Massachusetts Department of Elementary and Secondary Education
21st Century Community Learning Centers
Summer Learning Programs
Program Evaluation Report – Summer 2012

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Evaluation Report
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Introduction
During the summers of 2011 and 2012, the Massachusetts Department of Elementary and Secondary Education’s (ESE) 21st Century Community Learning Centers (CCLC) Grant Program funded four summer learning programs with a special emphasis on utilization of project-based learning approaches, outreach to diverse learners, and a blended academic and enrichment learning approach. Each of the selected sites had existing summer programs in place. Participation in this initiative facilitated program expansion to a larger and more diverse student population. Program sites funded were located in North Adams, Salisbury (Triton Regional School District), Springfield, and Wareham. These program sites were selected through a rigorous request for proposal process.

These four selected pilot sites were fully enrolled and served high proportions of low-income low-performing students. Programs coalesced around a variety of themes, but generally all focused on stemming summer learning loss, reinforcing the academic skills learned during the school year, and helping prepare students to succeed in the upcoming school year in the context of a blended academic and enrichment learning experience. This report presents findings from the evaluation conducted by the National Institute on Out-of-School Time (NIOST) at Wellesley College of the 2012 summer programs.¹

Methods
Data for the evaluation report were collected through (a) program observations; (b) interviews with site directors, academic teachers, and a subset of enrichment teachers; (c) review of child-level assessment data collected by the school and site directors; and (d) post-program interviews with parents and academic teachers.

The child-level assessment used was the Survey of Academic Youth Outcomes (SAYO). SAYO is designed specifically for use in out-of-school time programs and is a research-based scientifically-tested instrument. The SAYO is based on a “menu” approach, in which programs collect data from classroom teachers and afterschool program staff on those outcomes that are aligned with their goals and program practices. Each outcome area is measured by asking teachers and staff to respond to four or five questions related to observable youth behaviors. Outcomes selected for the ESE 21st CCLC program evaluation included a combination of outcome domains from the teacher and afterschool program staff versions of the SAYO. These outcomes included Science, Reading, Verbal Communication, Written Communication, Mathematics Communication, Mathematics Reasoning, Mathematics Problem Solving, Learning Skills, Behavior, Initiative, Relations with Adults, and Relations with Peers.

The Assessing Program Practices Tool (APT) was used to evaluate characteristics related to the overall structure/organization and functioning of the program, as well as features of the academic and enrichment activities. During a program visit, researchers observed the overall program according to five dimensions: (a) informal program time (e.g., arrival time), (b) academic organization, (c) youth participation, (d) staff management of academic learning time, and (e) overall social-emotional environment. In addition, researchers also evaluated each of the academic and enrichment activities that they observed according to six dimensions: (a) organization and

¹ An Executive Summary of the 2011 and 2012 summer evaluations are available at: http://www.doe.mass.edu/21cclc/reports/
nature of the activity, (b) staff ability to promote youth engagement and stimulate thinking, (c) staff ability to positively guide youth behavior, (d) staff build relationships and support individual youth, (e) youth participation in activity time, and (f) youth relations with others. Researchers rated each of the items that comprised these dimensions on a scale from 1 (not true) to 4 (very true). Individual item ratings for each of the dimensions were combined, and then an overall mean score was created for each of the dimensions described above.

**Program Models**

**North Adams**

**Program Background, Model, and Goals**
The North Adams “Imagineering” Summer Science Camp located at Brayton Elementary School, enrolled 325 children in pre-K through (rising) grade 6. The program expanded from last summer by almost 100 students, and included Kinder Camp, 3-year-olds, and CASTLE special-needs students. The overall goals of the summer program were to (a) stem summer learning loss, (b) reinforce the academic skills learned during the school year, and (c) help prepare students to succeed in the upcoming school year through project-based science and “Imagineering” activities. Nurturing students’ social and emotional well-being and growth was also a program priority and prompted the inclusion of the MindUP™ curriculum.

Throughout the summer program, literacy and mathematics activities were explored through science and engineering projects. The engineering theme was broadly defined giving teachers flexibility to explore various aspects of engineering, including architecture, civil and electrical engineering, water management, environmental safety, and preservation. All instruction embraced the “engineering design process” as defined by the Museum of Science’s Engineering is Elementary® initiative. The engineering design process focuses on identifying a problem/question, imagining a solution, making a plan, creating and testing a solution, and improving and adjusting a solution as needed.

**Staffing**
North Adams Summer Science Camp employed 25 teachers, assistant teachers, and one-to-one special education aides. A program coordinator, PE teacher, school nurse, and school principal were also on campus. Many of the teachers had worked at prior summer school programs or the afterschool program and were experienced in project-based and experiential learning. The program coordinator organized all aspects of the camp including (a) hiring teachers and recruiting students, (b) coordinating special education plans (IEPs) for students, (c) scheduling meals, (d) arranging transportation, and (e) developing field trip and special event schedules. The program coordinator also managed outreach to numerous community partners.

Teachers designed their summer classroom curriculum and planned multiple field trips that were tied to the program’s academic goals and engineering theme. Four professional development trainings were held for teachers prior to program commencement. Topics of these trainings included:
• MindUP™ curriculum
• Project-based learning
• Engineering is Elementary® curriculum
• Behavior management

Recruitment
The target population were academically at-risk (determined by reading and mathematics scores) and low-income students. Recruitment materials were sent home to families, and phone calls were initiated to encourage enrollment. Enrollment was opened to the general public after sufficient time elapsed for target student enrollment. There was extensive outreach to local childcare and Head Start centers to recruit children entering pre-kindergarten and kindergarten.

Schedule
Summer Science Camp operated Monday through Friday, seven hours per day, for six weeks from June 25 to August 3. Breakfast, lunch, and snacks were served daily, and bus transportation was provided. Classes were organized by grade level. Each class was assigned one teacher and one assistant teacher. Students and teachers stayed together as a unit throughout the day, including breakfast and lunch.

The program offered a diverse and varied schedule with a combination of academic learning, recreational activities, and fieldtrips. Both co-teaching and team-teaching models were frequently used. The program offered a balance of inside and outside activities. Physical Education and Music and Movement classes were offered weekly and also embraced the camp’s science theme by including such activities as FitMath and a musical/dance production called “It’s Electrifying.”

Educational field trips were a regularly scheduled feature of the summer program. All field trips were linked to the engineering curriculum and project-based learning framework. Each classroom typically had special events that took them off the Brayton School campus three days per week, for at least part of the day. These events included weekly trips to the public library and swimming at Windsor Lake or Lindley Pond. Examples of field trips and special events included visits to Rowe Hydro Electric Plant, Searsburg Wind Turbine, North Adams Historical Society, Hoosac Tunnel, Savoy State Park, Hopkins Forest, MASS MoCA Kidspace, Tanglewood, Mount Greylock, Berkshire Museum for “Innovations” Installation, and local-area businesses to see engineering in practice and everyday life. The summer program ended with a “Celebration of Learning Trip” to the Connecticut Science Museum.

Program Highlights 2012
Deepening relationships with community partners was a goal for the 2012 summer program. The partnership with Mass MoCA Kidspace led to the sharing and implementation of the MindUP™ curriculum. Through MindUP™ activities and materials students achieve the following: (a) learn about how the brain works, (b) practice self-awareness, (c) sharpen their ability to focus attention, (d) build self-regulation skills through “Mindful Attention and Mindful Actions,” and (e) explore how their attitudes and actions affect themselves and others.

