philadelphia's OST system-building efforts.

About this Report

This report examines the 21st CCLC programs evaluated by RFA and presents an aggregate analysis of key findings to inform broader discussions about OST programs. The report addresses the following questions:

1. Who participated in the 21st CCLC programs and how frequently did they participate?

[6] One grantee was an intermediary organization representing two provider organizations.

2. What organization-level elements of quality programming were in place to achieve the intended outcomes? Specifically:
    - What was the **content** of the 21st CCLC programs and how did the content support program goals for academic and behavioral improvement as well as **STEM** interest and engagement?
    - What were the **characteristics of staff** who implemented the 21st CCLC programs and what types of **organizational supports** were available to support them, particularly for those implementing **STEM** programming?
    - What was the reported **level of partnership between 21st CCLC programs and the schools** their students attended?
3. What was the relationship between program participation, organization-level elements of quality programming and academic, attendance and behavioral outcomes?

RFA addressed these research questions through a mixed-methods study that analyzed the following:

- Student outcomes data
- Program participation data
- OST staff survey responses
- Qualitative data from local evaluations, including interviews with program staff, site visits, and a review of program documents

The study includes data from each of the 50 sites operated by the 11 grantee organizations. However, the analysis of student outcomes focuses on a smaller subset of 40 sites from 11 providers which operated programs in public or charter schools. Data from Catholic schools could not be integrated into the student outcome analyses because these schools utilize different grade structures and assessments (TerraNova rather than PSSA scores).[7] In addition, the analysis of the organization-level elements of quality programming focuses only on 10 providers with staff who completed the staff survey.

Student outcomes analyses considered the following:

- Math, reading, and science course grades
- Math and Reading Pennsylvania System of School Assessment (PSSA) scores
- Developmental Reading Assessment (DRA) for 1st-3rd grade students
- HS credits earned for 9th-12th grade students
- School attendance and suspensions

Student outcomes analyses compared OST regular participants to students who did not regularly participate in the OST programs and non-participating students within their schools. The analysis also considered the level of program participation and the presence of key organization-level elements of quality programming. A more detailed description of the data collected and methodology can be found in Appendix B and C.

[7] A separate analysis for these Catholic schools is available in Appendix D. Catholic Social Services also operated two community centers which drew from public schools. CSS programs serving public school students are included in the aggregate analysis.

Overall, this study found promising evidence of the benefits of the 21st CCLC programs in two outcome areas—school attendance and course grades—for regularly participating elementary and middle school students. In addition, for students who participated in the program, the analyses found that outcomes in most areas improved as program participation increased. In addition, staff survey data revealed key organization-level elements of quality programming that may be related to more positive student outcomes. Our analysis of 21st CCLC program content, staffing, and school partnerships found variation in the implementation of these organizational-level elements of quality programming and suggests ways in which programs could increase their impact on students' outcomes.

The report is organized into the following main sections:

I. Context: 21st CCLC Providers, Schools, and Programs
II. Participant Characteristics and Level of Participation
III. Organization-Level Elements of Quality Programming: Promising Practices and Areas for Growth in Program Content, Staff, and School Partnerships
IV. Student Outcomes and the Relationship between Student Outcomes with Level of Participation and Organization-Level Elements of Quality Programming

I. Context: 21st CCLC Providers, Schools, and Programs

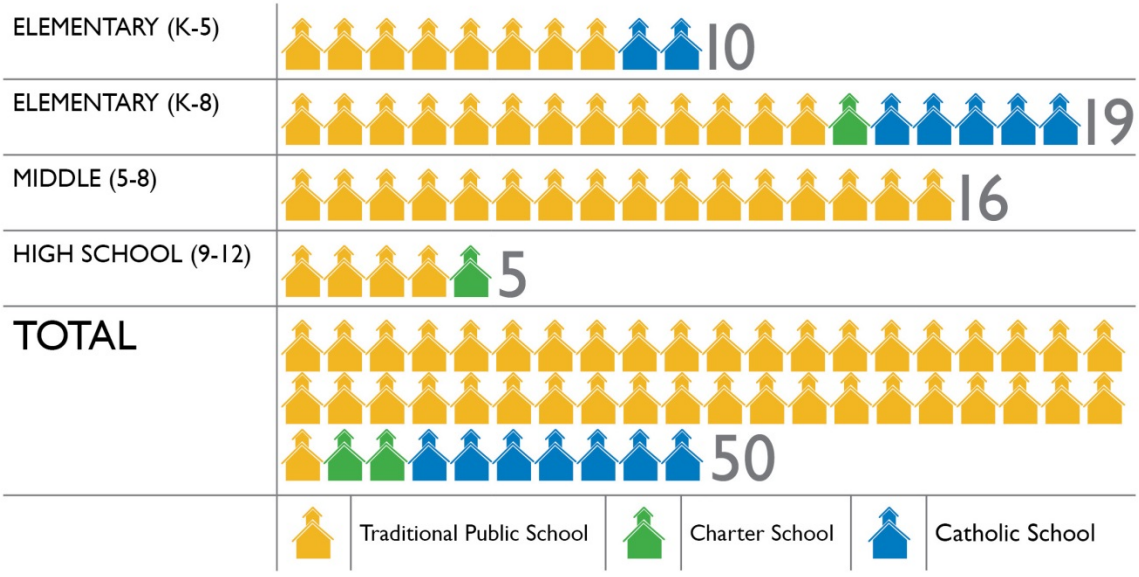
21st CCLC programs operate in a variety of settings including non-profits, university based centers, and charter schools. See Table E1 in Appendix E for a full list and profiles of provider organizations.

Overall, providers served a diverse array of schools.

- The 50 sites in which 21st CCLC programs operated included 46 schools and four community centers that served multiple schools.
- Programs typically drew participants from the schools in which the programs were located. However, the four community centers drew from several schools in their geographical areas. For the purposes of this study, we asked these programs to identify one primary feeder school.
- The schools included in this study were traditional public schools, charter schools, and Catholic schools.
- Schools included elementary (K-5 and K-8), middle, and high school grades. However, providers did not always serve all grade levels in the schools.
- Overall, the 21st CCLC programs served students in schools that were underperforming and had student populations that were predominantly low-income students of color.[8]

Table 1 displays the number and type of schools in the study.

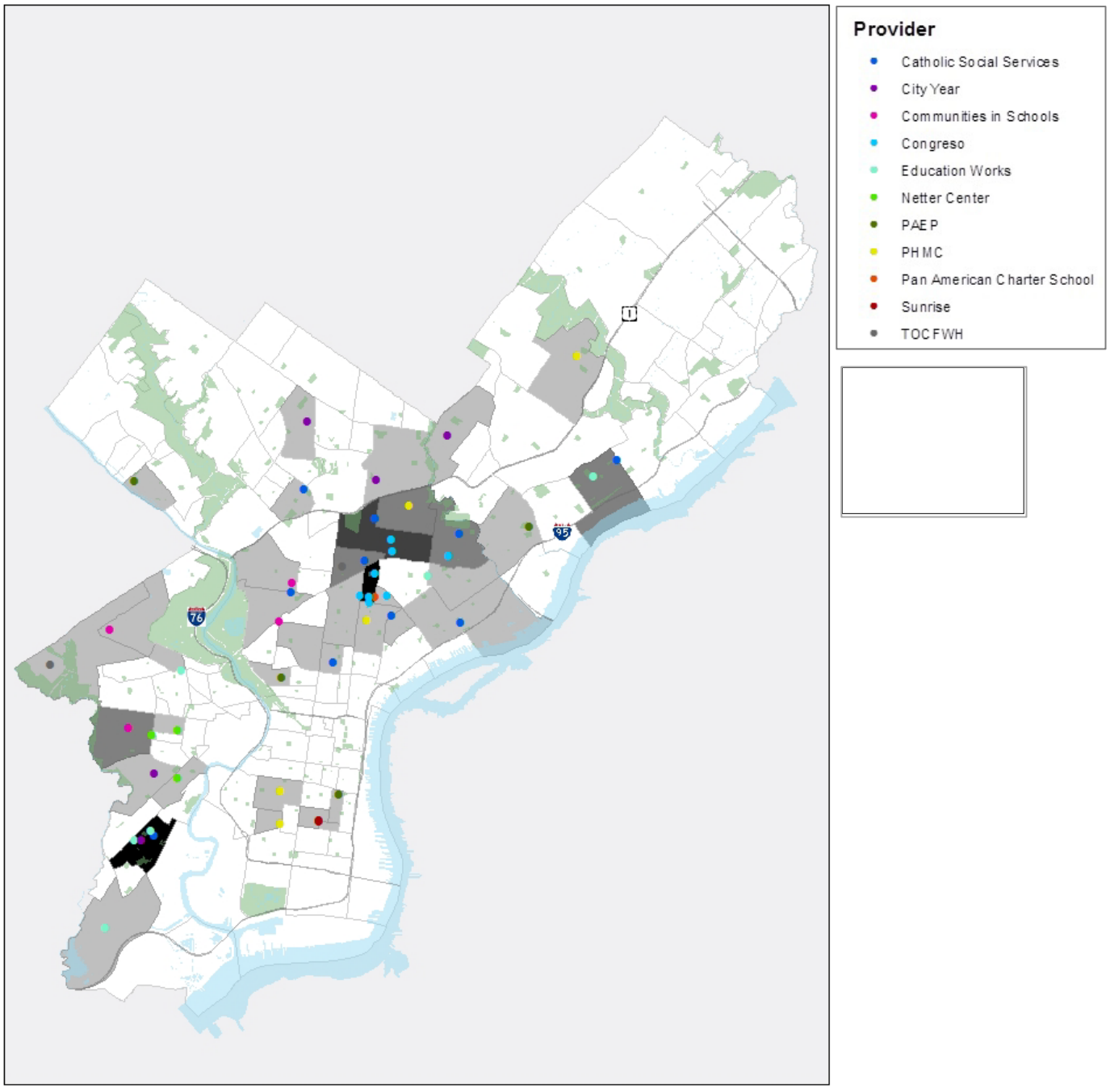
Table 1. Profile of Schools Served by 21st CCLC Cohort 6 Grants



[8] Data was not available to determine the performance of the Catholic schools in the study prior to 21st CCLC implementation.

21st CCLC programs were located throughout the city; the highest concentration was in North Philadelphia. Figure 1 displays the locations of 21st CCLC provider headquarters and program operation sites.

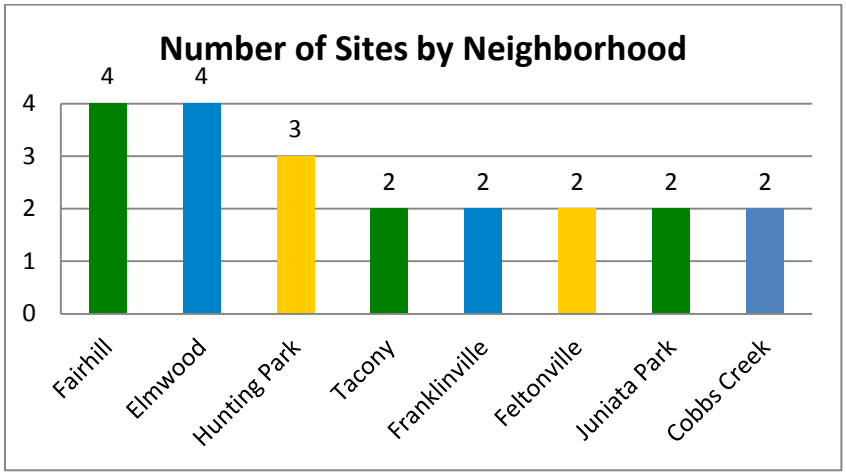
Figure 1. Neighborhoods of 21st CCLC Programs



- 21st Century programs evaluated by RFA operated in 38 of the 158 Philadelphia neighborhoods.
- Programs were concentrated in North Philadelphia.

Figure 2 identifies the neighborhoods that had more than one RFA evaluated 21st CCLC program.

Figure 2. Neighborhoods with More Than One RFA-Evaluated 21st CCLC Program



- 30 neighborhoods had one 21st CCLC program.
- Eight neighborhoods had two or more 21st CCLC programs. Fairhill and Elmwood hosted four programs.

Program content varied by provider. Providers offered a range of program content including arts programs, STEM programs and sports activities. Programs also varied by grade level. However, there were also many similarities in program content, particularly regarding academic supports.

Table 2 illustrates key program similarities and differences in program content among providers.

Table 2. 21st CCLC Program Content: Key Similarities and Differences

SIMILARITIES	DIFFERENCES
• All providers offered homework help. • More than three quarters of programs offered project-based learning. • Seven of eleven providers offered additional academic enrichment programming including math and literacy. • All offered other enrichment activities in the areas of arts, service learning, culinary, and other areas. • All but two offered physical activity as part of programming. Examples include organized sports, dance, cheerleading, and gym time.	• Six of the eleven providers included STEM activities in their programs such as robotics, nutrition or recycling projects or Fantasy Baseball competitions. • High school programs offered homework help on an "as-needed basis" while it was a required component of elementary school and middle school programs. • Few programs (seven out of 50) offered tutoring on a regular basis. • Few programs (five out of 50) offered college preparation or college-themed activities. • Only three of 50 programs had character development or mentoring activities. • High school programs were less likely to offer physical fitness activities.

II. Participant Characteristics and Level of Participation

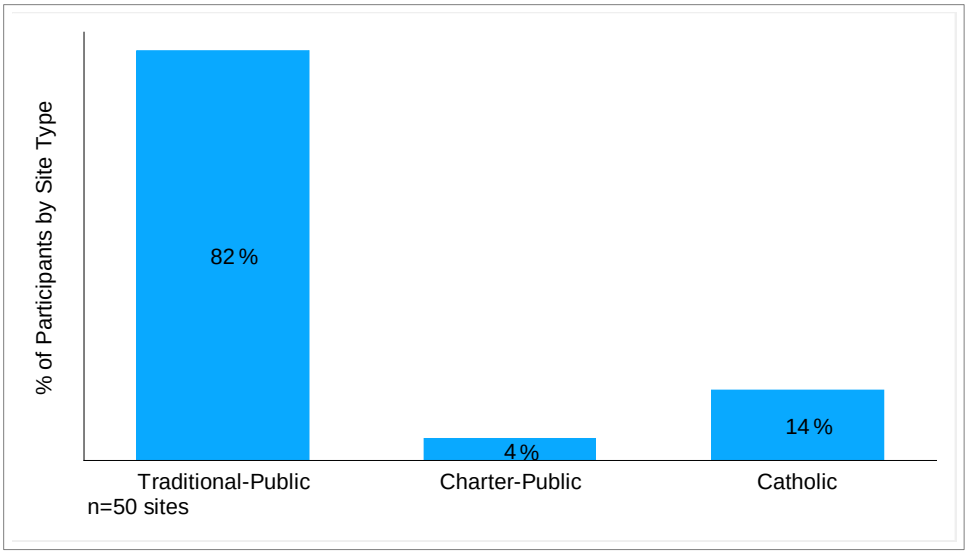
Level of participation in OST programs is a key determinant of the benefits students receive from the programs.[9] In this section, we examine which students were participating in the 21st CCLC programs and their levels of participation.

A. Participant Characteristics

21st CCLC programs are designed to serve youth in high-poverty, underperforming schools. Research on OST program participation across the country has found that this population of students has less access to and participates less frequently in OST programs.[10]

21st CCLC participants came from traditional public, charter, and Catholic schools. Figure 3 displays the percentage of students enrolled in the 21st CCLC programs by the type of school they attended.

