Afterschool Matters

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AT THE WELLESLEY CENTERS FOR WOMEN

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Page 11: PowerPlay NYC.

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WELCOME

When I left high school six years after the signing of Title IX, my school still didn't have a girls' soccer team. Now, in the 40th anniversary year of Title IX, more than 500 girls play soccer just in the community league in my small town, not to mention the many female players on school-sponsored JV and varsity teams.

"No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance."

—Title IX of the Education Amendments of 1972

As a lifelong community sports team coach and educator, I am moved by the tremendous influence of the 37 words that make up Title IX. I grew up on sports teams and have coached my own daughters in their sports endeavors. It is not a leap for me to connect sports participation with the development of important academic, emotional, and social skills. Ellen Markowitz's article "Exploring Self-Esteem in a Girls' Sports Program" (page 11) is timely in its examination of the value sports participation brings to girls' lives, including the development of competence, social acceptance, self-perception, and self-esteem.

Title IX and its implementation have been transformational in girls' and women's lives—and not just in sports. Title IX rejects gender discrimination in any education program or activity. Another area in which girls and youth of color are underrepresented is science, technology, engineering, and math (STEM). The National AfterSchool Association and the U.S. Department of Education's 21st Century Community Learning Centers program office have emphasized the critical role that out-of-school time (OST) programs can play in developing and delivering STEM experiences for children and youth.

Through the generous funding of the Noyce Foundation, we are devoting part of this issue to the converging issues and priorities that currently make up OST STEM. Project Exploration's Youth-Science Matrix (page 48) offers a unique STEM engagement model that values multiple entry points and promotes a continuum of opportunities throughout a young person's social and intellectual development. "Build IT" (page 58) focuses on designing a girls' computer science program for sustainability. A substantial benefit of the program is that it enhanced the IT skills not only of participating girls but also of the facilitators, themselves largely young women of color with little background in computer science.

We are thrilled in this 40th anniversary year of Title IX to call attention to girls' experiences and to highlight the important contribution of OST programs to STEM learning, particularly for populations that traditionally have been on the sidelines looking in.

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understanding the "how" of quality improvement

Lessons from the Rhode Island Program Quality Intervention

by Elizabeth Devaney, Charles Smith, and Kenneth Wong

Over the past 10 years, afterschool and youth development programming has moved from providing childcare for working parents to being an integral component of the learning day, supporting the academic, social, and emotional development of young people (C. S. Mott Foundation, 2007; Durlak & Weissberg, 2007). An important part of that transition has been a growing emphasis on improving program quality. Many communities around the country have begun to create site-level continuous improvement models (Wilson-Ahlstrom & Yohalem, 2008; Yohalem & Wilson-Ahlstrom, 2009). Aligned performance measures help program administrators evaluate the quality of young people's experience and give them a framework for improvement.

Many of these quality interventions target the leaders of afterschool organizations rather than simply directing attention to the teaching staff. Afterschool program managers often start their careers as front-line staff and work their way up to management positions without receiving training or education in how to lead an organization. They may not see themselves as instruc-

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tional leaders and may not have training in how to change the direction and design of their organization or how to develop the people who work for them.

The literature on school leadership and climate change highlights why a leader-focused approach makes sense. Researchers have demonstrated that improvements in school leadership can lead to improved teaching capacity and therefore to improved student achievement. In their meta-analysis of 70 studies of principal leadership, Waters, Marzano, and McNulty (2003) identified 21 separate responsibilities of school instructional leaders, from fostering a culture of shared beliefs to establishing order to providing resources and professional development. Improvements in a leader's ability to perform these responsibilities were linked to improved student achievement. Other reviews of the research have similarly found that school leaders have a responsibility to set direction, develop people, and redesign the organization in order to achieve improved student outcomes (Leithwood, Seashore Louis, Anderson, & Wahlstrom, 2004).

Researchers have demonstrated that improvements in school leadership can lead to improved teaching capacity and therefore to improved student achievement.

Our study looks at how participation in a continuous quality improvement initiative produces higher-quality practice in Rhode Island's afterschool community by fostering change in program management practices. Among other findings, we discovered that quality improvement begins with program managers, who then lead the process of change.

The Rhode Island Program Quality Intervention

The Youth Program Quality Intervention (YPQI), developed by the David P. Weikart Center for Youth Program Quality, is one intervention focused on program managers that is being used in communities across the country (Smith et al., 2012). YPQI is a multi-level intervention that uses continuous improvement practices to increase student exposure to positive youth development methods.

In Rhode Island, development of a statewide quality improvement system based on YPQI began in 2004, when the Wallace Foundation awarded a large grant that allowed for the establishment of an afterschool intermediary—the Providence After School Alliance (PASA)—and made quality an explicit priority. In partnership with the Weikart Center, PASA created the Rhode Island Program Quality Assessment (RIPQA), a tool comprising the Weikart Center's validated Youth Program Quality Assessment (HighScope, 2005) and a locally developed administrative checklist. The RIPQA was piloted and rolled out statewide in 2006. Since then, PASA has partnered with the Rhode Island After School Plus Alliance and the 21st Century Community Learning Centers initiative at the state Department of Education to create an improvement system—the Rhode Island Program Quality Intervention (RIPQI)—with the assessment tool at its center. Close to 100 organizations across the state are engaging in the process, including all 65 of the 21st Century Community Learning Centers. The RIPQI includes the following activities:

- Training in the use of the RIPQA
- Observation of individual program offerings at the point of service (where youth and adults interact) by teams of impartial external advisors and internal staff
- Assessment of management practices including staffing and professional development supports, family and community engagement, and administrative practices
- Quality improvement planning with the support of a trained quality advisor
- Five hours of on-site technical assistance connected to the quality improvement plan
- Participation in optional training aligned with the RIPQA

Each participating organization is paired with an expert "quality advisor" or coach for up to 25 hours every other year to complete the RIPQI process. First, a team of program staff uses the administrative checklist (RIPQA Form B) to rate the organization on various administrative practices. The advisor helps the team to arrive at consensus about strengths and areas for growth and to develop a quality improvement plan with specific action steps. Following this administrative audit, the advisor and the site director put together teams to observe three to five program offerings using the Weikart Center's Youth Program Quality Assessment (RIPQA Form A). Again, the teams come to consensus and develop an action plan containing specific steps for improvement. Often these action steps include sending staff to PASA trainings to improve specific skills. The quality advisor participates in observations, guides the site through this entire process, and then provides five hours of technical assistance or training in support of the site's quality improvement action plan.

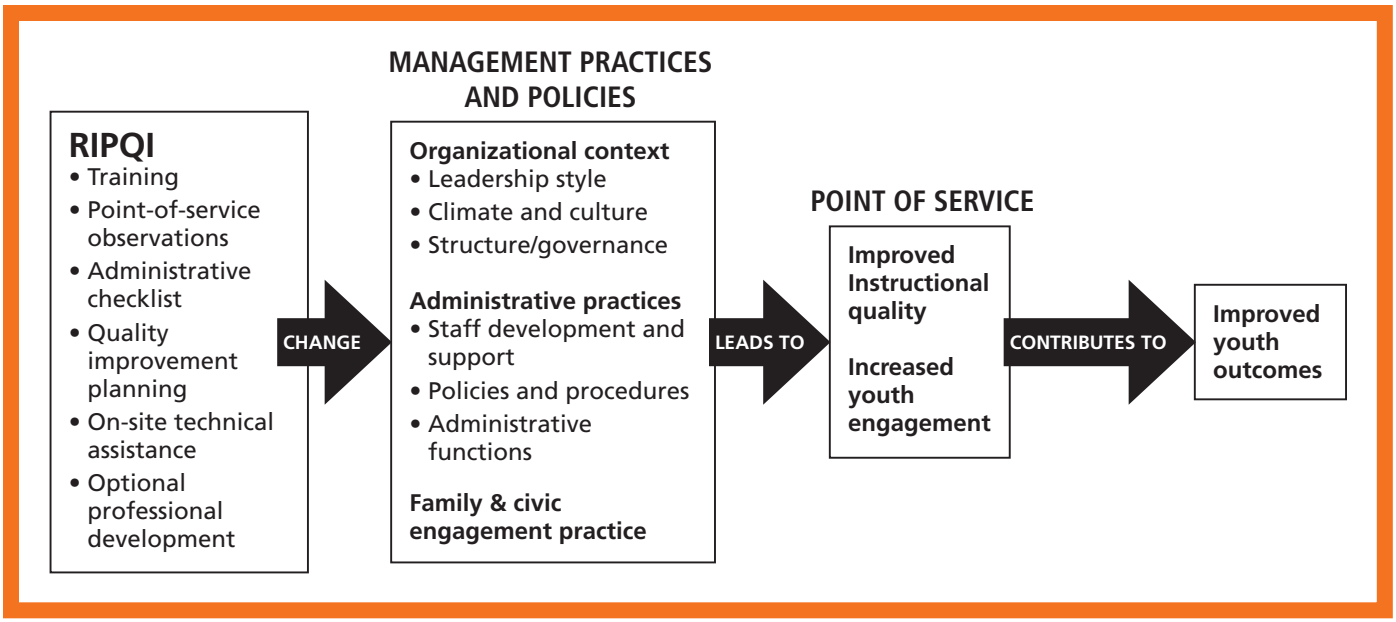

Figure 1. RIPQI Theory of Change

PASA has developed a theory of change that governs this intervention, shown in Figure 1. The first box on the left represents the intervention itself and the elements that comprise it. As the organization begins to engage in the intervention, the program manager begins to make changes to his or her practice that in turn affect the whole organization. This improvement leads to changes at the point of service. As instructional quality improves and youth are more engaged, we expect to see the improvement in youth outcomes the intervention was designed to produce.

PASA is not the only organization to create a quality improvement system based on the YPQI. In fact, to date, more than 70 communities around the country are implementing all or some components of this model,[1] providing substantial evidence of effectiveness. For example, in Palm Beach County, Florida, the intermediary organization Prime Time Palm Beach County has been implementing a quality improvement system based on the YPQI for the past five years. A recent study of that model demonstrated that a quality improvement *system* centered around a valid assessment tool and associated coaching and technical assistance can have positive effects on the quality of instructional and management practices in afterschool programs (Sinisterra & Baker, 2010; Smith, Akiva, Blazevski, Pelle, & Devaney, 2008). The Weikart Center, in a rare experimental study of a continuous improvement intervention in an educational context, examined the effectiveness of the YPQI in 87 afterschool programs in five states. Results show that the YPQI had a substantial and statistically significant effect on both the continuous improvement practices of site managers and the instructional practice of front-line staff (Smith et al., 2012). Both studies provide critical context for understanding the likely effects of the RIPQI on manager and staff practice. Our study focuses on *how* these effects occur, notably in the words of site managers engaged in the RIPQI process.

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Study Overview

The goal for this study was to test the validity of the theory of change presented above, using two guiding research questions:

1. Does the RIPQI process produce change in organizations?
   - Is implementation of the RIPQI related to change in the quality of instruction and child engagement?
   - Is implementation of the RIPQI related to change in organizational context, administrative practices, and family engagement practices?
2. How does change happen?
   - What practices do managers employ that may contribute to change at their site?
   - How do managers transfer, adapt, and extend the RIPQI in organizational settings?
   - In what ways are site managers affected by implementation?

The first set of questions focuses on the first three boxes in the theory of change: implementation of the intervention, change at the program level, and changes in instructional quality and youth engagement. The second set of questions explores what happens in the spaces between boxes to make change happen. The last step in the theory of change, the effect on youth outcomes, was beyond the scope of this study but is an important area for future research.

To answer these questions, we used a mixed-methods approach, employing data from 53 afterschool programs across Rhode Island funded by the 21st Century Community Learning Centers office at the state Department of Education. Sites are required to participate in the RIPQI process every other year; at the time of the study, every site had participated at least once. The 53 sites are distributed across the state, with a large concentration in Rhode Island's five "core" cities—Central Falls, Pawtucket, Newport, Providence, and Woonsocket. The sites serve all age groups with about half (54 percent) serving elementary-age students and the remainder serving middle (30 percent) and high school (16 percent) students. Sites range in size from 15 to 200 students per day.

Data Sources

Our study uses the following sources of data:

- Existing instructional quality data collected by trained observers during 2007–2010 (n = 325 program observations)
- Surveys with program staff (n = 62) and managers (n = 29)
- In-depth interviews with a subset of managers (n = 6) who reported a high level of RIPQI implementation

Observations were conducted using the Weikart Center's instrument (for validation evidence see Smith & Hohmann, 2005), one component of the RIPQA. Observations were conducted during individual program offerings over multiple sessions involving the same staff, the same youth, and the same purpose. Each required at least 45 minutes of observation by a reliable rater. The tool measures instructor practice in four key domains: safe environment, supportive environment, interaction, and engagement. Each domain has several indicators. Instructors are rated on a three-point scale using a rubric.

Two surveys were used for this study, one designed for managers, including site coordinators and other administrators, and one designed for front-line staff who work directly with youth. The surveys were modeled after those used in the YPQI study, described above, in an effort to create items and subscales in line with the known reliability and validity of those tools. The response rate was about 40 percent for the manager survey, with 29 managers, representing 21 of the 53 sites, responding. The staff survey had a 26 percent response rate; the 33 staff members who responded represented 14 out of the 53 sites.

Finally, the interviews were conducted using a standardized open-ended approach. Lasting about one hour, they included 15 questions in four key domains: changes to practice, accountability for implementing change, changes to leadership style, and overall program improvement. Five of the six managers interviewed were chosen because they reported high levels of RIPQI implementation on the survey. We also attempted to use the survey to identify a low-implementing manager. Only one individual had low enough scores to merit consideration as a contrast to the others, but her interview revealed that she reported low levels of implementation and change because she had recently completed the process and had not yet conducted extension activities or seen change happen at her site. We therefore simply included this manager's feedback with that of the other five.

Data Analysis

To analyze the data, we first looked at each data source individually and then began to link sources to answer the two research questions. Beginning with observational data, we identified 13 sites with data for two individual program offerings at each of two time points in different program years. We aggregated each site's ratings for each time point and then compared the two time points to describe an average amount of change for each site. Next we identified 21 instructors from different sites who had observational ratings in different years and then compared the two time points to describe an average amount of

change for each individual. For each of these samples, the RIPQI had been carried out between the two time points.

For survey analysis, we created several subscales from the survey items and ran cross-item and cross-survey analysis to understand the characteristics of individuals and organizations who reported high and low levels of change in program practices and higher and lower levels of youth engagement as a result of the RIPQI process.

Finally, to analyze the interview data, we first read through each interview transcript, looking for any practice or performance changes reported by the site managers we interviewed. We then identified key themes that emerged across all the interviews.

Does Change Happen?

Analysis of the observational assessment data, combined with staff and manager reports on the surveys and interviews, suggest that the RIPQI is working. To begin with, we saw high levels of fidelity to the RIPQI across all sites, in part because many of its elements are required. We quantified the level of implementation by asking managers and staff about their participation in various elements of the intervention, such as attending training, conducting observations, assessing administrative practices, and engaging in quality improvement planning. Out of a total of 21 elements, nine required and 12 not required, the average number in which managers participated was 10.5. More than half (55 percent) participated in 11 or more elements. We further distinguished high implementers from low implementers by looking at the 12 optional or "extension" activities, which required additional effort on the part of managers and staff. On average, managers participated in 6.75 of these extension activities.

Youth program staff across Rhode Island reported that administrative practices and instructional experiences are improving as a result of the RIPQI. Managers and staff reported almost universally (97 percent of managers and 81 percent of staff) that the RIPQI produced positive change in program quality. Fully 72 percent of managers and 67 percent of staff reported that the RIPQI supported youth to become more engaged in program offerings.

In analyzing the observational data, we looked at the subsamples of 13 sites and 21 individual instructors from different sites who had observational data before and after participation in the RIPQI. We asked the simple question: Was there positive change from the first observation to the time after the RIPQI had been introduced? On the whole, the answer was yes, although the small sample size reduced the power to detect statistically significant differences. In nearly all cases, scores went up from the baseline to the second observation. For the subsample of 13 sites on which we had instructional quality data at two time points, differences in observed quality were positive, particularly in the domain of *safe environment*, where we saw statistically significant change.

Our best test of baseline-to-post–RIPQI change is for the 21 individual instructors who were observed doing the same program at two time points, with exposure to the RIPQI in between. In these cases, the average score change was large and statistically significant. While scores improved in all four key domains, statistically significant change occurred in the total score as well as in two domains: *supportive environment* and *interaction.*

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How Does Change Happen?

That the RIPQI is working was one question this study set out to answer. Our findings provide evidence supporting the theory of change. When fully implemented—that is, when staff embrace the process and engage in activities beyond what is simply required—the RIPQI does appear to produce measurable change in instructional practice. These findings serve to confirm with local data what the more rigorous studies described above suggest: that the investment in the RIPQI has produced gains in the quality of afterschool programs across the state. However, perhaps the more intriguing finding from this study is *how* the RIPQI is working. If we understand the *how*, we can improve training for sites and better prepare quality coaches.

The manager interviews allowed us to further explore how administrative practices support changes to instruction. Across the interviews, several themes emerged regarding how the RIPQI changed management practices and policies.

Changes to Manager Practice

Managers reported changes in how they viewed or carried out their roles. Several talked about being more comfortable in the role of instructional leader, being more able to provide feedback to program instructors, freeing up time to provide better supervision, and in gen-

eral being more intentional about how they ran their sites. For example, one manager reported:

> I used to just think that I'd hire the facilitators and they'd know what to do and how to interact with kids, or teachers would come on board and it'd be, "Oh, they're a school teacher so I don't really have to tell them anything," but…I think I'm more comfortable speaking up to facilitators now, and I do it more often…. I think that I [have] become a stronger leader because I'm more intentional about the supervision and the feedback that I give people in the observations that I do with them.

Another core part of changing the manager role was improving orientation and training for staff. All six managers mentioned this element and described how incorporating the RIPQA into their training allowed them to better prepare their staff to meet expectations. One manager explained that the RIPQA "gave me some way to structure my trainings with my staff, and it gave them a structure of how to think about their time in the classroom with students." Another talked about how she selected one indicator from the RIPQA to discuss at each staff meeting.

One manager explained that the RIPQA "gave me some way to structure my trainings with my staff, and it gave them a structure of how to think about their time in the classroom with students."

Improvements to Communication

One of the most prevalent themes that came out of the interviews was improvement to communication at all levels. Managers reported better communication between site managers and staff, site managers and their supervisors, the program and parents, and instructors and youth. *Communication* was defined broadly but included some of the following types of changes or improvements:

- Improved policies and procedures, clarifying to everyone what was expected of participating youth and staff
- More intentional and more regular supervision of staff, including not only formal supervision but also more informal observations, check-ins, and meetings
- Improved communication with youth, including more opportunities for youth to voice their opinions and have a say in the program structure through, for example, youth advisory councils, student focus groups, and one-on-one conversations with instructors
- Better staff meetings that took advantage of the RIPQA tool and its core indicators
- Improved staff connections to family and community, more parental involvement

One manager talked about a change she made to the program schedule to allow for more communication among staff:

> Every day, as an entire group, we meet at 2:00—every single day. And we have a check-in about the day, talk a little bit about the logistics of the afternoon…and then, there's that open hour…where everyone is paid to be at work to…do lesson planning, get their snacks ready, meet with each other…or someone will have scheduled a time to come and meet with me one-on-one. But we have that hour set aside every day.

Another talked about how she uses the RIPQA to help herself and her team set goals:

> During my supervision that I have with them on a monthly basis, that's one of the talking points that we have, is the RIPQA process. And how do I feel that it's going, are there any issues going on, is there anything that I think we can strive [for]…. I'm constantly setting goals every month, talking about the goals that we've met.

Improvements in Program Structure

Several managers reported that the RIPQA process provided them with a practice that helps them shape and make improvements to the overall program structure. As one manager put it, the RIPQA "creates procedure. It creates form. It creates a structure that you can work within that is still flexible." Another reported:

> I think the biggest thing is just offering a structure that seems to really work...There's just so much when you're trying to hire, and staff, and train youth workers coming from such different backgrounds. I cannot assume that they're coming in with a certain skill set, and [the RIPQA] has kind of allowed me to structure our programming and structure the way we think about how we interact with students.

The changes to program structure that resulted from the process were not purely abstract. One manager talked more concretely about how the process helped her restructure her program:

> One of the main things that came out of our RIPQA process two years ago was that we were working our kindergarten and first graders way too hard…. We

> restructured our K and 1 program based on the RIPQA process…. And there was a huge change in behavior, and meltdowns, and kids passing out at 4:30—just falling asleep because they were so exhausted because we worked them so hard.

Improvements in Hiring Practices and Staff Composition

A fourth theme that came out of the interviews was the impact the RIPQA process had on the composition of the staff. All interviewed managers talked about such efforts as rewriting job descriptions to better reflect the quality standards, making changes to the organizational chart to allow for better staffing, creating assistant director positions in order to free up the site manager to spend more time on quality improvement, and firing staff or using natural transition to eliminate staff who were not committed to reflective practice and improvement. One manager described this last kind of change:

> After about a year of RIPQA, when I realized that there were some staff that were either apprehensive or completely just holding back from being a part of this and moving forward like we were, they were not asked to come back to work this year… They may be wonderful youth workers, but if they're not aligned with the vision and the needs that your school has, then it's just not the right fit anymore.

Improvements in Instruction

Of course the changes listed above are valuable only if they eventually have a direct impact on the experience of young people in the program. Although at least two of the managers felt that the changes they were making had not yet led to improved instruction, others talked about what they saw changing for the young people in their programs, including:

- Improvements to the safety and environment including more secure entrances and sign-out procedures, more appropriately sized furniture, and better fire drill procedures.
- Improvements to the quality of interaction between the youth and the staff. For example, staff asked more open-ended questions and were more intentional about greeting each student; youth voice was solicited through time built in for feedback and reflection.

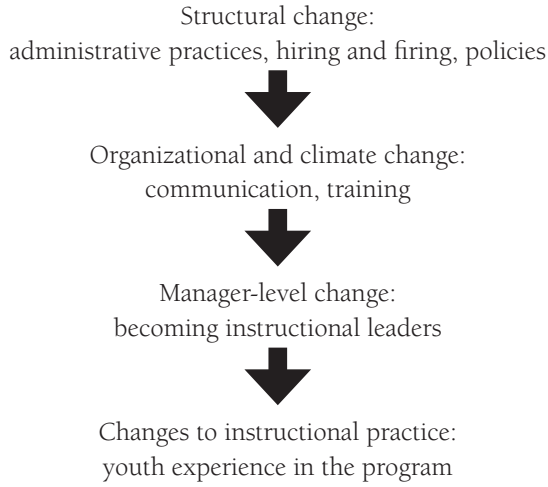
One manager reported on how the program elicited youth voice:

> The ten-minute, five-minute check-in at the end of a class, "How did this go for you? What's your favorite part? How can we make it better?" —that was something that kids really did come to me and say, "Hey, guess what? We told them we didn't like this class this day and they're going to change it." And that was a big thing.

The *How* of Program Improvement

These findings describe changes to administrative and management practices that can lead to improved instruction and increased youth engagement as described in the theory of change. When fully implemented, the RIPQI does appear to produce significant change in instructional practice, as measured by the observations, as well as in greater youth engagement, as reported by managers and staff. In addition, it appears to have an effect on management practice, as described by the program managers interviewed for this study.

So what is actually going on at the site level that makes change happen? Taken together, the observational data, survey responses, and interview transcripts begin to tell a story that mirrors the theory of change laid out above. That is, sites appear to go through a flow of activity that starts with structural change and ends with improvements to instructor practice:



Structural Change

It appears that change begins at the higher levels of administration. The RIPQI provides a framework and context for getting the right staff in place to do the right jobs. By revising job descriptions, hiring more intentionally, firing staff who aren't a good fit, creating new policies and procedures, and shifting job duties, organizations ensure that their staff members are strong and committed and that they understand exactly what is expected of them.