Efforts were made to take full advantage of regional resources and environments. Rising fifth- and sixth-grade students produced models of two local historical sites: (1) the Hoosac Tunnel, a 4.75-mile-long railroad tunnel in western Massachusetts and (2) Mount Greylock Summit and War
Memorial Tower. After visiting and photographing both locations, students met with historians at the North Adams Historical Society to learn about the history and engineering accomplishments each site represents. Working in teams, students developed schematics and constructed models of these two historical sites using plywood, chicken wire, papier-mâché, paint, and natural objects. These models were presented to the school Superintendent and Mayor of North Adams for display in City Hall.

**Salisbury**

**Program Background, Model, and Goals**

The Summer Adventures program at Salisbury Elementary School was organized and managed by the special coordinator for the Triton Regional School District and included children in kindergarten through grade 5. The planning team for the summer program included the Title 1 director, the curriculum coordinator for mathematics and ELS, the school nurse, school adjustment counselor, principal, and assistant principal. Program goals for 2012 were to build on the success of the 2011 summer program by providing an enriching and stimulating experience that blends academic content with project-based learning while emphasizing STEAM (science, technology, engineering, arts, and mathematics) skills.

Recognizing that science and technology were underrepresented in the classroom, the school district had procured engineering curriculum kits earlier in the year. The summer would prove to be a timely pilot of the kits. With training through the Museum of Science, one teacher provided on-site training to summer colleagues (e.g., teachers, instructional assistants, and college mentors) over the course of several weeks prior to program launch. Curriculum kits were project-based, and teachers were given the latitude to enhance the curriculum as needed for their individual classrooms. Additional materials were purchased to supplement the kits and to deepen and expand the scope of engineering exploration. Children in each grade level moved sequentially through the steps of the engineering design process—identifying a problem, brainstorming solutions, designing and building their product, testing their design, and redesigning and testing as needed. All projects required hands-on exploration and collaboration with peers, and were linked to other academic domains through literature, mathematics, art, and history.

**Staffing**

There were 14 teachers on staff and 16 instructional assistants (IAs). Six of these IAs were one-to-one aides, supplied by the district’s Department of Special Education. Additional staff included eight college mentors, a school nurse, and an on-site counselor. Once again a team-teaching model was utilized, with each class having at least two or more teachers, as well as a college mentor. Parents were also invited to volunteer in the classroom or to chaperone field trips.

Daily operations were managed by a program director and included (a) overseeing the curriculum and training, (b) purchasing supplies and materials, (c) arranging for a daily snack and lunch, (d) hiring of staff, (e) enrolling the children, and (f) communicating with families. All three program partners—Harlequin Theatre, the Salisbury Police Department, and the Salisbury Public Library—were on site and visible to staff and children. These partners provided multiple services and benefits to the program, including support for the theater stage production, bike helmets and instruction, and access to library cards and books. A new partnership with the local cable company led to the filming of the S-T-E-A-M Olympics and the theater production of “Schoolhouse Rock.”
Recruitment
Given that many families in Salisbury struggle with poverty and, in many cases, homelessness, outreach efforts were made to youth and families. An early mailing about the program targeted the homeless and academically struggling children in the district. Additional recruitment communications included the district newsletter, information distributed/communicated during parent-teacher conferences, as well as personal referral and phone calls home. Recruitment efforts led to 154 children being enrolled for the summer.

Schedule
The program operated Monday through Thursday, from 9 a.m. to 3 p.m., with an early drop off provided for those families that needed additional care. Morning classes were academically focused and incorporated project-based learning approaches. Afternoon enrichment classes also used project-based learning and linked to the morning academic classes. These enrichment classes ran from 1 p.m. to 3 p.m., with children choosing from many activities, including theater, movie production, physical activities, computer, art, mathematics, games, and outside activities.

Program Highlights
Consistent with the 2011 program design, small group and individualized mathematics support was provided. Children rotated out of mathematics class to the mathematics lab, with daily visits for those children struggling academically or those that tested below their grade level. Every effort was made to ensure that the summer mathematics curriculum supported the mathematics curriculum taught during the school year, while allowing for deeper exploration of mathematics concepts through games and other hands-on activities.

Field trips were directly linked to the content of the summer curriculum. For example, fifth-grade students studying submersibles were able to design, build, and test their own submersibles and then go on a whale watch to see whales breach and feed. Other field trips included the Butterfly Museum, the Children’s Museum in Dover, and the Museum of Fine Arts.

The last week of the program featured the S-T-E-A-M Olympics, with the arrival of the Olympic Torch and a variety of competitions. A culminating public stage production of “Schoolhouse Rock” was videotaped and covered by the local cable company and media.

Springfield
Program Background, Model, and Goals
Springfield’s Summer Learning Program, held at Van Sickle Middle School, incorporated the Summer Olympics as the backdrop for a robotics-focused STEM (science, technology, engineering, and mathematics) learning experience. Managed by Springfield’s Department of Parks, Buildings and Recreation Management (DPBRM), the program provided youth the opportunity to learn team-building skills, develop positive relationships, and increase self-confidence through participation in a blend of academic and enrichment activities. A key partner for the program was Springfield College’s Leaders in Academics, Community Engagement, and Service (LACES) program, a comprehensive youth development program that helps youth develop as community leaders and engage in citizenship through team-building and trust exercises.
Staffing
Teachers from the Springfield Public Schools along with Springfield College students, Springfield DPBRM leaders, and other paraprofessionals worked together prior to the start of the summer to design a program that highlighted a collaborative teaching approach and learning experience for students. The 36-member teaching team, which included many teachers from the previous summer program, attended 30 hours of pre-training including LACES experiential training, robotics, and academic enrichment planning. Two program coordinators organized all aspects of the summer learning program including student/staff recruitment, field trip coordination, family communication, and attendance/behavior monitoring.

Recruitment
Program providers used a multi-level approach to participant recruitment. Initially, program providers invited youth from the 2011 summer program to participate. Recruitment was expanded to include students attending the 21st CCLC afterschool programs at Liberty Elementary School and Van Sickle Middle School in addition to other feeder elementary schools to Van Sickle Middle School. Enrollment in the summer program was based on a student’s ability to attend full days and the entire six-week program.

Schedule
The six-week program operated from 8:00 a.m. to 4:00 p.m., with 145 youth in grades 3 through 9. Youth were placed into groups by age to maintain age-appropriate academic and enrichment activities. The program took place from July 5 to August 10 at Van Sickle Middle School and Springfield College. Students met at Van Sickle Middle School each day for the first four weeks. Youth were able to choose and participate in a selection of enrichment, academic, and physical activities. A weekly field trip was included in the schedule.

Using the Olympics as a unifying theme, students worked collaboratively in small groups to select a country, conduct historic and cultural research, and create a profile for an athlete. During the fourth week students were introduced to the robotics curriculum and began developing their robotic athletes. Older youth with previous experience building and programming robots assisted and mentored younger students. The robots were decorated to represent their assigned countries and programmed to compete in their target sport for the Olympic Games held later at Springfield College.

Youth spent time at Springfield College learning about robotics and participating in activities designed by the LACES program to reinforce trust-building, effective communication, and self-confidence. The LACES activities included an outdoor ropes course, indoor rock climbing, and field games. Throughout the program, youth were presented with group challenges that focused on building emotional well-being and positive peer relationships. During the last week, youth returned to Van Sickle Middle School to finalize their projects and prepare for a public showcase of their summer accomplishments.