Figure 3. Percentage of Students Enrolled in 21st CCLC Programs by School Type

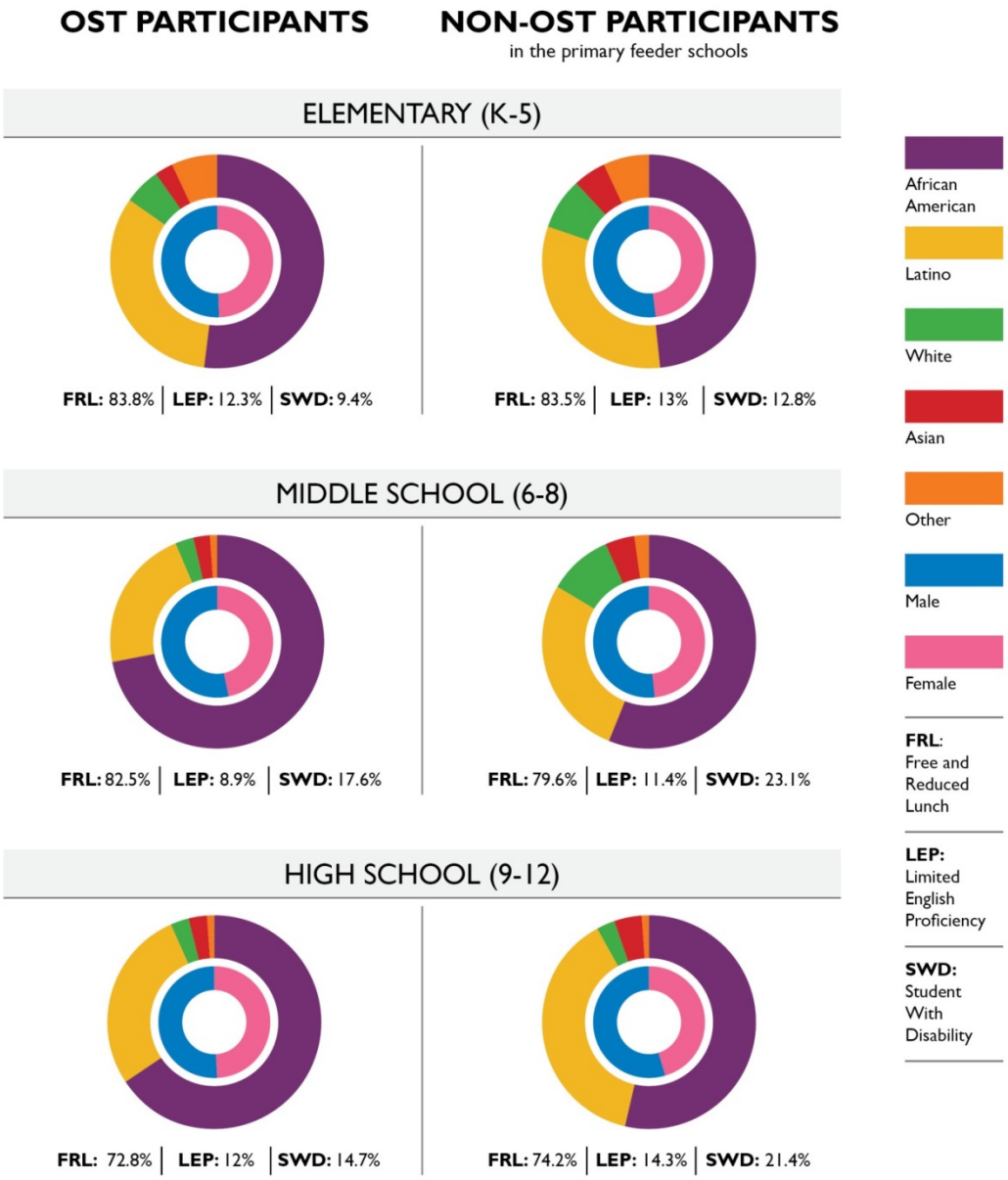


- A total of 4,594 students were enrolled in the programs for which we had participation data.
- More than 80% of participating students were enrolled in traditional Philadelphia public schools and approximately 4% were in charter schools.
- About 14% of participating students were enrolled in Catholic schools.

21st CCLC participants were predominantly African-American and Latino. Limited English speakers and students with disabilities were under-represented in comparison to the populations in participating schools. Figure 4 displays the demographic characteristics of OST participants in comparison to the demographics of all other students in the same schools.

[9] Little, P., Wimer, Christopher, Weiss, H. B. (2008). After School Programs in the 21st Century: Their Potential and What It Takes to Achieve It. *Issues and Opportunities in Out of School-Time Evaluation*: Issue 10. Cambridge, MA: Harvard Family Research Project
[10] Ibid.

Figure 4. Demographic Characteristics of 21st CCLC Participants and Non-OST Students



- **Race/Ethnicity**: Overall, the programs in our study served a predominantly African-American and Latino student population. African-American students represented 52% of students at the elementary school level, 72% of students at the middle school level, and 66% of students at the high school level, while Latino students represented 33%, 22%, and 28% of elementary, middle and high school participants, respectively. Compared to the general student population at their schools, African-American students were over-represented in OST programs.
- **Free and Reduced-Price Lunch:** Roughly 83% of OST elementary and middle school participants qualified for FRL, and 73% of high school participants qualified for FRL. Overall,

the percentage of OST participants qualified for FRL was similar to the general population at their schools.[11]

- **Limited English Proficiency:** Thirteen percent, 9%, and 12% of the elementary, middle, and high school OST participants respectively were identified as LEP, which is smaller than the general student population at the schools they attended in 2012-13.
- **Students with Disabilities:** Nine percent, 18%, and 15% of the elementary, middle, and high school OST participants respectively were SWD. The percentages are smaller than the general student population at the schools they attended in 2012-13. Fifty-six percent of high school OST participants were SWD, while 63% of non-OST participants were SWD.
- **Male/Female:** At high school level, male students were slightly underrepresented in OST programs as compared to the non-OST population in the feeder schools.

B. Participation Levels

Research has consistently identified a relationship between a student's level of participation in an OST program and the benefits received. No consistent level of overall program "dosage" has been identified for achieving the benefits of OST programs. However, at least two studies found academic benefits for students who participated in programming between 60-90 days.[12] In this report, we use 30 days as the minimum level of participation because 30 days is the cut-off used to define a program participant for federal 21st CCLC reporting requirements. We use 90 days as the threshold for the upper range of participation because it matches the dosage level reported in a 2004 evaluation of 21st CCLC programs that resulted in positive academic outcomes for students. In this 2004 evaluation, participants showed slightly increased scores on the Iowa Test of Basic Skills (ITBS) after 60 days but a "stronger impact" on the ITBS score after 90 days.[13]

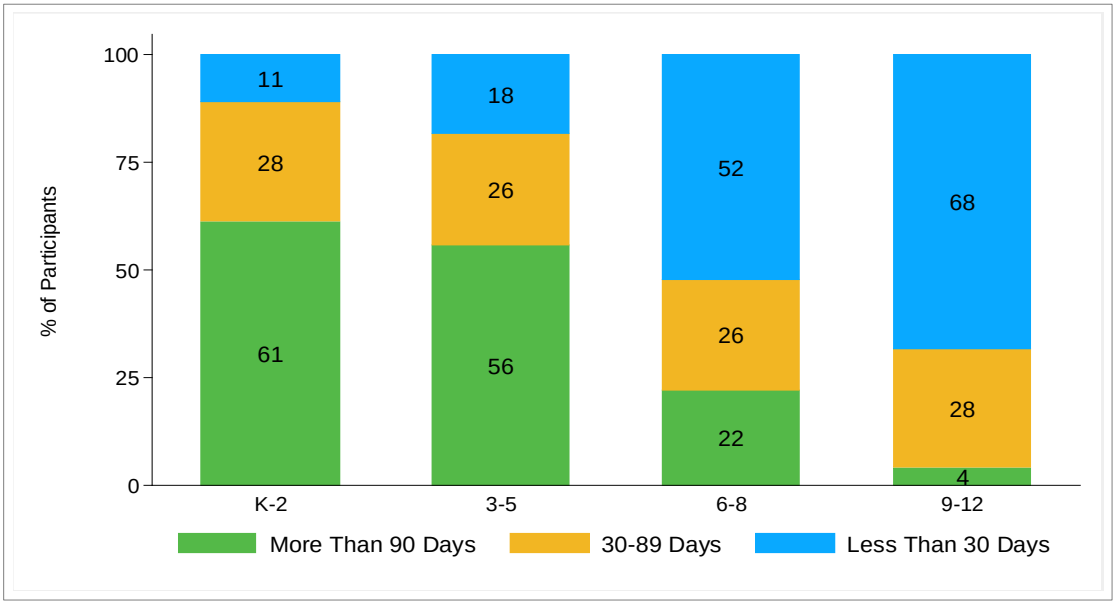
A majority of K-5 students participated 90 or more days, while more than half of middle and high school students participated less than 30 days. Figure 5 illustrates these participation levels by grade levels in 2012-13.

[11] Free and reduced priced lunch (FRL) is a problematic indicator of income status because families are required to submit paperwork to qualify for this status and can cause FRL to be under-reported. However, FRL is the only indicator of socio-economic status available through the School District of Philadelphia.

[12] Little, P., Wimer, Christopher, Weiss, H. B. (2008). After School Programs in the 21st Century: Their Potential and What it Takes to Achieve it. *Issues and Opportunities in Out of School-Time Evaluation: Issue 10*. Cambridge, MA: Harvard Family Research Project; Black, A. R., Somers, M.-A., Doolittle, F., Unterman, R., and Grossman, J. B. (2009). *The Evaluation of Enhanced Academic Instruction in After-School Programs: Final Report* (NCEE 2009-4077). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, United States Department of Education.

[13] Little, P., Wimer, Christopher, Weiss, H. B. (2008). After School Programs in the 21st Century: Their Potential and What it Takes to Achieve it. *Issues and Opportunities in Out of School-Time Evaluation: Issue 10*. Cambridge, MA: Harvard Family Research Project, page 6.

Figure 5. Percentage Enrollment by OST Participation and Grade Level



Note: n=4,337; 257 participants are not reported in this figure because grade levels were not available in the data.

- More than 80% of elementary school students, including K-2 and 3rd-5th grade students, attended more than 30 days, and more than half of them attended 90 days of the 21st CCLC programs.
- Just over half of middle school students attended fewer than 30 days of the OST programming.
- More than two-thirds (68%) of high school participants attended fewer than 30 days.

C. Section Summary

The 21st CCLC programs enrolled students from underperforming schools, and more than two-thirds qualified for FRL (an indicator of poverty). However, representation of students with LEP and SWD was somewhat lower in the OST programs than in the schools that they served. The majority of elementary school students participated in 21st CCLC programs at a meaningful level (90+ days), yet the majority of middle and high school students attended less than 30 days of the programming, possibly weakening the effect of the supports received through the OST program.

III. Organization-Level Elements of Quality Programming: Promising Practices and Areas for Growth in Program Content, Staff, and School Partnerships

21st CCLC funding is awarded to programs with the goal of improving students' academic outcomes (e.g., standardized test scores and grades), as well as students' school attendance and behavior. Research identifies several organization-level elements of quality programming that contribute to implementation of high-quality, academically-focused OST programming. These are:

1. The alignment of program content with student academic and behavioral goals;[14]
2. The training and expertise of the staff who deliver program supports;[15] and
3. Strong partnerships with schools to inform the design of program content and other supports provided by staff.[16]

In this section,[17] we examine the extent to which these organization-level elements of quality programming were in place for the 21st CCLC Cohort 6 and 6A programs.[18]

A. Organization-Level Element of Quality Programmin85/9g: Alignment of Program Content to Student Academic and Behavioral Goals and Intended Outcomes

Research suggests that OST programs can impact academic achievement, school attendance, and behavior when the programs:

- Set clear and consistent goals for academic improvement[19]
- Provide academic support that includes:
  - A meaningful amount of support;[20]
  - Small-group or one-on-one settings;[21]
  - Alignment with the school curriculum or grade-specific academic standards,[22] and
  - A meaningful amount of support for program design and planning.

[14]Little, P., Wimer, Christopher, Weiss, H. B. (2008). After School Programs in the 21st Century; Their Potential and What it takes to Achieve it. Issues and Opportunities in Out of School-Time Evaluation: Issue 10. Cambridge, MA: Harvard Family Research Project

[15] Huang, D., Dietel, R. (2011). Making after-school programs better. (CRESST Policy Brief). Los Angeles, CA: University of California.; Nee, J. (2011). *Core knowledge and competencies for Afterschool and Youth development professionals.* National Institute for Out-of-School Time: Wellesley Center for Women. ; Bodilly, Susan J. and Megan K. Beckett. *Making Out-of-School-Time Matter: Evidence for an Action Agenda*. Santa Monica, CA: RAND Corporation, 2005. http://www.rand.org/pubs/monographs/MG242. Also available in print form.; Starr, E., Gannett, E.,; Little, P., Wimer, Christopher, Weiss, H. B. (2008). After School Programs in the 21st Century; Their Potential and What it takes to Achieve it. Issues and Opportunities in Out of School-Time Evaluation: Issue 10. Cambridge, MA: Harvard Family Research Project

[16] Huang, D., Dietel, R. (2011). Making after-school programs better. (CRESST Policy Brief). Los Angeles, CA: University of California

[17] Please see the Appendix for more details on the methodology that guided the development of this section of the report.

[18] Note: We were not able to conduct an assessment of program implementation.

[19] Huang, D., Dietel, R. (2011). Making after-school programs better. (CRESST Policy Brief). Los Angeles, CA: University of California

[20] Black, A. R., Somers, M.-A., Doolittle, F., Unterman, R., and Grossman, J. B. (2009). *The Evaluation of Enhanced Academic Instruction in After-School Programs: Final Report* (NCEE 2009-4077). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education; Patricia A Lauer; Motoko Akiba; Stephanie B Wilkerson; Helen S Apthorp; et al. (2006). Out-of-School-Time Programs: A Meta-Analysis of Effects for At-Risk Students, Review of Educational Research,76;p. 275.; Moss, M., Swartz, J., Obeidallah, D., Stewart, G., Greene, D. (2001). Americorps Tutoring Outcomes Study. Abt Associates. Cambridge, MA.

[21] Ibid.

[22] Huang, D., Dietel, R. (2011). Making after-school programs better. (CRESST Policy Brief). Los Angeles, CA: University of California.

In addition, research suggests that STEM programs can influence student interest, engagement, and even academic achievement in STEM when they include hands on learning environments.[23]

Promising Practices: Alignment of Program Content to Student Academic Goals and Intended Outcomes

Across 21st CCLC providers, programs supported academic improvement in one or more of the following ways:

Academic goals were consistent among providers. Research indicates that setting clear and consistent goals for OST programs that are related to academic improvement can positively impact student academic achievement as well as school attendance and behavior. Providers most often reported that their primary goal was to improve academic achievement, social skills, and behavior. Improving school attendance was seldom mentioned as a primary goal. Additional goals identified by most providers included increasing student motivation, self-confidence and self-efficacy.

STEM goals were well-aligned to indicators of high quality programming. Six of the providers included STEM activities as a core or supplemental component of their programming. Research indicates that high quality STEM OST programs typically help students develop a deeper interest in STEM, develop an awareness of STEM career opportunities, and increase their STEM content knowledge[24]. Aligned with the research, the top STEM goals most consistently cited across providers included increasing student interest in STEM and their awareness of STEM careers and improving STEM student achievement.

Programs provided a meaningful amount of academic support through homework help and/or project-based learning (PBL). According to research, programs demonstrating achievement level gains in math and reading provide between 1.5 to 3.5 hours of academic support each week, depending on the structure of the support (e.g., one study of one-on-one support demonstrated impact on literacy outcomes with 1.5 hours of tutoring per week).[25] Most providers devoted between 30-60 minutes per day, or 2-5 hours per week, to homework help—a meaningful amount of support as suggested by the research. In addition to homework help, providers offered other types of academic enrichment including academic games, such as Scrabble, spelling bees, fantasy baseball or STEM activities. Finally, all elementary school providers offered 30-90 minutes of PBL three-to-five days per week. PBL is intended to incorporate academic skills but providers' PBL activities varied in the extent to which they incorporated these skills.

Programs offered enrichment activities, but these varied in the amount of intentional skill-building. Effective OST programs augment academic support with other types of enrichment activities focused on skill-building.[26] All 21st CCLC programs offered enrichment activities each week and all but two programs offered various types of physical activity as well. However, enrichment activities varied in the degree to which they incorporated intentional skill-building.

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[23] Campbell et al., 2002; Davis and Rosser, 1996; Froschi et al., 2003; Hansen, et al.,1995; Koch, 2002; Lee, 1997; Wenglinsky, 2000
[24] Afterschool Alliance (2013). Defining youth outcomes for STEM learning in afterschool. Retrieved from: http://www.afterschoolalliance.org/STEM_Outcomes_2013.pdf
[25] Moss, M., Swartz, J., Obeidallah, D., Stewart, G., Greene, D. (2001). Americorps Tutoring Outcomes Study. Abt Associates. Cambridge, MA.
[26] Durlack, R. & Weissberg, R. (2012). After-school programs that follow evidence-based practices to promote social and emotional development are effective. Expanded Learning and After-school: Opportunities for Student Success. http://www.expandinglearning.org/docs/Durlak&Weissberg_Final.pdf

Areas for Growth: Alignment of Program Content to Student Academic Goals and Intended Outcomes

Across providers, the alignment of program content with desired student academic outcomes was limited in a few ways.

Fewer than half of the programs offered subject-specific academic support in a one-on-one or a small group setting.[27] OST programs that have demonstrated impact on academic outcomes provide one-on-one or small group tutoring focused on particular subjects like math or English or provide explicit instruction in those subject areas to fewer than nine students at a time. Across the 50 programs, only three elementary, three middle, and one high school program offered explicit tutoring or direct, subject-specific instruction in this format.