Organizational and Climate Change

Once the right mix of staff is in place, the RIPQI seems to provide the staff with a framework for improved communication. This communication takes several forms, but the most common changes seem to be dramatic improvements to orientation and training for new and returning staff and more intentional staff meetings. By using the RIPQA to shape new orientations, managers ensure that all staff members have a set of shared standards to work from and can therefore establish common goals. After establishing a common language at the beginning of the year, managers then used aspects of the RIPQA throughout the year at staff meetings. The standards provided managers with a structure around which to shape meetings intentionally.

The survey data tell us that staff who are most likely to report changes in their practice are those who feel most supported by their supervisors and who feel they understand the shared goals of their organization. It stands to reason, then, that, as the climate of the organization becomes more intentionally aligned with the RIPQA and staff are receiving more training and better support through ongoing supervision and staff meetings, they will feel more supported and therefore more inclined to enact change.

Manager-Level Change

As managers become more certain of their staffing mix, create a shared language for the staff, establish clearer policies and procedures, and develop an infrastructure for intentional staff meetings, they begin to feel more confident as instructional leaders. Every manager talked about continuing to conduct informal and formal observations after the official RIPQI process was over. These managers now have language for giving staff feedback on their performance. Many also talked about establishing more regular and intentional supervision with their staff, using the RIPQA as a guideline. When staff are hired and trained using a common language, managers can more easily provide guided support for their practice. The survey data suggest that the front-line staff most likely to change their practice are those who are involved deeply in the quality improvement process. As managers become more comfortable giving feedback, they are likely not only to observe their staff, but also to provide recommendations and feedback that lead to the final product: improvements to instructional practice.

Changes to Instructional Practice

The final stage in the theory of change that our study addressed is improvement to instructional practice. This process of change—improving the staffing mix; creating a shared language and common goals; and more intentionally supporting staff through improved communication, training, and supervision—takes time. Sites that have engaged in the process longer or that have strong leaders are further along than others. Several managers, but not all, did report change at the instructor level. Many of the changes managers described were basic and relatively easy to achieve, such as greeting all youth warmly, improving the appropriateness of furniture and supplies, and creating a sense of belonging. However, a few managers referred to development of higher-order skills among their instructors, such as asking more open-ended questions, providing opportunities for youth to reflect on the program, and doing more intentional planning.

As managers become more comfortable giving feedback, they are likely not only to observe their staff, but also to provide recommendations and feedback that lead to the final product: improvements to instructional practice.

Study Limitations

This study has several important limitations. For one, it used existing, but incomplete, observational data collected as part of a quality improvement system. Not every site had a complete set of observational data at two time points. We based our analysis on those that did.

A second limitation is the small sample size. As noted above, we had a relatively low response rate on the staff and manager surveys, probably because we distributed them in June, when many programs were breaking for the summer. By design, interviews were conducted with just six individuals. With more time and better response rates, the data might have yielded different findings.

A final limitation is that the study was conducted by someone very close to the RIPQI process. Elizabeth Devaney created the RIPQI in partnership with the Weikart Center and has been largely responsible for its growth and development into a quality improvement system in Rhode Island. She is not an impartial researcher. Those surveyed and interviewed knew Elizabeth well and may have tailored their responses to her. However, her closeness to the sites was also a benefit because she was

intimately familiar with the RIPQI and the nuances of implementation.

Further research is needed to confirm the validity of these findings and to explore what effect additional factors, such as the experience level and education of the manager, the longevity of staff, and the program setting, may have. Although these findings mirror the education literature on administrator effect on teacher practice (Leithwood et al., 2004; Marzano et al., 2003), there may be other ways to understand the flow of factors that affect instructor improvement, including the effect of formal education and training. The field would benefit from additional research exploring the pathways to instructor improvement.

Implications

The purpose of the study was to gain a better understanding of how the RIPQI achieves effects on afterschool organizations in Rhode Island. Its findings have implications both locally and nationally. Locally, these findings suggest that Rhode Island's quality improvement system is working but is highly dependent on administrators embedding the process and the language of the RIPQA into their organizations. Managers who can translate a one-time assessment and quality improvement process into an ongoing, embedded system of continuous improvement are going to be more successful than those who can't. Knowing that, RIPQI decision makers may want to redesign training for new sites and quality coaches to include strategies for embedding the process into ongoing program planning. For example, bringing successful managers into the training to share lessons learned and promising strategies may improve implementation at new sites.

Managers who can translate a one-time assessment and quality improvement process into an ongoing, embedded system of continuous improvement are going to be more successful than those who can't.

Nationally, this study can inform communities that are developing and launching quality improvement systems based on the same or similar tools and practices. A clear lesson from this study is that focusing on managers at the start may be more effective than moving directly to individual instructors. Without a shared language and infrastructure for discussing quality improvement, instructor-level change may not happen or may be short-lived at best. Change seems to happen on a continuum that begins with the administration.

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References

C. S. Mott Foundation. (2007). *A new day for learning: A report from the time, learning, and afterschool task force.* Washington, DC: Collaborative Communications Group.

Durlak, J. A., & Weissberg, R. P. (2007). *The impact of after-school programs that promote personal and social skills.* Chicago, IL: Collaborative for Academic, Social, and Emotional Learning.

HighScope Educational Research Foundation. (2005). *Youth program quality assessment: Administration manual.* Ypsilanti, MI: HighScope Press.

Intercultural Center for Research in Education & the National Institute on Out-of-School Time. (2005). *Pathways to success for youth: What counts in after-school. Massachusetts afterschool research study (MARS) report.* Wellesley, MA: Author.

Leithwood, K., Seashore Louis, K., Anderson, S., & Wahlstrom, K. (2004). *How leadership influences student learning: Review of the research*. New York, NY: Wallace Foundation.

Sinisterra, D., & Baker, S. (2010). A system that works: Highlights of effective intervention strategies in a quality improvement system. *Afterschool Matters*, *12*, 37–44.

Smith, C., Akiva, T., Blazevski, J., Pelle, L., & Devaney, T. (2008). *Final report on the Palm Beach Quality Improvement System pilot: Model implementation and program quality improvement in 38 after-school programs.* Ypsilanti, MI: HighScope Educational Research Foundation.

Smith, C., Akiva, T., Sugar, S. A., Devaney, T., Lo, Y-J., Frank, K., Peck, S., & Cortina, K. (2012). *Continuous quality improvement in afterschool settings: Impact findings from the Youth Program Quality Intervention study*. Ypsilanti, MI: David P. Weikart Center for Youth Program Quality.

Smith, C., & Hohmann, C. (2005). *Full findings from the Youth PQA validation study.* Ypsilanti, MI: HighScope Educational Research Foundation.

Waters, J. T., Marzano, R. J., & McNulty, B. A. (2003). *Balanced leadership: What 30 years of research tells us about the effect of leadership on student achievement*. Aurora, CO: Mid-continent Research for Education and Learning.

Wilson-Ahlstrom, A., & Yohalem, N. (2008). *Speaking in on voice: Toward common measures for OST programs and systems.* Washington, DC: Forum for Youth Investment.

Yohalem, N., & Wilson-Ahlstrom, A. (2009). *Measuring youth program quality: A guide to assessment tools* (2nd ed.). Washington, DC: Forum for Youth Investment.

Note

[1]Use of other continuous improvement models is also growing. Notably, the Afterschool Program Assessment System (APAS) by the National Institute on Out-of-School Time (NIOST), which is being used in several communities around the country, draws on similar continuous improvement practices and principles. Validation evidence for the APAS is provided in the final report on the Massachusetts Afterschool Research Study (INCRE & NIOST, 2005).

exploring self-esteem in a girls' sports program

Competencies and Connections Create Change

by Ellen Markowitz

When asked what my girls' afterschool sports program does for participants, I used to say that it "builds self-esteem." While this may have been true to some degree, I was expressing a program objective, rather than a researched outcome. Only after exploring self-esteem in my doctoral program did I begin to understand how complex and difficult it is to measure self-esteem. Now I have a deeper appreciation both for the challenges facing those who research self-esteem and for the role afterschool programs can play in facilitating its development, particularly among adolescent girls.

Self-esteem has been problematic for researchers because it is complex, stable, and hard to measure (Steinberg, 1996). When assessing the self-esteem of out-of-school time (OST) program participants, some researchers may think their instruments will not detect changes, either because the program does not last long enough to make a difference or because self-esteem is multidimensional and difficult to change. Some may respond to high-stakes testing and the pressure to demonstrate program outcomes by assessing concepts or behaviors with the strongest potential to show change, regardless of how they fit with program objectives. These responses can create a chasm between practitioners and researchers. Practitioners see firsthand that participants change how they feel about themselves, but researchers either have trouble capturing this phenomenon or are substituting other attributes for self-esteem.

This article attempts to address these gaps by reviewing research about self-esteem and adolescent girls, presenting findings from a study exploring girls' experiences in a sports-based youth development program, and attempting to engage practitioners and re-

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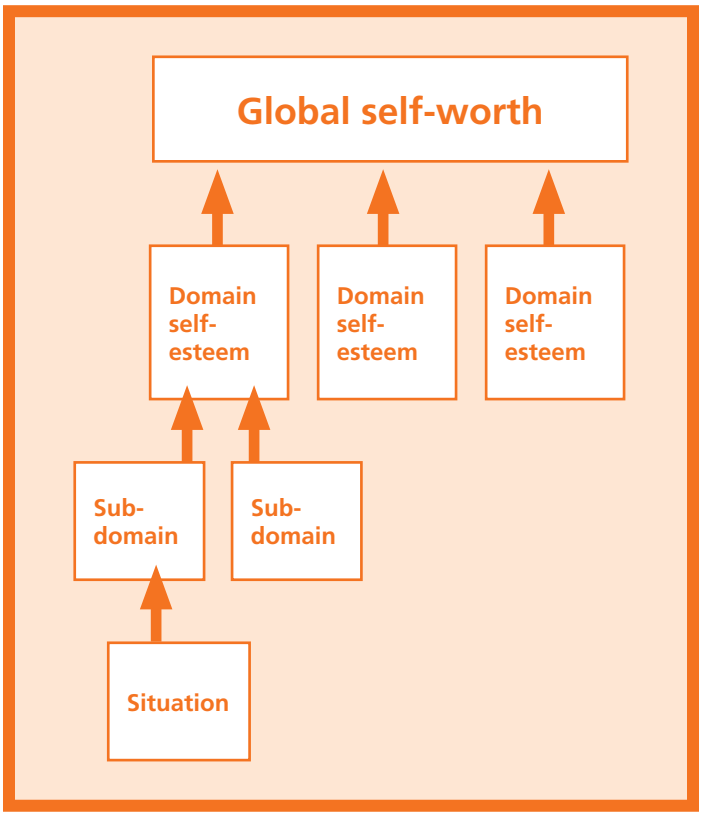
searchers in new conversations about self-esteem and how we assess it.

Understanding Self-Esteem

Understanding how individuals feel about themselves has been a quest of researchers for many years (Blumer, 1969; Mead, 1934). Currently, the predominant view is that self-esteem is hierarchical and multidimensional, consisting of various levels of self-assessment (Marsh, 1990). At the highest level, *global self-worth* is one's overall assessment of how one feels about oneself. This level is the most stable and difficult to change (Marsh, 1990).

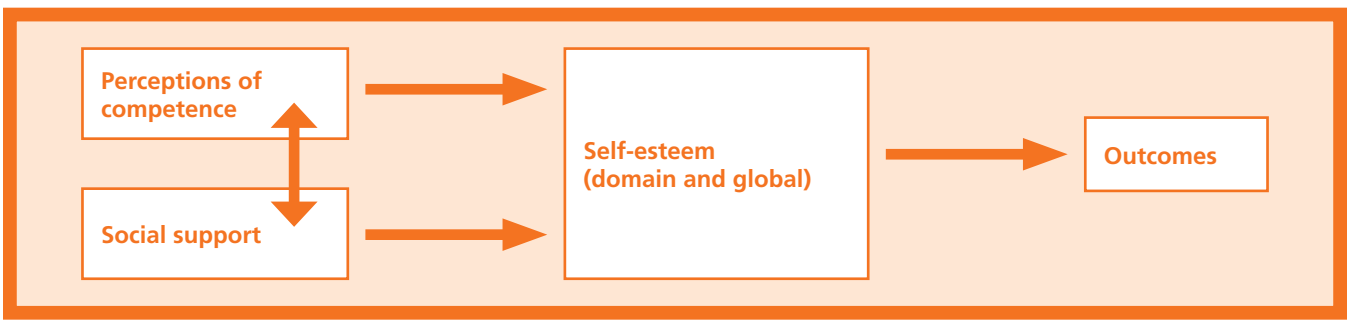
Figure 1. Hierarchical Model of Self-Esteem



Below global self-worth is *domain-level self-esteem*, which consists of how one feels about oneself in areas of one's life such as family, athletics, academics, and friends. Below the domains are *sub-domains*. Sub-domains under the domain of athletic competence, for example, might be the specific sports one plays, such as basketball, soccer, or tennis. Below sub-domains are *situations*, such as shooting free throws or serving. In this hierarchical model (see Figure 1), the odds of increasing one's self-esteem are better at the lower levels, in sub-domains or situations. For example, improving skills in a particular sport can enhance one's perception of competence in that sub-domain, which might then "trickle up" to the domain of athletic competence.

In this hierarchical model of self-esteem, the two main influences on self-esteem are perceptions of competence and social support, as shown in Figure 2 (Harter, 1987). *Perceptions of competence* refers to how capable one feels at a skill or activity. *Social support* is how much one feels supported or encouraged by others. Though global self-esteem is considered stable (Steinberg, 1996), domain self-esteem levels can change contextually and over time. Domain-level self-esteem and its effect on overall global self-esteem are derived from the combination of how important a particular domain is and how competent we feel in it. Overall self-esteem, or global self-worth, is a composite of all of one's domain self-esteem levels, combined with the level of importance associated with each domain (Harter, 1990). For example, when I was a child I was a good athlete and felt high perceptions of competence in sports. In addition, the domain of sport was very important to me. This combination contributed to my global self-esteem. On the other hand, I was not as skilled at playing the piano. Fortunately, my low perceptions of competence in music did not affect me so much because music was not a high priority in my life. Thus, individuals can have varying levels of self-esteem depending on domains, and the domains that have more relevance will carry more weight in assessing their global self-esteem. This combination of domains

Figure 2. Antecedents of Self-Esteem



and associated values makes self-esteem complex and hard to measure.

Self-Esteem & Adolescent Girls

Several distinct patterns have emerged in research on adolescent girls' self-esteem. One well-documented finding is a decline of self-esteem in white middle-class girls (AAUW, 1992; Birndorf, Ryan, Auinger, & Aten, 2005; Quatman & Watson, 2001). However, this phenomenon is not found in African-American girls, who consistently report higher self-esteem than white girls and do not experience the same declines in self-esteem that white or Latina girls do in early adolescence (Biro, Striegel-Moore, Franko, Padgett, & Bean, 2006; Greene & Way, 2005; Kimm et al., 2002). Rather than the *loss* of voice that characterizes this period for white or Latina girls, black girls often experience an *increase* in voice. Therefore, research about one ethnic group of adolescent girls cannot be generalized to all groups. Moreover, ethnic labels can never represent all girls who share that ethnicity, because there is more variation within groups than across groups (Eccles, Barber, Jozefowicz, Malenchuk, & Vide, 1999). In addition, context makes a difference. Whether at home, at school, or in an OST program, youth feel differently about themselves, their skills, and their relationships depending on the context, who is there, and what they are doing.

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Framing the Study

To support healthy development, girls need contexts and activities that foster self-esteem, and particularly its antecedents: perceptions of competence and social support. One particularly important context for positive development is OST learning, specifically sport and physical activity programs. The most popular OST activity is sports (Larson & Verma, 1999; Theokas & Lerner, 2006). Though significant gender gaps still exist, particularly in urban communities, girls who participate in sports can receive many social, psychological, and health benefits (Sabo & Veliz, 2008).

Participation in sports and physical activity can enhance the physical competence, health, and well-being of girls (Bowker, 2006; Pederson & Seidman, 2004; Richman & Shaffer, 2000). For example, girls who participate in physical activity report positive feelings about body image, increased self-confidence and motivation, and enhanced mood states (Wiese-Bjornstal, 1997). They also report reduced symptoms of stress, anxiety, and depression (Greenberg & Oglesby, 1997). Girls who participate in sports are more likely to graduate high school and go to college and are less likely to be sexually active or get pregnant than are girls who do not participate in sports (Miller, Melnick, Barnes, Farrell, & Sabo, 2005). Finally, sports participation has been associated with lower dropout rates (Mahoney & Cairns, 1997), particularly for low-income or at-risk youth, white females in suburban and rural schools, and Latina athletes in rural schools (Fredericks & Eccles, 2006).

Little research has been conducted on girls' sports programs as developmental contexts, especially for girls of color (Tucker Center, 2007). My study centered on understanding how and why adolescent girls of color can experience increases in self-esteem by participating in a girls' sports program.

Methodology

To understand participants' perceptions of their own self-esteem, I used both qualitative and quantitative approaches, with an emphasis on qualitative. While quantitative methods provided an informative snapshot, qualitative methods allowed for in-depth exploration of the complex phenomenon of self-esteem. A mixed-methods design gave me data on both *processes* and *outcomes*, leveraging the strengths of both qualitative and quantitative methods (Bryman, 2006; Johnson & Onwuegbuzie, 2004).

The research site was a program offered by PowerPlay NYC, a girls' sports-based youth development organization that I founded in 1998. PowerPlay offers sports and life skill programs annually for more than 400 girls, ages 7–17, in New York City. During the summer, PowerPlay runs an intensive eight-week Summer Leadership Academy for 30 high school girls. Participants are typically 13–17 years old, from lower socioeconomic backgrounds, and are mostly African American. My study included 13 program participants: nine African American, two Latina, and two Asian.

I was careful to incorporate appropriate research measures to ensure validity and to check my potential biases as the founder of the organization. These measures included peer review and discussion of my findings. I also focused on participants' *experiences* rather than on the program itself.

Methods

Data sources included interview transcriptions, pre- and post-participation surveys, and observational field notes. I conducted three sets of participant interviews, one before and one immediately after the program, and another three months later. All of the interviews (n = 37) were semi-structured, recorded, and transcribed by professionals. In the first interview, prior to the academy, I asked participants about themselves, their families and friends, school and sports, and other activities. In the second interview, after the program, I asked girls about their experience in the program, what they learned, how this experience influenced them, to whom they felt close during the program, and how satisfied they were with the program. The third interview included questions about whether the girls were still using what they learned in the program and about their relationships with academy participants, their sport participation, and the impact of this experience in their lives. For all interviews, I used follow-up probes such as "why?" "how?" and "in what way?" to elicit more elaborate responses.

Pre- and post-participation surveys were used to explore participants' self-esteem (n = 13). Adolescent self-esteem has typically been measured through self-report on questionnaires. I used *The Self Perception Profile for Adolescents* (Harter, 1988), a multi-dimensional self-report instrument consisting of a 36-item scale made up of six sub-scales: five domain-specific sub-scales for scholastic competence, social acceptance, athletic competence, physical appearance, and behavioral conduct, along with one global scale of self-worth. Although the sample is small, this quantitative perspective complements the qualitative data.

Finally, I was a participant-observer during the academy for three weeks. During 105 hours of observations, I took extensive field notes to record social processes, actions and behaviors, and group activities, focusing on participants and their relationships with peers and staff.

Data Analysis

Data analysis consisted of both deductive and inductive coding. I started with codes derived from research literature and then added codes that arose from the data. Initial codes included *self-perceptions, athletic competence, scholastic competence, close friendships, social acceptance, significant others,* and *skill development.* Codes that arose from the data included *coaching, challenges, future selves,* and *staff support.*

In addition, the small sample size allowed me to take a "within girl" approach, to look at girls' individual profiles across the six domains of self-esteem and explore domain-level changes for each girl. I was then able to integrate survey responses with interview responses and observational field notes to construct a fuller portrait of each girl's perception of her self-esteem and possible changes influenced by the program.

Findings

The findings are presented in three parts: girls' perceptions of their global self-esteem and of its two components, competence and social support.

Perceptions of Self-Esteem

When asked how they defined self-esteem, participants responded, "the way you think of yourself," "how you carry yourself," "how you feel about yourself," and "how you view yourself." These responses align with the mainstream definition of self-esteem. When asked whether the academy helped to increase their self-esteem, 11 girls (85 percent) said they began with a healthy sense of self-esteem, which the program reinforced. Participants scored high on the global self-worth subscale of the survey both before and after the program. On the pre-participation survey, seven girls (64 percent) scored at least 3.8 out of 4.0 for global self-worth. This outcome is not surprising given that African-American adolescent females often have high self-esteem (Biro et al., 2006; Greene & Way, 2005; Kimm et al., 2002).

Though survey results do not show changes in self-esteem, the juxtaposition of numbers with narratives tells a different story. Using the "within girl" approach afforded by the small sample, I was able to go "between the numbers," using the interviews and observations to learn more about each girl's experience.

For example, before she came to the academy, "Zelda" (a pseudonym) was concerned that she would be the fattest participant. Her score on the pre-participation survey of 2.4 for athletic competence was one of the lowest. However, during the program, Zelda was continually surprised that she could keep up with the other girls, both in stamina and in skill level. Her perception of her athletic competence increased, and she started to like sports more. Her score for athletic competence rose to 3.0 after the program, the greatest single increase of all of the participants. When I spoke with her three months after the program, she told me that she and her dad had been exercising together and that she wanted to try out for the volleyball team next year. This change could be described as an example of increasing self-esteem by increasing one's *perceptions of competence.*

Nene's pre-program global self-worth score of 3.4 was also one of the lowest of the group. In her first interview, she said that she was lazy and needed a push. During the program, Nene became close to two girls she already knew from school, along with several participants in her PowerPlay newsletter group. Their closeness was reflected in the time they spent hanging out, laughing and joking together, and in the nicknames they gave one another. Nene was the "grandma" of the newsletter "family." After the academy, Nene scored 4.0 in global self-worth. She said that PowerPlay pushed her to try new things and stretch herself. In November, she talked about her willingness to climb the ladder in a ropes course activity on a school trip, whereas before she would not have tried. Nene's story reflects an increase in self-esteem generated by increased levels of *social support*.

These two examples illustrate the nuanced processes of self-esteem development through increased perceptions of competence or social support. They also illustrate the value of the mixed-methods approach.

Perceptions of Competence

Because perceived competence is one of the key drivers of self-esteem, I was interested in the skills girls learned in the program and how they thought these skills helped them. Participants talked about improving their skills particularly in two areas: athletic competence and career development, particularly networking skills.

Athletic Competence

In interviews, 11 of the 13 girls (85 percent) reported that the program helped them to improve their sport skills, such as stamina or flexibility, as well as their attitudes. However, the group mean for athletic competence stayed virtually the same on surveys (3.0 before and 2.93 after), so that it could look as if no change had occurred. Of the seven girls whose mean scores were below 3.0 before the program, four—including Zelda—reported post-program increases. Selena said, "I would say I improved, like, my body-wise. I remember running, for example, I wouldn't finish laps. I remember last year I got to four and I got tired." Janet also noticed improvement in her stamina, saying, "I felt that really helped me this year when I took the Pacer test [a physical activity assessment] in school. Last year, I ran 56. This year, I ran 90."

Other girls mentioned improving skills in particular sports. Nene and Venus were both excited that they learned how to swim for the first time. Nakeeba, a member of her high school basketball team, was happy that she learned some new moves from coach Maya, a former collegiate All-American player. Here again, qualitative methods revealed the nuances of how the program positively affected girls' sense of athletic competence.

Career Development

The second major area in which participants discussed building their skills and feeling more competent was career and workplace development, specifically networking and communication skills. When asked how she got better at networking, Aliann said, "I just listened to what you guys said when you taught us about networking, and I just tried it and it worked." Even Iris, one of the shyest girls in the program, said that she was better able to talk to adults:

> I think it made me more confident. Back then if I had to speak to a grown-up, I'd get really, really quiet, and then my heart would beat fast or whatever. But now my heart doesn't beat fast, but I'm still quiet.