Program Highlights
Springfield’s Summer Learning Program at Van Sickle offered a unique blend of challenging academic and enrichment learning experiences. The Olympic Games theme provided a familiar, timely, and engaging context for a summer learning experience. Structural improvement in the program following the previous summer allowed for more youth choice in the selection of enrichment and physical activities. Youth could change their enrichment or physical activities daily,
or could continue with something in which they wanted to build more skills. Teachers and program
leaders believe that the program improvements resulted in higher levels of engagement, less
behavioral issues, and higher attendance rates.

**Wareham**

**Program Background, Model, and Goals**
The Community, Academic, Recreation, and Enrichment (CARE) summer learning program, now
in its second summer of programming at the Wareham Middle School, served 189 youth. Youth in
grades 3 through 9 participated in CARE for six hours a day over a six-week period. The program
goal, similar to that for last summer, was the successful delivery of academic and enrichment
classes that focused on STEM and project-based learning. The STEM focus was chosen because
science, in particular, remains a targeted need/goal for the district, especially among elementary
students. A continuing priority of CARE was to utilize the surrounding natural environment, such as
marshlands and beaches, as well as other regional resources. Approximately 50 percent of last
summer’s participants returned to the CARE program this summer. New enrichment partners and
field trip sites included Buzzards Bay Coalition, Cape Cod Canal Education Center, Harvard
Natural History Museum, and the New Bedford Ocean Explorium. Returning partners and field trip
sites were Wareham YMCA, National Marine Life Center, Bridgewater State University, and
Bristol Community College.

**Staffing**
The CARE program director has been coordinating the summer and afterschool programs in
Wareham for 9 years and has taught science at the middle school for 16 years. Many of the CARE
staff are faculty in the Wareham School District or are affiliated with the Wareham Middle School
afterschool program. Program staff included a program director, 24 teachers, 19 para-professionals,
2 adjustment counselors, a full-time nurse, secretary, and an assistant coordinator. Each class was
taught by a teacher and at least one para-professional. Class sizes ranged from 9 to 15 children.

This summer CARE was able to expand the academically at-risk class to include not only rising
ninth-graders but also rising seventh- and eighth-graders. This class of 13 students was taught by 3
staff members who engaged students in community service projects while exposing them to career
and college opportunities and planning. Collaboration between science teachers and staff from the
Buzzard’s Bay Coalition began during the school year and continued through the summer. Every
Monday during the summer program, two to three educators from the Buzzard’s Bay Coalition co-
taught science classes with CARE teachers.

Three new professional development opportunities were offered to summer staff focusing on
mathematics, media, and student learning styles:

- Ten staff members participated in a three-hour Rubik’s Cube training, which incorporated
  mathematics concepts such as geometry, algebra, and fractions.
- Four staff members completed a four-week online training through MIT for “Scratch,” a
  programming language that allows youth to use a computer to create interactive stories,
  animations, music, games, and art while utilizing mathematical, problem-solving and
  reasoning skills.
Seven staff members took part in a four-hour training on the Universal Design Process, which focused on modifying lessons for students with different learning styles.

Recruitment
The CARE program targets low-income youth in the Wareham School District. Families were made aware of the program through an open house featuring a presentation describing the program. A direct mail campaign targeted three groups: summer 2011 participants, low performers on MCAS, and students recommended by administrators and school staff. Enrollment was voluntary and based on interest. After registration, an orientation meeting was held to explain the details and goals of the program to participating families.

Schedule
The CARE program operated every Monday through Thursday from July 2 to August 9, for six hours each day (8:30 a.m.–2:30 p.m.). Each morning youth were transported to the program by bus and gathered in the auditorium for a community meeting. Students took seven different classes over the course of the six-week program. The daily schedule consisted of three classes: a 2.5-hour morning class, a 45-minute book club after lunch, and a 1.5-hour afternoon enrichment class.

Students were assigned to 1 of 12 groups according to grade level. This year’s program utilized less mixed-grade grouping than last year’s program in order to keep classes more developmentally appropriate for individual youth. Youth traveled in these groups for most of the day, which afforded them programmatic continuity and relationship building with peers. Lunch, book club, and field trips provided opportunity for cross-group socializing and learning.

Program Highlights
The CARE program showcased their STEM theme with a display of student work, including life-size crabs and turtles, in the lobby and classrooms. To emphasize the importance of community service programming, youth participated in two fundraising events for the benefit of the National Marine Life Center (NMLC). The inaugural 4-mile Cape Cod Canal Walk raised over $200 for the NMLC, and the annual CARE Fair was an opportunity for family members to purchase student-made items as well as to learn about students’ summer projects. Other service projects included beautification of the school grounds and creating laminated field guides for the surrounding salt marsh area.

Participants
The following table describes the enrollment profile of the four ESE 21st CCLC pilot program sites. Mean attendance across all programs was 82 percent. Students attended an average of 147 hours of programming and only 10 percent of the students enrolled participated for less than 50 percent of the program time.
Table 1: Student Characteristics for All Sites, 2012

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</tr>
<tr>
<td>Female</td>
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<td>50%</td>
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</table>

Findings

Interviews with Program Leaders
Researchers from NIOST interviewed teaching staff at each of the summer learning program sites to gain an understanding of their summer program experiences. The following synthesizes the major themes that emerged from these interviews: (a) planning and partnership, (b) building and strengthening adult-youth relationships, (c) changes to teacher’s toolboxes, (d) learning experiences, and (e) suggestions for program improvement.

Planning and Partnership
When teachers were asked about the actualization of their summer program goals, many of the staff attributed their positive experiences to two major factors. First, many staff reported they had increased direction prior to the start of the program, and felt that the level of training and preparation were key elements to the success of their program. Such trainings not only helped staff acquire new (and successful) ideas and teaching strategies to implement in their summer program, but they also acquainted staff with one another. Providing staff with planning and training opportunities helped foster a stronger sense of confidence about the success of the summer program, and allowed them to think more concretely about where to focus their efforts to maximize students’ abilities and potential.
We had training sessions in the spring ... where we all met and were getting ideas and a feel for the program ... so that kind of prepared us and we were given the kits and materials ahead of time. We also got to know who was in our group, who the teachers and helpers were, and started talking about our ideas and what we wanted to do.

We had training sessions this spring where we would come Wednesday afternoons for a few hours. And that’s where we all kind of met and started our own community, you know? We started getting ideas and a feel for the program. They would have speakers come in from the Museum of Science, Children’s Museum, and then there’s a science teacher in the district who’s very involved with the EIE kids. So he would come and offer any help he could and give us ideas.

Another important factor that staff described as integral to meeting their summer goals was aligning with an organizational partner who shared similar goals and a vision for student success. Having an organizational partner with shared, as well as unique, goals helped foster a more holistic agenda for staff and a sense of teamwork among staff and community partners. Such relationships, however, needed to be characterized by open and transparent communication and flexibility.

I think [in part] the flexibility of who you’re partnering with. Knowing that the partners are really good at knowing what we need and making sure we achieve those goals based on the students as opposed to a rigid set [agenda] that really may not work ... and that’s been really great.

So this summer we’re partnered up with the Buzzards Bay Coalition. So that’s been really, really helpful because they had goals that they needed to accomplish. So I have to be honest and say that we kind of just matched ours to match theirs. You know, they wouldn’t have been that different anyway. We feel like there’s a little bit more—I think we feel that we have more direction this summer.

Building and Strengthening Adult-Youth Relationships

Building relationships with the youth during the summer was important given that many teachers will see the same youth during the academic year. In addition, teachers described the positive impact that these relationships had on youth behaviors and on creating a stronger sense of community within their program. Youth were more receptive to adults’ guidance, which had a positive impact on youths’ relationships with their peers. Strengthening relationships between summer program staff and behaviorally challenging youth helped those youth more positively redirect behaviors and promoted higher levels of engagement in the program.