The observed STEM program implementation did not align with known best practices. Research indicates that high quality STEM programs include opportunities for students to engage in hands-on, inquiry-based learning opportunities; encourage a high level of participant engagement through purposeful activities; and are driven by STEM content knowledge and practices. Program observations revealed that, although staff believed they saw student engagement in the program, the activities did not include many of these known indicators of high quality STEM practices. Inquiry and reflection come from activities that are student directed and have significant opportunities for students to explore, question, and discover answers primarily on their own. Our observations suggest that these types of activities were not generally integrated into STEM programming at provider sites.

Support for program design and planning varied. Support for program design and planning was similar across providers in that planning for daily program activities typically happened at the site level—the majority of provider staff survey respondents reported that either the group leaders or the "staff team" planned daily activities. However, organization-level support for planning varied. A majority of staff across all providers reported receiving feedback and guidance on daily lesson plans and a majority of staff at eight of ten providers reported receiving templates for lesson planning. Fewer providers (5/10) made curriculum available. However, STEM programs often drew upon curriculum. Even fewer providers (2/10) had a majority of staff reporting receiving paid planning time which may be needed, particularly if curricular materials are not available. Across providers, group leaders were more likely than site coordinators to plan daily activities but they were consistently less likely to have paid planning time. Group leaders averaged four hours/week of paid planning time while site coordinators averaged 11 hours/week of paid planning time. Thus, there seemed to be some discontinuity between who had dedicated/paid time for planning (site coordinators) and who actually planned the activities (group leaders).

Alignment to the school-day curriculum was not consistent across providers. Only four providers reported some alignment between the school-day curriculum and after-school activities. The programmatic model for two providers called for using the schools' curricular topics to develop aligned enrichment activities. In the other two instances, having a blended staffing model—teachers or

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[27] Black, A. R., Somers, M.-A., Doolittle, F., Unterman, R., and Grossman, J. B. (2009). *The Evaluation of Enhanced Academic Instruction in After-School Programs: Final Report* (NCEE 2009-4077). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education; Patricia A Lauer; Motoko Akiba; Stephanie B Wilkerson; Helen S Apthorp; et al. (2006). Out-of-School-Time Programs: A Meta-Analysis of Effects for At-Risk Students, Review of Educational Research,76;p. 275.; Moss, M., Swartz, J., Obeidallah, D., Stewart, G., Greene, D. (2001). Americorps Tutoring Outcomes Study. Abt Associates. Cambridge, MA.

paraprofessionals from the school day work in the OST program along with other OST staff—or a strong school day presence may have helped the provider align programming to the school day. Even when incorporating significant academic content to their programs, most providers did not reference the school curricula in planning those activities.

B. Organization-Level Elements of Quality Programming: Well-Prepared Staff

Skills and expertise of OST staff play a major role in whether youth become engaged in a program and whether the program is beneficial to them. Research has found that:

- Highly qualified OST staff typically have these characteristics:
  - experience in the OST field
  - experience working with the provider
  - high levels of education[28,29]
  - demonstrable competencies in a number of areas deemed important for youth development professionals.[30]
- STEM providers should have content knowledge in a STEM field[31].
- Well-designed professional development can support the development of highly-effective OST staff.[32]

Promising Practices: Well-Prepared Staff

As noted, research indicates that highly qualified staff members typically have experience in the OST field, experience working with the OST provider, and high levels of education. RFA's staff survey analysis, as well as qualitative data and analyses, found that OST providers are increasingly hiring staff with these research-based qualifications.

At least 50% of staff at more than half of the providers have a college degree and 5+ years of OST experience. Table 3 illustrates the number of providers with 50% or more of their OST staff having the research based qualifications of experience in the OST field, experience working with the OST provider, and high levels of education.

[28] Huang, D. & Dietel, R. (2011). *Making Afterschool Programs Better*. National Center for Research on Evaluation, Standards, & Student Testing

[29] Bodilly, Susan J. and Megan K. Beckett. *Making Out-of-School-Time Matter: Evidence for an Action Agenda*. Santa Monica, CA: RAND Corporation, 2005. http://www.rand.org/pubs/monographs/MG242. Also available in print form.

[30] NIOST (2012) Retrieved from: http://www.wallacefoundation.org/knowledge-center/after-school/quality-and-cost/Documents/Strong-Directors-Skilled-Staff-Guide-to-Using-the-Core-Competencies.pdf ; OSTRC (2010). OST Staff Competencies.

[31] A Review of the Literature and the INSPIRE Model STEM in Out-of-School Time (June 2007)

[32] While research on the effectiveness of professional development on improving program quality is inconsistent. Several studies have found benefits for program staff and programs. (New York State After-School Network (2011). After-school professional development; Resources, Outcomes and Considerations; Out-of-School Time Resource Center Summary of Literature: Evaluating the Impact of Teacher Trainings on OST Program Quality (2003).

Table 3. Number of Providers with 50% or More of Staff with College Degrees, 5+ Years with Provider and In OST Field

	Number of Providers									
50% or more staff with 5+ years in OST	1	2	3	4	5	6	7	8	9	10
50% or more staff with 5+ years with provider	1	2	3	4	5	6	7	8	9	10
50% or more staff have college degrees	1	2	3	4	5	6	7	8	9	10

Providers hired staff with college degrees. Research indicates that there is a relationship between the level of staff education and quality programming.[33] Staff of ten of the eleven providers completed the staff survey.

- Eight of ten providers had 50% or more staff with college degrees.
- Seven of ten providers had 75% or more site coordinators with college degrees.
- Five of ten providers had 75% or more group leaders with college degrees.
- Two of ten providers also employed classroom teachers to staff their programs.

Staff report competency in areas related to the delivery of high quality youth programs. The staff survey asked respondents to identify their top strengths from a list developed by the National Institute on Out of School Time (NIOST) as well as the Out of School Time Resource Center (OSTRC) at the University of Pennsylvania. These competencies are known to be related to positive OST youth outcomes.

The following are the most commonly reported strengths, across providers:

- Developing positive relationships with program participants (8 of 10 providers)
- Supporting homework help (7 of 10 providers)
- Presenting program activities in an engaging way (5 of 10 providers)
- Creating a safe environment (5 of 10 providers)

These survey findings are encouraging because research shows that "youth engagement is key to positive outcomes for youth in afterschool programs."[34] In addition, the ability to develop positive relationships with youth and the ability to create safe spaces for youth are important OST staff competencies.[35]

Staff participated in significant professional development opportunities. Although there is no conclusive evidence on the impact of OST staff professional development for youth outcomes, professional development does matter for classroom teachers.[36] A review of over 1,000 studies on the

[33] Massachusetts After-School Research Study (2005). Pathways to Success for Youth: What Counts in After-School. 2005 United Way of Massachusetts Bay.
[34] Ibid.
[35] National Institute on Out of School Time (2012). Strong Directors and Skilled Staff: Guide to Using the Core Competencies. Out of School Time Resource Center (2010). Philadelphia OST Staff Competencies and Content Areas.
[36] Hill, S. (2012). Leap of Faith: A literature review on the effects of professional development on program quality and youth outcomes. National Institute on Out-of-School Time. Commissioned by the Robert Bowne Foundation.

impact of professional development for classroom teachers revealed that providing teachers with more than 14 hours of professional development had a positive and significant impact on student achievement.[37] Research also indicates that well-designed professional development may support the growth of a highly-effective OST staff.[38] We did not collect information on the types of professional development opportunities in which staff participated. However, we did ask staff how much time they spent in professional development. On average, staff received about 33 hours of professional development through the provider and external sources each year—well above the 14 hours designated as meaningful in the literature. However, it is unclear whether all of these hours were spent on OST-specific professional development.

Areas for Growth: Well-Prepared Staff

The following section provides insight into the areas for staff growth across the eleven providers. These findings draw primarily from the staff survey but are also supplemented by qualitative data and analyses.

Overall, 21st CCLC program staff members were relatively new to working with their providers and in the OST field.

- Only two providers had 75% or more staff with 5+years of OST experience.
- The majority of providers had 25% or fewer staff that had been working with the provider for 5 years or more.

Overall, the majority of staff delivering STEM programming did not have STEM backgrounds. Even though the research is mixed on whether staff that have strong STEM content background actually make a difference in STEM OST programs, staff with STEM backgrounds may have more capacity to align program content and design with school curricula and STEM OST program goals.

- On average, providers reported that 32% of staff that led math activities had a STEM background.
- On average, providers reported that 28% of staff that led science activities had a STEM background.
- None of the six OST providers that included STEM activities in their programming had more than 47% of staff with STEM majors and the average across providers was 35%.
- Only two of the six providers intentionally hired staff because of their STEM backgrounds.

Staff reported challenges in several youth development competency areas. In the staff survey, across ten of the eleven providers, staff reported the following as top challenges or professional development needs, as reported in aggregate at the provider level:

- Effectively guiding and managing student behavior (10 of 10 providers)
- Identifying community resources and building community connections (7 of 10 providers)

[37] Yoon, Duncan, Lee, Scarloss, & Shapley (2007).Reviewing the evidence on how teacher professional development affects student achievement. Institute of Education Sciences.

[38] While research on the effectiveness of professional development on improving program quality is inconsistent. Several studies have found benefits for program staff and programs. (New York State After-School Network (2011). After-School Professional Development: Resources, Outcomes and Considerations; Out-of-School Time Resource Center Summary of Literature: Evaluating the Impact of Teacher Trainings on OST Program Quality (2003).

- Building relationships with parents (6 of 10 providers)
- Encouraging youth voice or leadership in the program (4 of 10 providers)
- Creating and sticking to a structure in the program (4 of 10 providers)

Identifying community resources, building community connections, and building relationships with parents are known OST staff competencies for high quality programming. Our analyses identified them as persistently challenging for staff and, therefore, in need of further attention by providers.

C. Organization-Level Elements of Program Quality: Robust School Partnerships

The strength of an OST program's partnership with its host school may contribute to the program's impact on academic outcomes, including participants' level of "homework effort" and homework completion[39] and even grades and test scores[40]. Strong school partnerships have also been related to higher levels of school attendance among program participants[41].

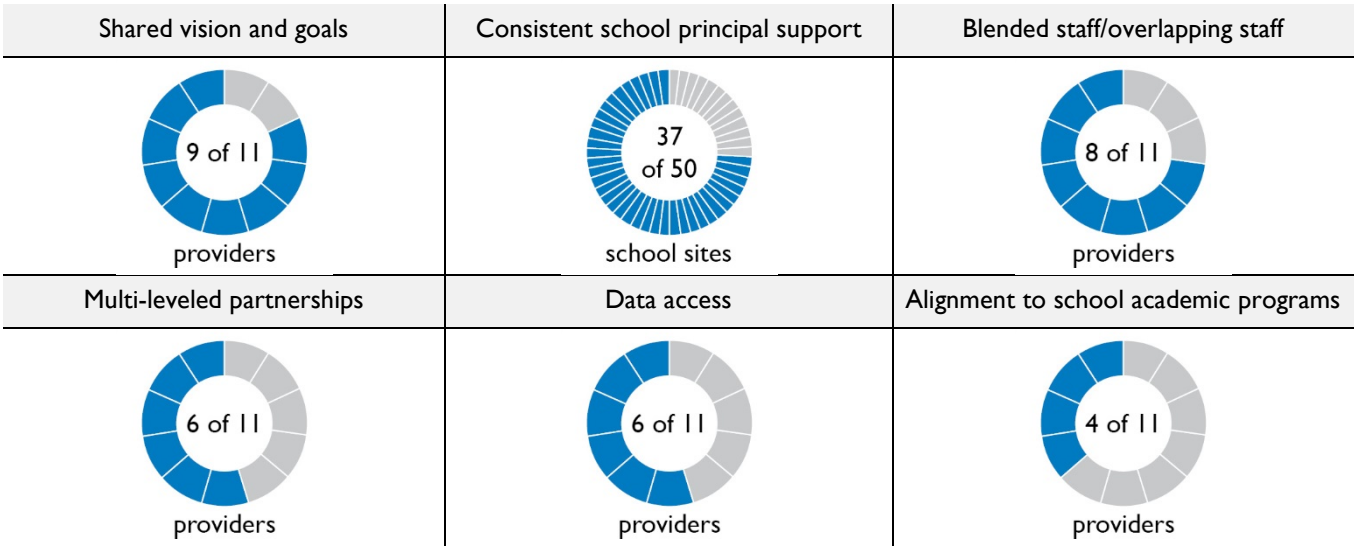
Research has identified six characteristics of strong school partnerships:

1. **Shared vision and goals**: OST program staff and school staff share similar goals for program participants.
2. **School principal support**: The program's relationship with the principal is characterized by mutual respect and regular, scheduled communication.
3. **OST staff are present in the school during the school day**: OST programs may use a "blended staffing" model in which the schools' teachers or paraprofessionals are hired to work in the OST program. Alternately, OST programs could structure staff positions so that half or more of their work hours overlap with the school day and they are able to be present in the school building during the day.
4. **Multi-level partnerships**: OST staff have relationships in the school with staff other than the principal. It is particularly beneficial for OST staff to have regular communication with classroom teachers. OST staff may also participate in school committees and/or school staff meetings. Cooperation with the school's custodial, cafeteria and security staff is also important.
5. **Data access and use**: OST program staff have regular and reciprocal sharing of information and data about student progress with school staff.
6. **Alignment to school behavioral norms**: OST program staff negotiate behavioral expectations for program participants with the school to align with school norms while remaining appropriate for an OST program.

Our analyses found that the 21st CCLC programs in our study tended to be stronger in some school partnership areas than in others. Figure 6 displays the variation in these characteristics, as suggested by our data.

[39] Massachusetts After-School Research Study (2005). Pathways to Success for Youth: What Counts in After-School. 2005 United Way of Massachusetts Bay.
[40] Huang, D. & Dietel, R. (2011). Making Afterschool Programs Better. National Center for Research on Evaluation, Standards, and Student Testing.
[41] Russell, C. A., & Reisner, E. R. (with Johnson, J. C., Rouk, Ü., & White, R. N.). (2005). Supporting social and cognitive growth among disadvantaged middle-grades students in TASC after-school projects. Washington, DC: Policy Studies Associates.

Figure 6. Evidence of Partnership Characteristics[42]



As can be seen in Figure 6, most of the characteristics of strong school partnerships were observed for at least half of the providers or school sites in our sample. The following section describes providers' efforts to build strong school partnerships, including promising practices and areas for growth.

Promising Practices: Robust School Partnerships

Several characteristics of strong school partnerships were prevalent among providers and sites in our study.

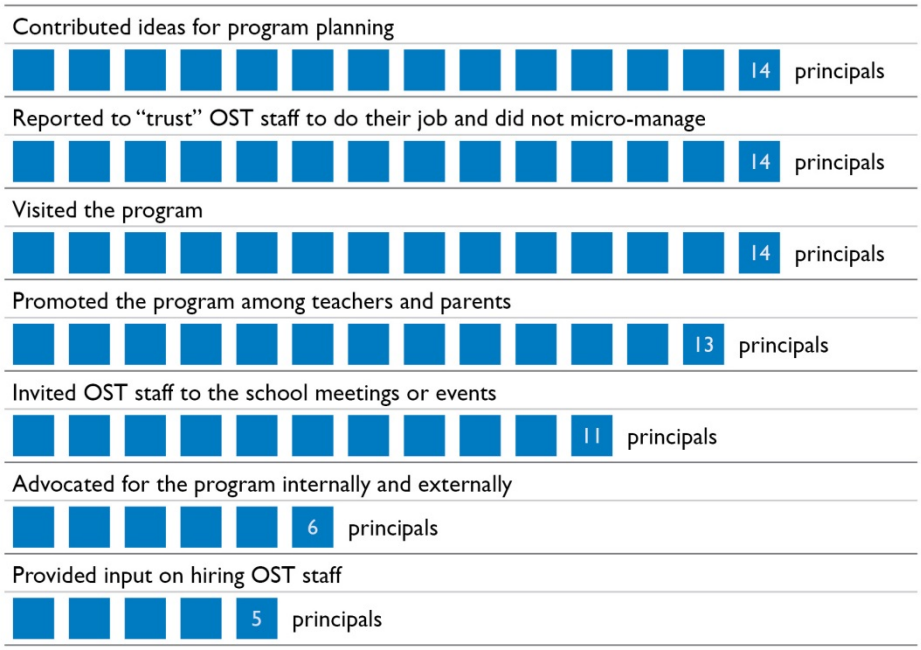
All 21st CCLC providers had goals aligned with those of schools and principals. Research suggests that in order for providers to partner effectively with schools, they must address academic improvement.[43]As mentioned in the previous section, 21st CCLC providers had clear and consistent goals for improving academic achievement, motivation to learn, and behavior. Our data confirmed that these goals are aligned to those of principals at OST school sites and that principals valued the OST programs. All but one principal expressed appreciation for the robust enrichment activities offered by the OST programs, including arts and music activities, which were not typically offered during the school day. Forty-one percent (41%) of interviewed principals (N= 17) also reported valuing the OST program because it provided a free, safe and productive environment after school, which helped the working parents of their school community. These principals appreciated that the program was not simply "babysitting" but involved skill-building and exposure to new activities.