Her score on the pre-participation survey of 2.4 for athletic competence was one of the lowest. However, during the program, Zelda was continually surprised that she could keep up with the other girls, both in stamina and in skill level. Her perception of her athletic competence increased, and she started to like sports more.

In the program, girls learned networking skills, practical office skills, such as how to copy, send faxes, and write résumés, and more intangible skills such as developing a professional identity. Selena said, "I learned how to keep your professional and personal life separate. For instance, e-mails—you should have a professional e-mail." Zelda thought that the program helped lessen her fears about the workplace; she said she learned "how to put myself out there for people and not be afraid. Like if I go on an interview, or if it's an internship, not be afraid, and show them what I have to offer."

The academy focused on using sports to teach life skills and enabling girls to practice these skills in a safe, supportive environment. Developing competencies helps individuals to feel better about themselves. Typically, skill improvement leads to increases in levels of enjoyment or

in motivation and persistence in the activity, especially in important domains (Gould & Weiss, 1987; Weiss, 1987).

Social Support

In the Summer Leadership Academy, the staff played a major role both in building girls' skills and in providing social support. Most of the girls acknowledged that the staff positively influenced the way they thought about themselves both by encouraging them and by connecting with them at their level, as if they were friends or family.

Many of the girls talked about how the staff encouraged them or gave them a push when they needed it. For example, Iris, one of the shyest girls in the program, set a goal in the academy to talk more. When Delila, a co-director, learned about this goal, she asked Iris to speak first at the next weekly "Girl Talk" session. Iris would not have chosen to speak first without this extra push. Other girls also said that the counselors encouraged them when they faced challenges. When asked to describe the staff, Janet said:

> I would say "encouraging," because if someone would say, "I can't do it," they'd say, "Yes, you can." Then they'd encourage you to do whatever you had to do that day, and not just let you sit back and say, "Okay, that's fine."

LaToya, a second-year attendee, admitted that Maya, a co-director, was a big influence on her:

> I think that since last year, she kind of helped me grow. Last year, I was a bit stubborn. This year, I wasn't as stubborn. She was kind of showing me. She told me that I've changed a little.

When asked to describe the staff, the participants repeatedly said that the counselors were on their level or seemed more like friends than teachers. Janet said, "You look at them as your friends. You're not a student-teacher relationship." Venus thought the counselors were different from other adults in her life because "you get so used to them that you forget they're adults; you forget they're older than you…. They're like your own friends." Iris said staff members were more open than other adults in her life. Selena said she liked that "you could relate to them. They kind of related to you. They shared their experiences." Anastasia thought the counselors "showed their personalities, which were great. That made it more fun and more enjoyable." Esme said, "For you to understand us, you have to get down to our level. You cannot think always like an adult."

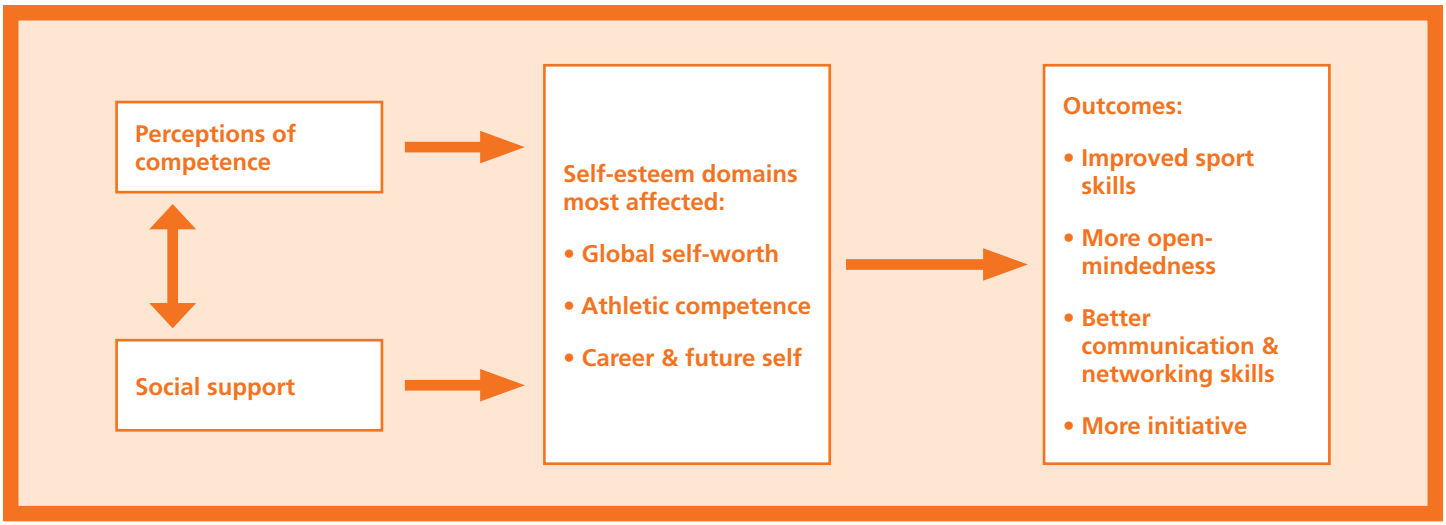
Another interesting phenomenon related to social support was that girls often described staff as being like members of their family. Specifically, four girls (31 percent) referred to a counselor as "my big sister." Aliann said of one counselor:

> She gave me a lot of great advice on staying focused with athletics and my studies. And she kind of encouraged me to be better in what I do than I am. And, yeah, she was kind of like a big sister.

The counselors also reminded girls of other family members. Anastasia said that Maya was like her father because she pushed the girls.

> She was in charge of the video group and noticed how we … were giving up. So we were, like, "Oh, we don't want to do this anymore." And so then she

Figure 3. Self-Esteem Development in Study Participants



would say, "No, we have to finish this thing." She was, like, the optimistic one.

Delila reminded Aliann of her dad because "she's smart like my dad. My dad's an English teacher too, so they're all about English." When asked how they were like other adults in their lives, four girls (31 percent) responded with a comparison between a counselor and a member of their family. Jaz said, "Jen is like my Auntie Shell. She took me in…. Any time I needed to talk, she [was] there." Zelda said that Maya was like her Aunt Tess and that Delila was like a mixture of her aunts, because some of them were sarcastic and funny like Delila. In total, six girls (46 percent) identified staff as being like sisters or family members.

Participants appreciated how the counselors interacted with them. The counselors successfully balanced being on the participants' level while remaining in a position of authority. In the OST field, this kind of relationship has been called "peer-like"; staff are perceived to be more like peers than like adults, although they are obviously not participants (Hirsch, 2005). This perception is a high compliment, conveying that staff members can be both friends and authority figures, shifting between the two roles as needed.

Revisiting the Model

Using Harter's framework, the process of self-esteem development for these girls is illustrated in Figure 3.

Through interviews and surveys, participants expressed that they gained competence in the domains of global self-worth, athletic competence, and career and future self. They perceived that they enhanced their skills in sports and in networking and communication and that they developed their professional identities. The girls also felt strong encouragement from and connection with the staff. For some girls, it seemed as if either increasing perceptions of competence or receiving social support was more important for triggering self-esteem changes, while for many girls, it seemed that both of these antecedents worked in synergy to increase self-esteem levels in particular domains. The two antecedents may be related; I saw girls' perceptions of both their competence and their connections with others change because of the support of others. PowerPlay's combination of opportunities for participants to practice skills and to receive positive reinforcement from adults was a powerful recipe for growth in self-esteem.

TIPS FOR FACILITATING YOUTHS' SELF-ESTEEM

INCREASING PERCEPTIONS OF COMPETENCE

- Facilitate and design practices that include a skill component or a time to practice or learn basic skills. Optimal sports practices have four parts: introduction and warm up; skills practice; game playing; and cool down, wrap up, and review.
- Break the skills down into parts, so that there is a progression of learning. Start with the easier parts and work up to the harder ones, or start with smaller movements before putting all the movements together.
- Demonstrate the skills, using all appropriate modalities, including kinesthetic, auditory, and visual. Involve youth in peer teaching.
- Encourage youth to try new things. We never know if we have talent or ability until we try.
- Adopt the attitude that failure is feedback. When youth make a mistake or feel challenged, they have learned what they need to work on.

INCREASING PERCEPTIONS OF SOCIAL SUPPORT

- Provide specific, positive feedback. Try to tailor your feedback to each person and to "capture the good." Be sure to mix it up; don't just say "good job" over and over again. Be creative in finding what kids do well.
- Use "feedback sandwiches" to build trust. A feedback sandwich has a positive comment as the top of the bun, constructive or helpful comments as the meat or cheese of the sandwich, and a positive comment for the other bun.
- Help youth to work in pairs or small groups. If seating is involved, ask youth to sit in different seats daily or weekly and to mix it up so they meet new people.
- Initiate rituals such as "buddy for a day." Set up mini-mentorships in which someone who is very skilled helps to teach a peer who is not as good at that activity.
- In team sports, modify the activity to include a certain number of passes before a team can try to score. This way, everyone gets involved.

Implications for Practitioners

For practitioners, one of the key takeaways of this study is that two main ingredients can help youth increase their self-esteem. One is structured activities that are focused on skill-building. The other is a supportive environment, particularly with staff who can shift between being peer-like and being adult leaders.

Building skills can help build self-esteem, because when youth increase their perceptions of competence, they may begin to feel better about themselves, especially in the areas of their lives they value most. Skills must be taught intentionally; they do not increase simply because an adult or coach is present. The myth surrounding youth sports is that, if a child is participating and being coached, then that child must be learning life skills. Life skills must be taught just like any other skills, and counselors need to be coached both on what life skills are and on how to teach them effectively. Thus, programs and practitioners should clarify for themselves the specific skills they want to foster and how best to assess the teaching and learning of those skills. Staff also need to be taught how to be both friends and adult mentors and to shift between those roles as needed.

In mainstream, non-academic circles, self-esteem is viewed as how one *feels* about oneself. By contrast, self-esteem researchers measure how one feels about what she can *do* or how *supported* she feels by others.

Implications for Researchers

This study illuminated two gaps that may arise with how self-esteem is traditionally considered and measured. The first gap is how different groups view self-esteem. In mainstream, non-academic circles, self-esteem is viewed as how one *feels* about oneself. By contrast, self-esteem researchers measure how one feels about what she can *do* or how *supported* she feels by others.

The second gap is methodological. Many powerful stories of change can be lost between data points, but they could be mined using qualitative methods. In my study, the girls' stories revealed the competencies and skills the girls learned in the academy. The outcomes are related to things they believed they could now *do*, rather than simply to how they *felt* about themselves. As a result of these newfound competencies, girls often felt better about themselves. These changes would not have been revealed by the quantitative survey results alone.

Synchronized Efforts to Support Self-Esteem Development

When individuals feel enhanced perceptions of competence in domains they value, strong support from others, or both concurrently, their self-esteem is likely to increase, whether in one domain or globally. Though there is no single set of agreed-upon best practices for promoting self-esteem, this study reinforces the importance of skill building and of positive relationships with adults (Grossman & Bulle, 2006; Rhodes, 2004; Roffman, Pagano, & Hirsch, 2001), two of the eight features of a quality OST program (National Research Council, 2002). I refer to these as the "2 Ss" of *skills* and *support*, or the "2 Cs" of *competence* and *connections*, where *skills* and *competence* are synonymous, as are *support* and *connections*.

Practitioners see firsthand the powerful impact of afterschool programs on youth. Researchers have come a long way in identifying the elements of OST settings that promote positive youth development (National Research Council, 2002). Now, by shifting the focus from how youth *feel* to *skills* and *support*, or *competence* and *connections*, practitioners and researchers can better synchronize their efforts to support positive youth development. Practitioners can focus on skills and competencies, thinking about which skills to teach and how, while simultaneously promoting support and connection by training staff to be both peer-like and adult. Meanwhile, researchers can use multiple approaches to understand youth experiences more fully. Working together, practitioners and researchers can translate self-esteem effects in strong, meaningful ways to present the compelling changes that happen every day in OST programs.

References

American Association of University Women. (1992). *The AAUW report: How schools shortchange girls*. Washington, DC: Author.

Birndorf, S., Ryan, S., Auinger, P., & Aten, M. (2005). High self-esteem among adolescents: Longitudinal trends, sex differences, and protective factors. *Journal of Adolescent Health*, *37*, 194–201.

Biro, F. M., Striegel-Moore, R. H., Franko, D. L., Padgett, J., & Bean, J. A. (2006). Self-esteem in adolescent females. *Journal of Adolescent Health, 39*, 501–507.

Blumer, H. (1969). *Symbolic interactionism: Perspective and method.* Berkeley, CA: University of California Press.

Bowker, A. (2006). The relationship between sports participation and self-esteem during early adolescence. *Canadian Journal of Behavioural Science, 38*, 214–229.

Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, *6*(1), 97–113.

Eccles, J. S., Barber, B. L., Jozefowicz, D., Malenchuk, O., & Vide, M. (1999). Self-evaluations of competence, task values and self-esteem. In N. G. Johnson, M. C. Roberts, & J. Worrell (Eds.), *Beyond appearance: A new look at adolescent girls* (pp. 53–83). Washington, DC: APA Books.

Fredericks, J. A., & Eccles, J. S. (2006). Extracurricular involvement and adolescent adjustment: Impact of duration, number of activities, and breadth of participation. *Applied Developmental Science*, *10*(3), 132–146.

Gould, D., & Weiss, M. R. (1987). *Advances in pediatric sport sciences, Vol. 2: Behavioral issues*. Champaign, IL: Human Kinetics.

Greenberg, D., & Oglesby, C. A. (1997). Physical and mental health dimensions from an interdisciplinary approach. In L. K. Bunker (Ed.), *Physical activity and sport in the lives of girls* (pp. 49–63). Washington, DC: U.S. Department of Health and Human Services.

Greene, M. L., & Way, N. (2005). Self-esteem trajectories among ethnic minority adolescents: A growth curve analysis of the patterns and predictors of change. *Journal of Adolescence*,*15*(2), 151–178.

Grossman, J. B., & Bulle, M. J. (2006). Review of what youth programs do to increase the connectedness of youth with adults. *Journal of Adolescent Health*, *39*, 788–799.

Harter, S. (1987). The determinants and mediational role of global self-worth in children. In N. Eisenberg (Ed.), *Contemporary topics in developmental psychology* (pp. 219–242). New York, NY: Wiley.

Harter, S. (1988). *Manual for the self-perception profile for adolescents.* Denver, CO: University of Denver.

Harter, S. (1990). Self and identity development. In S. S. Feldman & G. R. Elliott (Eds.), *At the threshold: The developing adolescent* (pp. 352–387). Cambridge, MA: Harvard University Press.

Hirsch, B. J. (2005). *A place to call home: After-school programs for urban youth.* New York, NY: Teachers College Press.

Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, *33*(7), 14–26.

Kimm, Y. S. Glynn, N. W., Kriska, A. M., Barton, B. A., Kronsberg, S. S., Daniels, S. R., ... Liu, K. (2002). Decline in physical activity in black girls and white girls during adolescence. *New England Journal of Medicine*, *347*(10), 709–715.

Larson, R. W., & Verma, S. (1999). How children and adolescents spend time across the world: Work, play and developmental opportunities. *Psychological Bulletin*, *125*(6), 701–736.

Mahoney, J. L., & Cairns, R. B. (1997). Do extracurricular activities protect against early school dropout? *Developmental Psychology*, *33*(22), 241–253.

Marsh, H. W. (1990). A multidimensional, hierarchical model of self-concept: Theoretical and empirical justification. *Educational Psychology Review*, *2,* 77–172.

Mead, G. H. (1934). *Mind, self and society*. Chicago, IL: University of Chicago Press.

Miller, K. E., Melnick, M. J., Barnes, G. M., Farrell, M. P., & Sabo, D. (2005). Untangling the links among athletic involvement, gender, race, and adolescent academic outcomes. *Sociology of Sport Journal, 22*(2), 178–193.

National Research Council and Institute of Medicine. (2002). *Community programs to promote youth development*. Committee on Community-Level Programs for Youth. J. Eccles & J. A. Gootman (Eds.). Board on Children, Youth and Families, Division of Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

Pedersen, S., & Seidman, E. (2004). Team sports achievement and self-esteem development among urban adolescent girls. *Psychology of Women Quarterly, 28*, 412–422.

Quatman, T., & Watson, C. M. (2001). Gender differences in adolescent self-esteem: An exploration of domains. *Journal of Genetic Psychology, 162*, 93–117.

Rhodes, J. E. (2004). The critical ingredient: Caring youth-staff relationships in after-school settings. In G. G. Noam (Ed.), *New directions for youth development: After school worlds: Creating a new social space for development and learning* (pp. 145–161). San Francisco, CA: Jossey-Bass.

Richman, E. L., & Shaffer, D. R. (2000). "If you let me play sports": How might sport participation influence the self-esteem of adolescent females? *Psychology of Women Quarterly, 24*(2), 189–199.

Roffman, J. G., Pagano, M. E., & Hirsch, B. (2001). Youth functioning and the experiences of inner-city after-school programs among age, gender, and race groups. *Journal of Child and Family Studies*, *10*(1), 85–100.

Sabo, D., & Veliz, P. (2008). *Go out and play: Youth sports in America*. New York, NY: Women's Sports Foundation.

Steinberg, L. D. (1996). *Adolescence*. New York, NY: McGraw Hill.

Theokas, C., & Lerner, R. M. (2006). Promoting positive development in adolescence: The role of ecological assets in families, schools and neighborhoods. *Applied Developmental Science*, *10*(2), 61–74.

Tucker Center for Research on Girls and Women in Sport. (2007). *The 2007 Tucker Center research report. Developing physically active girls: An evidence-based multidisciplinary approach.* Minneapolis, MN: Author.

Weiss, M. R. (1987). Self-esteem and achievement in children's sport and physical activity. In D. Gould & M. R. Weiss (Eds.), *Advances in pediatric sport sciences, Vol. 2: Behavioral issues* (pp. 87–120). Champaign, IL: Human Kinetics.

Wiese-Bjornstal, D. (1997). Psychological dimensions. In L. K. Bunker (Ed.), *Physical activity and sport in the lives of girls: Physical and mental health dimensions from an interdisciplinary approach* (pp. 49–70). Washington, DC: U.S. Department of Health and Human Services.

helping youth prepare for careers

What Can Out-of-School Time Programs Do?

by Kathryn Hynes, Kaylin M. Greene, and Nicole Constance

Dramatic changes in the labor market in the United States over the past 50 years have raised tremendous concern that many of our nation's youth are unprepared for the labor force. Policymakers and youth advocates are looking for strategies to improve the education system so that fewer youth drop out of high school and more have the skills and knowledge they need to contribute to the global economy. Initiatives such as Ready by 21 at the Forum for Youth Investment and the Mott Foundation's New Day for Learning highlight the importance of bringing together schools, workforce development programs, and out-of-school time (OST) programs to support youth to be successful in young adulthood. Indeed, many OST providers recognize the challenges facing youth and want to help. However, important questions remain: How can OST programs best support youths' career development? What do quality career programs look like? Will youth attend? Will these programs be effective?

This article draws from several disciplines to integrate what is and is not known about engaging youth in career programming during OST. We begin by describing the challenges youth face as they transition into the labor market and the difficulties facing schools and higher education. We then juxtapose research on the potential for OST programs to support career development against evaluation research showing the challenges of changing long-term labor market outcomes.

Next, we take a program-level approach to understanding OST career programming. We draw from our

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own study of 30 OST programs serving primarily low-income middle and high school youth to show the ways OST programs are currently supporting career development. We discuss some of the challenges of career programming and highlight how programs are overcoming these challenges. Our concluding discussion draws both from our own study and from the literature on education, workforce development, and OST programming to show how several OST programs are using scaffolding, in which youth move from lower-level experiences to more challenging ones, to keep youth engaged and progressing.

Should OST Programs Engage in Career Programming?

Many OST programs engage in career programming because of the challenges youth face in entering the labor market and because of difficulties in the education system.

Challenges for Low-income Youth Entering the Labor Market

During the post–World War II era, youth with a high school degree and a willingness to work could often find reasonable jobs and support a family. Since then, the labor market has changed considerably. Technological innovation, globalization, and the decline in unions have made finding good work particularly difficult for young men with limited education. Between 1973 and 2007, median annual earnings for young men with only a high school education actually *fell* in real terms by about a quarter (Danzinger & Ratner, 2010). The economic recession that began in early 2008 exacerbated the problem. The unemployment rate for adults with only a high school education rose from 5.5 percent in 2007 to 12.4 percent in 2010. Rates for those without a high school degree were even worse, rising from 9.6 percent in 2007 to 18.3 percent in 2010. In contrast, the unemployment rate for adults with a college degree was only 5.9 percent in 2010 (Holzer & Hlavac, 2011).

Twenty years ago, a major national commission concluded that many young workers lacked the skills necessary to succeed in the labor market. The SCANS report argued that, in addition to improving basic reading, writing, and math skills, workers also needed to develop skills in communication, resource allocation, decision making, problem solving, and using data (U.S. Department of Labor, 1991). Despite many education reforms in the intervening years, employers continue to report that workers do not have the skills they need to keep companies competitive (Conference Board et al., 2006).

Difficulties in the Education System

Many youth programs work hard to help youth get into college. Clearly college provides a path to good, high-paying jobs. However, despite decades of effort, only 32 percent of young adults aged 25–29 have completed a bachelor's degree (U.S. Department of Education, 2011). Many efforts have focused on getting youth *into* higher education; indeed, more youth enroll in college today than in the past. Unfortunately, many drop out. Only slightly more than half of students enrolled full-time in four-year institutions receive a bachelor's degree within six years; completion rates are lower for two-year degrees (Knapp, Kelly-Reid, & Ginder, 2011). Debates about the best way to help these students are underway (Bowen, Chingos, & McPherson, 2011). Some argue for shifting the focus from college enrollment to college *completion* (Russell, 2011). Others argue that the focus on college completely fails students who never enter or are not properly prepared to attend college and that strategies to connect these students with work should also be examined (Rosenbaum, 2001). In this complicated environment, some OST programs focus on both college *and* career readiness.

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Many efforts to support youth are underway in the K–12 education system. Some integrate career development into the curriculum, whether by adopting career education standards or by implementing schoolwide reform models like Career Academies (Kemple & Willner, 2008). However, many argue that schools, which already struggle to meet youths' needs, cannot—and should not have to—do it alone. Some schools partner with community-based organizations to provide OST learning opportunities for youth, such as the After School Matters apprenticeship programs in Chicago (Hirsch, Hedges, Stanwick, & Mekinda, 2011). In other cases, community-based organizations step in to provide career programming when schools do not. Although a wide variety of career supports are currently in use, clear evidence of their effectiveness has yet to emerge.

How Can OST Programs Help?

That quality OST programs can improve youth outcomes has long been recognized. However, OST programs have an effect only if youth attend and participate. Meanwhile, recruiting and retaining older youth can be a formidable challenge. One promising finding from recent research is that some youth seem to enjoy career-related programming. In a previous study, we surveyed more than 135 OST programs serving middle and high school youth, finding that those offering career programming were significantly more likely to be full at the start and end of the year than other programs (Hynes, Miller, & Cohen, 2010). Similarly, in a study of nearly 200 OST programs in six cities, Deschenes and colleagues (2010) reported significantly higher youth retention rates for programs that offered leadership opportunities such as community service, youth councils, opportunities to design or lead activities for younger children, and paid youth staff positions. These activities, which build marketable job skills, are often included in career development programs.

In contrast to the challenges of recruiting and retaining older youth in traditional youth programs, demand for summer job programs appears to be high. When public funds became available through the American Recovery and Reinvestment Act, states enrolled more than 313,000 youth in federally subsidized summer jobs (Bellotti, Rosenberg, Sattar, Esposito, & Ziegler, 2010). In many areas of the country, applications for these jobs exceeded available slots. Retention was high, with more 80 percent of these youth completing their summer experiences (Bellotti et al., 2010).