I think that that’s a wonderful dynamic in the classroom for these kids— and it gives each of the kids an opportunity to reach out in the way that they need to reach out.

This year the teachers worked with all the groups, and I enjoyed it because I’ve gotten to know all the older kids, and I’ve formed relationships with all of them.
So I’m going to continue to see them, and that relationship that I built with them will go into the school year, which will be good. Beneficial to me, and beneficial to them, because a few of the kids are behavior kids, they have their issues and they...we’re talking to them and building relationships with them, and I find, I’ve seen improvement in their behavior.

Changes to Teacher’s Toolboxes
Teaching in the summer learning programs has provided some of the teachers with a renewed sense of purpose as to why they started teaching in the first place. For others, the summer experience helped them discover the learning approaches that youth were passionate about, so that they can integrate these experiences during the academic year. Several teachers described the value and success of hands-on activities and are bringing those ideas into their classrooms. In addition, many teachers emphasized that they learned the importance of teamwork and collaboration among their colleagues, and are now mindful of building and strengthening these professional connections.

I do a lot of “hands on” in my regular classroom...but I’ve noticed that by gaining a sense of what the kids are looking for, what to expect out of them...we got a pretty good sense of what works and what doesn’t work across the board, so I’ve gained some positive experience and...to incorporate more of that into my classroom.

More “hands on” and having the kids solve the problems. I think with MCAS, we are getting away from that and [teaching] has become very different...we want the kids to be able to explain the process of what they went through and not just get the answer.

I want to be more positive, not that I am a negative person, but certainly with younger kids you look to be more positive and that would work with anybody. Now that I see that spark for learning is still here, how do I resurrect it, you know get it back, be more positive in the classroom.

One thing I can honestly say that I took into my school year from last year [summer] was team building. I really learned how to collaborate and work with other people. I brought that into my classroom as well as games and activities I learned from the summer. In my classroom this year they [the children] were definitely a community.

Learning Experiences
Each site delivered a unique themed program that included mathematics, science, writing, or social studies. The common thread characterizing all of these programs was to promote youth engagement through hands-on learning opportunities. As a result, staff observed higher levels of youth engagement, improved peer and teacher relationships, and a new level of excitement about learning.

I connected with another teacher who had done the program [elsewhere], as well as the teacher who did it in this school last year and got some information and you know I kind of created the program. I started instructionally—what is the academic content to bring to the students while trying to create a cross-content curriculum to include math, science, and social students with outdoor components.

The whole thing really this summer was learning by doing, you know and we have more access to having things be fun because they are doing “hands on.” I don’t
know if you heard the kids on their way up from the hill, they were saying “can we have one day where we just get to build what we want to?”

It’s going really well and the kids love it…we do a lot more hands-on activities ...it’s really neat to have the kids be able to see what they are capable of doing and the reason why they’re doing this stuff.

The kids are getting a lot out of the program this year, and are getting to do and [experience] things that are new to them. I saw a student who last year would not climb at all, and then we did a field trip and he said he wouldn’t do it, he was petrified, but he got over his fear and did it, he felt so good about himself after he was done, it was definitely a good experience for him because now he can take that confidence with him.

Suggestions for Program Improvement
Most programs had many of the same staff and teachers that worked in the program last summer. Given their previous summer experience, staff were already familiar with what aspects of the program were successful. They were able to harness those aspects and alter less successful features prior to starting this year’s summer program. Program feedback was generally very positive, but there were some recommendations that staff felt could only improve the summer experience for youth. One idea included enlisting summer program participants who are aging out of the program as mentors for the younger youth. Most staff felt that the planning and training opportunities were an asset to program delivery and wanted more. Finally, staff had suggestions about how to alter the curriculum to balance youth pre-existing knowledge base with summer program curriculum goals.

I think if the program continues next year, they should have some of the older kids who are aging out of the program come back as counselors and trainers to help the younger kids. With that age group and experience for the younger kids to have mentors who they saw this past year, but for the [older kids] because they will have something [positive] to do and [avoid] getting involved in things they don’t need to get involved in.

I think for the staff and counselors it definitely would be beneficial if they had planning time, like once a week, after school, paid type of thing...to plan out everything they need to do.

I think the [subject] we’re studying [was advanced] and the kids won’t see again until fourth or fifth grade, and it might have been better if we had been building on what they already had. We had to give them a lot of background knowledge here. But if we were to tweak it, might try it that way.

Survey of Academic Youth Outcomes
Students showed positive change from pre- to post-assessment in all of the SAYO domains. Sample size varies across program sites since they were able to target particular domains based on program goals and priorities. All sites, however, measured change in Learning Skills, Behavior, Initiative, and Relations with Adults. Table 2 and Chart 1 show mean change on pre- and post-SAYO
assessments across all four ESE 21st CCLC pilot summer sites. The largest percent changes appear in Mathematics Communication (21 percent), Relations with Adults (16 percent), and Initiative (15 percent). With regard to learning skills, a larger average percent change was observed for Science Skills (10 percent) than for Reading Skills (8 percent).

Table 2: Change in SAYO Pre/Post Scores, 2012

<table>
<thead>
<tr>
<th>Domain</th>
<th>N</th>
<th>Average Change Pre-Post</th>
<th>Average % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>429</td>
<td>.2</td>
<td>10%</td>
</tr>
<tr>
<td>Reading</td>
<td>429</td>
<td>.1</td>
<td>8%</td>
</tr>
<tr>
<td>Verbal Communication</td>
<td>386</td>
<td>.3</td>
<td>14%</td>
</tr>
<tr>
<td>Written Communication</td>
<td>288</td>
<td>.3</td>
<td>12%</td>
</tr>
<tr>
<td>Mathematics Communication</td>
<td>144</td>
<td>.4</td>
<td>21%</td>
</tr>
<tr>
<td>Mathematics Reasoning</td>
<td>93</td>
<td>.1</td>
<td>7%</td>
</tr>
<tr>
<td>Mathematics Problem Solving</td>
<td>371</td>
<td>.2</td>
<td>12%</td>
</tr>
<tr>
<td>Learning Skills</td>
<td>638</td>
<td>1.7</td>
<td>13%</td>
</tr>
<tr>
<td>Behavior</td>
<td>638</td>
<td>2.1</td>
<td>11%</td>
</tr>
<tr>
<td>Initiative</td>
<td>638</td>
<td>2.6</td>
<td>15%</td>
</tr>
<tr>
<td>Relations w/Adults</td>
<td>638</td>
<td>2.6</td>
<td>16%</td>
</tr>
<tr>
<td>Relations w/Peers</td>
<td>494</td>
<td>2.2</td>
<td>13%</td>
</tr>
</tbody>
</table>

Chart 1: Change in SAYO Pre/Post Scores, 2012

Tables 3 and 4 summarize the mean percent change in each of the SAYO domains by program site and by student characteristics, specifically gender and race/ethnicity. Because of the differential program goals, individual sites selected particular SAYO-T domains for assessment that were most
relevant to their program goals. For seven of the SAYO-T domains, students in Springfield generally showed comparatively higher levels of change between pre- and post-assessments than students in other sites. Cross-program analyses were conducted to determine if any of these average percent changes were significant across sites. Significant effects were found for two subscales, Relations with Adults (26 percent) and Initiative (25 percent) at Springfield, where teachers rated youth significantly higher between pre- and post-test assessment relative to the other three programs, \( p < .05 \). In addition, significant effects were found between Wareham, North Adams, and Springfield in the domain of Behavior—i.e., teachers perceived less improvements in behavior from pre- and to post-test at Wareham (4 percent) than at North Adams (11 percent) and Springfield (16 percent), \( p < .05 \). Although all four programs included a focus on STEM learning, teachers in Salisbury rated their students the most improved in Science between pre- and post-assessment (17 percent). Although SAYO results among Wareham youth were consistently positive (i.e., no negative change in any domain), the changes in Learning Skills, Behavior, Initiative and Relations with Peers were relatively (by comparison to the other three programs) more moderate.