The majority of OST providers reported that their relationships with principals were defined by mutual respect and regular communication. The conditions of a supportive principal relationship –mutual respect and regular communication—appeared to be in place for the majority of OST-school partnerships in our study. Providers reported that regular communication with principals was occurring, more likely informally than formally. A majority of site coordinators reported

[42] Note: Providers have multiple school sites and the analysis rated these characteristics present if it appeared to be present for a majority of sites, based on staff and principal interviews. Or, if a majority of staff responded positively to relevant questions on the staff survey.
[43] Deschenes, S. N., Arbreton, A., Little, P.M., Herrera, C., Grossman, J.B., Weiss, H.B., Lee, D. (2010). Engaging older youth: Program and city-level strategies to support sustained participation in out-of-school time. Harvard Family Research Project.

that they communicated informally with the principal at least once per week via email, text, phone calls, or impromptu check-ins. Formal meetings with principals occurred less frequently, but seemed to occur at least monthly for eight of 11 providers. In some cases, principals were described as particularly invested. Activities of invested principals included the following (see Figure 7):

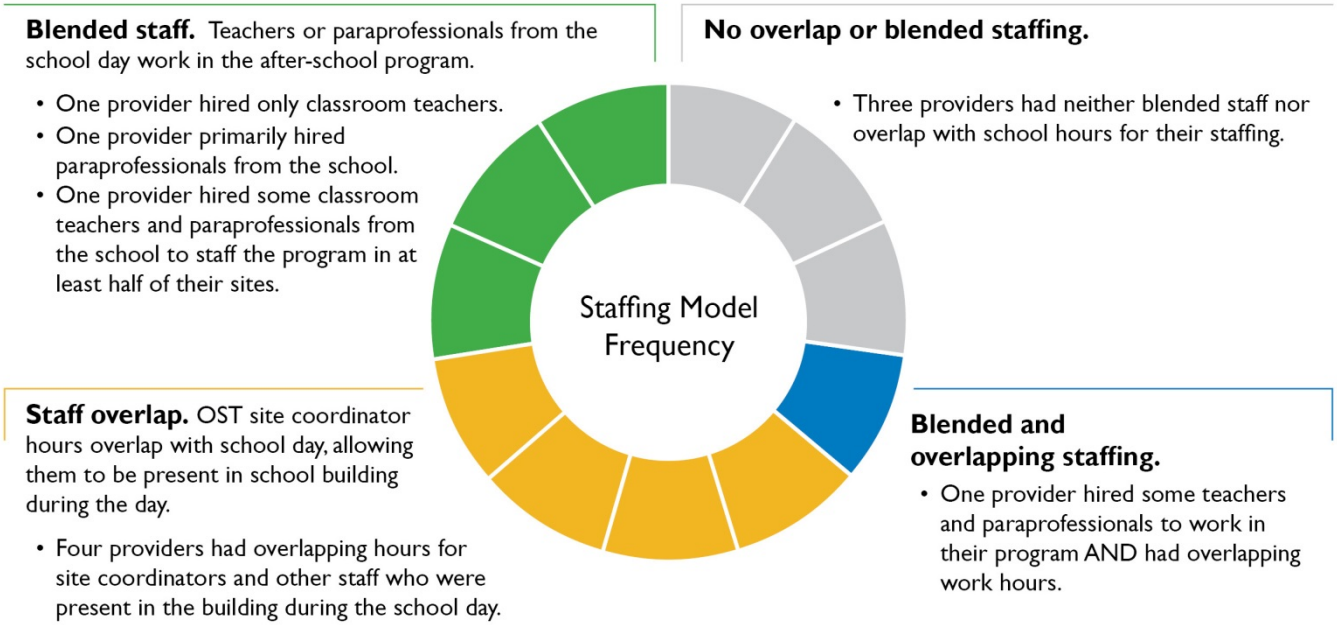
Figure 7. Principal Support Activities



A particularly promising sign is that about 17% of principals were described as being involved in three or more of the above tasks and communicating daily or weekly with OST program staff. These positive and supportive relationships may have resulted, in part, from providers' long-term relationships with many of the schools receiving 21st CCLC support. Thirty-six of 50 schools had pre-existing relationships with providers. Schools that were developing new partnerships or had new principals (principal turnover was reported in seven sites) reported greater challenges with developing principal support.

A majority of providers utilized overlapping or blended staffing models, which helped to ensure continuity between the school day and OST program. Providers with these staffing models tended to have more consistently positive school-partnerships. Figure 8 describes the multiple staffing models that providers used to develop strong relationships with the host schools and describes the number of providers using these models.

Figure 8. Provider-School Partnerships: 21st CCLC Provider Staffing Models



Areas for Growth: Robust School Partnerships

Our analyses identified a number of areas that are still challenging for providers and present opportunities for further development of strong school partnerships.

A few providers experienced challenges establishing trust and mutual respect with new principals. In only a handful of cases, providers that were developing relationships with new schools or new principals reported challenges. For example:

- Several sites with overlapping and blended staffing models experienced challenges with clarifying the role of staff that were present in the school all day so that they did not get tasked with inappropriate duties, such as security.
- Other sites experienced challenges with clarifying the principal's authority over OST staff and programmatic decisions. In one case, one provider with a blended staffing model encountered a principal who felt uncomfortable with her staff taking direction from the OST provider for after-school activities. Another provider discovered that the principal expected them to get permission from her for taking youth on after-school trips.
- Providers also reported challenges in getting access to some principals to communicate about program needs or challenges.

These types of challenges were mostly encountered in new OST-principal relationships.

Low morale existed in two sites where schools were slated for closure. Not surprisingly, providers had difficulty gaining traction for the program and recruiting and retaining participants in programs at these schools. Both programs ended early in the school year.

Providers were less likely to have multi-leveled partnerships with schools, particularly relationships with multiple teachers. Providers varied significantly in terms of the depth of the

partnerships they developed with schools. This was particularly true regarding the degree to which they developed relationships with the classroom teachers of students in their programs. This variation included the following:

- Six of the ten providers who completed the staff survey reported contact with only one or two teachers in each of their sites.
- Blended and overlapping staff models generally supported more frequent and widespread contact with teachers but there were instances where OST staff were in the school building during the school day and did not necessarily use this time to build relationships with teachers.
- Tensions were also reported with teachers because providers often had to share their space.
- Our analyses identified only one of eleven providers that had site coordinators participating in school committees, which is another indicator of a multi-leveled relationship between the OST program and the school.

Almost half of the providers did not have regular and reciprocal data sharing with schools. Providers were less likely to report having regular access to student data, such as report cards or school attendance, to inform program planning. Even among organizations that reported some access to student data, it was not clear that regular access was granted (e.g. daily school attendance or quarterly report card grades). In addition, in some instances, data access was a result of students voluntarily sharing report cards, a strategy that is unlikely to provide complete data for all students in the program. Ideally, data sharing should be reciprocal—providers have program data, such as enrollment and participation data, which could be of interest to schools. It was not clear that many providers regularly shared this type of information with the schools.

Alignment of program norms to school day norms was challenging for some sites. Our data also captured a handful of instances in which principals had concerns about how OST staff were managing student behavior in the program. This challenge may relate to the lack of alignment between program norms and school day norms. As discussed earlier, staff reported that managing student behavior was one of their greatest challenges. Research suggests that providers and schools need to agree on behavioral norms for the after-school program in order to strengthen their partnership.

D. Section Summary

The primary goals of 21st CCLC programs are to improve academic achievement, student behavior, and social skills. Programs worked towards these goals through activities such as homework help and project-based learning (PBL). Programs that incorporated STEM components had goals aligned with indicators of high quality STEM programming: increasing student interest, career awareness, and content knowledge in STEM. Moreover, programs supplemented academic support with enrichment and skill-building activities to engage students. However, academic supports provided by programs were hampered by providers' limited capacity to provide one-on-one or small group academic support and the inconsistent alignment of programs with school curricula. In addition, STEM programming did not always include hands-on learning opportunities nor did staff across all programs receive the program planning and design support that they needed.

This year's staff survey allowed RFA to examine staffing issues from the viewpoint of staff and not just through secondary information gathered from program directors and site coordinators. Overall, OST

staff members had appropriate educational credentials, but did not have a lot of experience with the providers or in the OST field. However, providers invested in strong leadership by hiring program directors and, in most cases, site coordinators. Moreover, staff had many opportunities to participate in professional development but identified several key areas where they felt they needed additional training, such as managing student behaviors.

Finally, providers in our sample generally reported adequate support from schools and principals. Providers encountered generally supportive principals who were grateful for the academic enrichment, and after-care support provided by the programs and saw these programs as valuable resources which supported and shared their vision and goals. More than half of providers had a blended or overlapping staffing model, which allowed them to develop partnerships with teachers and become more familiar with and aligned with the school curriculum. However, providers continued to experience some challenges in their partnerships with schools, such as aligning program behavioral norms with school-day norms and regularly accessing and sharing data with schools.

IV. Student Outcomes

Research on out-of-school time (OST) programs suggests that these programs can have an impact on school attendance, academic outcomes - including standardized test scores, and socio-emotional outcomes.[44] RFA conducted a series of analyses to evaluate the potential impact that the 21st CCLC programs had on each of these outcome areas for elementary, middle, and high school students. In this section, we report the findings from our analyses of the following outcome areas:

- School attendance
- Reading, math and science course grades
- Reading and math PSSA scores
- 1st-3rd grade Developmental Reading Assessment (DRA)
- High school student credit accumulation
- Student behavior

A. Data and Analysis

The analyses of student outcomes use a subset of public school students that attended the 21st CCLC programs to examine the relationship between student outcomes and program participation. The subset of programs used for analyses met the following criteria:

- Completion of a full year of programming in 2012-13
- Availability of two years of data for the analysis
- Availability of participation data
- Utilization of PSSA assessments
- Use of common grading systems

A total of 40 sites, representing 11[45] providers, met these criteria.[46] Data on program content areas and program staff were collected via the staff survey described in the previous section. Our analyses also compare OST regular participants with their peers, including students who attended the same schools but did not participate in 21st CCLC programs. Grade levels and assessment data for all OST participants and non-OST students were provided by the School District of Philadelphia, and one charter school.

RFA utilized the following definitions of OST groups for the evaluation:

Regular Participants: Participants who attended at least 30 days of programming. The Regular Participant group is further broken down into 30-89 day participants and 90+ day participants in our descriptive analyses.

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[44] Durlack, R. & Weissberg, R. (2012). After-school programs that follow evidence-based practices to promote social and emotional development are effective. Expanded Learning and After-school: Opportunities for Student Success. http://www.expandinglearning.org/docs/Durlak&Weissberg_Final.pdf; Little, P., Wimer, Christopher, Weiss, H. B. (2008). After School Programs in the 21st Century; Their Potential and What it takes to Achieve it. Issues and Opportunities in Out of School-Time Evaluation: Issue 10. Cambridge, MA: Harvard Family Research Project

[45] One provider did not participate in stuff survey so the total provider is 10 for analysis using stuff survey data.

[46] Eight Catholic schools could not be incorporated because they utilized Terra Nova assessments rather than the PSSA exams. In addition, the structure of grading systems in Catholic schools differed from the public schools making it difficult to merge the data. Two public sites did not provide participation data.

- **30-89 day Participants**: Participants who attended 30-89 days
- **90+ day Participants**: Participants who attended 90 or more days

A **Comparison Group** was selected from the less than 30 day participants or Non-OST students as defined below:[47]

- **Less than 30 day Participants**: Participants who attended fewer than 30 days
- **Non-OST Students**: Students who did not participate in the program

Limitations of the Study

Although RFA's analyses took into account the observed differences in student background characteristics, as well as the differences in student academic and behavioral performance before participating in the 21st CCLC program in 2012-13, selection bias remains a possibility, given the limited student and school information available for this study. Furthermore, we did not have data on whether OST participants and non-OST students attended programs other than 21st CCLC programs. As a result, the analyses could be biased if some comparison students included in this study attended other enrichment programs.

Organization of Findings on Student Outcomes

The analyses in each outcome area are organized in the following way:

1. **Descriptive analyses of OST participants' and non-OST students' outcomes.** The descriptive analyses provide a snapshot of the student academic and behavioral outcomes by OST participation levels. However, OST participants and non-OST students differ by their demographic and family characteristics, such as race/ethnicity, socioeconomic status, gender, English proficiency levels, disability status, as well as by their historical academic achievements. The observed differences presented in the descriptive analysis may be due to these pre-existing differences and may not reflect the potential impact of the 21st CCLC OST programs.
2. **Comparative analysis between OST regular participants and a comparison group that includes non-OST students and participants who attended 21st CCLC programs less than 30 days.** Analyses compare regular participants with a selected comparison group of students with similar background characteristics and academic achievement before attending the OST programs in 2012-13. These analyses are intended to determine whether OST regular participants outperformed comparison students if there was no preexisting statistically significant difference in student achievement and observed background characteristics based on the available data.
3. **The relationship between student outcomes and varying participation levels of the 21st CCLC programs participants.** RFA conducted a set of analyses using program participation data to examine the relationship between OST days attended and student attendance, taking into account the differences in race/ethnicity, gender, English proficiency levels, Free Reduced Lunch (FRL), and disability status.

[47] RFA utilized the Propensity Score Matching method (nearest neighbor matching within a caliper) to select a comparison group for the comparative analysis. Student demographic characteristics, as well as students' prior academic achievement and behavioral performance were controlled in the regression analyses.

We also incorporated the organizational-level elements of program quality, such as staff characteristics, content focus of the OST program, and strength of the school-program partnership into our analyses, which allows us to examine the role of these provider-level factors in the observed student outcomes. We summarize the finding from these analyses after reporting the results for all the outcome areas.

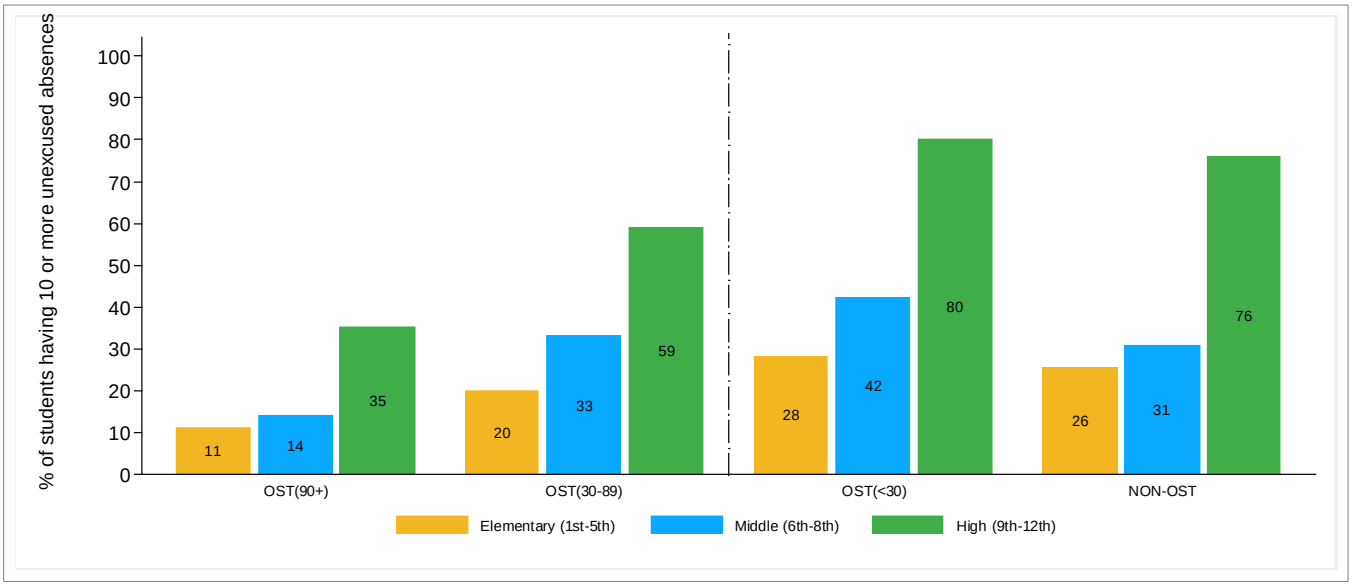
B. Student Attendance

The analysis of student attendance examines the likelihood of OST regular participants having 10 or more unexcused absences in comparison to participants who attended less than 30 days and non-OST students, and in relationship to their level of program participation. This section of the report begins with a descriptive analysis of the school attendance data of OST subgroups and non-OST students, and then provides results from the comparative analysis between OST regular participants and the comparison students with similar background characteristics and prior academic and behavioral performance. We then report the relationship between participation levels and student school attendance.