These findings linking career programming to recruitment and retention may reflect the fact that, conceptually, a career focus aligns well with best practices for engaging older youth in OST programming. Programs with high recruitment and retention often provide youth with opportunities to experience the real world, learn new skills, make a difference in the community, and practice autonomy and decision making (Eccles & Gootman, 2002; Hynes et al., 2010). Another reason career programming may appeal to youth is that it targets an important developmental need. Throughout middle and high school, youth should be engaged in establishing a vocational identity (Porfeli, 2008). Indeed, aiding youth in career exploration and decision making may be an important goal. Recent research shows that youth who are indecisive about their career plans have significantly lower wages in adulthood (Staff, Harris, Sabates, & Briddell, 2010).

Though there is a good conceptual link between OST and career programming, attempts to improve long-term career outcomes have been mixed.

Though there is a good conceptual link between OST and career programming, attempts to improve long-term career outcomes have been mixed. A recent evaluation of the After School Matters initiative showed that participation in an OST apprenticeship program was associated with higher reports of self-regulation and slower increases in problem behavior, but it was not associated with increased marketable job skills or academic outcomes (Hirsch et al., 2011). Other efforts to improve long-term career outcomes have been undertaken through the workforce development system. Again, even when programs are expensive, effects are small or fade out after a few years (Bloom, 2010). For instance, Job Corps, which provides education and job training in a residential setting for disadvantaged youth aged 16–24, led to short-term gains in employment and earnings. However, those positive effects faded out over time, leading researchers to question whether one-time interventions would be adequate to keep youth on a positive trajectory (Bloom, 2010). Research has not adequately explained why some efforts to improve labor market success work and others do not (Heinrich & Holzer, 2010), but issues such as inadequate staffing and training, short program duration, and the difficulty of replicating promising models appear salient (Miller, Bos, Porter, Tseng, & Abe, 2005; Schrim, Stuart, & McKie, 2006). Also, because promising programs often include many different activities, evaluations have yielded little information about *which* activities are most important (Arcaira, Vile, & Reisner, 2010).

Questions remain about the best way to assist youth in their transition to adulthood. On one hand, there is clearly a need for OST programs to provide critical supports. Youth appear interested in career-related programming, whose focus on building real-world skills through hands-on learning fits nicely with developmental theory. On the other hand, changing long-term labor market outcomes is extremely challenging, so programs should be realistic about what they promise to achieve. Finally, given the variety of ways schools and communities are implementing career programming and the real-

ity of tight government budgets, researchers, practitioners, and funders need to work together to ensure that career development funds go into cost-effective strategies.

Engaging Youth in OST Career Programming

This section brings the discussion to the program level, drawing on our recent study of OST programs to ask: What exactly is "career programming" in OST? How are programs actually integrating career content? What do promising program models look like?

In 2011–2012, we collected extensive data, including hour-long interviews with directors, day-long program observations, and surveys of participating youth, on 30 OST programs serving primarily low-income middle and high school youth. We wanted to understand how OST programs integrated content about careers, what components of career programming engaged youth, and what obstacles interfered with successful career programming. We asked leaders in the field to identify programs that had a reputation for quality career programming. We included school-year and summer programs from across Pennsylvania with various funding sources and different approaches to career programming. Our research methodology and main findings are available in an online report (Hynes, Constance, Greene, Lee, & Halabi, 2011). This article draws from that study to show what OST career programming can look like. After outlining the three types of career programming we observed, we describe three specific programs that successfully engaged youth, highlighting the ways these programs overcame some common implementation challenges.

How OST Programs Are Implementing Career Programming

One of the main goals of our study was to understand what programs were actually doing when they said they provided career programming. Data from our study suggest that career programming falls into three categories:

- **Career exploration** activities help youth understand what careers are available and what skills and experience those careers require. Sometimes these activities are individualized, helping youth match their own strengths and interests to career paths. Other times, group activities teach youth about local industries or train them in vocations such as culinary arts or cosmetology.
- **Work experiences** give youth actual job experience, whether the work is done in the community or at the program. Some programs include training in work-readiness skills, such as proper business behavior and communication. Others may include job-search skills such as interviewing.
- **Substantive theme** programming teaches youth occupation-specific or topic-specific skills and knowledge in such areas as technology, urban agriculture, or construction.

Separating these three types of career programming is useful because each type requires different resources, poses different challenges, and may influence different outcomes. A program could do just one type of programming, but many of the programs we studied included more than one type. Figure 1 (page 25) shows that seven out of 30 programs in our study combined substantive theme programming with career exploration, and four combined work experiences with substantive theme programming. Five of the 30 included all three types.

Challenges to Engaging Youth in Career Programming

As with any kind of youth programming, career programming offers challenges. Some challenges are *informational*. Programs that wanted to teach youth about available jobs sometimes struggled to find enough people with up-to-date information on available jobs and the skills and education they require. Other programs struggled to find people with adequate substantive knowledge to teach youth cutting-edge technology or science skills.

Another set of challenges revolved around providing *developmentally appropriate* programming. Some programs wanted to offer career programming at younger ages in order to help youth make good early decisions about school performance or class selection. Others worried about finding "good" jobs for youth, ones that could teach youth skills and knowledge useful for future careers. Still others focused on the need to take youth from where they are and support them as they move up to the next proficiency level.

Finally, *engaging* youth is always challenging. Some programs struggled to find topics or final projects that truly motivated older youth. Others cited challenges in finding programming or work experiences that were good matches for youths' own career interests. Still others wanted to keep youth engaged long enough to master a task or substantive area but struggled because other activities competed for youths' time or interest.

Creative Ways Real Programs Overcame These Challenges

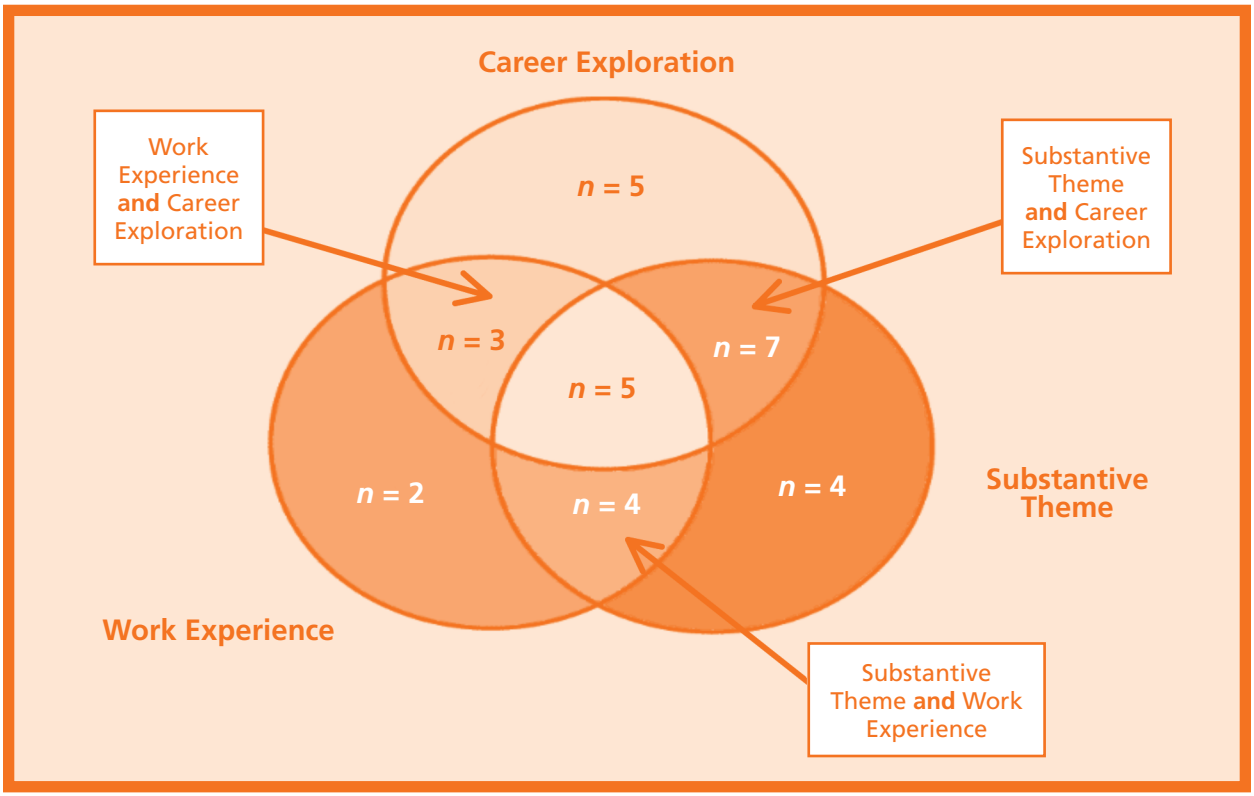
This section highlights three programs—one from each type of career programming identified above—that effectively engaged youth in career-related activities. Our study was not an evaluation, so we did not explore whether these programs affected youth outcomes. Instead, we focused on whether they were able to *engage* older youth. We identified engaging programs using a comprehensive assessment that included youth-reported measures of engagement and of career-related learning, observer-reported measures of attendance and youth engagement, scores assigned by the research team about the likelihood that the program was improving important career-related skills, and director reports of enrollment and attendance. See Hynes et al. (2011) for a more detailed methodology.

Career Exploration

The Industry Clubs are career exploration programs supported by the Northwest Pennsylvania Workforce Investment Board (WIB), the regional workforce development group. The goal of the Industry Clubs is to expose middle school students to careers and industries that are growing in their local communities. Meeting weekly after school for two hours, students did interest assessments, went on field trips to local work sites, and heard guest speakers talk about various jobs and fields. Clubs were led by a teacher or group of school personnel who received support from the WIB. The WIB funded the clubs and their transportation needs, provided information about growth occupations in the region, and helped to identify guest speakers and field trip sites. At the end of the semester, students from all of the regional clubs came together for a career expo. They gave presentations sharing what they learned about various careers and participated in hands-on activities and demonstrations.

The Industry Club model creatively overcame several challenges other programs cited about implementing career exploration activities. For instance, several programs reported difficulty in finding field trip locations and guest speakers. Some Industry Clubs arranged these experiences themselves, but others relied on the WIB, with its strong ties to local businesses and professionals. The Industry Clubs also relied on the WIB to solve the problem of providing up-to-date information about the training and education necessary for the jobs of interest to youth or about the careers that were expanding in the region. Finally, the Industry Clubs targeted middle school

Figure 1. Types of Career Programming



students instead of waiting until high school. An Industry Club leader explained the importance of focusing on middle school students: "We have students that are juniors and seniors that suddenly decide… 'Oh, I really want to be that [occupation]. What do I have to do?' Well, we have to back up two years in life—which is impossible—and get you on the right track…." Career exploration activities in middle school allow students to develop interests and then take the high school classes necessary to pursue those interests.

Substantive Theme Programming

Techno Teens is a substantive program that turns high school youths' love of video games into an opportunity to learn computer skills and explore technology-based careers. The goal of the program is for youth to design and produce an original video game. In our study, we saw youth working in teams to develop their game's story and design the game using computer software. They also learned about the business side of gaming by researching companies that sell video games, learning about the salaries of video game developers, and writing a marketing letter. Although the video gaming clearly sparked youths' interest, the program expanded their horizons by taking them on field trips to local companies and introducing them to people who used computer skills in a variety of professional-level jobs.

Techno Teens used field trips to local companies to help youth see how the skills they were developing would help them get a range of professional jobs and to teach them what additional experiences and education they needed.

Techno Teens creatively overcame several obstacles that program leaders raised when discussing substantive career programming. It attracted and retained older youth by having a very clear, motivating outcome: Youth attended because they wanted to make video games. The computer skills and teamwork they learned were necessary to produce the end product. Another challenge is finding people who can teach sophisticated technical components. Techno Teens brought in a local computer expert. The program overcame the difficulty of retaining youth over time by running during the summer, 9:00 a.m.–4:00 p.m., five days a week, for three weeks, avoiding conflicts with other extracurricular activities. One youth programming expert in our study discussed such intensive time periods: "So often in the school setting, or the afterschool setting… you jump in, you do an activity, and…move on to the next thing, time's up!" This expert described the benefits of the longer blocks of time available in the summer:

> The education was happening then; I was not going to interfere with that. This activity that should have taken fifteen minutes… ended up taking about two and a half hours, and we sat down and we processed it. Those kids got more out of those two hours than if we would have pushed through.

Finally, Techno Teens used field trips to local companies to help youth see how the skills they were developing would help them get a range of professional jobs and to teach them what additional experiences and education they needed.

Work Experience

The Bethlehem Partnership for a Healthy Community, in order to increase the diversity of its workforce, runs a program designed to get at-risk immigrant youth involved in health-related careers. The program combines paid hospital work experience with ongoing training that includes work readiness, medical terminology, and even literacy. Our study showed that youth were performing necessary but age-appropriate tasks such as stocking supplies, preparing neonatal incubators, helping in the CAT scan lab, and transporting patients.

This program creatively overcame many of the challenges of placing youth in paid work. To reduce the burden on the hospital staff who were the day-to-day supervisors, the program provided intensive work-readiness training, and its staff monitored youth throughout the job placement. This supervision was critical to ensuring that youth were following instructions and helped to smooth over issues before they became major problems.

Also, finding "good" jobs for youth can be challenging. Research indicates that good jobs provide adequate supervision, feature age-appropriate responsibilities that are meaningful but not too stressful, and help youth see the importance of education (Staff & Schulenberg, 2010). Strong support from the hospital administration helped to ensure that this program gave youth good opportunities. A hospital is a good place for work experience because it has many professionals, doing many different kinds of jobs, with whom youth can be matched. Finally,

the work experience was clearly connected to "next steps" for students interested in long-term jobs at the hospital or in further education in health fields.

The Quest for Long-Term Outcomes

The ultimate goal of career programming is to improve wages and employment prospects in adulthood. Achieving this goal typically requires improving soft skills and occupation-specific skills through some combination of education, training, and experience—a challenging task, particularly with at-risk youth. One of the main difficulties OST programs face is engaging youth long enough to affect outcomes. Middle and high school youth often participate in other activities that make it difficult for them to participate consistently in OST programs. In addition, many youth leave afterschool programs because of boredom (Weisman & Gottfredson, 2001). It can be challenging for longer programs to keep youth engaged over time (Hirsch et al., 2011).

In response, directors may offer shorter programs. Indeed, although programs of varying length can engage youth, some of the most engaging programs we saw were shorter ones (Hynes et al., 2011). However, previous evaluations have suggested that generating long-term developmental effects may be difficult when youth participate for only a short time (Kauh, 2011). Even when programs achieve short-term positive outcomes, these effects sometimes fade out over time (Zaff & Smerdon, 2009).

Combining Engaging Experiences into Long-term Interventions

In our research, we saw several programs trying to overcome this dilemma by creatively using scaffolding, or a leveled sequence of learning experiences. Scaffolding is not a new idea. In academics, youth with sufficient competence progress from pre-calculus to calculus; in sports, they advance from junior varsity to varsity. Scaffolding has been promoted in the OST field as well. For instance, Halpern argues that we need to "create scaffolding for a coherent set of learning experiences, across time and place" to truly support youth development (Halpern, 2012, p. 98). Scaffolding has a strong theoretical basis in educational theory, career progression, and theory on vocational identity development. For instance, in education, research shows that students learn best when the material is challenging but not impossible, meeting youth at their current level and helping them reach the next level. Material that is too easy leads to boredom; material that is too hard leads to frustration (Clifford, 1990). A sequence of programs built one on top of the other allows for an appropriate match between youths' skills and program content. Similarly, the career development field uses the idea of a career ladder, on which people move from one level to the next as they gain skills and experience. Research on vocational identity indicates that programming should help youth explore career choices, select a career path, and then pursue that path (Porfeli & Lee, 2012).

In our study, we saw several OST programs using scaffolding in creative ways. Within an organization, exploratory programs can be linked to higher-level, more intensive programs, so that students who are interested in continuing after a first set of experiences can see an immediate higher-level step to take. For instance, one program offered a fun three-day summer camp to spark interest in a field among a large group of high school students. Students who wanted to learn more could compete for admission into a more intensive school-year afterschool program. Another provider offered a series of programs, with each one building on the last, so students who wanted to stay involved had something new and more advanced to do each year. Students could eventually receive intensive training and return as paid staff leaders. In both programs, students who were not interested in learning more about the topic could pursue other interests. This kind of scaffolding may combine the appeal of shorter programs with the longer-term skill development and consistent relationships that are important for long-term effects.

As Halpern (2012) argues, scaffolding may occur across organizations as well as within organizations over time; adults working with youth can facilitate this process. Our research found that such connections across organizations are already happening in some areas. For instance, many OST programs take youth on college tours to expose them to post-secondary opportunities—a relatively easy way to build knowledge about possible next steps. For younger students, we saw a career exploration and science program that brought youth from various middle schools into a vocational high school for an intensive five-week afterschool program. These youth not only learned new skills but also got a chance to see the vocational school and meet a few teachers, providing them with better information as they thought about which high school to attend.

We saw other creative ideas for helping youth progress to the next level. For instance, youth may begin to explore a particular interest at an OST program and then "climb up" to the next opportunity, such as a summer job in that industry, funded through a workforce develop-

ment organization, or post-secondary schooling. One example was a career exploration program for juniors and seniors interested in skilled occupations. The program met once a month at different local businesses. Youth met people who worked at the business, learned about the available career paths, and did hands-on activities to see what the work was like. Many of the local businesses had apprenticeship programs. By the end of the year, interested youth knew who to contact, how much they would get paid, and how to apply to the next step. Through these mechanisms, the programs directly connected youth with an interest in learning more about a topic to a realistic, tangible next step. This kind of connection requires the links between the education, workforce development, and OST systems for which many advocate (e.g., Halpern, 2012). From a youth development perspective, it matters less which institution runs the next experience than whether youth find and engage in the next rung in the ladder.

From a youth development perspective, it matters less which institution runs the next experience than whether youth find and engage in the next rung in the ladder.

Teaching Youth to Transition to the Next Step on the Ladder

Our discussions with OST providers made it clear that many programs were already focusing on teaching youth the skills they need to succeed in careers. For these programs, career programming may not represent yet another new set of activities to add to the curriculum. Instead, these programs may simply need to ensure that youth understand, and can articulate, how the skills they are learning can help them in the future. For instance, a recent evaluation of the After School Matters Initiative in Chicago indicates that having skills is not enough; youth have to understand, and be able to communicate, how the skills they learn will transfer to the workplace. Unfortunately, the evaluators found that many youth either did not know that skills they developed in afterschool programs "counted" as work skills or could not explain how those skills would help them in the workplace (Alexander & Hirsch, 2012).

OST programs need to be sure youth understand what *transferable skills* are and to clearly articulate how the skills developed in the program will help them succeed in the next step on the ladder. Many of the programs we observed were organized around a substantive area, such as urban farming, technology, or entrepreneurship. Program directors talked about teaching youth not only substantive skills but also critical transferable skills identified in the SCANS report (U.S. Department of Labor, 1991), such as communication, problem solving, and teamwork. When applying for jobs, post-secondary education, or other training, youth have to be able to communicate how their experiences have given them the skills and knowledge to be successful. As the After School Matters evaluation showed, explicitly teaching youth to articulate what they have learned may be an important component of youth programming (Alexander & Hirsch, 2012).

The Need and the Opportunity

There is a clear need to do more to support youth as they move through school and into the labor market. OST programs can play an important role in this effort. Career-related activities and opportunities appear to be appealing to some youth. In addition, career programming fits nicely with the philosophy of many OST providers, as it can readily incorporate best practices including opportunities to build new skills, interact with the real world, lead, and make decisions. Indeed, many programs are already engaging youth in career-related activities.

However, improving career outcomes for low-income youth will be challenging. More research is necessary to help us understand which program models have the greatest effects, and on which youth. One fruitful strategy is to bring together schools, workforce development, OST programs, and funders to share resources, identify gaps in services, and build educational ladders that youth can use to develop the skills and knowledge they need to succeed in the labor market.

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References

Alexander, K., & Hirsch, B. (2012). Marketable job skills for high school youth: What we learned from an evaluation of After School Matters. *New Directions for Youth Development, 134,* 55–63.

Arcaira, E., Vile, J., & Reisner, E. (2010). *Citizen Schools: Achieving high school graduation: Citizen Schools' youth outcomes in Boston.* Policy Studies Associates. Retrieved from http://www.policystudies.com/studies/?id=39

Bellotti, J., Rosenberg, L., Sattar, S., Esposito, A., & Ziegler, J. (2010). *Reinvesting in America's youth: Lessons from the 2009 Recovery Act Summer Youth Employment Initiative.* Mathematica Policy Research. Retrieved from http://www.mathematica-mpr.com/publications/PDFs/labor/youth_employment_program.pdf

Bloom, D. (2010). Programs and policies to assist high school dropouts in the transition to adulthood. *Future of Children, 20,* 89–108.

Bowen, W., Chingos, M., & McPherson, M. (2011). *Crossing the finish line: Completing college at America's public universities.* Princeton, NJ: Princeton University Press.

Clifford, M. (1990). Students need challenge, not easy success. *Educational Leadership, 48,* 22–26.

Danzinger, S., & Ratner, D. (2010). Labor market outcomes and the transition to adulthood. *Future of Children, 20,* 133–158.

Deschenes, S., Arbreton, A., Little, P. M., Herrera, C., Grossman, J. B., Weiss, H. B., with Lee, D. (2010). *Engaging older youth: Program and city-level strategies to support sustained participation in out-of-school time.* Cambridge, MA: Harvard Family Research Project.

Eccles, J., & Gootman, J. (2002). *Community programs to promote youth development.* Washington, DC: National Academy Press.

Halpern, R. (2012). Supporting vocationally-oriented learning in the high school years: Rationale, tasks, challenges. *New Directions for Youth Development, 134,* 85–106.

Heinrich, C. J., & Holzer, H. J. (2010, April). *Improving education and employment for disadvantaged young men: Proven promising strategies.* National Poverty Center Working Paper Series, #10-04. Retrieved from http://npc.umich.edu/publications/u/working_paper10-04.pdf

Hirsch, B., Hedges, L., Stanwick, J., & Mekinda, M. (2011). *After school programs for high school students: An evaluation of After School Matters.* Retrieved from http://www.sesp.northwestern.edu/docs/publications/19023555234df57ecd0d6c5.pdf

Holzer, H., & Hlavac, M. (2011, April). *An uneven road and then a cliff: U.S. labor markets since 2000.* Retrieved from http://www.s4.brown.edu/us2010/Data/Report/report4.pdf

Hynes, K., Constance, N., Greene, K., Lee, B., & Halabi, S. (2011, November). *Engaging youth in career programming during out-of-school time: Lessons for program design from a study of experienced out-of-school time programs.* Available from http://www.psaydn.org

Hynes, K., Miller, A., & Cohen, B. (2010). *The Pennsylvania older youth out-of-school time study: A practitioner's guide to promising practices for recruiting and retaining older youth*. Available from http://www.psaydn.org

Kauh, T. (2011). *AfterZone: Outcomes for youth participating in Providence's citywide after-school system.* Philadelphia, PA: Public/Private Ventures.

Kemple, J. J., & Willner, C. J. (2008). *Career academies: Long-term impacts on labor market outcomes, educational attainment, and transitions to adulthood.* New York, NY: Manpower Demonstration Research Corporation.