Table 4 shows that boys and girls generally showed similar percent change from pre- to post-assessment across all domains. Boys showed greater average percent change in six domains (Science Skills, Mathematics Communication, Mathematics Problem-solving, Behavior, Initiative, and Relations with Peers). Girls showed greater average percent change than boys in the domains of Verbal Communication, Written Communication, Mathematics Reasoning, and Learning Skills. One significant effect was found supporting that girls were rated significantly higher than boys in Verbal Communication skills, \( p < .05 \). Within the domain of Verbal Communication boys and girls in Springfield were the most different (11.25 percent and 23.57 percent, respectively). With regard to significant differences across racial/ethnic groups, Black students showed significantly greater improvement in Initiative (26 percent), Relations with Adults (29 percent), and Relations with Peers (27 percent) compared to their White and Mixed race peers. No other significant differences, by race, were found.

SAYO-T analysis by SPED and income subgroup also showed some interesting findings. The data showed significant differences in Science Skills and Initiative between those youth receiving SPED services and those not receiving these services, \( p < .05 \). In both cases, youth receiving SPED services showed greater average percent change compared to their non-SPED peers. There were also site-based variations in how teachers’ ratings of SPED youth compared to non-SPED youth. Specifically, in North Adams, SPED youth were reported to show significantly greater average percent change in five domains: Science, Learning Skills, Behavior, Initiative, and Relations with Adults. In the domain of Mathematics Reasoning, non-low income youth (13 percent) showed greater average change relative to their lower income peers (3 percent). This effect was likely driven by Wareham youth, the only site for which significant differences by income status were found.

Youth in Grades 8 through 10 showed the greatest average percent change relative to their younger peers in five domains: Written Communication, Behavior, Initiative, Relations with Adults, and Relations with Peers. Notably, in North Adams, first grade youth scored significantly lower than youth in other grades in the domains of Science, Learning Skills, Initiative, and Relations with Adults, \( p < .05 \).
Table 3: Percent Change in SAYO Pre/Post Scores by Program Site, 2012

<table>
<thead>
<tr>
<th>Domain</th>
<th>North Adams</th>
<th>Springfield</th>
<th>Salisbury</th>
<th>Wareham</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%Change</td>
<td>N</td>
<td>%Change</td>
</tr>
<tr>
<td>Science</td>
<td>206</td>
<td>5%</td>
<td>144</td>
<td>17%</td>
</tr>
<tr>
<td>Reading</td>
<td>186</td>
<td>3%</td>
<td>144</td>
<td>10%</td>
</tr>
<tr>
<td>Verbal Communication</td>
<td></td>
<td></td>
<td>144</td>
<td>17%</td>
</tr>
<tr>
<td>Written Communication</td>
<td></td>
<td></td>
<td>144</td>
<td>15%</td>
</tr>
<tr>
<td>Mathematics Communication</td>
<td></td>
<td></td>
<td>144</td>
<td>21%</td>
</tr>
<tr>
<td>Mathematics Reasoning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mathematics Problem Solving</td>
<td>134</td>
<td>8%</td>
<td>144</td>
<td>19%</td>
</tr>
<tr>
<td>Learning Skills</td>
<td>208</td>
<td>13%</td>
<td>144</td>
<td>17%</td>
</tr>
<tr>
<td>Behavior</td>
<td>208</td>
<td>11%</td>
<td>144</td>
<td>16%</td>
</tr>
<tr>
<td>Initiative</td>
<td>208</td>
<td>10%</td>
<td>144</td>
<td>25%</td>
</tr>
<tr>
<td>Relations w/ Adults</td>
<td>208</td>
<td>12%</td>
<td>144</td>
<td>26%</td>
</tr>
<tr>
<td>Relations w/ Peers</td>
<td>208</td>
<td>10%</td>
<td>144</td>
<td>22%</td>
</tr>
</tbody>
</table>

Table 4: Percent Change in SAYO Pre/Post Scores by Student Characteristics, 2012

<table>
<thead>
<tr>
<th>Domain</th>
<th>Females</th>
<th>Males</th>
<th>White</th>
<th>Black</th>
<th>Hispanic</th>
<th>Multi-race</th>
<th>Low Income</th>
<th>SPED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science</td>
<td>9%</td>
<td>11%</td>
<td>10%</td>
<td>4%</td>
<td>2%</td>
<td>7%</td>
<td>10%</td>
<td>17%</td>
</tr>
<tr>
<td>Reading</td>
<td>8%</td>
<td>8%</td>
<td>7%</td>
<td>8%</td>
<td>7%</td>
<td>10%</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>Verbal Communication</td>
<td>19%</td>
<td>10%</td>
<td>14%</td>
<td>13%</td>
<td>16%</td>
<td>21%</td>
<td>14%</td>
<td>19%</td>
</tr>
<tr>
<td>Written Communication</td>
<td>15%</td>
<td>9%</td>
<td>12%</td>
<td>13%</td>
<td>14%</td>
<td>18%</td>
<td>14%</td>
<td>14%</td>
</tr>
<tr>
<td>Mathematics Communication</td>
<td>18%</td>
<td>23%</td>
<td>22%</td>
<td>0%</td>
<td>4%</td>
<td>3%</td>
<td>22%</td>
<td>28%</td>
</tr>
<tr>
<td>Mathematics Reasoning</td>
<td>9%</td>
<td>4%</td>
<td>6%</td>
<td>4%</td>
<td>13%</td>
<td>22%</td>
<td>3%</td>
<td>7%</td>
</tr>
<tr>
<td>Mathematics Problem Solving</td>
<td>11%</td>
<td>14%</td>
<td>13%</td>
<td>11%</td>
<td>7%</td>
<td>9%</td>
<td>10%</td>
<td>14%</td>
</tr>
<tr>
<td>Learning Skills</td>
<td>14%</td>
<td>13%</td>
<td>13%</td>
<td>19%</td>
<td>13%</td>
<td>11%</td>
<td>13%</td>
<td>19%</td>
</tr>
<tr>
<td>Behavior</td>
<td>10%</td>
<td>12%</td>
<td>10%</td>
<td>18%</td>
<td>12%</td>
<td>6%</td>
<td>11%</td>
<td>13%</td>
</tr>
<tr>
<td>Initiative</td>
<td>14%</td>
<td>15%</td>
<td>13%</td>
<td>26%</td>
<td>19%</td>
<td>8%</td>
<td>15%</td>
<td>18%</td>
</tr>
<tr>
<td>Relations w/ Adults</td>
<td>16%</td>
<td>16%</td>
<td>15%</td>
<td>29%</td>
<td>21%</td>
<td>11%</td>
<td>16%</td>
<td>19%</td>
</tr>
<tr>
<td>Relations w/ Peers</td>
<td>12%</td>
<td>13%</td>
<td>11%</td>
<td>27%</td>
<td>16%</td>
<td>7%</td>
<td>13%</td>
<td>13%</td>
</tr>
</tbody>
</table>
Program Quality

Using the APT, researchers conducted program observations at the four sites on the programmatic structure/organization of the program as well as the features of both academic and enrichment activities. Two observations were conducted per site. A total of 40 separate activity sessions were observed. Ten of the forty (25 percent) activity observations were coded as primarily “enrichment.”