Descriptive Analyses

Figure 9 illustrates the percentage of students who had 10 or more unexcused absences in 2012-13 by grade and participation level. The dashed line separates the groups who regularly participated in the programs from OST participants who attended less than 30 days of the programming and non-OST students.

Figure 9. Percentage of Students Having 10 or More Unexcused Absences by Grade and Participation Level



- With the exception of middle school students who attended 30-89 days of programming, across all the grade levels, a smaller percentage of regular participants had 10 or more unexcused absences in comparison to less than 30 day participants and non-OST students.
- Across all OST groups, the percentage of students having 10 or more unexcused absences was lower for students in lower grade levels.

Comparative Analyses

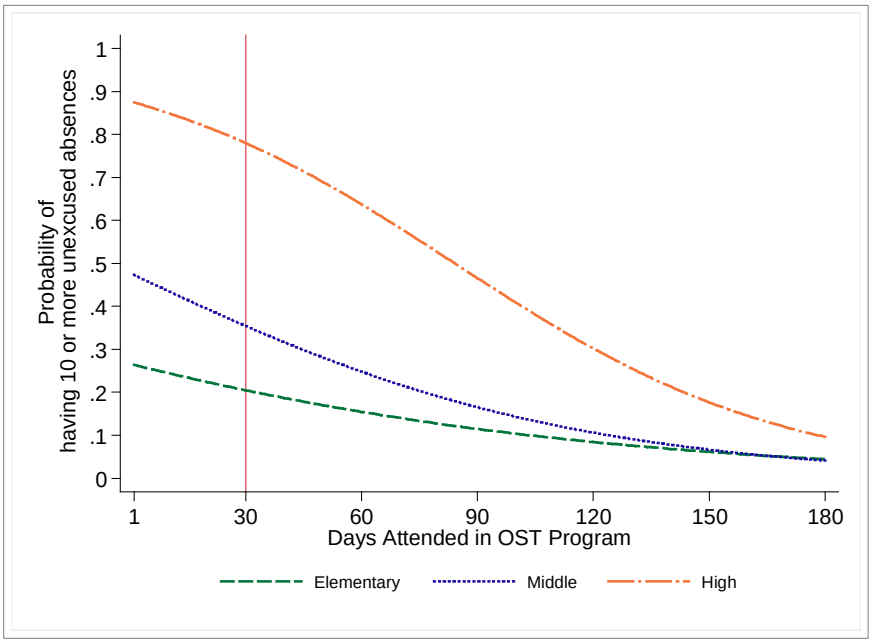
After ruling out differences in student background characteristics and student performance existing before entrance in the OST programs, our analyses suggest the following:[48]

- Elementary school OST regular participants were less likely to be absent 10 or more days than comparison students.
- For middle and high school students, there was no difference in the likelihood of being absent for 10 or more school days between OST regular participants and comparison students.

Relationship Between Level of Program Participation and School Attendance

Figure 10 displays the results of the logistic regression analysis showing changes in school attendance as program participation increases, controlling for the observed student and site characteristics, as well preexisting differences in student academic and behavioral performance. In Figure 10, the three lines show the estimated probabilities of having 10 or more unexcused absences at each participation level and the vertical line marks 30 days of participation in the OST program. For example, the probability of the having 10 or more unexcused absences for high school students (orange line) who did not participate in OST programs was approximately 0.8 (or eight out of 10). In contrast, high school students who attended 120 days had a much lower probability of 10 or more absences (roughly 0.3 or three out of 10).

Figure 10. Relationship Between OST Program Participation and School Attendance[49]



- For all grade levels, students who attended more days in the OST program were less likely to have 10 or more unexcused absences than students who participated fewer days.[50]

[48] Detailed results from the comparative analyses are provided in Table B2 in Appendix B.
[49] $p<0.05$ for the relationship displayed in the figure. All other variable considered in the analyses are held constant. Detailed results are reported in Table C1 in Appendix C.
[50] For example, elementary students who attended 30 days in the OST program have 28% lower odds to have 10 or more unexcused absences than those who attended only one day.

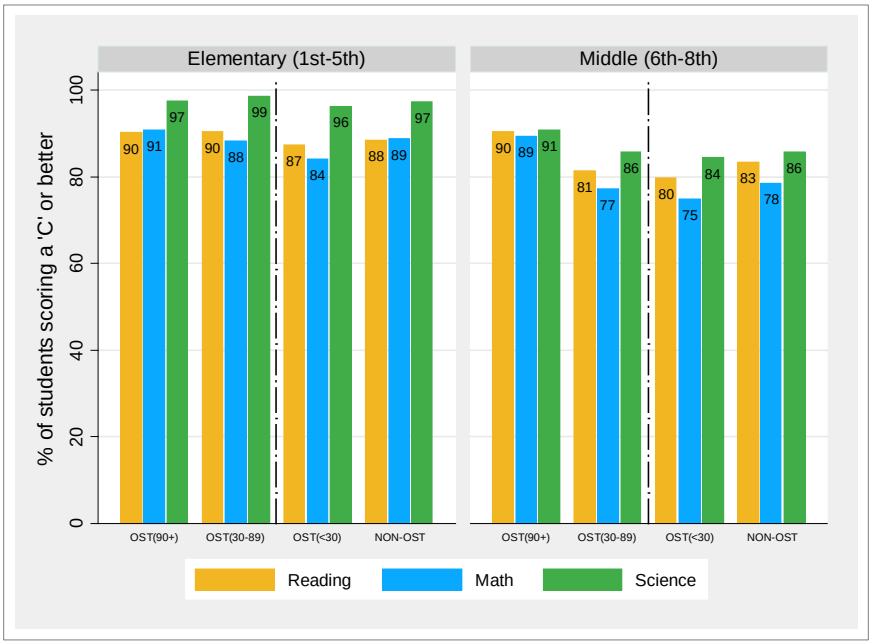
C. Reading and Math Course Grades

The analysis of literacy and math outcomes examines students' reading and math courses grades relative to a comparison group, and in relationship to their level of program participation. Like in the previous section, we first present a descriptive analysis of the course grade data of OST subgroups and non-OST students, followed by the results of comparative analyses between OST regular participants and the comparison groups with similar background characteristics and prior academic and behavioral performance. We end the section with an analysis of the relationship between participation levels and student course grades in reading and math.

Descriptive Analyses

Figure 11 illustrates percentage of student earning a "C" or above by grade and participation level. The dashed line separates the groups that regularly participated in the programs from OST participants attending less than 30 days and non-OST students.

Figure 11. Course Grades: Percentage of Students Earning a C or Above, by Grade and OST Subgroup



- **Math:** A higher percentage of 90+ day participants in elementary schools earned a C or better in math as compared to participants attending less frequently and non-OST students.
- **Science:** Overall, a very large percentage (greater than 95%) of elementary students, including all OST participant groups and non-OST students, received a "C" or better in science.
- **All Subjects:** A higher percentage of 90+ day participants at the middle school level earned a C or better in all subject areas in comparison to participants attending less frequently and non-OST students.

Comparative Analyses

After taking into account any pre-existing differences in student background characteristics and student performance before entering into the OST programs, our analyses suggest the following:[51]

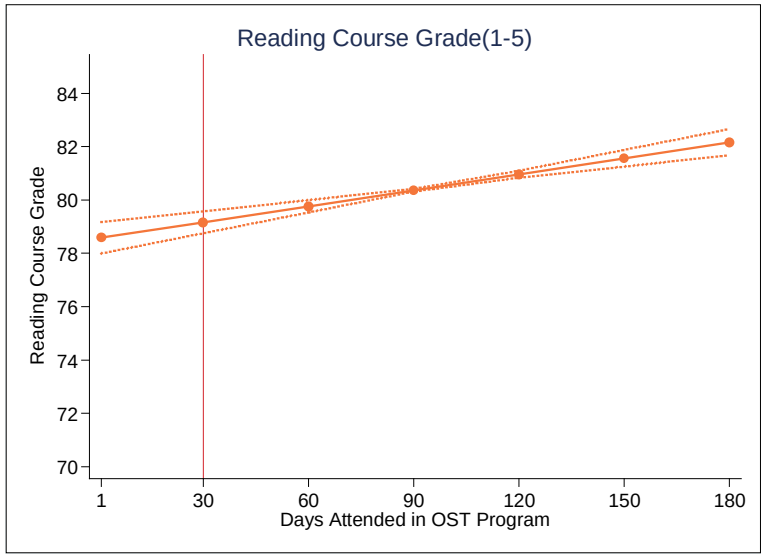
- Regular participants in middle school, on average, earned higher scores in math and reading than comparison students.
- There is no significant difference in middle school science course grades between regular participants and comparison students.
- There is no significant difference in elementary school reading, math, and science course grades between OST regular participants and comparison students.

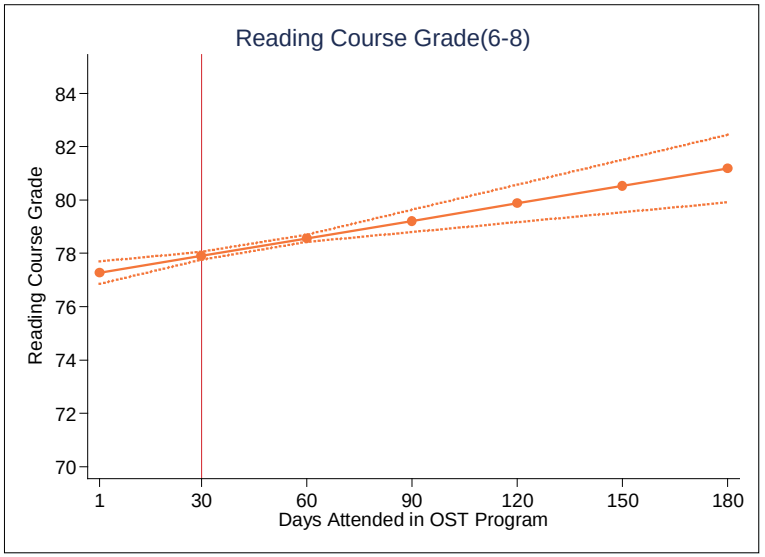
Relationship Between Level of Program Participation and Student Course Grades

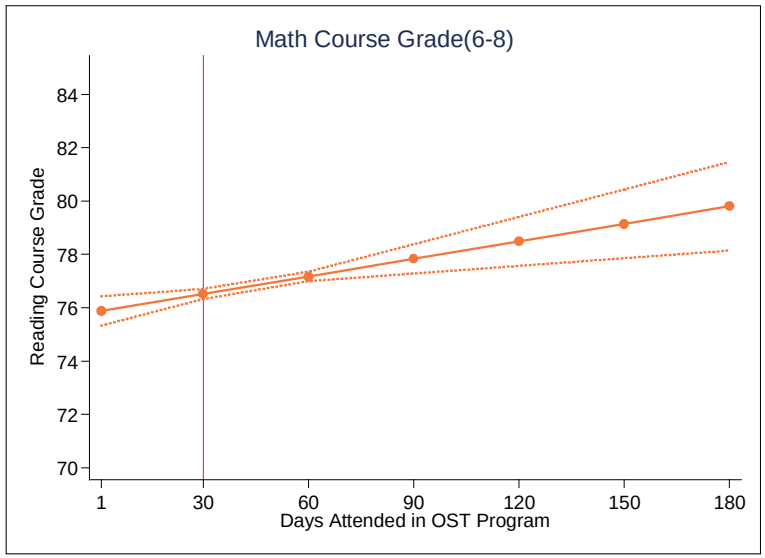
Figures 12-15 further illustrates the results from the regression analyses showing changes in student course grades as OST program participation increased, controlling for all other student and site level factors. The area within the dashed lines defines the confidence interval, or range, in which scores could fall. As the range gets wider, uncertainty increases. The vertical line marks 30 days of participation in the OST program.

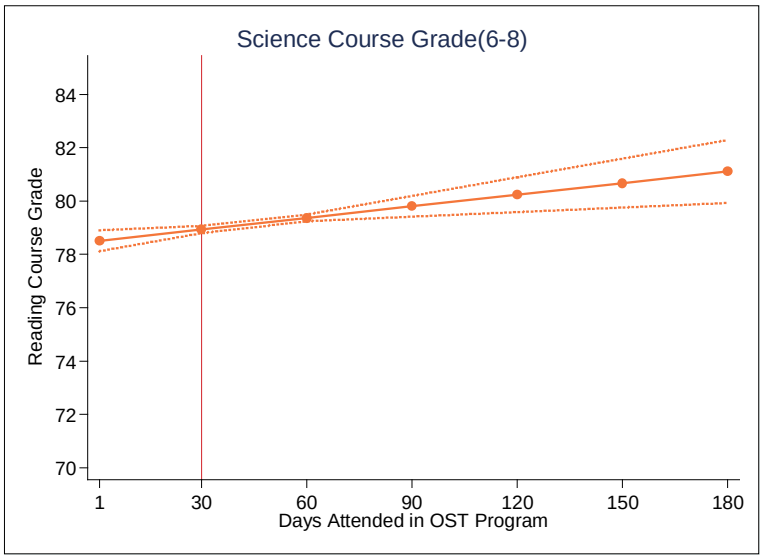
[51] Detailed results of the comparative analysis controlling for various student characteristics are provided in Table B1 in Appendix B.

Figures 12-15. Relationship Between Level of OST Participation and Elementary School Students Course Grades[52]









[52] $p<0.05$ for the relationship displayed in the figure. All other variable considered in the analyses are held constant. Detailed results are reported in Table C2 in Appendix C.

- On average, elementary school OST participants who attended more program days received higher course grades in reading than participants who attended fewer days.
- On average, middle school OST participants who attended more program days received higher course grades in reading, math, and science than participants who attended fewer days.
- No relationship was found between levels of program participation and elementary course grades in math and science.

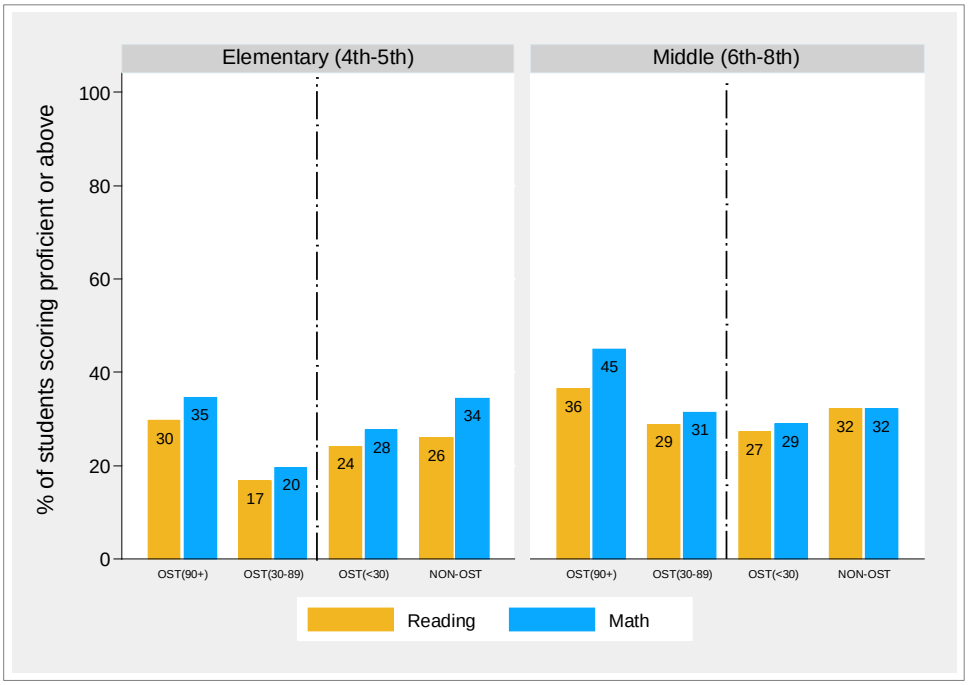
D. Reading and Math PSSA Scores

The analysis of student performance in reading and math PSSAs compares OST participants' scores on reading and math PSSAs to that of students in the comparison group, and in relationship to their level of program participation. The section begins with a descriptive analysis of the PSSA score data of OST subgroups and non-OST students, and is followed by the results from the comparative analysis between OST regular participants and the comparison students with similar background characteristics and baseline academic and behavioral performance in the previous year. The section ends with the analysis examining the relationship between participation levels and student PSSA scores in reading and math.