Knapp, L., Kelly-Reid, J., & Ginder, S. (2011). *Enrollment in postsecondary institutions, fall 2009; graduation rates, 2003 & 2006 cohorts; and financial statistics, fiscal year 2009* (NCES 2011-230). U.S. Department of Education. Washington, DC: National Center for Education Statistics. Retrieved from http://nces.ed.gov/pubs2011/2011230.pdf

Miller, C., Bos, J., Porter, K., Tseng, F., & Abe, Y. (2005, September). *The challenge of repeating success in a changing world: Final report on the Center for Employment Training replication sites*. Retrieved from http://www.mdrc.org/publications/453/full.pdf

Porfeli, E. (2008). Career exploration. In F. Leong (Ed.), *Career counseling*, pp. 1474–1477. Thousand Oaks, CA: Sage.

Porfeli, E., & Lee, B. (2012). Career development during childhood and adolescence. *New Directions for Youth Development, 134,* 11–22.

Rosenbaum, J. (2001). *Beyond college for all: Career paths for the forgotten half.* New York, NY: Russell Sage Foundation.

Russell, A. (2011, October). *A guide to major U.S. college completion initiatives* (American Association of State Colleges and Universities Higher Education Policy Brief). Retrieved from http://www.aascu.org/uploaded-

Files/AASCU/Content/Root/PolicyAndAdvocacy/PolicyPublications/Policy_Matters/College%20Completion%20October%202011.pdf

Schrim, A., Stuart, E., & McKie, A. (2006, July). *The Quantum Opportunity Program demonstration: Final impacts.* Retrieved from http://www.mathematica-mpr.com/publications/pdfs/QOPfinalimpacts.pdf

Staff, J., Harris, A., Sabates, R., & Briddell, L. (2010). Uncertainty in early occupational aspirations: Role exploration or aimlessness? *Social Forces, 89,* 659–684.

Staff, J., & Schulenberg, J. (2010). Millennials and the world of work: Experiences in paid work during adolescence. *Journal of Business Psychology, 25,* 247–255.

The Conference Board, Partnership for 21st Century Skills, Corporate Voices, & Society for Human Resource Management. (2006). *Are they ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce.* Retrieved from http://www.p21.org/storage/documents/FINAL_REPORT_PDF09-29-06.pdf

U.S. Department of Education. (2011). *The condition of education: Educational attainment*. Retrieved from http://nces.ed.gov/programs/coe/indicator_eda.asp

U.S. Department of Labor. (1991). *What work requires of schools: A SCANS report for America 2000.* Retrieved from http://wdr.doleta.gov/SCANS/whatwork/whatwork.pdf

Weisman, S., & Gottfredson, D. (2001). Attrition from after school programs: Characteristics of students who drop out. *Prevention Science, 2,* 201–205.

Zaff, J., & Smerdon, B. (2009). Putting children front and center: Building coordinated social policy for America's children. *Applied Developmental Science, 13,* 105–118.

supporting youth with special needs in out-of-school time

A Study of OST Providers in New Jersey

by Jane Sharp, Elizabeth Rivera Rodas, and Alan R. Sadovnik

Although the Americans with Disabilities Act (ADA) of 1990 requires accommodations for individuals with disabilities in community settings, many out-of-school time (OST) programs struggle to successfully support youth with special needs. Programs that fully include children with special needs are less available for school-age children and adolescents than for younger children, and finding appropriate placements for older youth or children with severe disabilities is particularly challenging (Mulvihill, Cotton, & Gyaben, 2004). According to a February 2010 study conducted by the New Jersey School-Age Care Coalition:

> There is a critical need for afterschool programs that can receive and handle students with special needs. …[P]rograms could be strengthened by providing training for caregivers in such areas as autism and ADHD, along with encouraging hiring practices that would provide an appropriate adult-to-student ratio to enhance care options for students with disabilities. (New Jersey School Age Care Coalition, 2010, p. 5)

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In 2011, the Robert Bowne Foundation awarded an Edmund A. Stanley Research Grant to the School of Public Affairs and Administration at Rutgers University in Newark, New Jersey, to study the professional development needs of OST program staff to help them support students with special needs. The goal is to use research and analysis to raise awareness of issues regarding inclusive OST programs and to guide policy decisions on professional development. The project is also intended to guide OST administrators and staff in selecting professional development to support inclusion.

Most research on inclusion of children with special needs has centered on preschool childcare programs or school classrooms. In these settings, research has demonstrated positive outcomes for children with and without disabilities (Hall & Niemeyer, 2000). Based on this premise that inclusion is beneficial for children with and without special needs, our study explored the role of OST providers in successfully supporting youth with special needs. Our survey of 421 New Jersey OST providers found that professional development and experience were correlated with positive experiences with inclusion, whereas education, position, size of program, or the type of agency were not. This finding and other interesting correlations lead us to recommend that individuals and groups supporting OST programs provide professional development to help staff work with children with special needs.

Studies of professionals in many fields have concluded that personal experience combined with knowledge gained through professional development is more likely to change practice than either element alone.

Research on Professional Development and Inclusion

In our study, we defined *special needs* broadly to include any physical, mental, or psychological condition. *Inclusion* implies that youth with special needs actively participate with their typically developing peers. *Professional development* encompasses a variety of activities designed to increase knowledge and improve practice, including workshops, conferences, online training, mentoring or coaching, consultation with other professionals, on-site meetings, and telephone technical assistance, as well as information provided by parents, schools, and other professionals.

Research on professional development in general, as well as studies specific to inclusion of children with special needs, reveal several patterns in OST providers' willingness and ability to serve children with special needs.

Experience Matters

Studies of professionals in many fields have concluded that personal experience combined with knowledge gained through professional development is more likely to change practice than either element alone. According to Daley (2002), professionals constantly seek new knowledge in their fields, but a change in practice is most likely to occur as a result of a personal encounter with a client. Study participants—lawyers, social workers, nurses, and adult educators—described meaningful interactions with particular individuals that challenged their beliefs and assumptions. Such encounters prompted the professionals to re-examine previous knowledge in a new context.

In regard specifically to inclusion, Buell, Gamel-McCormick, and Hallam (1999) noted that childcare providers who have experience caring for a child with special needs are more willing to do so in the future than those who have no experience.

Professional Development Is Important

A recent OST provider study found that staff members with previous professional development on inclusion were significantly more likely to modify program activities or environment to accommodate children with disabilities (Smith, 2011). In-service staff training has been associated with greater willingness to care for children with disabilities (Mulvihill et al., 2004).

Two studies of childcare providers conducted almost ten years apart concluded that professional development was a stronger predictor of inclusive practices than were education, age, salary, group size, or staff-child ratios (Buell et al., 1999, Essa et al., 2008).

Delivery Methods Make a Difference

High-quality OST professional development occurs when organizations train all staff, align the training with accountability requirements, and foster ongoing professional learning communities (Smith, 2002). A longitudinal study of teacher professional development found that study groups and network activities pro-

duced better results than did workshops and conferences because they lasted longer. Professional development that involved active learning as part of a coherent program of teacher development was also more effective than one-time events (Garet, Porter, Desimone, Birman, & Yoon, 2002).

Research on professional development specific to inclusion recommends ongoing training that includes disability awareness, developmentally appropriate practices, and activities that increase knowledge and skills for working with diverse populations (Mulvihill et al., 2004). OST staff who attended a series of trainings on inclusion indicated a higher percentage of positive change, for both attitude and topic knowledge, than those who attended only one or two sessions (Kids Included Together, 2005). Workshops combined with on-site consultation have been found to contribute to positive results among practitioners (Kids Included Together, 2005; Mulvihill et al., 2004).

Staff willingness to make inclusion work contributes to the success with which children with special needs can participate in typical experiences with children without disabilities.

Attitude Makes a Difference

Studies have also documented that provider attitude and confidence have an effect on inclusion. More confident teachers required less training and less in-class support for children with disabilities than did others (Buell, Gamel-McCormick, Hallam, & Scheer, 1999). Staff willingness to make inclusion work contributes to the success with which children with special needs can participate in typical experiences with children without disabilities (Devore & Hanley-Maxwell, 2000).

Resources and Partnerships Are Essential

Childcare providers have identified the need to use outside resources to support children with special needs as well as the importance of mutually supportive relationships with parents (Devore & Hanley-Maxwell, 2000). Successful inclusion results from a combination of attitude, resources, and curriculum (Hall & Niemeyer, 2000). Beyond a positive attitude, in order to implement an inclusive program, providers need resources, such as access to specialists, collaborative planning with school day staff, and connections with families and community organizations. The curriculum must include accommodations that promote natural interaction among youth.

Afterschool in New Jersey

New Jersey is an ideal location in which to study the landscape of afterschool programs. Despite its small size, the state is geographically and demographically diverse. Almost 9 million people call New Jersey home; the population is 69 percent Caucasian, 14 percent African American, and 18 percent Latino. Almost 20 percent of the population is foreign born (U.S. Census Bureau, 2010). Most people are familiar with New Jersey's urban centers near Philadelphia and New York, but they may not realize that the northwest and southern portions of the state are predominately rural. Suburban communities fill the central part of the state, and a series of small towns occupy the 126 miles of shoreline.

According to the Afterschool Alliance, 14 percent (213,883) of New Jersey's K–12 children participate in afterschool programs, including 20,170 students in 21st Century Community Learning Centers (21st CCLC). Programs for school-age children receive 43 percent of federal Child Care and Development Fund subsidies for childcare (Afterschool Alliance, 2011). At the time of this study, state funds supported afterschool programs through New Jersey After 3 and the Family Friendly Center initiative, although funding for New Jersey After 3 has since been eliminated from the state budget.

In August 2011, the New Jersey Office of Licensing listed 960 licensed afterschool centers (Office of Licensing, 2011). This number does not include exempt programs operated by public schools or those serving youth over the age of 13, so it does not indicate the full number of OST programs in New Jersey. The number of students with special needs in OST programs is not available because no regulatory agency or funding source collects this information.

Methodology

We used the research findings summarized above to help us develop the OST Inclusion-Professional Development Survey, with input from stakeholders including the New Jersey Department of Education; the New Jersey School Age Care Coalition; Advocates for Children of New Jersey; the Statewide Parent Advocacy Network; Southern Regional Child Care Resource Center; the Map to Inclusive Child Care team; faculty from Rutgers University; and practitioners representing Boys & Girls

Clubs, 4-H, New Jersey After 3, and the New Jersey YMCA State Alliance. Staff from the Out-of-School Time Resource Center at the University of Pennsylvania also provided support.

The survey was designed to test the following hypotheses, derived from the literature:

- OST providers who have previous experience serving children with special needs are more likely to include children with special needs.
- OST providers with positive attitudes toward inclusion are more likely to include children with special needs.
- Participation in professional development activities directly affects the successful inclusion of children with special needs in OST settings.
- Both the content of training and the delivery method affect professional development outcomes.

To create a logical sequence, we divided the survey into six sections: description of the respondent's OST program, information about the respondent, professional development needs, attitudes toward inclusion, experience with inclusion, and open-ended feedback. The survey was anonymous. A sampling plan was devised to collect data from programs representing the spectrum of K–12 OST programs in New Jersey. Several agencies posted the Internet-based survey in email lists, websites, and LinkedIn and Facebook pages. In addition, Jane Sharp, the lead author, handed out hard copies of the survey at five training events during the collection period. To verify that responses reflected the targeted population, the survey included questions about the location, size, and type of respondents' OST programs as well as demographic questions about respondents' positions, education, and years of experience.

Although this sampling strategy reached a wide cross-section of OST providers, there are still potential threats to the validity of the survey. Our method did not yield a formal probability sample of the population; thus, the result may not be statistically generalizable to all New Jersey providers. In addition, duplicate responses could have been collected via both paper and online surveys. Due to the voluntary nature of the survey, those who have experience with inclusion may have been more likely to participate.

We analyzed the results from the OST Inclusion-Professional Development Survey to test our four hypotheses using Stata, a data analysis software program. After cleaning the data, we examined the relationships among various key questions in the survey to ascertain any trends in responses. Here we report only statistically significant responses; please contact us for more detail on statistical methods and the data.

Survey Participants

From April to June 2011, 421 people took the OST Inclusion-Professional Development Survey, with an 86 percent completion rate. Responses were received from all 21 counties in New Jersey: 55 percent came from suburban locations, 45.5 percent from urban centers, and 11.5 percent from rural communities. Most respondents worked with elementary (87 percent) and middle school children (58 percent); 23 percent of respondents worked with high school youth. (Percentages add up to more than 100 because many programs serve more than one age range.) Responses were fairly evenly divided among upper-level administrators (26 percent), mid-level administrators (29 percent), and direct service staff (27 percent). Sixty-three percent of respondents worked for nonprofit or community-based organizations and 19 percent for public schools during afterschool hours. Respondents identified a variety of public and private funding sources for their programs, with 59 percent charging parents fees.

Of the 421 respondents, 346 had a college degree: 43 percent had bachelor's degrees and 23 percent held master's degrees. Fields of study were quite varied: education (49 percent), social work (10 percent), youth development (7 percent), and health (6 percent) were most frequently mentioned. Other fields, including psychology, business, arts, history, English, human services, Spanish, and communication, accounted for 42 percent of degrees. Among respondents who indicated they had a college degree, only 5.5 percent specified a degree in special education. This broad range of educational backgrounds and pre-service knowledge among staff adds to diversity in program delivery but also demonstrates a need for standards such as those of the National Afterschool Association (NAA, 2012) Core Knowledge and Competencies as well as for professional development specific to the OST field.

Survey Results

Ninety percent of respondents indicated that either they or their staff had experience with children with special needs in their OST program. Generally our findings corresponded with the four hypotheses we formulated based on the literature.

Types of Disabilities

The types of disabilities identified by respondents are

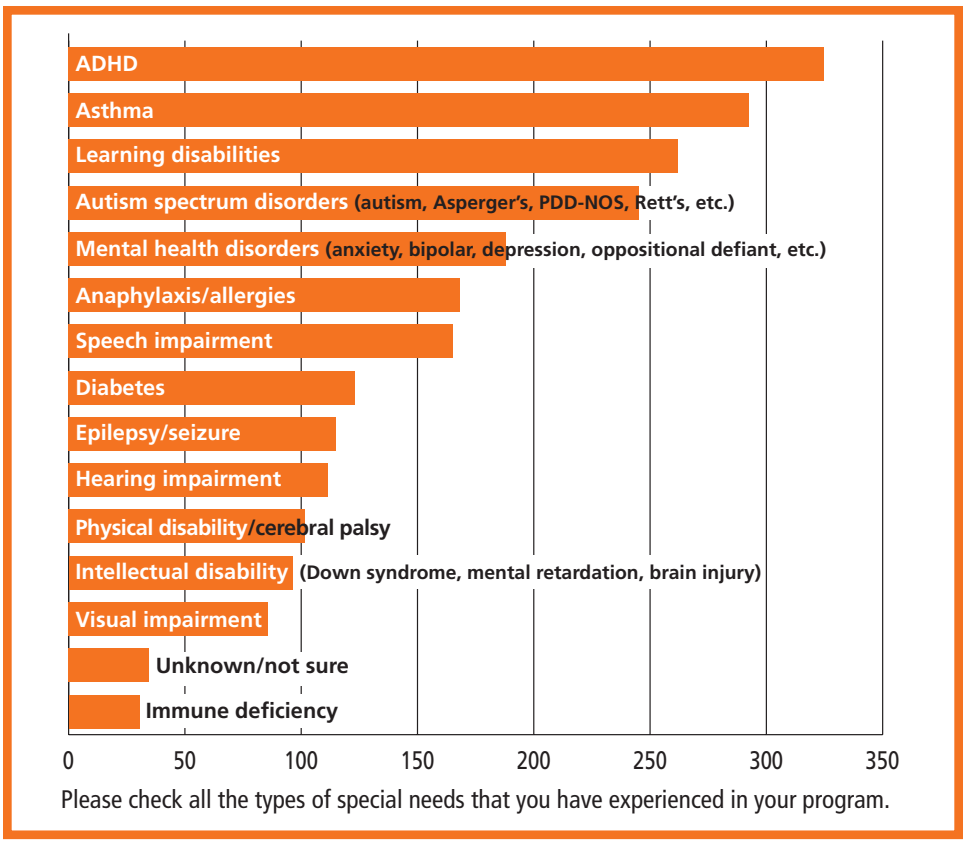


Figure 1. Disabilities OST Survey Respondents Had Experienced in Their Programs

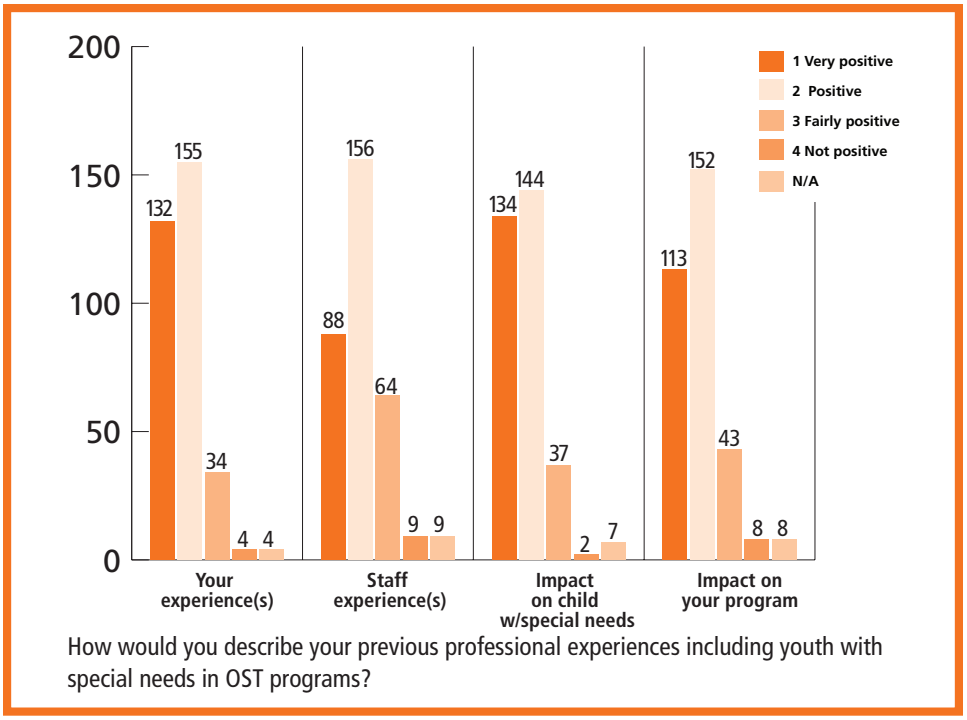


Figure 2. Previous Experience Serving Youth with Special Needs

listed in Figure 1. The types of disabilities most often identified in OST programs were ADHD, asthma, learning disabilities, and autism.

Experience with Inclusion

Respondents who said that they had experience including children with special needs in OST programs were asked for their perceptions of their personal experience, the staff's experience, the effect on the child with special needs, and the effect on the program, using a five-point Likert scale. The 331 responses were overwhelmingly positive, as illustrated in Figure 2. One respondent said, "It is fascinating how after a few days kids do not even care that this child is different from them. They all just love to play and run and have fun, and it really is so rewarding to see them all communicating with each other."

When we compared responses on providers' experience with inclusion to responses on program and demographic information, we found that that respondents' levels of professional development and years of experience correlated with a positive experience with inclusion, whereas their education or position, the size of their program, or the type of agency (public school or community-based organization) did not.

As the number of hours of professional development increased, perceptions of positive effect on children with special needs and on the program increased as well. Similarly, the number of years of experience in OST-related fields corresponded with positive perceptions of

staff experience and of the effect on the child with special needs and on the program. Our results concur with previous studies showing that positive experience with inclusion is more dependent on individual experiences with youth and extensive participation in professional development than on educational background or position.

Attitudes toward Inclusion

In order to determine respondents' attitudes toward inclusion, we asked them to agree or disagree with a series of six statements using a four-point Likert scale. We compared these responses to results from questions about their previous experience serving youth with special needs.

Our analysis found a statistically significant relationship between less positive experiences with youth with special needs and less positive responses to statements about inclusion. Conversely, respondents who said they had a positive experience with youth with special needs were more likely than others to indicate a positive attitude toward inclusion.

When we compared responses to various statements about inclusion to respondents' actual experiences with various disabilities, we found statistically significant correlations between positive responses and specific disabilities. Table 1 demonstrates that respondents' attitudes toward inclusion were affected by their experiences with different children.

Table 1. Correlation between Positive Attitudes toward Inclusion and Experience with Different Disabilities

RESPONDENTS WHO RESPONDED POSITIVELY TO THESE STATEMENTS…	…HAD EXPERIENCE WITH THESE DISABILITIES
Having youth with and without special needs in OST programs is the right thing to do.	diabetes, learning disabilities, autism, physical disabilities
Working in this setting is very rewarding for staff.	intellectual disabilities, learning disabilities
Having youth with and without special needs together fosters an understanding and acceptance of diversity.	physical or learning disabilities, visual or hearing impairments
Youth with special needs do not take staff time away from others who do not have special needs.	epilepsy, speech impairment

Use of Resources

Though 90 percent of respondents indicated that they had served a child with special needs in their OST program, far fewer said that they had tapped resources listed in the survey. These resources included school staff—classroom teachers, child study teams, school nurses, and special education professionals—and community resources such as disability organizations, parent groups, health care providers, specialists, peers, and New Jersey OST agencies, as well as Internet resources. Of survey respondents, 69 percent said they had used parents as a resource, 58 percent had used classroom teachers, and 47 percent had collaborated with child study teams or special services staff.

Respondents who said that they would need additional money, staff, or other resources to accommodate children with special needs were more likely than those who did not to have a positive attitude toward inclusion. We surmise that these respondents, though understanding that inclusion may require more resources, perceive it to be a worthwhile endeavor. We also found a statistically significant correlation between a desire for information from parents in order to serve a child with special needs and a positive attitude toward inclusion.

Respondents' level of experience in the field was positively correlated with their use of resources to support inclusion. Comparative analysis revealed that upper-level administrators had used many of the resources listed in the survey, but direct service staff had not.

Professional Development

When asked about the number of annual hours they participated in any type of professional development, 51 percent of respondents said that they exceeded New Jersey licensing requirements of 20 hours per year. All respondents were interested in more training on inclusive practices. The topics in which they were interested are listed in Figure 3.