Salisbury showed the strongest ratings in overall program delivery, especially in the cultivation of youth-staff relationships, the promotion of student engagement and stimulated thinking, positively guiding student behavior, and peer relationships. Our findings show that North Adams program leaders and teachers were consistently the strongest across all programs in structuring, organizing, and delivering the overall program experience (see Tables 5 and 6).

Table 5: Activity Implementation Domains, 2012

<table>
<thead>
<tr>
<th>Domain</th>
<th>All Sites</th>
<th>North Adams</th>
<th>Salisbury</th>
<th>Springfield</th>
<th>Wareham</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>3.7</td>
<td>3.4</td>
<td>3.8</td>
<td>3.7</td>
<td>3.9</td>
</tr>
<tr>
<td>Nature of Activity</td>
<td>3.2</td>
<td>3.1</td>
<td>3.5</td>
<td>3.3</td>
<td>2.7</td>
</tr>
<tr>
<td>Staff Promote Engagement &amp; Stimulate Thinking</td>
<td>3.1</td>
<td>4</td>
<td>3.4</td>
<td>2.7</td>
<td>3</td>
</tr>
<tr>
<td>Staff Positively Guide Behavior</td>
<td>3.8</td>
<td>3.8</td>
<td>4</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>Staff Build Relationships – Support Individual Youth</td>
<td>3.3</td>
<td>3.5</td>
<td>3.4</td>
<td>3.1</td>
<td>3.4</td>
</tr>
<tr>
<td>Youth Relations w/Adults</td>
<td>3.5</td>
<td>3.6</td>
<td>3.8</td>
<td>3</td>
<td>3.6</td>
</tr>
<tr>
<td>Youth Participation</td>
<td>3.3</td>
<td>3.3</td>
<td>3.6</td>
<td>3.1</td>
<td>3.2</td>
</tr>
<tr>
<td>Peer Relations</td>
<td>3.7</td>
<td>3.9</td>
<td>3.8</td>
<td>3.5</td>
<td>3.7</td>
</tr>
</tbody>
</table>

Note. APT items are reported on a 1(not true) to 4 (very true) scale.

Table 6: Overall Organization Domains, 2012

<table>
<thead>
<tr>
<th>Domain</th>
<th>All Sites</th>
<th>North Adams</th>
<th>Salisbury</th>
<th>Springfield</th>
<th>Wareham</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrival Time</td>
<td>3.1</td>
<td>3.7</td>
<td>2.3</td>
<td>3.3</td>
<td>3.1</td>
</tr>
<tr>
<td>Pick-Up Time</td>
<td>3.3</td>
<td>3.3</td>
<td>2</td>
<td>3.8</td>
<td>N/A</td>
</tr>
<tr>
<td>Informal Program Times</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Staff Observations</td>
<td>3.7</td>
<td>4</td>
<td>3.3</td>
<td>3.8</td>
<td>3.5</td>
</tr>
<tr>
<td>Youth Observations</td>
<td>3.9</td>
<td>4</td>
<td>3.8</td>
<td>3.6</td>
<td>4</td>
</tr>
<tr>
<td>Program Space Supports Goals of Programming</td>
<td>3.6</td>
<td>4</td>
<td>3.7</td>
<td>3.6</td>
<td>3.2</td>
</tr>
<tr>
<td>Overall Program Schedule &amp; Offerings</td>
<td>3.8</td>
<td>4</td>
<td>3.9</td>
<td>3.7</td>
<td>3.5</td>
</tr>
<tr>
<td>Overall Social-Emotional Environment</td>
<td>3.9</td>
<td>4</td>
<td>4</td>
<td>3.6</td>
<td>4</td>
</tr>
</tbody>
</table>

Note. APT items are reported on a 1(not true) to 4 (very true) scale.
Stemming Summer Learning Loss

**North Adams**

Analyses of the DIBELS Oral Reading Frequency (ORF) scores, both pre-summer program involvement and post-summer involvement were conducted to examine whether summer program participation had an impact on youth reading scores. One hundred and eight (n=108) youth participated in the summer program compared to the three hundred and ninety-seven youth (n=397) who did not participate in the summer program.

A mean-level comparison of ORF scores between summer program participants and non-participants was conducted to determine if summer program participants showed less learning loss from June to September compared to non-participating youth. Pre- and post-test data were available for two hundred and forty-three (n=243) summer program participants compared to two hundred twenty-one (n=221) non-participating youth. Results of an Independent samples t-test analysis suggested that summer program participants (M=-8.68) showed less learning loss from June to September compared to non-participating youth (M=-9.07), although these effects were non-significant, p>.05.

Among summer participants, “rising” second-graders (n=49) were the only subgroup of youth, by grade, that showed an increase in average ORF scores between both assessments (M=0.49). The highest average decrease in scores was observed for third-grade youth (n=46; M=-18.46). In order to determine whether grade-level differences in average ORF change scores were significant, we conducted a One-Way ANOVA with Bonferroni post-hoc analyses. Results of these analyses supported that second-graders (M=0.49) showed significantly less learning loss from June to September compared to “rising” third- (M=-18.46), fourth- (M=-8.44), and fifth- (M=-13.90) graders, p<.05. Third-grade youth (M=-18.46) showed significantly greater average decrease in scores from June to September compared to youth in grade 2 (M=0.49), grade 4 (M=-8.44), and grade 6 (M=-3.27) for the 2012–2013 academic year. Fourth-graders (M=-8.44) showed average change scores that were significantly lower than the average found among “rising” second-graders (M=0.49), but significantly higher than the mean change scores among “rising” third-graders (M=-18.46). Mean change scores among fifth-grade youth (M=-13.90) were significantly lower (i.e., showed higher average decrease) from those scores of youth in grade 2 (M=0.49) and grade 6 (M=-3.27) for the 2012–2013 academic year. Finally, “rising” sixth-graders (M=-3.27) showed significantly lower decreases in mean ORF scores compared to “rising” third- (M=-18.46) and fifth-graders (M=-13.90), p<.05.

A comparison of summer program participants’ average ORF change scores based on their DIBELS status (i.e., core support, intensive support, strategic support), as assessed at the end of the 2011–2012 academic year, showed significant differences between the three performance levels, F(2, 240)=3.67, p<.05. Bonferroni post-hoc analyses supported that youth in the “Core Support” status group (n=130; M=-10.21) showed greater decreases in average ORF scores than youth in the “Intensive Support” status group (n=52; M=-3.50) from pre- to post-test assessment, p<.05. An Independent samples t-test analysis that compared youth who received free lunch (n=206; M=-8.84) versus reduced lunch (n=32; M=-7.76) showed no significant difference in mean ORF change scores between the two groups, (p>.05). However, an Independent samples t-test analysis that compared average ORF change scores among participating youth who received Special Education services (n=76; M=-4.62) versus those who did not (n=167; M=-10.53) supported that youth who
received Special Education services showed lower average decreases in their ORF scores from pre- to post-test assessment. Finally, the number of hours that youth attended the summer program was not significantly associated with average ORF change scores, for all grades combined ($r=-.13$, $p=.18$) and when each grade was analyzed individually.