Descriptive Analyses

Figure 16 illustrates the percentage of students who scored proficient or advanced on the PSSA exam in 2012-13 by grade and participation levels. The dashed line separates OST regular participants from participants who attended less than 30 days, and non-OST students.

Figure 16. PSSA: Percentage of Students Scoring Proficient or Above by Grade and OST Subgroup



- Higher percentages of 90+ day OST participants scored proficient or advanced on the math and reading PSSA than participants who attended fewer days of OST programming or non-OST students.

Comparative Analyses

After ruling out differences in student background characteristics and student performance that existed before entrance in the OST programs, our analyses suggest the following[53]:

- For both elementary and middle school students, there is no significant difference on reading and math PSSA between regular participants and comparison students.

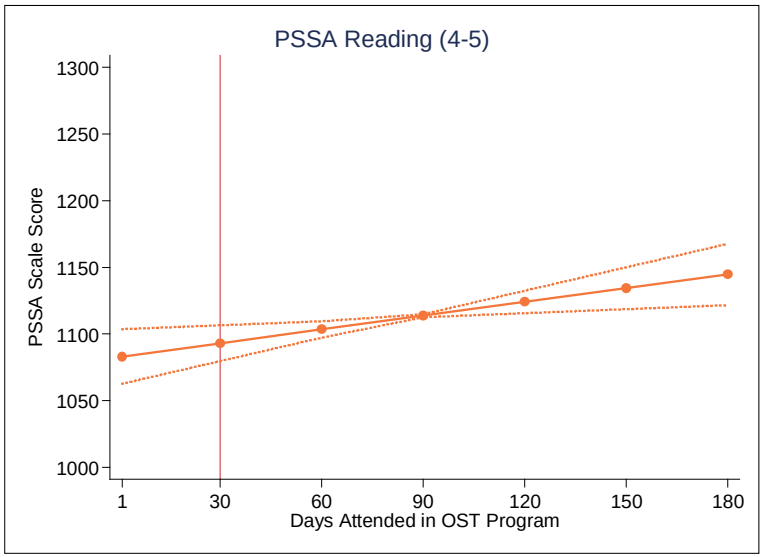
Relationship Between Level of Program Participation and Student Performance on PSSA

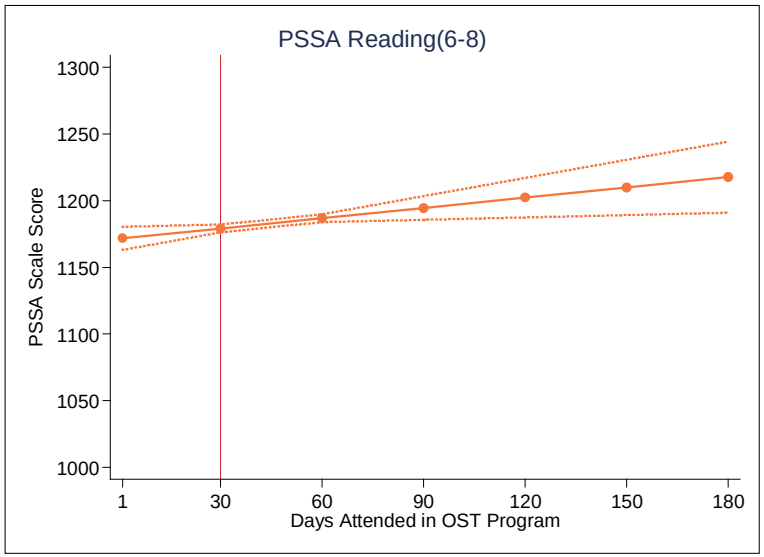
Figure 17-19 illustrates the results of a regression analysis showing changes in student math and reading PSSA scores as OST program participation increased, after controlling for background characteristics. Again, the vertical line (x=30) displays 30 days participation in the OST program. The area within the dashed lines defines the range within which we can be 95% certain the predicted values will fall. As the area between the dashed lines gets wider, the uncertainty increases.

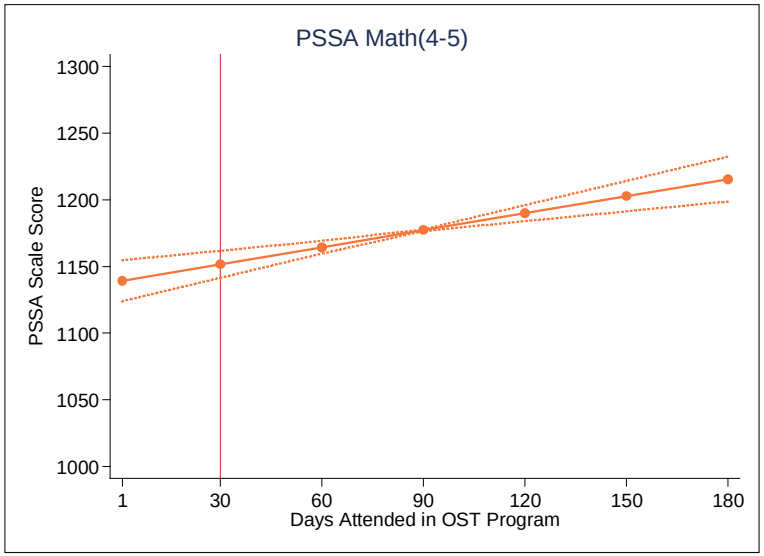
- On average, elementary school students with higher OST attendance scored higher on both math and reading PSSA than OST participants who attended fewer days.
- Middle school students with higher OST attendance scored higher on the reading PSSA than OST participants who attended fewer days.

[53] Detailed results are reported in Table B1 in Appendix B.

Figure 17-19. Relationship Between OST Participation and Student Performance on PSSA[54]







[54] p<0.05 for the relationship displayed in the figure. All other variable considered in the analyses are held constant. Detailed results are reported in Table C1 in Appendix C.

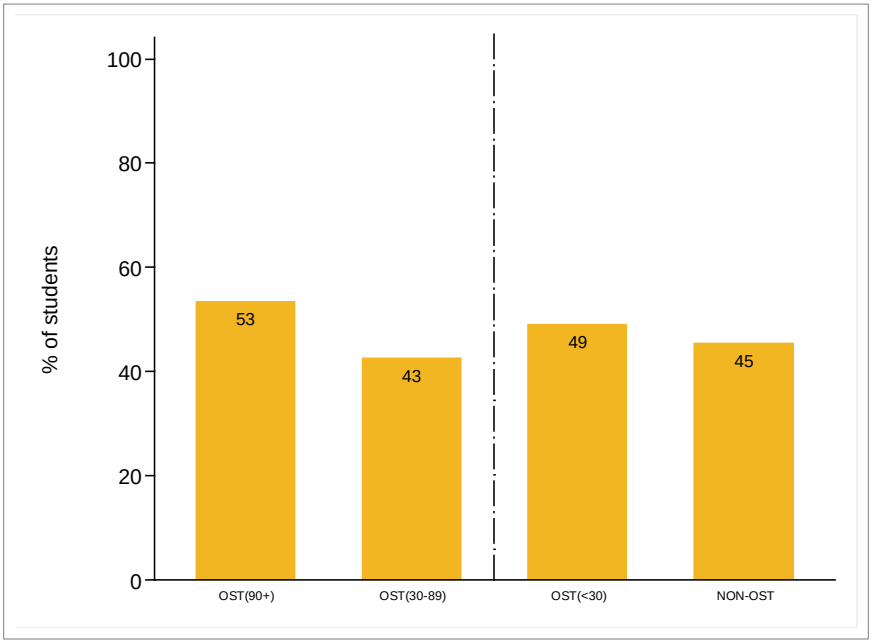
E. Developmental Reading Assessment

The Developmental Reading Assessment (DRA) is included in our analysis as an outcome for 1st-3rd grade students who do not take the PSSA or do not yet have two years of PSSA data available. The analysis of DRA examines OST regular participants' reading assessment scores in comparison to those that participated less than 30 days and non-OST students, and in relationship to their level of program participation. This section of the report starts with a descriptive analysis of the developmental reading assessment data of OST subgroups and non-OST students, and is followed by the results from comparative analyses between OST regular participants and the comparison group with similar background characteristics and prior academic and behavioral performance. We then report on the analysis examining the relationship between participation levels and DRA scores.

Descriptive Analyses

Figure 20 illustrates the percentage of 1st through 3rd grade students reading at grade level by grade and participation level.

Figure 20. Percentage of Students Reading at Grade Level, by Grade and OST Subgroup



- Higher percentages of 90+ day participants read on grade level than participants who attended fewer than 30 days in OST programming and non-OST students.

Comparative Analyses

After taking into account differences in student background characteristics and student performance that existed before entrance in the OST programs in 2012-13, our analyses suggest the following[55]:

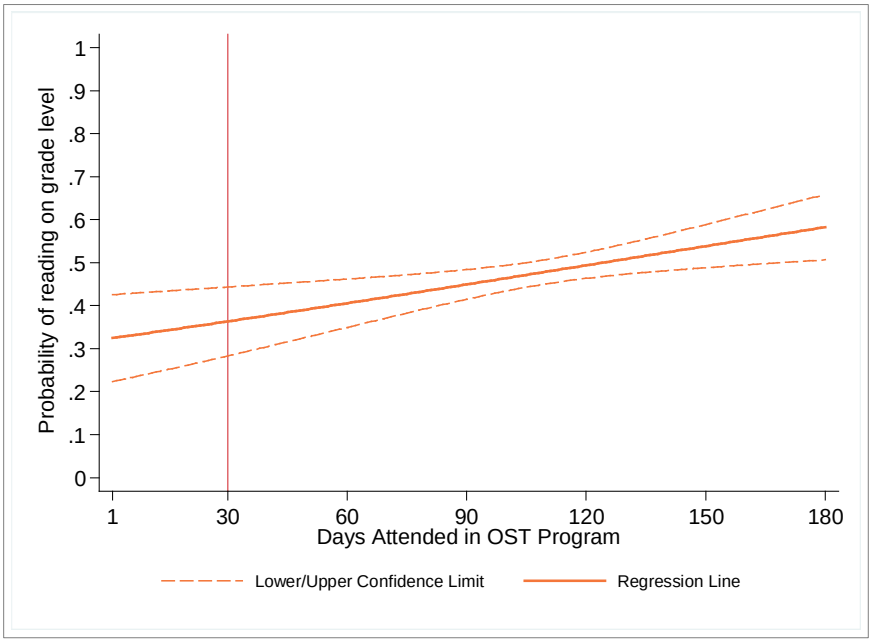
- Regular participants and comparison students displayed equal likelihoods of reading at grade level.

[55] Detailed results are reported in Table B2 in Appendix B.

Relationship Between Level of Program Participation and Student Performance on DRA

Figure 21 displays the results of the logistic regression analysis examining the probability of reading on grade level as program participation increases, controlling for the observed student and site characteristics, as well as preexisting differences in student academic and behavioral performance. The area within the dashed lines defines the range within which we can be 95% certain the predicted values will fall. As the area between the dashed lines gets wider, uncertainty increases. The vertical line marks 30 days participation in the OST programs.

Figure 21. Relationship Between OST Program Participation and Student Performance on DRA[56]



- Students who attended more days of OST programming were more likely to read on grade level than students who participated fewer days.[57]

F. High School Student Credit Accumulation

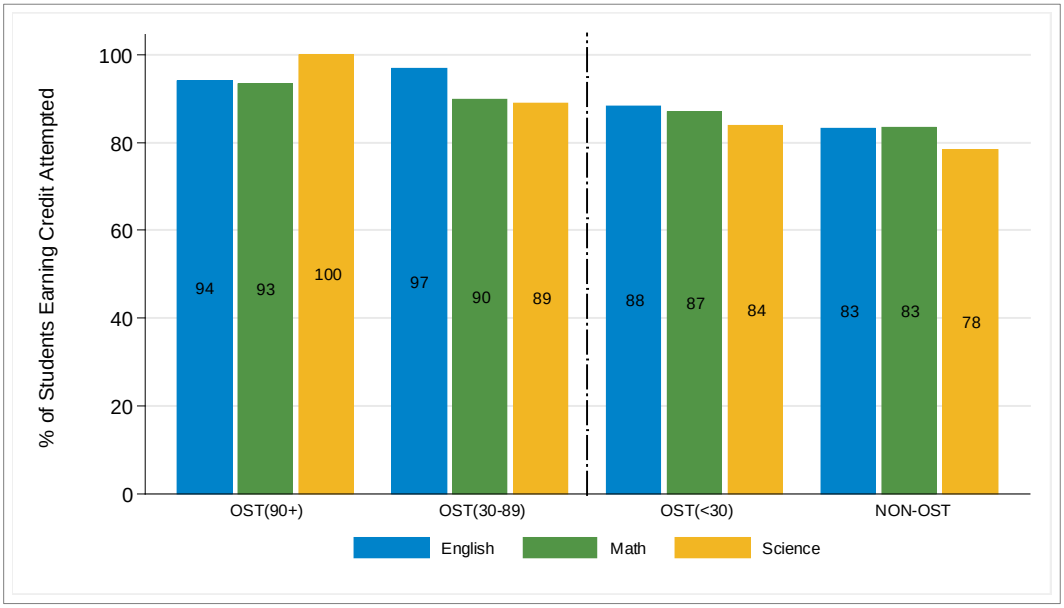
This section presents analyses of high school student credit accumulation in English/Language Arts (ELA), mathematics, and science comparing OST regular participants to participants who attended less than 30 days and non-OST students, and in relationship to their level of program participation. We examined high school credit accumulation because not all high school students in our study take standardized tests. Although 11th grade students take the PSSA there were not two consecutive years of standardized test scores available for our analyses. In addition, the complexity of high school course-taking patterns makes it challenging to aggregate and compare course grades.

Descriptive Analyses

Figure 22 illustrates percentage of students who earned all the credits attempted in each subject area of ELA, math, and science in 2012-13.

[56] $p<0.05$ for the relationship displayed in the figure. All other variable considered in the analyses are held constant. Detailed results are reported in Table C1 in Appendix C.
[57] For example, students who attended 30 days in the OST program have 19% higher odd of reading on grade level than those who attended only one day.

Figure 22. Percentage of high school students earning the credits attempted by subject and OST subgroups



- Overall, a higher percentage of OST participants earned credits attempted in all subject areas than non-OST students; and
- Across all subject areas, a strong majority of all students received all credits attempted.

Comparative Analyses

The comparative analyses, controlling for preexisting differences in academic and behavioral performance and observed background characteristics, suggest the following:[58]

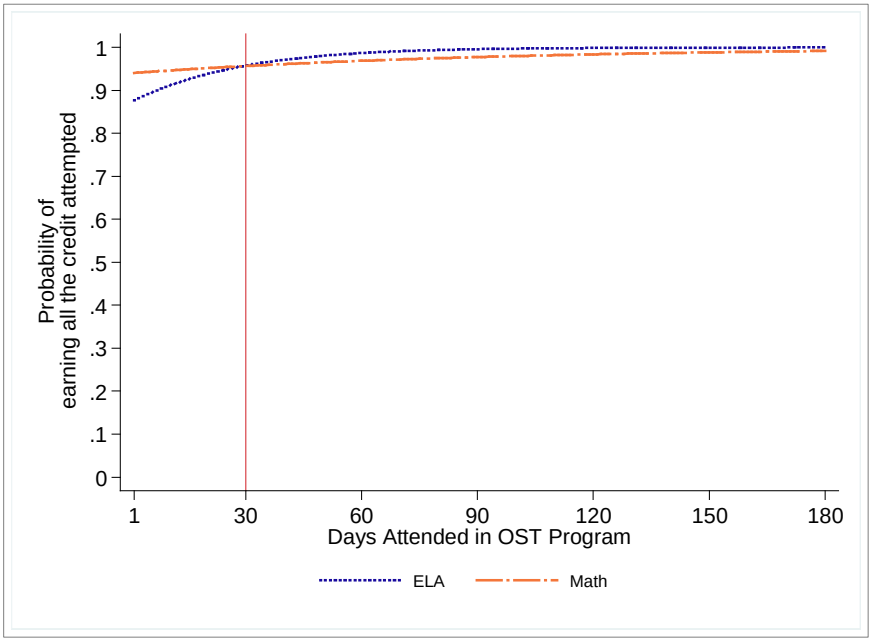
- For each of the subject areas studied, the probability of earning all credits attempted is the same for OST regular participants and comparison students.

Relationship Between Level of Program Participation and High School Student Credit Accumulation

Figure 23 displays the results from logistic regression analyses showing changes in the likelihood of earning all the credits attempted in ELA and math as OST program participation increases, controlling for all other student and site level factors. The vertical line marks 30 days of participation in the OST program. The area within the dashed lines defines the range within which we can be 95% certain the predicted values will fall. As the area between the dashed lines gets wider, uncertainty increases. The vertical line marks 30 days participation in the OST programs.