We previously noted the correlation between positive experiences with students with disabilities and more

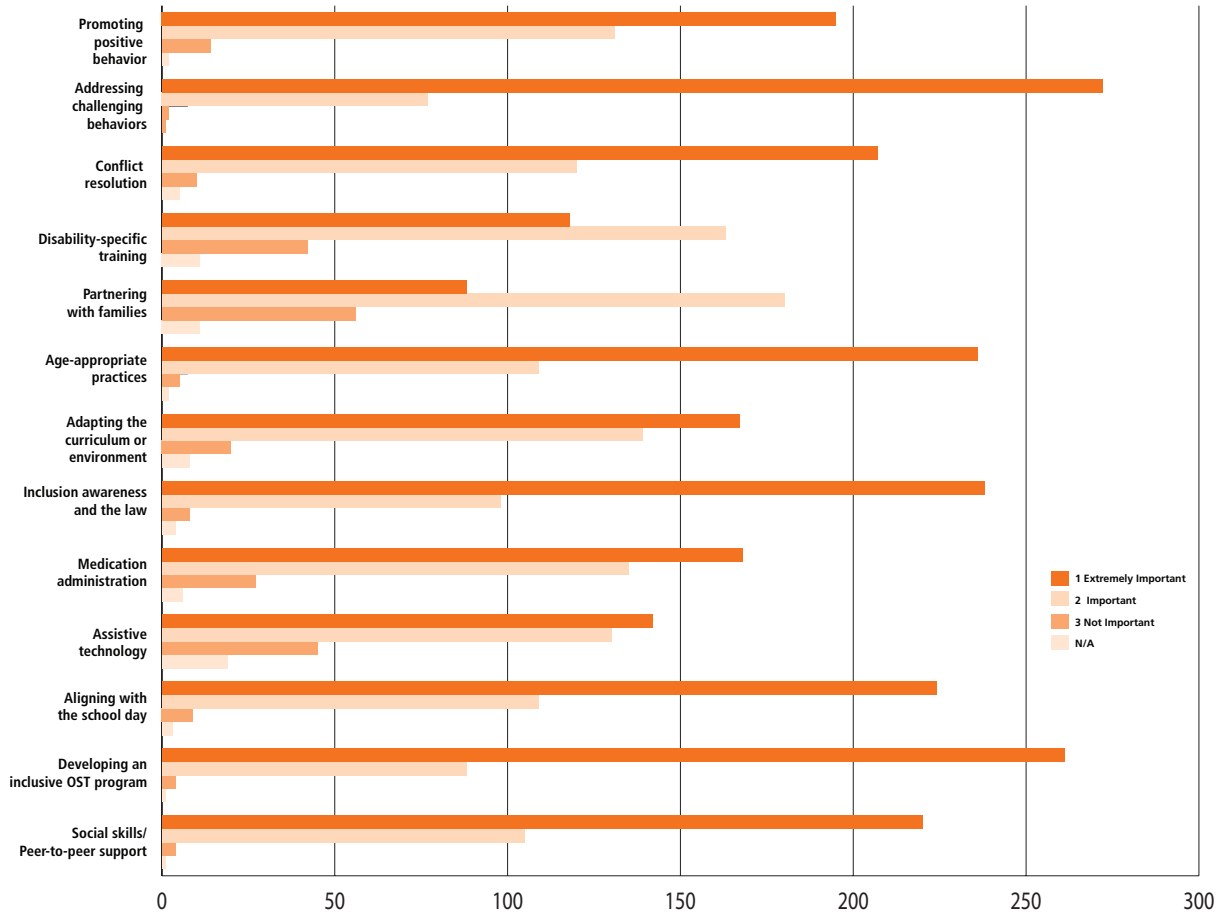


Figure 3. Respondents' Interest in Professional Development Topics

hours of professional development. The correlation between professional development and positive experiences with inclusion was highest among those who had participated in professional development programs offered by 21st CCLC, Boys & Girls Clubs, and NJ After 3. Respondents from 21st CCLC programs reported the highest correlation with positive personal, staff, and program experiences with children with special needs. Respondents from Boys & Girls Clubs and NJ After 3 indicated a higher correlation of positive responses on the effect on the program. (Seventy-nine percent of respondents from Boys & Girls Clubs received funding from either NJ After 3 or 21st CCLC, so they would have participated in training offered by both their club and the funder.) We surmise that these initiatives have a high correlation between professional development and a positive experience with children with special needs because their grant-making processes set the expectation that children with special needs will be included and because they require intentional professional development that is closely aligned with research-based best practices.

Next, we compared the formats and topics of professional development to respondents' level of education, years of experience, and position in the organization. We found that higher levels of education correlated with a preference for conferences, on-site technical assistance, and networking with other professionals as formats for professional development. Professionals with more experience in OST-related field also preferred on-site technical assistance, while perceiving college courses and mentoring as less important. We found that direct service staff were more likely than administrators to prefer college courses, mentoring or coaching, and internships or apprenticeships.

Preferences for topics in professional development also correlated with education, experience, and position. Higher levels of education correlated with a belief that addressing challenging behaviors was an important train-

ing topic. By contrast, as education increased, respondents considered social skills and inclusion and the law to be less important topics. Direct service staff were more likely to consider assistive technology, medication administration, promoting positive behavior, and social skills to be important topics, while upper-level administrators considered these same topics less important.

Recommendations

Recommendations from this study, based both on the literature and on the results of our survey, focus on improving professional development opportunities for OST providers to support the inclusion of children with special needs in their programs. Below we offer recommendations for OST program administrators, for training organizations and individuals, for funders, and for regulatory agencies.

Anecdotal discussions with training agencies in New Jersey have suggested that participation in conferences and workshops has declined as a result of funding cuts to schools and community agencies. New Jersey OST programs are looking for cost-effective professional development that meets licensing requirements and the needs of their staff. Therefore, our recommendations take into account not only research-based best practices but also cost and efficiency.

Administrators who believe that "having youth with and without special needs in OST programs is the right thing to do" may be more likely to promote appreciation of diversity and to cultivate the professional development, resources, and experiences that build successful inclusive programs.

OST Administrators

A survey respondent noted, "Inclusion can be positive experience for children and staff if supported correctly." A combination of factors influence positive inclusive experiences for OST staff. Key among them are experience with youth with special needs, attitude, use of resources, and professional development.

Our study confirmed a correlation between positive attitudes toward inclusion and positive staff experiences. Administrators who believe that "having youth with and without special needs in OST programs is the right thing to do" may be more likely to promote appreciation of diversity and to cultivate the professional development, resources, and experiences that build successful inclusive programs.

Our study supports previous research that a positive attitude toward inclusion is connected to staff members' prior experience with children who have special needs. We therefore recommend that OST administrators ask during hiring interviews about candidates' personal history with diverse populations. A lack of experience should not be a barrier to employment; however, staff who are not familiar with inclusive practices may need training in disability awareness.

Recent trends in the OST field encourage more formal linkages with the school day through extended learning opportunities. In our survey, slightly more than half of the respondents identified school-day teachers as a resource to support a child with special needs. Administrators were more likely to identify this relationship than were direct service staff. OST administrators need to consider how to intentionally connect direct service staff with available resources and promote mutually responsive relationships with families, while still maintaining children's confidentiality. Children with special needs typically have either individual education programs (IEPs) or 504 plans in school. Better collaboration with parents, special education staff, and school-day teachers could help OST providers use these existing student plans to develop individualized assessments and reasonable accommodations, as required by the ADA. Such collaboration could also lead to a unified approach among school, afterschool, and home. In addition, OST providers and school staff could attend training events together. This solution would promote consistency across systems and give OST providers access to training without significant additional investment.

We found that survey respondents' interests in topics and types of professional development varied with their level of education, years of experience, and position in the OST organization. Based on these results, we recommend the use of professional development plans centered on the individual learning styles, interests, and needs of staff as opposed to a one-size-fits-all approach. We also recommend using the NAA Core Knowledge and Competencies as a guide in developing individual learning plans.

Our findings confirm best practice recommendations for ongoing professional development that involves all staff. Program leaders could create such opportunities

by fostering coaching and mentoring relationships between new and seasoned staff and by promoting networking opportunities among program sites.

Professional Associations, Intermediary Agencies, and Trainers

One survey participant underlined the connection between professional development and positive attitudes toward inclusion: "I would like to see more training on inclusion so all staff is on the same page, and to back up my vision to include everyone and encourage acceptance, and not see special needs as a burden, but rather a learning process that we all can benefit from."

Research has shown that professional development positively affects both outcomes for students and successful inclusion of children with special needs (Buell et al., 1999; Smith, 2002). Workshops on inclusion combined with on-site consultation have demonstrated the most positive results (Kids Included Together, 2005; Mulvihill et al., 2004). We recommend that individuals and agencies who offer training provide ongoing professional development that occurs over time and gives participants opportunities to practice knowledge and skills. Organizations that conduct annual conferences can foster ongoing learning by creating formal opportunities for participants to cultivate continuing relationships. These could include communities of practice, a series of follow-up webinars or conference calls, or multi-day training events on a specific theme.

Our study confirmed a statistically significant correlation between increasing hours of professional development and respondents' perception that inclusion had a positive effect on children with special needs and on the program. Our survey also identified significant interest in training on inclusion. These results lead us to recommend more instruction on disability awareness, strategies for inclusion, and use of resources. Embedding information on supporting youth with special needs into existing OST trainings would significantly expand professional development on inclusion. It would also require facilitators either to learn more about inclusion or to identify co-presenters who could facilitate meaningful discussion on supporting students with special needs.

We recommend that OST grant makers provide funding, resources, and guidelines for high-quality, research-based professional development. Increasing opportunities for non-funded OST programs to participate in the high-quality professional development offered to grant-funded programs would expand the positive impact of the training and lead to better outcomes for students.

Funders

Our OST survey showed the highest correlation between professional development and positive experience with students with special needs among respondents who participated in comprehensive training provided through 21st CCLC and NJ After 3. We recommend that OST grant makers provide funding, resources, and guidelines for high-quality, research-based professional development. Increasing opportunities for non-funded OST programs to participate in the high-quality professional development offered to grant-funded programs would expand the positive impact of the training and lead to better outcomes for students.

Regulatory Agencies

In our survey results, 51 percent of respondents said that they exceeded the New Jersey licensing requirements of 20 professional development hours per year and yet indicated interest in more training on inclusive practices. Increasing the number of training hours required of licensed programs while expanding the types of activities provided will likely result in more positive experiences for both OST providers and the children they serve—those with and without disabilities. Costs associated with these increases could be mitigated if on-site consultation, mentoring, coaching, peer-to-peer networking, teleconferences, and webinars were more widely accepted as meeting professional development obligations.

The Promise and the Challenge of Inclusion

A hopeful finding from our survey was that a significant number of respondents—90 percent—said that they had prior experience with inclusion in their programs. More importantly, 87 percent of those who had served a child with special needs indicated that their personal experience was positive or very positive. These results are encouraging for those working to promote inclusive opportunities for children with special needs. At the same time, the high level of interest in additional professional

development provides a challenge for policymakers, funders, training entities, and program administrators to provide more opportunities to support inclusion.

Acknowledgments

The researchers are thankful to the funders and the many people who participated in this project, especially the OST providers who shared their experiences and opinions through the survey.

References

Afterschool Alliance. (2011). *Afterschool in New Jersey*. Retrieved from http://www.afterschoolalliance.org/policyStateFacts.cfm?state_abbr=NJ

Buell, M. J., Gamel-McCormick, M., & Hallam, R. (1999). Inclusion in a childcare context: Experiences and attitudes of family childcare providers. *Topics in Early Childhood Special Education, 19*, 217–224.

Buell, M. J., Gamel-McCormick, M., Hallam, R., & Scheer, S. (1999). A survey of general and special education teachers' perceptions and inservice needs concerning inclusion. *International Journal of Disability, Development, and Education, 46*, 143–156.

Daley, B. J. (2002). Learning and professional practice: A study of four professions. *Adult Education Quarterly, 52*, 39–54.

Devore, S., & Hanley-Maxwell, C. (2000). "I wanted to see if we could make it work": Perspectives on inclusive childcare. *Exceptional Children, 66*(2), 241–255.

Essa, E. L., Bennett, P. R., Burnham, M. M., Martin, S. S., Bingham, A., & Allred, K. (2008). Do variables associated with quality child care programs predict the inclusion of children with disabilities? *Topics in Early Childhood Special Education, 28*, 171–180.

Garet, M. S., Porter, A. C., Desimone, L., Birman, B., & Yoon, K. S. (2002). What makes professional development effective? Results from a national sample of teachers. *American Education Research Journal, 38*, 915–945.

Hall, A., & Niemeyer, J. (2000). Inclusion of children with special needs in school-age child care programs. *Early Childhood Special Education, 27*(3), 185–190.

Kids Included Together. (2005). *SB 1703 Inclusive Child Care Program final evaluation report*. San Diego, CA: Child and Adolescent Services Research Center.

Mulvihill, B. A., Cotton, J. N., & Gyaben, S. L. (2004). Best practices for inclusive child and adolescent out-of-school care: A review of literature. *Family and Community Health, 27*(1), 52–74.

National Afterschool Association. (2012). *Core competencies*. Retrieved from http://www.naaweb.org/default.asp?contentID=694

New Jersey School-Age Care Coalition. (2010). *Taking the temperature of afterschool*. Westfield, NJ: Author.

Office of Licensing. (2011). *Licensed child care centers*. Trenton, NJ: New Jersey Department of Children and Families.

Smith, C. (2002). *Evidence of effectiveness for training in the HighScope participatory learning approach*. Ypsilanti, MI: HighScope.

Smith, K. (2011). *The need for skilled inclusion in out-of-school time programs: Kids Included Together responds*. San Diego, CA: Kids Included Together.

U.S. Census Bureau. (2010). *New Jersey quick facts*. Retrieved from http://quickfacts.census.gov/qfd/states/34000.html

MORE RESOURCES AND DISCUSSION

We hope that this article becomes a catalyst for discussion and change in the field. Toward that end, we have started an online community where we can continue the discussion and respond to inquiries and comments. Please join the LinkedIn group Inclusion Is Belonging—you can find us by searching on the group name.

You may find these Internet resources helpful. If you have trouble finding the specific resource, use the site's search function to find words from the descriptions below.

ONLINE PROFESSIONAL DEVELOPMENT

Center for Inclusive Child Care
Free e-learning courses at *www.inclusivechildcare.org*

Kids Included Together (KIT)
Informative training videos at *www.youtube.com/user/TorrieatKIT*

California After School Resource Center
Strategies and resources, free training documents, *Inclusion Quality Self-Assessment Tool* at *www.californiaafterschool.org/specialneeds*

LEGAL RESPONSIBILITIES

U.S. Department of Justice
Common Questions about Child Care and the ADA at *www.ada.gov/childq&a.htm*

Sharp ideas and NJ Map to Inclusive Child Care Team
"Legal Responsibilities for Accommodating Children with Special Needs" and other resources at *www.sharp-ideas.org* (under Publications)

DISABILITY-SPECIFIC INFORMATION

National Dissemination Center for Children with Disabilities
Fact sheets on characteristics of specific disabilities, tips for parents and teachers at *www.nichcy.org/disability/specific*

LD online
"Boosting Inclusion in After School Activities with Assistive Technology and Supplemental Services" at *www.ldonline.org*

SUMMER PROGRAMS

National Inclusion Project
Activity guides, resources, and funding opportunities at *www.inclusionproject.org*

The National Center on Physical Activity and Disability
"Best Practice of Inclusive Services" with examples from community agencies at *www.ncpad.net/*

MEDICATION AND HEALTH ISSUES

American Academy of Pediatrics
Medication administration curriculum, curriculum for managing infectious diseases, asthma action plan at *www.healthychildcare.org*

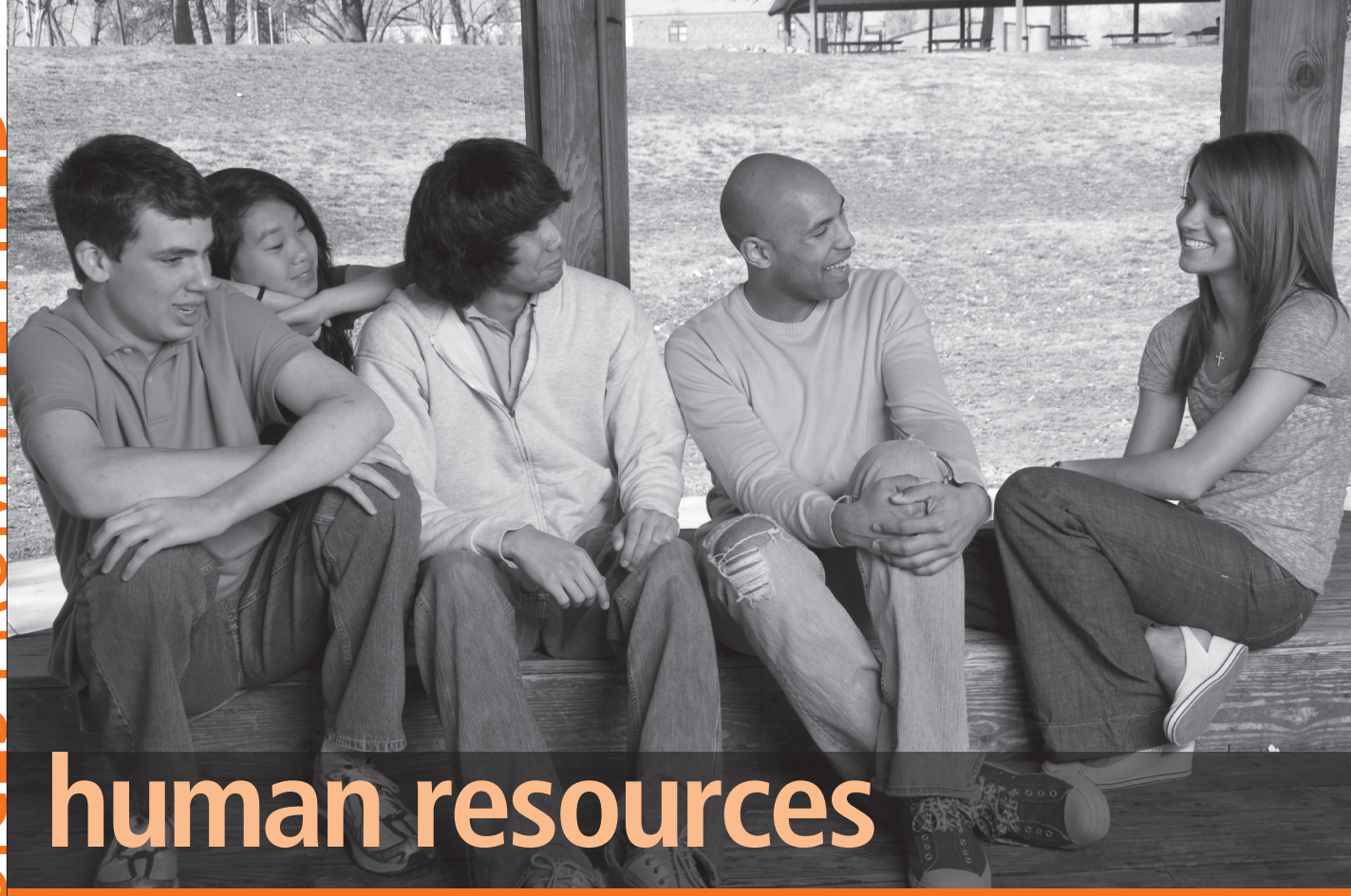
NJ Department of Health
Care plan for children with special health needs at *www.state.nj.us/health/forms/ch-15.pdf*

ACCOMMODATION PLANS

New Jersey Inclusive Child Care Project
"Finding Our Way Together," including curriculum modification planning and environmental supports at *www.spannj.org/njiccp_resourceguide*

ENGAGING FAMILIES

Disability Is Natural
Extensive list of Internet resources at *www.disabilityisnatural.com*



human resources

Staffing Out-of-School Time Programs in the 21st Century

by Ron Asher

I am a site manager employed by a small community-based organization (CBO) that provides afterschool programming at a number of school-based sites scattered throughout southern King County in Washington State. As such, I belong to one-half of the afterschool youth development (AYD) workforce: the (for the most part) full-time, salaried site managers and coordinators who supervise the other half of the AYD workforce—the part-time hourly workers who make up the bulk of front-line staffs. One of my greatest challenges as a site manager has been attracting and retaining part-time staff who can be relied on to deliver the high-quality programming our funders expect and our students deserve.

I used the opportunity of a long-term action research writing project to climb out of the trenches of direct service, take a good look around at the current landscape, and gather information that might help me address the difficulties I was facing as a site manager. I've come away convinced that I'm not alone, that the challenges I've faced in staffing a stable, high-quality afterschool program are the same challenges being faced by out-of-school time (OST) managers every day. My research has left me with the realization that the high level of turnover typical for part-time AYD workers represents a systemic challenge to the entire field. The relatively low wages and few hours we are able to offer these staffers are built into the structure and nature of afterschool work, so that these jobs will inevitably remain entry-level positions subject to high levels of turnover.

So what can be done to mitigate this challenging reality? My interviews with colleagues, combined with a review of published literature on the subject, have generated several recommendations, such as hiring staff already

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working in the school building, encouraging university teaching programs to include AYD and OST internships as part of their required coursework, and concentrating our scarce professional development resources on full-time staffers rather than part-time workers. I wish I could offer a more satisfying or efficacious fix to this vexing problem. I am left instead with the hope that we will continue to explore these questions as more front-line practitioners add their voices to the discussion.

Quality Staffing: Benefits and Challenges

The linkage between program quality and the quality of the OST workforce seems obvious on its face—hire a great staff, and chances are they'll run a great program. Researchers agree with this assessment. For example, a study of 21st Century Community Learning Centers (21st CCLC) notes, "Center staffing is a crucial factor in the success of afterschool programming" (Naftzger et al., 2007, p. 36). A report by School's Out Washington (2008) concurs: "For children to have positive outcomes, they must access high-quality programs. High-quality programs require high-quality staff" (p. 12).

However, as a site manager charged with hiring and supervising a part-time front-line staff, I know from experience that putting together a great staff is a lot harder than it sounds. In fact, the biggest challenge I've faced in my three years of managing an afterschool program has been attracting and retaining high-quality workers. I'm not alone. In talks with fellow site managers, the topic of staffing comes up frequently, with the site manager usually saying something along the lines of "I just lost another part-time staff person. Do you know anyone looking for work?"

According to a recent report by The After-School Corporation (TASC, 2010), "Research has shown that, just as good teachers correlate to children's success in school, so too are out-of-school time staff integral to making afterschool an enriching educational space" (p. 1). Other research has found a correlation between the level of staff training and the ability of programs to attract and retain youth (Pearson, Russell, & Reisner, 2007). We also know that continuity and longevity are essential to effective mentoring relationships between staff and youth (Cole, 2006). So the issue of high staff turnover is troubling not only from a managerial, programmatic, and educational standpoint, but particularly from the standpoint of a young person who watches adult mentors come and go through the revolving door that typifies the staffing situation at many youth development programs.

So the issue of high staff turnover is troubling not only from a managerial, programmatic, and educational standpoint, but particularly from the standpoint of a young person who watches adult mentors come and go through the revolving door that typifies the staffing situation at many youth development programs.

Findings: Framing the Challenge and Searching for Solutions

In order to gauge how the challenges I've experienced as an OST site manager compared with the experiences of others in similar positions, I conducted a series of interviews over the course of several weeks with the practitioners to whom I had easy access: the site managers who work for my nonprofit CBO. Though at my organization we are called *site managers*, other organizations might call us *site coordinators* or *site supervisors*. In any case, we are the employees responsible for the day-to-day operations at our sites.

During the time that I conducted the interviews, my organization employed 14 site managers, myself included, who ran programs at 16 school-based sites in south King County, Washington. Eight of these programs were funded through a federal 21st CCLC grant. We have programs in eight elementary schools, five middle schools, and three high schools. All of our site managers are full-time employees, except for one manager based in an elementary school who works in her school building during the day as a para-educator and then works for us as a part-time site manager after school.

I contacted all of my colleagues by phone or email to set up a face-to-face meeting. I then sat down with each of them for a structured one-on-one interview, with two exceptions. One interview with a high school site manager took place over the phone rather than face-to-face, and another interview involved two middle school site managers at the same time. I used the same set of 18 questions for each interview. Half of the questions were demographic in nature, asking about age, education, years in the respondents' current position, and so on. The other half were open-ended questions, asking managers about their experience in running OST programs, the challenges they faced, and their ideas on how to address those challenges. I took handwritten notes, which I typed out as soon as I could get back to a computer. Later, I pored over my typed notes with

colored highlighters in order to separate demographic facts from professional opinions and to tease out common themes.

I compiled some biographical information on my fellow site managers to see how we match up with AYD workers across the state and nation. The average age of our 14 site managers was 35 years, with the oldest being 62 and the youngest 23. As shown in Figure 1, ages were distributed between two distinct clusters: half were in their early to mid-20s, and another group was 47 or older. These findings correspond with statistics showing that OST workers tend to enter the field early in their working life, return to the workforce after raising children, or end up in OST after changing careers later in life (School's Out Washington, 2008; Yohalem, Pittman, & Edwards, 2010).