**Salisbury**

The Triton District Grade Test for Reading was administered to students in grades K through 2 in spring and fall 2012. The district provided results relative to the percent of students from each of the three elementary schools reading on grade level as based on the assessment. Salisbury Elementary is the only elementary school in the district eligible for 21st CCLC grant funding based on the school income and MCAS score profile. At the spring assessment, 81 percent of the kindergarteners (rising 1st graders) at Salisbury Elementary were reading at grade level. At re-testing in the fall, 65 percent of the students were reading at grade level. The 16 percent drop in students reading at grade level was comparatively low compared to Pine Grove and Newbury Elementary Schools kindergarteners, each of which dropped 37 percent and 30 percent respectively. Students in grade 1 and grade 2 at the two other elementary schools fared better at retest than Salisbury students participating in the summer program. The district also provided information on 34 students who were targeted for the Salisbury summer program but did not participate. Eighty-eight percent (88 percent) of the students scored lower on the fall reading assessments with an average decrease of 17–22 points.

**Springfield**

Analyses of the Mathematics District Benchmark Assessment scores (Grades 3 through 8) were conducted to examine whether summer program participation had an impact on youth mathematics scores. Scores from 96 youth ($n=96$) who participated in the summer program were compared against scores from non-participating youth ($n=6,790$). Given the notable skew in sample size between participating and non-participating youth, the majority of analyses examined within- and across-grade changes in mathematics scores for participating youth only. In addition, because only two grade 3 youth participated in the summer program, within-grade analyses was conducted for youth in grades 4 through 8. Independent samples $t$-test analyses that compared participating youth ($M=-14.20$; $SD=17.31$) to non-participants ($M=-10.88$; $SD=18.42$) showed no significant differences in mathematics change scores, $p>.05$.

According to our findings, shown in Table 7, youth participants in all grades showed decreases in their average mathematics scores from pre- to post-test. Grade 6 participating youth ($n=25$) showed the largest decrease in mean mathematics scores ($M=-23.00$; $SD=18.36$). By contrast, participating youth in grade 8 ($n=15$) showed the smallest decrease in raw scores from pre- to post-test ($M=-6.87$; $SD=14.13$). Given the small sample sizes for each of the grade-level subgroups, mean-level comparisons across grades were not conducted.

Paired samples $t$-test analyses were conducted, by grade, to examine whether there were significant differences in participating youth pre- and post-test raw mathematics scores. Significant negative differences in pre- and post-test scores were found for all grades, with the exception of the decrease in average scores among youth in grade 8, which was non-significant, $p>.05$. 

20
Table 7: Mean Mathematics Benchmark Assessment Scores for Summer Program Participants, by Grade, 2012

<table>
<thead>
<tr>
<th>Grade</th>
<th>Pre-Test Raw Score</th>
<th>Post-Test Raw Score</th>
<th>Mean Difference Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade 4 (n=13)</td>
<td>82.1</td>
<td>72.6</td>
<td>-9.5*</td>
</tr>
<tr>
<td>Grade 5 (n=14)</td>
<td>74.9</td>
<td>64.0</td>
<td>-10.9*</td>
</tr>
<tr>
<td>Grade 6 (n=25)</td>
<td>76.6</td>
<td>53.6</td>
<td>-23*</td>
</tr>
<tr>
<td>Grade 7 (n=27)</td>
<td>61.3</td>
<td>46.6</td>
<td>-14.7*</td>
</tr>
<tr>
<td>Grade 8 (n=15)</td>
<td>54.1</td>
<td>47.2</td>
<td>-6.9</td>
</tr>
</tbody>
</table>

Note: *p<.05

Independent samples t-test analyses, conducted separately by grade, that compared youth who participated in the summer program versus those youth who did not with regard to change in mathematics scores showed no significant differences, p>.05. However, these non-significant differences should be interpreted cautiously given the notably smaller sample size of participating youth compared to non-participants.

**Wareham**

Analyses of Wareham youth scores on several academic assessments (i.e., DIBELS, GRADE, and GMADE) were conducted to examine associations between summer program participation and students’ assessment scores. These assessments were completed both pre-summer program participation (spring 2012) as well as in the fall of 2012, after youth had participated in the summer program. In addition to these analyses, average summer reading grade scores of program participants versus non-participants were also compared to investigate whether summer reading grades differed between both subgroups of youth. Data were available for one hundred and sixteen youth (n=116), 58.6 percent (n=68) of whom had participated in the summer learning program. Pre-and post-test data (DIBELS, GRADE, and GMADE scores) were available for forty-six of these (participating) youth (n=46). Summer reading grade scores were available for all one hundred and sixteen youth. Differences in average change scores (for DIBELS, GRADE, and GMADE assessments) and mean scores (for summer reading grades) were also examined across grades to determine whether any significant effects existed with regard to grade level.

With regard to DIBELS test scores, a total of twenty-three (50 percent) summer participants had both pre- and post-test data available. An average decline in scores was observed among these youth (M= -48) between both DIBELS assessments. Paired samples t-test analyses supported that this average decrease was significant, p<.05. Because only a small number of Grade 3 (n=13) and Grade 4 (n=10) youth had available pre- and post-test DIBELS data, findings from any grade-based comparisons can be particularly misleading and should be interpreted cautiously. Although the data did support that Grade 3 youth (M= -25.3) showed a smaller average decline in DIBELS scores compared to their Grade 4 peers (M= -77.5) between the spring and fall assessments, these differences were non-significant, p>.05.

GRADE (n=43) and GMADE (n=42) assessment scores also significantly decreased between pre- and post-test assessments (M= -.65 and M= -1.0, respectively; p<.05). We conducted One-Way ANOVA analyses, separately by assessment, that examined between-grade differences in mean score changes. However, similar to the DIBELS data, these findings should be interpreted cautiously and need to be replicated with larger subgroups of youth. Pre-and post-test GRADE data were available for Grade 3 (n=13), Grade 4 (n=12), and Grade 5 youth (n=18). Although average GRADE scores decreased between spring and fall assessments for all youth, irrespective of their
grade, none of these decreases were significant, \( p > .05 \). The greatest decrease in scores was observed for Grade 3 youth \((M = -0.92)\) compared to their Grade 4 \((M = -0.50)\) and Grade 5 peers \((M = -0.56)\), whose average score changes were relatively similar. With regard to GMADE scores, Grade 3 youth \((n=13; M = -1.46)\) showed the greatest average decline in their scores compared to Grade 4 \((n=12; M = -1.42)\) and Grade 5 youth \((n=17; M = -0.35)\). These average score differences were found to be significant \((p < .05)\), and post-hoc analyses supported that Grade 5 youth showed significantly less average decline in their scores between spring and fall assessments compared to their Grade 3 and Grade 4 peers.

Comparisons of average summer reading grades between summer program participants \((n=68)\) and non-participants \((n=48)\) supported that summer program participants showed higher average \((M = 2.69)\) summer reading grades compared to non-program participants \((M = 2.58)\). However, results of an Independent samples \(t\)-test analysis demonstrated that these differences were non-significant, \( p > .05 \).

We conducted ANOVAs, separately for summer program participants and non-summer participants, to determine if any grade-based differences in average summer reading grades existed. However, the sample sizes of the grade-based subgroups were small making statistical inferences difficult. Among non-summer program participants, no significant differences between grades were found, \( p > .05 \). However, Grade 3 youth showed the highest average summer reading grade \((n=13; M = 3.31)\) and Grade 4 youth showed the lowest average \((n=13; M = 2.31)\).