[58] Detailed results are reported in Table B2 in Appendix B.

Figure 23. Relationship Between OST Program Participation and High School Student Credit Accumulation[59]



- Students who attended more days in OST programming were more likely to successfully earn all credits attempted in ELA and math than those who attended fewer days.[60]

G. Student Behavior Outcomes

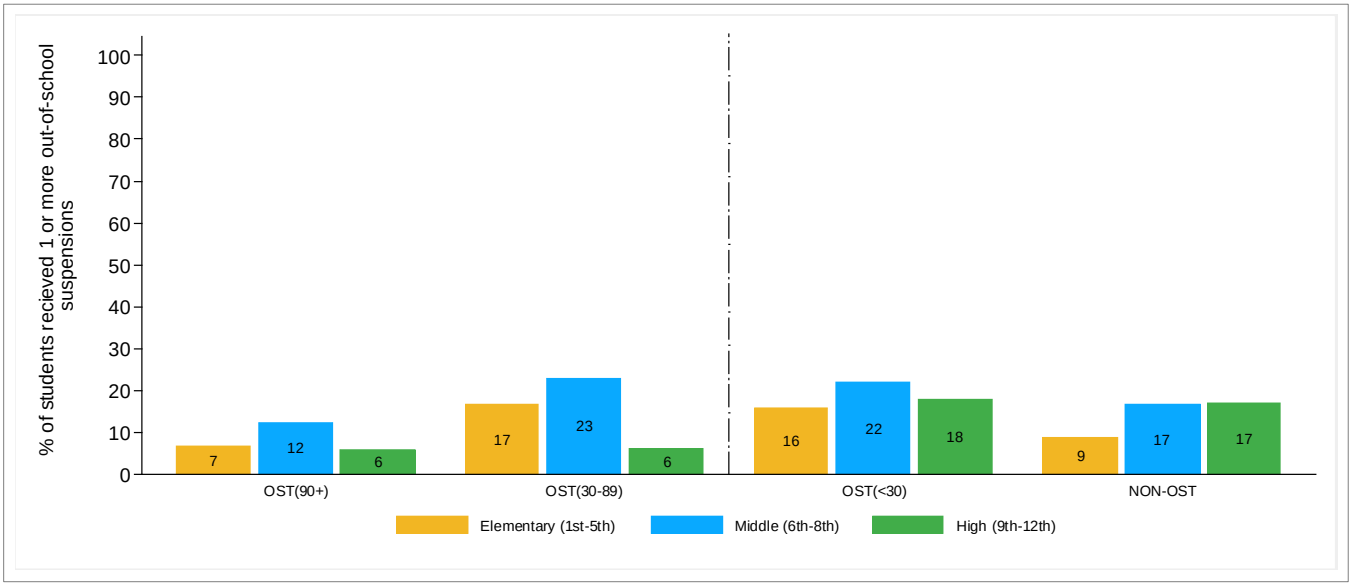
RFA's analyses of student behavior outcomes examined the likelihood that OST regular participants would receive out-of-school suspensions in comparison to their peers, and in relationship to their level of program participation.

Descriptive Analyses

Figure 24 illustrates the percentage of students who had one or more out-of-school suspensions in 2012-13 by grade levels and OST participation groups. The dashed line separates the groups who regularly participated in the programs from other groups such as OST participants who attended less than 30 days of the program or non-OST students.

[59] $p<0.05$ for the relationship displayed in the figure. All other variable considered in the analyses are held constant. Detailed results are reported in Table C2 in Appendix C.
[60] For example, students who attended 30 days in the OST program have 36% higher odds to earn all credits attempted in math than those who attended only one day.

Figure 24. Percentage of Students Having One or More Out-of-School Suspension by Grade Level and Days Attended



- A smaller percentage of 90+ day OST participants had an out-of-school suspension in 2012-13 than participants who attended fewer days or non-OST students.

Comparative Analyses

When comparing OST regular participants with students with similar background characteristics and baseline performance in the previous year, our analyses suggest that:[61]

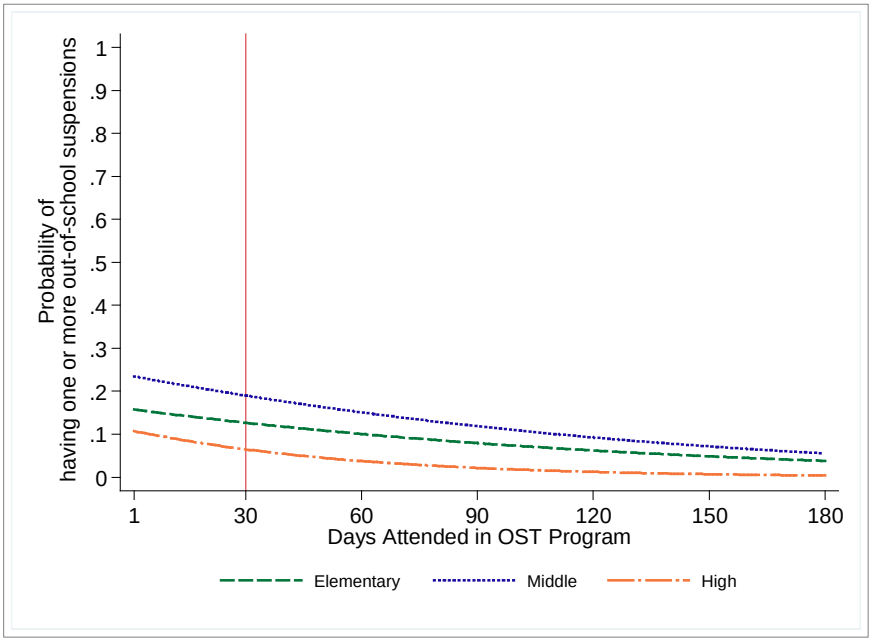
- OST regular participants and comparison students had the same likelihood of having one or more out-of-school suspensions.

Relationship Between Level of Program Participation and Student Suspensions

Figure 25 displays the results of a regression analysis showing changes in the likelihood of receiving one or more out-of-school suspensions as program participation increased. The vertical line (x=30) displays 30 days participation in the OST program. The area within the dashed lines defines the range within which we can be 95% certain the predicted values will fall. As the area between the dashed lines gets wider, uncertainty increases. The vertical line marks 30 days participation in the OST programs.

[61] See detailed results in Table B2 in Appendix B.

Figure 25. Relationship Between OST Attendance and Student Suspensions[62]



- Students who participate in OST programs more frequently are less likely to receive one or more suspensions than those participating less frequently.[63]

H. The Role of Organization-Level Elements of Quality Programming

21st CCLC providers vary by program goals and content, staff characteristics, school partnerships and in other observed and unobserved ways. The degree to which organization-level elements of quality programming are related to program effectiveness may have policy and practice implications for providers and other education and OST policymakers. RFA's evaluation incorporated data collected from a staff survey which assessed these organization-level elements of quality identified in other research as supports for high quality OST programs into our analyses. This section provides a summary of the findings of these statistical analyses. More details about the analyses and the results are reported in Tables C1-C4 in Appendix C.[64]

- **Staff with college degrees:** A higher percentage of staff with at least a bachelor's degree is associated with a higher probability that OST high school students will successfully earn all credits attempted in each subject area of Reading, Math, and ELA. However, the relationship between the percentage of staff with a bachelor's or higher degrees and student performance is mixed across different assessments or subject areas for elementary and middle students. There is also no consistent relationship pattern between staff degree and behavioral outcomes of all the students.

[62] $p<0.05$ for the relationship displayed in the figure. All other variable considered in the analyses are held constant. Detailed results are reported in the appendix Table C4.
[63] For example, elementary students who attended 30 days in the OST program have 22% lower odds to have out-of-school suspension than those who attended only one day.
[64] The variables actually included in the analyses vary for different analyses because of missing data and colinearity issues, or due to little variation across providers within the grade level studied.

- **Staff with teaching certifications:** A higher percentage of staff with a teacher certification is associated with a higher probability that OST high school students will successfully earn all credits attempted in the subject areas of ELA and math. However, there are no consistent relationship patterns between the percentage of staff with a teacher certification and other outcome areas studied.
- **OST staff meetings with school teachers:** A higher percentage of staff meeting with teachers is negatively associated with elementary and middle school course grades as well as elementary students' school attendance and behavioral outcomes. However, this is positively associated with reading PSSA scores for both elementary and middle school students.
- **OST staff meetings with principals:** A higher percentage of staff meeting with principals is negatively associated with elementary and middle school reading PSSA scores, elementary reading course grades, as well as elementary and middle school attendance.
- **Other organization-level elements of quality programming:** The analyses of other organizational-level elements, such as percentage of full-time staff, percentage of staff majoring in STEM, percentage of staff using curriculum for planning OST activities, percentage of staff considering a strong academic or STEM as a program, etc., also produced mixed results.

Overall, our analyses found much variation across the outcome areas of the study (attendance, course grades, PSSAs, behavior, and others) and grade levels. The mixed results from the analyses reflect complex relationships between organization-level elements of quality programming and student outcomes. More specifically, while the organization-level elements of quality programming can play an important role in achieving the proposed academic and behavioral goals of 21st CCLC OST programs, the presence of these elements among providers might also be a function of the needs of students served. For example, on one hand, the positive relationship between staff quality in terms of percentage of staff with at least a bachelor's degree or with a teacher certification and high school student credit accumulation might suggest the importance of having qualified staff for the programs serving high school students, which is consistent with the findings documented in the literature. On the other hand, the negative relationship between the percentage of staff meeting with school teachers or principals and student outcomes, such as course grades and school attendance, might reflect a stronger partnership between OST programs and schools as a response to the needs of low-performing students.

These **findings should be interpreted with caution** given the limitations of the analyses and complex relationships between organization-level elements of quality programming and measured student outcomes for all outcome areas and grade levels.

I. Section Summary

RFA analyses examined the potential impact of OST programs on student academic performance and behavioral outcomes. After taking into account the pre-existing differences between OST and non-OST students, 21st CCLC OST regular participants did better than students who attended less than 30 days in OST programs and non-OST students in multiple arenas. Specifically:

- Regular elementary school OST participants were less likely than comparison students to have 10 or more unexcused absences.
- Regular middle school OST participants were more likely than comparison students to earn higher course grades in math and reading.

For OST participants, **higher levels of participation were associated with better outcomes in many, but not all, behavioral and academic performance indicators.** Table 4 summarizes these participation-level findings.

Table 4. A Summary of Finding from Analyses of the Relationship Between OST Participation Levels and Student Outcomes

Outcomes	Elementary	Middle	High
Fewer school absences	●	●	●
Higher reading course grades	●	●	●
Higher math course grades	●	●	●
Higher science course grades	●	●	●
Score higher on PSSA reading	●	●	●
Score higher on PSSA math	●	●	●
1st-3rd grade students reading at grade	●	●	●
Successfully earning credit attempted in ELA and math	●	●	●
Successfully earning credit attempted in science	●	●	●
Fewer out-of-school suspensions	●	●	●

● Significant evidence ● No significant evidence ● N/A

V. Recommendations

The results of this cross-site analysis of OST programming and participation outcomes offer insights into the strengths and challenges of OST programs in Philadelphia and suggest recommendations for providers to strengthen their individual programs and for policy-makers to continue building the capacity of the City's OST system.

A. Recommendations for Program Providers

- **Focus on Retention.** Our study suggests that when students participate more frequently in OST programs, they have better academic and behavioral outcomes. This confirms what has been reported in other research on OST programs[65]. Rather than expanding enrollment, programs could work to increase participation and retention among those already participating, particularly for middle and high school students. Intentional retention efforts, such as monitoring program attendance and calling students who drop off from the program and their parent/guardians may be required with older youth.

- **Increase the percentage of program staff with bachelor's degrees and explore ways to increase the percentage of certified teachers for programs serving high school students.** Hiring more certified teachers and staff with bachelor's degrees is associated with some positive academic outcomes for high school students. This confirms what has been reported in other literature on OST programs[66]. However, hiring staff with more education and teacher certifications can be costly. 21st CCLC OST programs should consider ways to hire at least one certified teacher to oversee and mentor other front-line staff in providing academic support.

- **Providers should continue to develop relationships with school personnel, particularly teachers.** Providers in our study varied in the extent to which they developed relationships with the classroom teachers of students they served. Relationships with classroom teachers allow for more continuity between school day activities and norms and after-school activities. Schools and OST providers could work together to identify the best strategies for developing these relationships. Strategies may include periodic common planning time for teachers and OST staff, or communications systems such as "homework logs"[67], through which teachers could share information about daily homework. OST staff and schools could also explore common professional development that would promote alignment of supports for students.

- **Consider blended or overlapping staffing models and leverage their potential.** This study, as well as other evaluations of OST programs, suggests that blended staffing or overlapping staffing models in which OST staff work either for the school or in the school during the school day, may be a promising practice for building school partnerships. This blended staff model can provide additional opportunities for OST staff to build relationships with the school

[65] Deschenes, S. N., Arbreton, A., Little, P.M., Herrera, C., Grossman, J.B., Weiss, H.B., Lee, D. (2010). Engaging older youth: Program and city-level strategies to support sustained participation in out-of-school time. Harvard Family Research Project.
[66] Bodilly, Susan J. and Megan K. Beckett. *Making Out-of-School-Time Matter: Evidence for an Action Agenda*. Santa Monica, CA: RAND Corporation, 2005. http://www.rand.org/pubs/monographs/MG242. Also available in print form.
[67] Huang, D., Dietel, R. (2011). Making after-school programs better. (CRESST Policy Brief). Los Angeles, CA: University of California

and ensure the alignment of the school day to the OST program. For example, providers with staff presence in the school were able to meet with classroom teachers, participate in school committees or teacher professional development sessions, and generally stay abreast of the major events or developments occurring during the school day. In our study, these models support but do not guarantee the development of these deeper school partnerships. In some cases, school-based site coordinators did not fully leverage their presence in the school to deepen the school partnership. Providers should be intentional, then, about utilizing staff based on schools to develop school relationships.

- **Enhance STEM.** Strong STEM programming is characterized by hands-on, inquiry-driven learning opportunities which encourage a high level of activity, engagement and STEM knowledge. In this first year of widespread STEM programming, RFA's observations suggest that there is room for growth in developing STEM programming across providers; particularly when OST staff are asked to deliver the STEM curriculum. OST staff should have a clear understanding of the material but also the ability to facilitate an inquiry driven, hands-on program, in order to positively influence student interest in STEM, their awareness of STEM career opportunities, and eventually their success in STEM courses.

- **Consider ways to provide more subject-specific and one-to-one tutoring efforts.** Programs can have the greatest impact on academic outcomes when they provide regular one-to-one tutoring supports. Programs should consider strategies, such as recruiting high school or college student volunteers, to provide these supports. However, this would require programs to create an infrastructure to support tutors, including appropriate supervision and training.

- **Engage in reciprocal data sharing.** Strong school partnerships are fostered by reciprocal data sharing. Sharing student grades, test scores, school attendance and suspensions data can help OST providers better target their individual or collective support for participants. As providers seek access to data from schools, they should also look for opportunities to share data on their programs with schools including enrollment and participation data or local evaluation reports. School staff could benefit from knowing which students are participating in the after-school program so that they can leverage their supports.

- **Leverage 21st CCLC advisory councils to build staff competencies.** Across providers, staff reported that building relationships with parents and utilizing community resources were their most challenging tasks. Research on OST programs suggests that engaging parents and communities is a best practice which increases the engagement and impact of OST programs. All 21st CCLC programs are required to have advisory councils made up of parents and other stakeholders. Programs should leverage these groups to help build staff skills in this important area.

B. Recommendations for Philadelphia's OST System

Continue to Support Citywide **Professional Development** of OST Staff in the following areas:

- **Train the trainer professional development for providers on supporting their front-line staff with behavior management:** Staff reported behavior management as

one of their most challenging areas. In addition, staff, across providers, tended to be newer to the OST field and may have lacked experience in this area. Given that staff turnover is often high in the OST field, supporting staff with behavior management is an ongoing need for OST organizations. Philadelphia's OST system already offers professional development opportunities for OST staff around behavior management. The system could further support providers by providing them resources to offering trainings for program directors and managers regarding best practices and resources for coaching OST staff in this area.

- **Building community connections and relationships with parents:** Philadelphia's OST system could also support providers in identifying ways to build skills and knowledge related to their neighborhoods, community resources and parents.