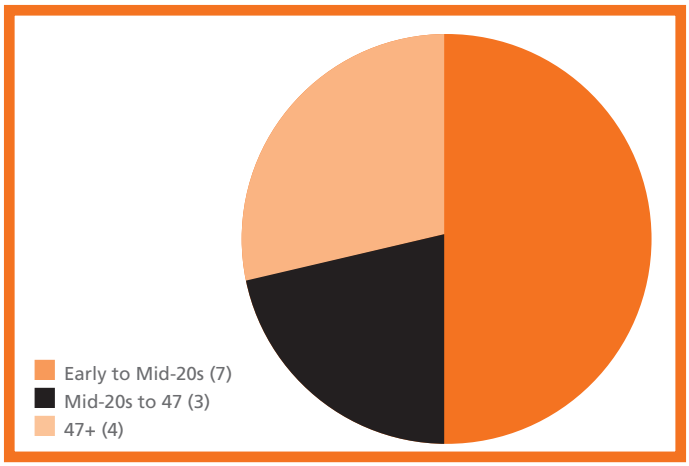

Figure 1. Age of Site Managers

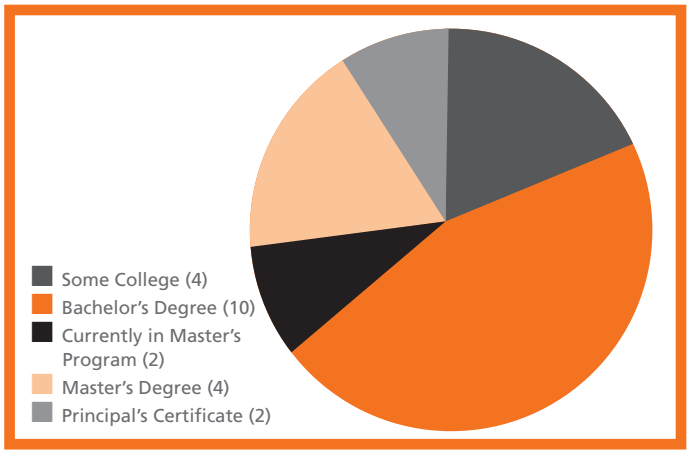

Figure 2. Education Level of Site Managers

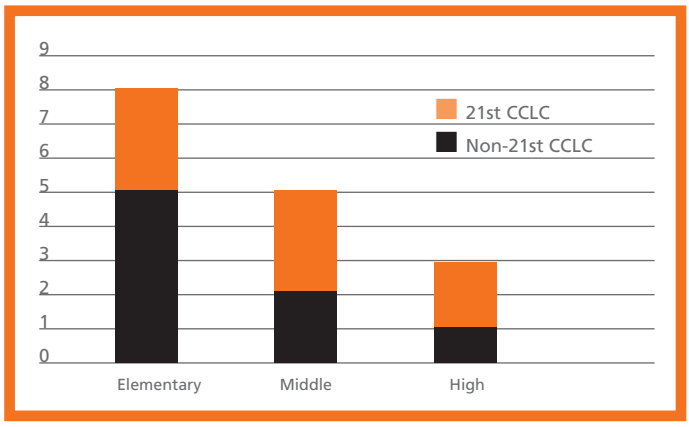

Figure 3. Afterschool Programs by School Type

As a group, site managers at my CBO were a bit more educated than AYD workers nationwide. Figure 2 shows that all 14 of us had at least some college education; most had a bachelor's degree, and several had or were working toward more advanced credentials. By way of comparison, a 2009 report on Missouri's AYD workforce found that 60 percent held two-year college degrees or higher, a finding echoed in nationwide data (Craig, 2009; Yohalem et al., 2010).

The 14 site managers in my study were also quite experienced in the field, amassing a total of 96 years in OST programs, an average of nearly seven years per site manager (not counting years in school-day positions). This level of experience mirrors statewide data showing that a majority of AYD workers in senior or leadership positions had worked in the field for more than five years (School's Out Washington, 2008). In their current positions with our organization, site managers averaged nearly 2.5 years of service. The most experienced manager had been in the position for six years, the least experienced for one.

Asked what kind of programs they run, 11 of 14 site managers described their programs as mixed, meaning a combination of academic-based programming with some enrichment, recreation, and leadership activities. The other three managers described their programs as primarily academic. Figure 3 shows that half of the 16 programs served elementary school students.

Eight of our site mangers ran 21st CCLC programs. When asked if conforming to the academic mandates of 21st CCLC funding affected staffing decisions, more than half (five of eight) agreed that it did. One mentioned the tension between reaching academic goals while trying to engage kids and hit her enrollment targets. She felt the academic mandates kept her from offering "fun" activities that would keep kids coming back. Another manager said that the strict student-leader ratios required by the grant, coupled with the requirement to serve a certain number of regular program attendees, resulted in a lot of pressure: "If I enrolled the number of students I needed to hit my attendance requirements while maintaining the proper ratios, I'd have to hire something like eight part-time

staff with a budget that only allows me to hire four, tops!" Four site managers whose programs weren't 21st CCLC sites but who had heard from other managers about the grant requirements responded to the question, "Are you a 21st Century site?" with some variation of "Thank goodness, no!" One responded, "No, and it's a good thing—I don't need the added pressure."

I then moved on to questions related to challenges faced in the OST field. Specifically, I asked the site managers to describe, in order of importance, the challenges they faced in their current positions. The challenges they described as most important are shown in Figure 4. The main challenge cited by the most managers was lack of funding. The next biggest challenge was hiring and retaining quality staff. Clearly lack of funding—a concern mentioned by the vast majority of interviewees, even if they did not cite it as the primary concern—is closely related to the issue of staffing. Since staff salaries and benefits make up the largest line items in our budgets, the inability to attract and retain quality staff can be directly linked to lack of adequate funding. Only four of the 14 managers interviewed failed to mention staffing or lack of resources among the challenges they faced.

Eight of 14 site managers said that recruiting and retaining quality staff was either the biggest or one of the biggest challenges. When drilling down into the specific challenges they faced with regard to staff turnover, everyone I interviewed cited low pay and few hours as the biggest impediments to retaining quality staff. When asked to focus on ways of addressing the issue, they all pointed to systemic problems. The part-time nature of the jobs we offer, along with the relatively low wages paid to part-time staff and the lack of opportunities for advancement, led to a situation where, in the words of one manager, "We hire part-time workers looking for full-time work." School's Out Washington, in a 2008 report, found this issue to be a statewide concern:

> Program staff that serve children after school and during the summer, from elementary school through high school, are increasingly expected to improve academic performance and help young people develop the skills and attributes necessary to succeed in a global community. Yet these workers, from whom we now expect so much, may have little experience or education directly related to their jobs, receive low wages and few benefits, and lack a pathway to career advancement. (School's Out Washington, 2008, p. 5)

One middle school manager put it this way: "I hire people with career ambitions. When opportunity knocks, they have to take it." Another complained, "Those people you really want to hire are usually the first to leave when something better comes along." On average, our site managers were able to offer their part-time employees 12 hours of work per week at an average rate of $13.80 per hour, slightly higher than the median hourly rate of approximately $10 per hour reported nationwide (Cole, 2006; Craig, 2009; Yohalem et al., 2010).

I asked the site managers who mentioned recruitment and retention as a staffing challenge if they had any ideas or best practices they'd like to offer to others facing similar concerns. Having already cited low pay and few hours as systemic problems leading to high staff turnover, they reached near unanimity in describing the most logical solution to the problem: offer more hours and more pay. School's Out Washington heard similar responses when they asked AYD workers why they left the field. The two most common reasons given were that salaries weren't high enough and that there weren't enough full-time opportunities in the community or organization (School's Out Washington, 2008). "It's hard to find someone with the skills we need who is willing to work for the pay we offer," is how one of our site managers framed the challenge. Added another, "We don't offer enough hours, but at the same time we need people to work in the middle of the day, so it makes it difficult for them to hold another part-time job." Almost everyone I interviewed followed up by commenting that simply offering more hours or paying higher wages wasn't possible given the current state of program funding. One high school site manager summed up the retention problem best: "You're offering peanuts for very challenging work, and the part-time nature of the job is a serious disincentive."

> "I hire people with career ambitions. When opportunity knocks, they have to take it."

When it came to addressing the problem of high staff

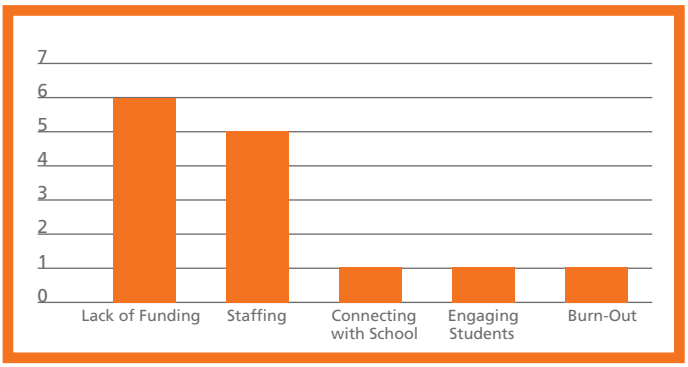

Figure 4. Challenges Cited by Site Managers

turnover, one of the most commonly expressed ideas was to try to hire staff already working in the school building. One long-time site manager solved the problem of high staff turn-over by hiring school-day staff. Another opined that part-time positions worked only for school staff such as para-educators or college students. Another was even more specific about hiring college students, recommending freshmen or sophomores "but not seniors—they leave after graduation." Another suggested that university teaching programs include OST internships along with school-day internships as options for student teachers.

Finally, in order to gauge how happy our site managers were with their current positions in our organization, I asked them to rate their level of satisfaction with the work they do. Given a choice among "very satisfied," "satisfied," "somewhat satisfied," or "unsatisfied," 10 out of 14 chose "satisfied," as shown in Figure 5. Three were "very satisfied," one was "somewhat satisfied," and no one claimed to be "unsatisfied." I followed up by asking what made them answer they way they did. Most said that the thing that brought them into the field in the first place—a passion for working with youth—was what kept them coming back year after year. This feeling was best expressed by a middle school site manager who responded, "It's satisfying to know your job actually means something. When you make a difference, you can see it." Another manager said, "I love working with youth. I went to school in this neighborhood. I came back to where I grew up in order to give back to my community." One of the three site managers who said she was very satisfied in her current position said, "After working in public education for 33 years, I appreciate the flexibility and freedom of working for a nonprofit. I love running my own program!"

Most said that the thing that brought them into the field in the first place—a passion for working with youth—was what kept them coming back year after year.

When asked what kept them from being "very satisfied," most returned to themes already expressed in the interview: lack of funding and resources, low pay, not enough help, lack of organizational support. In the words of one elementary school site manager, "Sometimes I feel like I don't know what I'm doing here. There needs to be more professionalization around what we do."

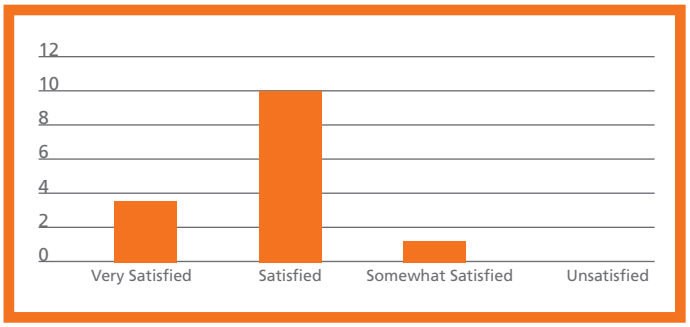

Figure 5. Site Managers' Job Satisfaction

Recommendations

I began this inquiry by looking primarily at strategies for retaining part-time staffers working the front lines of OST programs, thinking that resources put toward professional development should be spent transforming these part-timers into the high-quality workforce we rely on to deliver high-quality programming. But my research has led me to rethink that position. The TASC report encapsulates the dilemma: "High frontline staff turnover limits the incentives of directors to invest in deeper staff training; limited professional development and workplace or career benefits feeds high turnover" (TASC, 2010, p. 3). Because the part-time, low-wage nature of front-line positions is systemic, these positions will inevitably remain entry-level jobs subject to high levels of turnover. After all, front-line AYD jobs are just that—jobs, not careers. A part-time employee is like a renter while a full-time worker is like a home owner. Renters have little incentive to make substantial improvements to the property, since they will eventually be moving on. By contrast, home owners are invested in the long term and will do whatever they can to improve the value of their property. This isn't to say that our dedicated and caring part-timers aren't invested in what they do. They are. But they are less likely to be invested in the long-term sustainability of the program than full-time workers because they tend to be a transient workforce.

I'm not recommending that we ignore the professional development needs of the part-time half of the OST workforce. We should provide as many training opportunities for front-line workers as time and resources will allow. However, I would recommend directing the lion's share of our limited resources toward professionalizing the other half of the workforce: the full-time, salaried site managers (coordinators, supervisors, or whatever they're called) who see themselves not as youth development *workers* but as youth development *professionals*. These staff members may not stay with their current organizations, but, compared to part-timers, they are more likely to remain in the AYD field. Resources spent training and developing them have the potential to yield substantial returns as these professionals in-

vest their experience and knowledge in improving outcomes for the ultimate beneficiaries of our work: the children and youth in our programs.

An additional important finding of my research was the suggestion that one of the best ways to mitigate the problem of high turnover was to hire staff already working in the school building. I've shared this finding with others in my CBO, and we've begun the process of making this practice a recommended hiring strategy across our organization.

Another suggestion was to increase the number of AYD and OST internships at university education programs. Indeed, this recommendation was the focus of TASC's 2010 paper, which found that:

> [A]s schools increasingly emphasize project-based learning, service learning, experiential, and community-based learning… existing afterschool programs offer valuable sites for teachers and leaders to build skills in these methods, which are not covered in typical teacher education. (TASC, 2010, p. i)

The report ends with a call for leaders in the afterschool movement to seek out partnerships with institutions of higher learning in order to increase the participation of future educators in OST youth development (TASC, 2010).

The data I gathered through interviews with colleagues admittedly focused rather narrowly on one organization in one geographic area delivering a relatively uniform type of OST programming. I directed my attention to a small corner of the AYD landscape with the understanding that a much larger and more diverse world exists outside my immediate frame of reference. I urge other practitioners to conduct their own inquiries into their own programs and organizations so that we can create a mosaic that takes into account the diversity of programs, practices, and people who constitute the OST workforce in the 21st century.

Every field has its own language, its own idiom, a way of talking among its professionals about what they do. In the field of nonprofit CBOs, we've made a conscious effort to shape our language so that, when we talk about the populations we serve, we speak of benefits, not deficits. We want to see students, families, and communities in terms of what they have, not what they lack. However, when we talk about who we are and what we do, we often allow ourselves to be defined not by what we bring to the table but by what we lack in terms of resources. I know that much of this paper had been shaped by a discussion of what we need, not what we have. So I feel compelled to end by noting another theme that bubbled up throughout my research: the passion and dedication of the OST workforce. Even though I was mining my interviews and the literature for data illuminating the challenges we face, I kept digging up nuggets that reflected a workforce motivated not by fame or fortune, but by the possibility of making the world a better place—one child, one family at a time. It is to that feeling and those people that this paper is dedicated.

Acknowledgement

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References

Cole, P. (2006, August). *Understanding the afterschool workforce: Opportunities and challenges for an emerging profession.* Houston, TX: National AfterSchool Association. Retrieved from http://www.nextgencoalition.org/docs/NAA-understand-afterschool.pdf

Craig, D. (2009). *An emerging workforce: Missouri's youth development professionals.* Jefferson City, MO: Missouri P–20 Council.

Naftzger, N., Bonney, C., Donahue, T., Hutchinson, C., Margolin, J., & Vinson, M. (2007). *21st Century Learning Centers (21st CCLC) analytic support for evaluation and program monitoring: An overview of the 21st CCLC performance data 2005–06.* Naperville, IL: Learning Point Associates.

Pearson, L. M., Russell, C. A., & Reisner, E. (2007). *Evaluation of OST programs for youth: Patterns of youth retention in OST programs, 2005–06 to 2006–07.* New York, NY: Policy Studies Associates.

School's Out Washington. (2008). *A well-prepared workforce brings out the best in our kids: A framework for a professional development system for the afterschool and youth development workforce in Washington State.* Seattle, WA: Author.

The After-School Corporation & Foundations, Inc. (2010). *Out-of-school time: Leveraging higher education for quality.* Moorestown, NJ: Foundations, Inc., & New York, NY: The Center for Afterschool Excellence at TASC.

Yohalem, N., Pittman, K., & Edwards, S. L. (2010). *Strengthening the youth development / after-school workforce: Lessons learned and implications for funders.* Houston, TX: Forum for Youth Investment.

beyond the pipeline

STEM Pathways for Youth Development

by Gabrielle H. Lyon, Jameela Jafri, and Kathleen St. Louis

As framed by national education policy priorities, the dominant metaphor describing participation and achievement in science, technology, engineering, and mathematics (STEM) is a "pipeline." The STEM workforce requires a "pipeline" of future scientists, engineers, and mathematicians. This pipeline begins in childhood and carries students through high school, college, and master's degrees, ending with a doctorate and a career in a STEM discipline. In this metaphor, students have a single path: they must develop an interest in STEM by middle school, choose particular courses in high school, and continue consistently and progressively with STEM study in college in order to end with a degree and career in STEM. The disproportionate exit from participation in STEM by minorities and girls throughout school and college, resulting in their underrepresentation in STEM careers, is referred to as the "leaky pipeline" (Alper, 1993; Blickenstaff, 2005; Jayarante, Thomas, & Trautmann, 2003; Leboy, 2008; Watt, Eccles, & Durik 2006).

In addition to the "pipeline" framed by national policy, a widespread set of American cultural assump-

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tions dictates who should "do" STEM. An extensive study undertaken by Public Agenda in Kansas and Missouri found that:

> [P]arents and students are aware of the importance of math, science, and technology for local and national competitiveness, but … they nevertheless do not view them as a vital key to personal opportunity and see no pressing reason to push hard for better results. (Kladec & Friedman, 2007, p. 7)

A growing body of research shows that students who do not find personal meaning or relevance in STEM will not pursue STEM beyond what is required in school (Basu & Barton, 2007; Campbell, Denes, & Morrison, 2000; Costa, 1995; Jeffe, 1995; Lynch, 2000; Lyon, 2010; McClure & Rodriguez, 2007; Zacharia & Barton, 2004).

Engagement, Capacity and Continuity: A Trilogy for Student Success (Jolly, Campbell, & Perlman, 2004) explores why successes in individual programs do not translate into student achievement in STEM at a systemic level:

> Stand-alone efforts that try to improve student academic performance or increase student interest in certain careers will only have limited success. It is the combination of engagement, capacity, and continuity that is essential to real progress. (Jolly et al., 2004, p. 18)

Although the theoretical framework proposed by Jolly and colleagues offers an alternative to the pipeline, the engagement, capacity, and continuity (EEC) trilogy fails to take into account systemic obstacles facing students who have traditionally been overlooked by STEM engagement initiatives. Middle and high school students of color and girls—particularly those from low-income families and schools—are disproportionally excluded or dropped from the STEM pipeline at formative moments in their academic trajectories. Their opportunities to get and stay engaged in science are limited due to structural barriers: registration fees, lack of prerequisite knowledge, competitive application processes, inability to demonstrate pre-existing interest in science, poor literacy skills, lack of transportation, and a dearth of accessible opportunities (Lyon, 2010).

If one of the goals of quality STEM education, particularly in out-of-school time (OST), is to provide greater opportunities for engagement by populations traditionally underrepresented in STEM fields, then the pipeline is a limited—and limiting—framework that undermines young peoples' needs for multiple entry and "re-entry" points and for a continuum of opportunities that support their full social and intellectual development. Issues faced by students from populations historically underrepresented in science need to be addressed through intentional program design strategies matched with systemic policies. The pipeline framework fails to move this agenda forward.

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For students traditionally underrepresented in the sciences—students of color, girls, students from low socioeconomic backgrounds and from under-resourced schools, and those who struggle academically—barriers inherent in the pipeline framework preclude not only equitable participation in STEM but also, more importantly, opportunities to see themselves as practicing STEM professionals. Moving beyond the pipeline is not only necessary for program design; it is an imperative for educational equity.

Based on lessons learned from more than a decade of OST STEM programming for urban youth, Project Exploration proposes an alternative to the pipeline: Youth-Science Pathways. Youth-Science Pathways enable program providers to move beyond "pipeline" priorities to design for outcomes in which STEM learning experiences support young people's social and emotional development. Changing the metaphor from a pipeline to pathway transforms the purpose of the educational effort: rather than an endeavor in which students' experiences support STEM academic and workforce outcomes, STEM experiences are put to work in the service of youth development.

Project Exploration

Project Exploration is a Chicago-based nonprofit education organization dedicated to making science accessible to students of color and girls through long-term relationships and personalized experiences with science and scientists. Founded in 1999, Project Exploration works to change the face of science. As of 2012, Project Exploration annually served approximately 350 middle and high school students in the Chicago Public School system. By spring 2012, 1,200 students had participated

in our programs. These students were primarily African American and Latino; more than 50 percent were girls, and nearly 50 percent were first-generation college-bound students. Most students participated in Project Exploration programs for three to five years.

Project Exploration programs are relationship based; they are designed around specific, intentionally structured relationships among students, staff, and scientists. Staff members serve as youth development specialists and program facilitators. They focus on recruiting students, fostering and supporting long-term relationships with students, and creating effective STEM learning environments. Students are expected to bring their curiosity and experiences to programs and to participate in shaping curriculum based on their interests. Scientists share their work and their curiosity about the world, run meaningful activities related to their professional endeavors, and share personal stories and their experiences with career development as STEM professionals.

Engaging Under-Represented Students in STEM

In 2009, Project Exploration enlisted researchers from the Center for Research, Evaluation, and Assessment (REA) at the Lawrence Hall of Science to undertake a 10-year retrospective study of the effect of Project Exploration programs on alumni's interest and participation in science and on their educational and career aspirations and attainment. Through an online survey and in-depth interviews, researchers identified factors that affected students' decisions to get involved—and stay involved—with science and with Project Exploration (Chi, Snow, Goldstein, Lee, & Chung, 2010).

Project Exploration participants were significantly more likely to graduate high school, go to college, and major in science than their peers. They attributed their persistence in school and science to participation in Project Exploration programs (Chi et al., 2010). Specific study findings included the following:

- 95 percent of alumni had graduated high school or were on track to graduate—nearly double the overall rate of Chicago Public Schools.
- 60 percent of alumni enrolled in a four-year college were pursuing degrees in STEM-related fields.
- 60 percent of alumni who graduated college had a degree in a STEM-related field (Chi et al., 2010).

In addition to these quantitative results, qualitative feedback provided insights into program characteristics that helped or hindered participation. Meaningful work with scientists and long-term relationships with caring adults were critical factors in students' decisions to persist in Project Exploration and in STEM (Chi et al., 2010). Participants described the factors that mattered most:

- Someone knew their name.
- The program "never ended."
- They learned how to write.
- They were in the news locally and nationally for their adventures and accomplishments in STEM.

From our staff's perspective, the most important finding was that students in Project Exploration demonstrated increased science capacity; positive youth development; and meaningful engagement in a community of practice that nurtured relationships while helping them learn from one another, envision careers in science, and conceptualize their futures.

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When asked what Project Exploration should do in the future, students told researchers they wanted opportunities to explore a broader range of scientific disciplines and career options and to investigate disciplines in depth once their curiosity was piqued. They also asked for transparency regarding advanced program and leadership opportunities. Although many students stayed involved with Project Exploration for four or five years, the 10-year study showed that they did not always know what programs were available and what was required to participate in advanced opportunities or leadership experiences.

Patterns of Participation

From anecdotal evidence, surveys and interviews with students, staff members' experiences, and data from Project Exploration's database, a pattern emerged of episodic engagement in Project Exploration, STEM, and higher education (Chi et al., 2010). Although some students came to Project Exploration programs continuously through middle and high school, many students participated episodically. In terms of higher education, first-generation college-bound students often did not ex-

plore the possibility of attending college until late in their senior year. Some students graduated from high school and immediately enrolled in a four-year institution, but some did not. Some students attended community college on an intermittent basis, while others entered the workforce or armed forces before returning to school. Some students began college, ran into obstacles (financial, disciplinary, personal, or medical), and dropped out, only to return to higher education in a new setting after time had elapsed.