Among summer program participants, the highest and lowest average summer reading grades were observed for Grade 4 \((n=4; M = 3.50)\) and Grade 6 youth \((n=9; M = 1.89)\), respectively. Results of an ANOVA suggested that there were significant differences across grades in average summer reading grades for summer program participants, \( p < .05 \). Post-hoc analyses supported that youth in Grade 3 \((M = 3.18)\) and Grade 4 \((M = 3.50)\) scored significantly higher than Grade 6 youth \((M = 1.89)\). No other significant differences, by grade, in average summer reading grades were found.

**Summary and Recommendations**

The evaluation of the ESE 2012 Summer Learning programs supported many features of summer programming that are effective in promoting positive academic and socio-emotional trajectories among academically at-risk youth. In this section, we will summarize our major research findings and the implications of these findings for strengthening future summer programming.

**Summary of Findings**

Many aspects and characteristics of the ESE 2012 Summer Learning programs were quite successful, and facilitated youth socio-emotional and academic growth. Youth perceptions of the programs were very positive, as evidenced by the mean attendance rate of 81.5% and that only 10% of youth attended less than fifty percent of scheduled program days.

Although there was variability in programmatic opportunities and experiences across the four participating sites, staff universally perceived this summer to be even more successful than the previous summer and some teaches felt renewed as educators after participating. For example, many teachers and staff reported feeling a stronger sense of direction and planning this summer as compared to last summer. In addition, when it came to hiring for this summer’s program, several
respondents emphasized that they were able to learn from the previous summer which staff were particularly strong and should be retained. Another factor that made this summer’s program more successful was the improved parent communication about program expectations and offerings. Consistent with this idea, greater transparency and communication in the relationships with their partnering organization also were important to a more successful program. Teachers felt that this summer experience equipped them with more varied and engaging teaching strategies, thereby diversifying their “teaching toolkits.” In addition, staff perceived youth experiences as generally very positive, particularly with regard to behavioral improvements and stronger relationships with adults and peers.

Findings from the SAYO-T supported that teachers perceived positive changes across all domains. In particular, the greatest improvements among all youth were in the areas of Mathematics Communication and Relations with Adults. What these data suggest is that teachers perceived the greatest gains to be in aspects of youth mathematics skills, as well as their interactions with adults (e.g., “discusses special ideas or interests with teacher” or “shows respect for teacher or other adult”). In general, few significant effects in average change scores were found based on selected students’ demographic characteristics, which suggests that the programs generally worked equally well for boys and girls and youth of diverse racial/ethnic groups. Variations by youth grade and SPED status were observed across various programs. In two domains – Science and Initiative – SPED students showed significantly more improvement compared to peers.

Findings from the APT observational data supported that all of the programs were generally quite strong, rating almost entirely above a 3 on a 1-4 (high) scale in their organization and activity implementation. We also observed variations, by program site, in these programmatic characteristics. For example, we observed Salisbury to be particularly stronger than peer programs in several areas including promoting engagement, guiding behavior, and youth-staff relationships. North Adams program leaders and teachers were consistently the strongest across all programs in structuring, organizing, and delivering the overall program experience.

Analysis of summer learning loss data showed some positive results. Where comparison of participants and non-participants was possible, there was some evidence such as North Adams DIBELS ORF scores, Salisbury kindergarten reading scores, and Springfield summer reading grades that summer program participants experienced “less” learning loss than their non-participating peers. Differences were not necessarily significant, though, and not reflected in other grade groups. However, along with data from the 2011 summer program, evidence is building that such a blended academic and enrichment summer learning program model can make a valuable contribution to stemming summer learning loss.

Based on these findings, we recommend the following actions toward continued programmatic success and improvement:

1. **Continue to strengthen the STEM content curriculum.** Although the curriculum content and delivery was generally positive across programs, our findings suggest that there are still some areas that could be strengthened. For instance, teachers perceived that youth made greater improvements in their Mathematics Skills compared to the Science Skills. Therefore, developing a curriculum that balances all of the STEM components and skills may be particularly beneficial to diversifying youth knowledge base. The areas/skills where teachers perceived that youth showed
greater improvements are clearly content domains that are strong in the curriculum. We would suggest, then, focusing the curriculum content more on those STEM skills/areas where teachers felt that youth did not show as much growth. Emphasizing Science Skills to a greater degree in the curriculum content, as well as aspects of Mathematics Reasoning, may help to diversify students’ STEM skill base and understanding. For example, it may be useful to harness the efforts of teachers who specialize in science to brainstorm content ideas for the curriculum. Although Reading Skills are not embedded in a STEM-focused curriculum, finding ways to integrate these skills and abilities into the content of the program is critical given that many teachers perceived that youth Reading Skills showed the least gains.

2. **Balance youth existing knowledge with new skill-building.** It may be beneficial to balance youth existing knowledge and skill base with the summer program goals and curriculum for new skill-building. Better alignment of the curriculum content with the summer program learning goals and students’ pre-existing knowledge base would help to build upon and strengthen youth understanding of the curriculum content. Introducing content that cultivates new skill development and that poses a challenge to youth existing knowledge fosters more engagement with the material. However, several staff expressed concern that some activities and skill foci were too advanced for youth at their current grade level. Although such skills were practiced, and (to some degree) developed during the summer program time, questions about the continuation of skill development and use in the forthcoming academic year was questionable given the normative school-year curriculum for a youth of a particular grade level.

Discussions with academic year teachers, and possibly trainings, would be helpful to provide summer program teachers with a deeper understanding of where youth are currently in their learning and abilities, as well as what skills they may be developing in the forthcoming academic year. Therefore, they can be sure to develop the summer program curriculum in a manner that balances both youth existing knowledge and skill base with next academic year’s curriculum goals and content.

3. **Provide more leadership and choice opportunities for youth.** Because the infrastructure and curriculum of these programs are already quite strong and well-developed, it may be useful to engage students in some of the planning efforts and decision-making around daily activities. Not only will such strategies likely increase their engagement with the material, but it may also enhance their leadership skills and sense of competency. For example, involving youth as “co-leaders” or mentors of their peers will contribute to a greater sense of mastery of the material and stronger connection to what they are learning. Furthermore, such youth-to-youth mentoring opportunities may foster stronger peer relationships and benefit youth behavior as well.

4. **Maintain transparent and open communication.** Because staff consistently attributed this summer’s program success to greater planning and training opportunities, this element of program development and function should be a primary consideration for subsequent summer learning programs. In addition to the larger, formal trainings, having regular, planning meetings (e.g., once/weekly) between classroom teachers and community
organization program leaders would also be beneficial. It may be helpful for both parties to
together establish content goals for the upcoming week, and communicate about how they
will address these goals. In addition, brainstorming opportunities together that balance inside
and outside activities that are unified by their content have the potential to strengthen the
overall curriculum and students’ interest and investment in what they are learning about.

5. **Maximize the unique contexts offered by each of the program sites.** Improvements on a
more granular level that recognize the variations within and across program sites, in terms of
their strengths and weaknesses, would be helpful to overall quality improvement.
Harnessing the unique strengths of each of the programs in particular socio-emotional and
academic domains may be beneficial to those community programs where such practices
were not as strong. It is important to examine the strategies and practices that contribute to
the successful outcomes associated with program involvement. As one example, given the
importance of STEM skill-building emphasis of the curriculum, educating programs that
were weaker in this area, through an examination of effective practices characteristic of
other programs, would be helpful. Exchanging effective and successful strategies at a pre-
summer cross-site conference or meeting to target specific academic and socio-emotional
goals would be extremely beneficial.