- **Implementation of STEM programming:** Philadelphia's OST system has made available the resources of the Franklin Institute to help train OST providers in offering STEM programming. However, our observations as well as student feedback suggest that there is room for growth in this area. Research indicates that high quality STEM programs are characterized by opportunities for students to engage in hands-on, inquiry-based learning environments. To increase the quality of STEM programming in the OST system, additional professional development and coaching, particularly on the hands-on and inquiry-based approach may be needed to develop OST staff capacity in this area.

- **Increasing student participation in programs, particularly engaging middle and high school students:** Middle school and high school students had low levels of participation in the 21st CCLC OST programs and program participation was related to improved outcomes for students. Programs could benefit from support in thinking about how to better engage middle and high school students so that they can retain more youth in the programs, support youth skill development and thus, improve student outcomes.

- **School curriculum and state standards:** Even if academic supports are not central to a providers' program model, homework help sessions could improve if program staff were familiar with the topics that students are expected to learn. For older students, it would be beneficial for staff to learn more about Keystone exit exams and consider ways to support older students in passing those exams.

Work with the School District of Philadelphia to Develop School-Level Support for OST-School Partnerships. The District could help strengthen OST programs in the following ways:

- **Increase principal awareness of the value of OST programs and ways in which they can support these programs in their schools**. Principal support is essential when integrating the OST program in the life of the school and developing alignment between the school day and the OST program. Principals who are invested in OST programs in their schools could be invited to speak to other principals at a forum either hosted by the School District or another organization. It would also be important to provide encouragement and support for principals about ways to deepen the partnerships between OST and school staff and create opportunities for further communication between OST staff and teachers.

- **Encourage schools to have common professional development with their OST providers about the curriculum and academic improvement needs of their students.** Common professional development is another strategy for aligning OST and school day activities and facilitating the development of relationships between OST staff and classroom teachers. School District staff could provide professional development to OST providers about the District curriculum. OST providers could provide training for teachers on project-based learning or STEM programming.

- **Make student data accessible to program providers in real time so that they can target academic interventions for program participants.** OST programs could better target academic and behavioral interventions if they had real-time access to student benchmarks, report cards, daily attendance and disciplinary incidents.

Consider Ways in Which the City Could Support the Development of the OST Workforce.

Clearly this is one of the most significant issues facing the city OST programs. There are no easy answers but system-level OST decision-makers should continue to consider strategies for creating a larger pool of highly qualified staff for OST programs such as increasing salaries and offering training opportunities that are substantial and accessible.[68]

C. Recommendations for Future Research

The results of this study encourage us to consider how we can build upon this work to offer further insight into factors supporting the development of high-quality OST programs and promising practices that support positive student outcomes. The following types of studies are worth considering in the future:

- **Longitudinal analyses.** Studying the long term impact of OST programs on student academic achievement and other socio-emotional outcomes would help fill a void in the OST research literature and provide the OST community with valuable information about the impact of sustained participation on student outcomes.
- **Best practices case studies.** Best practice research identifies programs that are proven effective and examines in more depth their program and operational practices. Research of this type would provide more information about strong organizational and program-level factors which are effective in Philadelphia. This type of investigation would employ a case study approach where intense observations, interviews, and other forms of qualitative data are collected to understand program quality and best practice implementation.
- **System-change study.** As noted above, efforts are underway to support the development of a more cohesive OST system in Philadelphia. As these efforts progress, it will be important to understand how the system impacts providers' ability to access data, resources, and other important information that will inform program improvement.

[68] Raley, R., Grossman, J., & Walker, K. E. (2005). *Getting itright: Strategies for after-school success*. Philadelphia, PA: Public/Private Ventures.

Appendix A. Organization-Level Elements of Quality Programming Data Collection and Analysis

Research for Action conducted one round of interviews with 21st CCLC program directors, site coordinators, select school principals, and select student participants as well as administered a staff survey during spring 2013. Researchers also collected and analyzed program documents, *e.g.*, Quarterly Performance Reports (QPRs) and program schedules. Table A1 below provides a brief description of the type of data collection tolls employed and the number of respondents.

Table AI. Description of Data Collection

Data Collection Tool	Number of Respondents
Staff Survey	288
Interviews with program directors and site coordinators	131
Interviews with principals	16
Interviews with students	47

Interviews were transcribed and data were coded using Atlas.ti. Analytic memos were developed for each local provider covering several themes including program content, staffing, and school partnerships. Provider memos were the basis for the provider-level local evaluation reports. Data was then combined into three matrices (academic program content, staffing, and school partnerships) that reflected data across all 50 sites. Data from these matrices formed the basis for city-wide analytic memos on the same three topics.

Appendix B. Comparative Analyses: Regular Participants Versus Comparison Students

As discussed in the report, RFA conducted two sets of analyses to examine the potential impacts of OST programming on student academic performance and behavioral outcomes. The first set of analyses examine whether students regularly attending OST programs had better academic and behavioral outcomes than the comparison students. This part of the study uses propensity score matching methods to select a comparison group of students who did not regularly participate in the 21st CCLC OST program in 2013. Table B1 compares student academic performance on PSSA and course grades of regular participants and comparison students.

Table B1. PSSA and Course Grades: Regular Participants vs. Comparison Students

	Regular participants		Comparison Students		Difference
	n	Mean	n	Mean	
Elementary					
PSSA Math (4-5th Grade)	223	1171.4	227	1207.1	35.80†
PSSA Reading (4-5th Grade)	224	1114.0	229	1132.8	18.80
PSSA Science (4th Grade)	129	1211.0	136	1219.2	8.20
Reading Course Grades	535	80.8	516	80.9	0.13
Math Course Grades	535	81.1	516	81.4	0.28
Science Course Grades	535	84.1	516	84.4	0.27
Middle School (6-8th Grade)					
PSSA Math(6-8th Grade)	613	1253.3	544	1234.1	-19.18
PSSA Reading(6-8th Grade)	614	1198.1	541	1197.4	-0.70
PSSA Science (8th Grade)	146	1076.4	135	1104.3	27.90
Reading Course Grades	603	78.9	521	77.8	-1.10*
Math Course Grades	603	78.1	521	76.6	-1.44*
Science Course Grades	603	79.6	521	79.6	0.06

†$p<0.10$; *$p<0.05$; **$p<0.01$

Table B2 reports estimated odds ratio from logistic regression analyses. The analyses examine: whether regular participants are less likely to have out-of-school suspensions or 10 or more unexcused absences; whether high school regular participants are more likely to successfully earn the credit they attempted in each subject area; and, whether regular participants in 1st through 3rd grade are more likely to read at grade level.

Table B2. Estimated Odds Ratio from Logistic Regression: Regular Participants vs. Comparison Students

		Estimated Odds Ratio[69]
Out-of-school Suspension	Elementary	1.47†
	Middle	1.07
	High	0.57
10+ unexcused absences	Elementary	0.66*
	Middle	0.86
	High	0.80
Earning credit attempted (9-12th grade)	ELA	2.43
	Math	0.42
	Science	1.23
DRA: read at grade level	(1-3rd grade)	1.12

†p<0.10; *p<0.05; **p<0.01

[69] Odds Ratio (OR) is a measure of association between the treatment and the outcome of interest (e.g. scoring proficient/advanced in PSSA, receiving a C or above), controlling for the variables that may be predictive of the outcome under study. Specifically, student participation in OST programs is not associated with odds of outcome if OR=1; student participation in OST programs is associated with higher odds of outcome if OR>1; and, student participation in OST programs is associated with lower odds of outcome if OR<1.

Appendix C. Analyses of the Relationship between Program Participation Levels and Student Outcomes

The second set of analyses use participant data to examine the relationship between the number of days students participate in OST programs and observed academic and behavioral outcomes. All the analyses use linear or logistic regression methods, and the variables controlled for in the models include student demographic and family characteristics, as well as student performance before joining the program. These characteristics are deemed important for student academic and behavioral performance in the literature. We also incorporated organization-level elements of quality programming collected from staff survey into the analyses. Including these factors that can be manipulated by providers in our analyses may have policy implications and can be methodologically important because of the potential correlation between these factors and other variables included in the analyses. It is worth noting that any results from this set of analyses should not be generalized to the whole student population since only data of OST participants was employed in the analyses. Table C1-C4 reports the results from this set of analyses.[70]

Table C1. Regression Results from Analysis of PSSA Data

	Elementary (4-5)		Middle (6-8)	
	Reading	Math	Reading	Math
OST Days	0.34*	0.37*	0.26*	0.16
% full-time staff	-1.42**	0.11	-7.20**	3.17*
% staff with at least a Bachelor	1.05	-0.34	12.98**	-4.24*
% staff being Certified teachers	1.19	-1.04	24.35**	-3.76
% staff majoring in STEM	--	--	9.24**	-3.95*
% staff saying STEM was program goal	--	--	-11.75**	2.31*
% Staff saying a strong academic was program goal	-2.04**	-0.54	4.02**	-3.87**
% staff using curriculum for activity planning	-5.28†	-1.40	-30.96**	5.17
% staff meeting teachers weekly	1.65**	0.26	7.23**	0.58
% staff meeting principals weekly	-2.57	0.41	-20.27**	1.71
Cohort 6A(STEM)	-15.65	-12.45	10.43	1.87

$^{\dagger}p<0.10$; *$p<0.05$; **$p<0.01$

[70] Student demographic and background characteristics (i.e., race/ethnicity, socioeconomic status, gender, English proficiency levels, disability status, and grade levels) and previous year performance were controlled in the analyses. Standard errors were clustered at the provider level. Some variables were omitted from analyses because there was little variation across providers or due to issues of missing data and colinearity.

Table C2. Regression Results from Analysis of Course Grades Data

	Elementary (4-5)			Middle (6-8)		
	Reading	Math	Science	Reading	Math	Science
OST Days	0.02**	0.01	0.01	0.02**	0.02**	0.01*
% full-time staff	0.04**	-0.01	0.08**	0.21**	0.19*	0.25**
% staff with Bachelor or higher ed. levels	0.16**	-0.01	0.09**	-0.28**	-0.26†	-0.39**
% staff being certified teachers	-0.04	0.04	-0.17*	-0.32*	-0.23	-0.55*
% staff majoring in Stem	--	--	--	-0.20**	-0.29*	-0.30*
% staff saying stem was program goal	--	--	--	-0.01	-0.03	0.22**
% staff saying academic was program goal	0.29**	0.06*	0.44**	0.03	-0.08	-0.26***
% staff using curriculum for activity planning	0.17*	-0.03	0.39**	0.67**	0.46	0.66*
% staff meeting teachers weekly	-0.31**	-0.01	-0.40**	-0.30**	-0.19*	-0.12†
% staff meeting principals weekly	-0.09**	0.01	-0.02	0.46**	0.34†	0.30
Cohort 6A (STEM)	0.25	1.46**	-0.26	-0.35	0.23	-1.53

†p<0.10; *p<0.05; **p<0.0. Analysis for elementary science course grades only include 2nd through 5th grade.

Table C3. Results from Logistic Regression: High School Credit (9th through 12th grade) and DRA (1st-3rd grade)

	Earning Credits attempted			Reading at grade level (1-3)
	ELA	Math	Science	
OST Days	1.04*	1.01**	1.01	1.01**
% full-time staff	0.99	1.00	0.94*	1.00
% staff with Bachelor or higher	1.46**	1.43**	1.47**	1.00
% staff being certified teachers	1.05**	1.05**	1.00	0.90**
% using curriculum for activity planning	--	--	--	1.10**
Cohort 6A (STEM)	0.97	0.87	1.56	1.67**

†p<0.10; *p<0.05; **p<0.01.

Table C4. Results from Logistic Regression: Out-of-School Suspension and Unexcused Absences

	Elementary (2-5)		Middle (6-8)		High (9-12)	
	10+ Unexcused Absences	Out-of-school Suspension	10+ Unexcused Absences	Out-of-school Suspension	10+ Unexcused Absences	Out-of-school Suspension
OST Days	0.99**	0.99**	0.98**	0.99**	0.98**	0.98**
% full-time staff	1.02**	0.99	1.00	0.99	0.93**	0.98**
% staff with Bachelor or higher	0.95**	1.01	1.01	0.99	1.44**	1.67**
% staff being Certified teachers	1.34**	0.94*	1.01	0.98*	1.04**	1.07**
% staff saying attendance as a program goal	0.97	--	1.01	--	--	
% staff having access to school data	1.07**	1.00	1.01	1.00	--	--
% staff meet teachers weekly	1.05**	1.02**	0.99	1.00	--	--
% staff meet principal weekly	1.09**	0.96**	1.03**	1.02	--	--
Cohort 6a(STEM)	0.33**	1.18	0.46*	1.11	0.58	1.50†

†$p<0.10$; *$p<0.05$; **$p<0.01$.

Appendix D. Results from Analyses using Catholic School Data

RFA also conducted a series of analyses using data collected from the seven 21st CCLC sites that served Catholic school students. Like the analyses using public school data, our analyses of Catholic school data include two sets of analyses. The first set of analyses examined whether students who regularly attended OST programs also attended more days of school and, in turn, achieved better academic outcomes than the comparison students. The second set of analyses examines how the OST participation levels were related to participants' school attendance and observed academic performance on TerraNova and course grades. Table D1 reports the statistical results from analyses of academic performance. The predictor for the comparative analyses is a dummy variable indicating whether the student regularly participated in the OST program in 2012-13. The predictor for the dosage analyses is the total days students participated in the OST programs. The outcomes are student numerical course grades and TerraNova percentile score in 2012-13.

Table D1. Statistical Results from Analyses of Academic Performance Data

Coefficients from comparative analyses: Regular Participants versus comparison students			
TerraNova (2-8th)		Course Grades (5-8th)	
Reading	Math	Reading	Math
2.54	1.00	-1.35*	0.22
Coefficients from dosage analyses: academic performance by OST participation levels			
Reading	Math	Reading	Math
0.01	0.02	-0.01	0.01

†p<0.10; *p<0.05; **p<0.01. Student previous year performance and indicators of grade levels were controlled in the analyses.

After controlling for students previous year's performance, our analyses suggests:

- There is no evidence showing OST regular participants did better in reading and math on TerraNova or course grades than comparison students.
    - OST regular participants underperformed comparison students in course grades in reading.
- Among students who attended the programs, there is no significant relationship between OST participation levels and student performance on TerraNova or course grades in both reading and math.

Table D2 reports the statistical results from logistic regression. The predictor for comparative analyses is a dummy variable indicating whether a student regularly participated in the OST programs in 2012-13. The predictor for the dosage analyses is the total days a student participated in the OST programs. The outcome is a dummy variable indicating whether students had 10 or more absences in 2012-13.

Table D2 VIIII. Statistical Results from Analyses of School Attendance Data.

		Estimated Odds Ratio
Comparative Analyses: Regular Participants vs. Comparison Students	Elementary (2-5)	0.54**
	Middle (6-8)	0.52**
Dosage Analyses: Academic Performance by OST Participation Levels	Elementary (2-5)	0.62
	Middle (6-8)	0.60

†p<0.10; *p<0.05; **p<0.01. Student previous school absences and dummy variables of grade levels were controlled in the analyses.

After controlling for student previous year absences, our analyses suggest:

- OST regular participants were less likely to have 10 or more absences than comparison students.
- Among students who attended the program, there is no significant relationship between OST participation levels and student likelihood of having 10 or more absences.

It is worth note that these findings should be interpreted with great caution given the limitations associated with the analyses. Besides the limitations discussed in the report, there are other data limitations for our analyses of Catholic schools. For example, we were not able to take into account the differences in student background characteristics because such information was either not available or incomplete in the data we received, whereas literature has suggested that these characteristics are important predictors for student academic performance. Furthermore, course grades were in different scales across different age grade levels (e.g., 1st-3rd grades reported letter grades while 4th-8th grades reported numerical grades), which created challenges in including all students into the analyses.

Appendix E. Provider Profile

Table E1. Provider Profiles

Provider	Type of Organization	Cohort 6 Grantee	Cohort 6A Grantee	Total number of sites
Catholic Social Services	Non-profit Multi-Service Organization	Yes		10
Education Works	Non-Profit organization Education and Youth Development Organization	Yes	Yes	6
Public Health Management Corporation	Intermediary Organization	Yes		4
Pan American Academy Charter School	Charter School	Yes		1
Netter Center for Community Partnerships at the University of Pennsylvania	University-based non-profit organization	Yes		3
Congreso de Latinos Unidos	Non-profit organization Multi-Service Organization	Yes	Yes	8
Philadelphia Arts and Education Partnership	Non-profit Arts Education organization		Yes	4
To Our Children's Future with Health	Non-profit, Education and Youth Development Organization		Yes	2
Sunrise	Non-profit Education and Youth Development Organization		Yes	1
Communities in Schools	National non-profit Multi-service organization		Yes	4
City Year of Greater Philadelphia	National non-profit Education and Youth Development Organization		Yes	6