The REA study demonstrated that Project Exploration's science education model had a significant and lasting effect on students' educational and career achievements. Project Exploration's relationship-based youth science model demonstrates what access to science can look like for minority youth, girls, and students who are not academically successful. Furthermore, REA findings strongly suggest that, even when students begin STEM participation late in their high school careers or participate episodically, they can—and often will—pursue STEM beyond high school and continue to be involved as adults, if given ongoing opportunities to stay connected.

Core Design Elements and Practices

Project Exploration's youth science model consists of a set of *core design elements* paired with *core practices*. These elements and practices form the backbone of our pedagogy for youth who are least likely to get and stay involved with STEM. Rooted in a progressive social justice agenda, Project Exploration's *core design elements* are:

- **Equity.** Our programs are intended to make science accessible to students traditionally underrepresented in STEM. Specifically, we target students of color and girls who come from under-resourced public schools or low socioeconomic status neighborhoods and those who struggle academically or socially.
- **Relationships.** We believe that learning is based in relationships. Our staff employs a highly personalized approach, with an emphasis on supporting long-term relationships among students, scientists, and staff through middle school, high school, and beyond.
- **Students at the center.** Project Exploration students are known to adults as individuals in terms of what they like and what they are curious about, as well as by what they can do in STEM. Students co-create curriculum based on their interests. Activities and materials are introduced in ways that make STEM accessible for all students, particularly those who struggle academically.
- **Access to experts.** Content is taught primarily by STEM professionals and guided by their questions and research. We collaborate closely with scientists to shape program experiences around authentic science and around the scientists' career paths and individual identities. Participants build social capital through relationships with passionate STEM professionals who are driven by curiosity.
- **Meaningful work.** In each program, students work toward a culminating public project. Experiences across programs are interconnected to encourage long-term involvement with STEM and the Project Exploration community, rather than to meet specific academic or workforce readiness goals.

All programs, regardless of STEM discipline-specific curricula, share the following *core practices*:

- Staff members facilitate STEM learning by creating the learning environment and supporting students' understanding of science as a process.
- Content is taught by scientists and STEM professionals.
- Students write every day together using a structured reading and writing process.
- Participants choose topics of interest and the medium through which they share their learning with others.
- Staff members connect students' experiences with their school lives through ongoing communication with teachers, principals, and families.

Outcomes That Matter

In our experience, the young people who are least likely to get involved with STEM participate in opportunities based on relationships rather than on workforce development goals. The demands of their lives mean they need opportunities that are non-linear but readily and regularly available. When the work in STEM programs is authentic, personally meaningful, and facilitated by caring adults, students will stay involved over many years, even if they do not intend to become scientists. Students who participate in such experiences have the opportunity to consider STEM in higher education and as a career; many of them actually do so, though these outcomes are not the primary program goals.

Successful involvement with STEM can emerge not only in the form of a STEM degree or career, but also in the form of ongoing STEM involvement on the part of adults who are also involved in public policy, journalism, home health care, parenting, traveling, or volunteering at a community-based organization, to name just a few examples from the lives of our alumni. This long-term out-

come stands in stark contrast to what counts as "success" in the pipeline approach.

We used Project Exploration participant engagement in STEM as a basis for defining our youth outcomes:

- Engagement in communities of practice, in which students feel welcomed and are part of a community of learners
- Increased science capacity, developed by providing students with authentic experiences that foster increased knowledge
- Strengthened socioemotional attitudes, developed by focusing on socioemotional capacity and resilience

In order to serve more students, Project Exploration staff wanted a conceptual framework that would capitalize on lessons we learned from the 10-year study and from student feedback in order to facilitate equity and access. As documented by the REA 10-year study (Chi et al., 2010), episodic participation over many years and the cumulative positive impact of relationship-based programming stand in stark contrast to the educational process prescribed by the pipeline metaphor. Frustrated with the limitations of the pipeline as a conceptual framework, Project Exploration set out to create a metaphor that would serve our mission and students' real-life experiences.

Moving beyond the Pipeline

Reviewing existing literature and templates, we found a few sources that resonated strongly with our program sensibilities. The learning principles of Learning in Afterschool (2012) and the Partnership for 21st Century Skills (2009) helped bolster our youth development conversation. The *Atlas of Science Literacy* from the American Association for the Advancement of Science (Project 2061, 2007) and Jason Zimba's (2009) "Five Areas of Core Science Knowledge'" informed our articulation of STEM competencies.

However, neither Project Exploration's social justice agenda or nor the youth science model at the core of our approach were represented in these materials. In addition, staff believed that working through the development of a framework would provide a meaningful learning experience. The team decided to create a conceptual framework to answer the question, "What's worth knowing and experiencing at Project Exploration?" Staff developed project goals:

- We should capitalize on our long-term relationships with students. We know students for years, not just one or two weeks in the summer or for a few months after school.
- The final product should be the journey itself. We need to value and support non-linear experiences and episodic participation. Kids' real lives need to be part of the equation.
- Experiences in STEM should be expansive. Rather than serving workforce development as their primary purpose, STEM experiences should serve as building blocks for youth development and the creation of social capital.
- Roles among students, scientists, and staff—and especially opportunities for student leadership development—should be transparent and explicit.
- Students' interests and curiosity should drive their choices and their progress in learning.
- Staff should be able to talk with students about their learning progression and to show them and their families what skills and competencies they are developing and can build on.
- Evaluation should be meaningful and should relate to the programs and our goals for students.

Project Exploration's Youth-Science Pathways emerged from this discussion. Built on our youth science model, the Pathways framework combines a set of complementary learning strands, called Discover-Explore-Pursue, with a set of competencies presented in our Youth-Science Matrix. Youth-Science Pathways merges best practices in youth development with the concept of science as inquiry. Students do not work in the service of STEM by, for example, participating in science in order to become scientists, engineers, and mathematicians. Rather, STEM experiences are put to work in the service of students' academic, social, and emotional development.

Learning Strands: Discover-Explore-Pursue

In addition to mastering content, learning science involves proficiency in the skills of scientific inquiry. Opportunities to *discover* something new, *explore* various aspects of it, and *pursue* a specific question are hallmarks of the inquiry process. Each phase is part of a reiterative inquiry cycle, as illustrated in Figure 1. Project Exploration programs fall along three complementary strands.

Discover programs:

- Introduce students to a broad range of scientific disciplines and topics
- Enable students to develop and practice the basic principles of science and scientific inquiry

- Build student confidence and lay the foundation for long-term relationships among students, Project Exploration staff, parents, teachers, and scientists

Explore programs:
- Focus more specifically on discrete disciplines and inquiry methods
- Expand critical thinking, collaboration, public speaking, and investigative approaches
- Empower students to articulate their interests and create their personal science identities

Pursue programs:
- Equip students with skills and experiences to pursue science in higher education and the workforce
- Include an in-depth investigation in a research-based setting
- Build advanced scientific proficiencies as well as leadership and decision-making skills
- Allow students to develop highly personal, one-on-one working relationships with scientists

As complementary opportunities, Discover-Explore-Pursue programs enable participants to build content knowledge and work toward mastery of a topic in a linear, progressive fashion. A Youth-Science Pathway consists of a collection of program experiences over time.

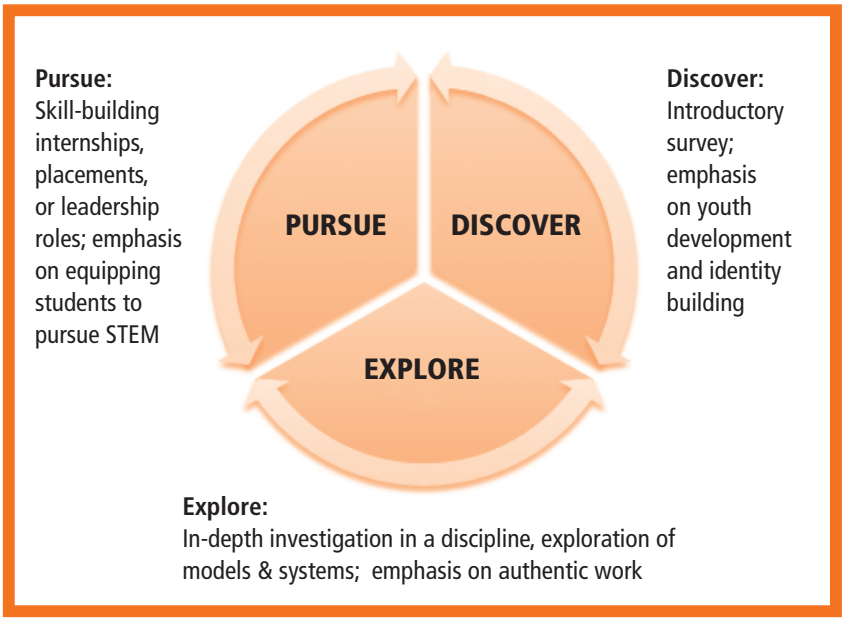


Figure 1. Discover-Explore-Pursue Framework

Table 1 offers an example of an individual student's content-based pathway in forensics. As the student participates in each program, he or she is not only progressively learning content knowledge and career requirements, but also developing self awareness that can help him or her make informed decisions about what he or she is interested in and why. Because participants are encouraged to choose particular programs based on their curiosity, and because Project Exploration focuses on long-term relationships rather than on single experiences, the strands support students to take ownership of learning and to be active members of the Project Exploration community.

Table 1. Youth-Science Pathway: Forensics

DISCOVER	EXPLORE	PURSUE
Discover Forensics March 2011 Survey experience over five full days in spring break **Science Digest** October 2011 Half-day introduction, on a Saturday, to what it's like to be a forensic scientist for a government agency	**Forensic Investigators** Summer 2012 Two-week summer immersion program with a culminating "court case" presentation	**Summer Internship** Summer 2012 with Illinois State Police **Team Leader** Spring 2013 Leading other youth in the Project Exploration program Forensics Investigators

Youth-Science Pathways makes Project Exploration's relationship-based approach explicit and transparent. As illustrated in Figure 2, the level of initiative and engagement required of participants, as well as of staff or scientists, changes with each program strand. In Discover programs, the responsibility to develop program activities is on the staff member who recruits students and takes the lead in shaping the program. In Pursue programs, students and scientists are both expected to work more independently: students set their own learning goals, and scientists work with students on authentic projects in the field or in labs.

Now that we had a transparent way to describe and diversify programs, our staff

turned to articulating a continuum of competencies to ensure that participants progress intellectually, socially, and emotionally throughout their involvement with Project Exploration.

Youth-Science Matrix: Progressive Competencies

When Project Exploration opened its doors in 1999, funders, parents, students, and scientists asked, "Are you a *youth development* organization or a *science education* organization?" The question has persisted. Rather than choosing one or the other, we believe that competencies developed through science learning and youth development are complementary and strengthen each other. Researchers such as Joseph Durlak (Durlak & Weissberg, 2007) have shown that afterschool programs that use evidence-based youth development practices are the most effective in producing positive outcomes. The 10-year study of Project Exploration (Chi et al., 2010) demonstrated that, by intentionally fostering socioemotional skills—such as communication, self-confidence, self-efficacy, teamwork, cooperation, and leadership—while immersing students in high-caliber STEM programs, Project Exploration enables participants not only to learn science, but also to translate their experiences into future aspirations and achievement.

With the Discover-Explore-Pursue learning strands in hand, staff broke into two teams to examine both youth development assets and competencies in science inquiry, selecting competencies that aligned with Project Exploration program practices. The teams agreed on three ideas:

- Scientific inquiry is a way of understanding the natural world.
- Positively focusing on youth competencies and social and emotional skill-building while exploring STEM will equip students for success in life.
- Critically conscious youth are empowered to identify challenges to, and strategies for achieving, equitable participation in science.

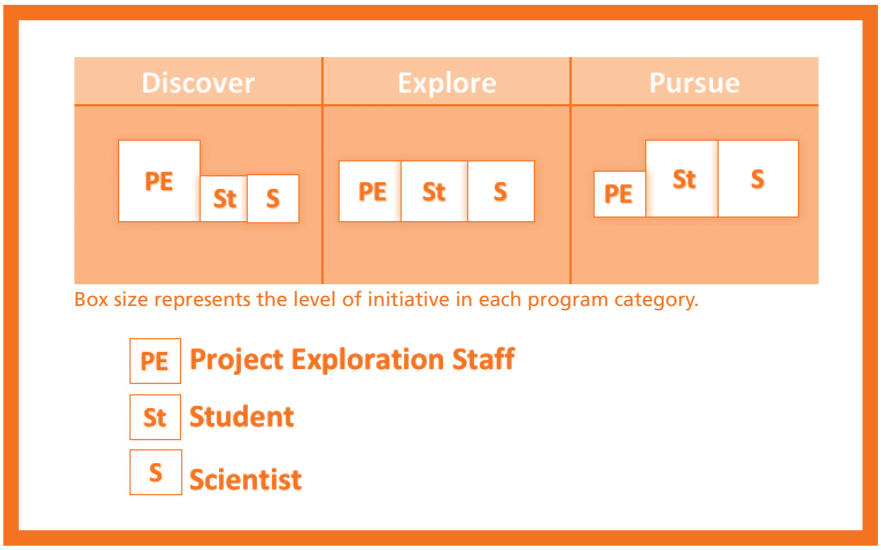
The team emerged with a set of 14 competencies that spanned youth development and STEM inquiry:

- Building models
- Understanding math
- Building scientific knowledge
- Investigating
- Understanding science as a social endeavor
- Observing
- Reflecting
- Collaborating
- Taking initiative
- Being curious
- Communicating
- Being part of a community
- Developing leadership
- Developing self-identity

The competencies integrate science process skills and youth development assets. When Discover-Explore-Pursue strands are mapped across these competencies, the result is the Youth-Science Matrix, excerpted in Table 2. The matrix outlines basic scientific and youth development competencies we expect each student to explore in all programs, with increasing sophistication across Discover, Explore, and Pursue opportunities.

The Youth-Science Matrix describes an explicit ecosystem for designing programs along learning strands. This tool gives staff and scientists a common language for discussing and designing experiences, content, and skill development activities. It enables staff to move away from hidden or implied curricula toward being explicit with scientists, facilitators, and students. For example, scientists who are interested in doing

Figure 2. Discover-Explore-Pursue Pathways: Relationship Engagement Levels



CORE COMPETENCIES	EMERGING SKILLS		
	DISCOVER	EXPLORE	PURSUE
BUILDING MODELS	• Using models as analogies to represent natural phenomena that may be too small or large to observe (e.g., atom, solar system)	• Learning to accurately scale natural phenomena (e.g., evolutionary time, cells, bacteria) • Developing ways to accurately represent and describe abstract ideas	• Considering alternative models to explain the same phenomenon • Learning how models of a specific discipline have changed over time • Using models to make and test predictions (e.g., computer, mathematical)
BUILDING SCIENTIFIC KNOWLEDGE	• Learning basic vocabulary related to the nature of science (e.g., observations, data, experiment) • Learning major concepts that are shared among scientific disciplines (e.g., evolution, energy flow, interconnectedness)	• Learning discipline-specific vocabulary • Learning to use discipline-specific tools • Discussing major concepts and principles within a specific discipline	• Mastering the use of some discipline-specific tools • Using scientific vocabulary and principles to pose questions and formulate responses
USING MATH	• Using simple algebra to collect data • Using numerical data to describe and compare data • Using simple tools of measurement (e.g., scales, rulers)	• Reading and presenting numerical information through graphs and charts • Using mathematics to solve a problem	• Quantifying statements • Learning to interpret data using quantitative methods (e.g., statistics)

Table 2. Youth-Science Matrix Excerpt

outreach with our participants often have a hard time understanding how to teach content so that it is embedded in youth development assets. Using the Youth-Science Matrix as a guide, scientists know in advance whether they are working to help participants Discover, Explore, or Pursue. They have an outline for developing activities to build skills and competencies that cut across science and youth development. The matrix provides transparency for students by helping them understand what programs are available now and in the future, what competencies they can develop, and what is expected of participants. It also serves staff as a rubric for program evaluation.

Youth-Science Pathways: Learning Strands across a Matrix

The Youth-Science Pathways framework, built on progressive learning strands paired with a competencies matrix, enables young people to develop STEM literacies as well as social, emotional, and leadership fluency. The aims of the Youth-Science Pathways framework are fourfold.

The first goal is to increase access to and transparency about program opportunities. While striving to maintain flexibility, Pathways provides clear, customizable options. In addition to helping students set clear goals and understand what is expected of them in Project Exploration programs, the Pathways framework also supports longer-term aspirations for high school graduation, college, and career.

A second goal is to build and enhance continuity across the program landscape. Responding to student interests is a fundamental cornerstone of Project Exploration's program design. However, as we expand, it is critical that students, scientists, and teachers agree on certain competencies or skills, both academic and developmental, that will be addressed in each strand of programming. The Pathways framework enables us to be explicit about our experiential goals for students and about their learning along the way. These competencies create a dashboard for internal and external program evaluation. Standardizing program design facilitates stu-

dents' progress, bolsters the development of STEM capacities, and reinforces the community of practice.

A third goal of Youth-Science Pathways is to design with episodic participation in mind. Students whose lives outside of school make regular, linear participation in school or in OST programs a challenge need opportunities to participate in a welcoming community based on curiosity rather than on prerequisites. The Pathways approach assumes that it is never too late to participate—or to return.

The Pathways approach capitalizes on relationships with scientists and on institutional partnerships to ensure that students build social capital. Project Exploration works with diverse STEM professionals who come from universities as well as from public and private sectors. Students not only are exposed to a variety of careers and working environments but also can get connected and develop diverse networks of relationships.

The learning strands and competencies matrix of Youth-Science Pathways facilitate OST experiences that are critical not only for STEM pursuits, but also for healthy adulthood. Youth need sustained opportunities in STEM, and their engagement needs to be progressively sophisticated in order to develop both technical and socioemotional skills. Youth-Science Pathways provides an architecture within which students can explore successive and diverse experiences in STEM while also getting support for their development as young people. The Pathways framework enables program providers to reconsider the value of STEM experiences in terms of youth development over time. Young people know that they have multiple options and are empowered to make decisions that will support their growth and learning.

What's Next

The work of bringing Youth-Science Pathways to life has just begun. New programs are being mapped against the Discover-Explore-Pursue learning strands. This approach is envigorating our ability to be strategic about partnerships with STEM professionals and about communication with our students. But we have much more work to do. A pipeline model can be evaluated quantitatively in terms of STEM degrees granted and STEM careers launched. A pathways approach requires fresh thinking about what matters most—and to whom and why.

In the short term, we are developing program indicators, observation rubrics, and evaluation templates that will provide feedback for program providers and youth participants and will inform the organization's strategic planning. We are exploring critical questions such as:

- How do we use Pathways to support individualized learning plans for participants?
- Can we develop a transparent and youth-friendly tool that allows students to be aware of their own assets and monitor their skill development?
- How can we use the matrix to assess skill development for formative evaluation during programs as well as for summative evaluation afterward?
- What are the implications of the Pathways approach for staff recruitment, retention, and professional development?
- In what ways can data inform how we refine specific paths?
- What longitudinal data will be most important to collect?

Youth-Science Pathways enables program providers to move beyond the STEM "pipeline" to support youth development goals as well as STEM learning. Instead of putting students to work to serve STEM workforce demands, it puts STEM education to work to expand possibilities in students' lives.

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References

Alper, J. (1993). The pipeline is leaking women all the way along. *Science, 260*(5106), 409–411.

Basu, S. J., & Barton, A. C. (2007). Developing a sustained interest in science among urban minority youth. *Journal of Research in Science Teaching, 44*(3), 466.

Blickenstaff, J. C. (2005). Women and science careers: Leaky pipeline or gender filter? *Gender and Education, 17*(4), 369–386.

Campbell, G., Denes, R., & Morrison, C. (2000). *Access denied: Race, ethnicity, and the scientific enterprise.* New York, NY: Oxford University Press.

Chi, B., Snow, J. Z., Goldstein, D., Lee, S., & Chung, J. (2010, December). *Project Exploration: 10-year retrospective program evaluation summative report.* Berkeley, CA: Center for Research, Evaluation and Assessment. Retrieved from http://www.projectexploration.org

Costa, V. B. (1995). When science is "another world": Relationships between worlds of family, friends, school, and science. *Science Education, 79*(3), 313–333.

Durlak, J. A., & Weissberg, R. P. (2007). The impact of after-school programs that promote personal and social skills. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning. Retrieved from http://www.casel.org

Jayaratne, T. E., Thomas, N. G., & Trautmann, M. (2003). Intervention program to keep girls in the science pipeline: Outcome differences by ethnic status. *Journal of Research in Science Teaching, 40*(4), 393–414.

Jeffe, D. (1995). About girls' "difficulties" in science: A social, not a personal matter. *The Teachers College Record, 97*(2), 206–226.

Jolly, E., Campbell, P. B., & Perlman, L. (2004). *Engagement, capacity, continuity: A trilogy for success.* New York, NY: GE Foundation.

Kladec, A., & Friedman, W. (2007). *Important, but not for me: Parents and students in Kansas and Missouri talk about math, science and technology education: A report.* Public Agenda Foundation. Retrieved from: http://www.kauffman.org/uploadedfiles/important_but_not_for_me.pdf

Learning in Afterschool. *Project position statement*. Retrieved from http://www.learninginafterschool.org/documents/PositionStatement.pdf

Leboy, P. (2008). Fixing the leaky pipeline. *The Scientist, 22*(1), 67.

Lynch, S. J. (2000). *Equity and science education reform*. Mahwah, NJ: Lawrence Erlbaum.

Lyon, G. (2010). *Project Exploration's personalized curriculum: Fostering access and equity in science out-of-school.* Unpublished PhD thesis. University of Illinois, Chicago.

McClure, P., & Rodriguez, A. (2007). *Factors related to advanced course-taking patterns, persistence in science, technology, engineering and mathematics, and the role of out-of-school time programs: A literature review.* Coalition for Science After School.

Partnership for 21st Century Skills. (2009). *21st century skills map: Science*. Retrieved from http://www.p21.org/storage/documents/21stcskillsmap_science.pdf

Project 2061. (2007). *Atlas of science literacy, Vol. 1 and 2.* Washington, DC: American Association for the Advancement of Science.

Watt, H. M. G., Eccles, J. S., & Durik, A. M. (2006). The leaky mathematics pipeline for girls. *Equal Opportunities International, 25*(8), 642–659.

Zacharia, Z., & Barton, A. C. (2004). Urban middle-school students' attitudes toward a defined science. *Science Education, 88*(2), 197–222.

Zimba, J. (2009). *Five areas of core science knowledge: What do we mean by "STEM-capable?"* Paper prepared for the Carnegie-IAS Commission on Mathematics and Science Education. New York, NY: Commission on Mathematics and Science Education. Retrieved from http://opportunityequation.org/standards-and-assessments/what-do-we-mean-by-stem-capable

build IT

Scaling and Sustaining an Afterschool Computer Science Program for Girls

by Melissa Koch, Torie Gorges, and William R. Penuel

"I want to be a software engineer because I want to be involved with computers." –Build IT participant

"I would like to create software because I would make a lot of money, and people in these jobs are intelligent." –Build IT participant

"I have been so inspired working with this curriculum and with the whole Build IT team that I have applied to a graduate program...in learning, media and technology." –Build IT facilitator

The program that elicited these statements is Build IT, a two-year afterschool and summer curriculum designed help middle school girls develop fluency in information technology (IT), interest in mathematics and computer science, and knowledge of IT careers. Build IT is a problem-based curriculum consisting of six units that capitalize on girls' interest in design and communication. SRI International's Center for Technology and Learning (SRI) and Girls Incorporated of Alameda County (GIAC) designed the materials and professional development to teach technology and computer science skills not only to girls but also to afterschool facilitators—who are primarily young women—while building facili-

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tators' capacity to provide this programming. To date, Build IT has been implemented at 33 sites and has reached more than 2,000 girls and 50 afterschool educators in the U.S. and Canada through the Girls Inc. network of affiliates. Co-developed and co-owned by SRI and GIAC, with funding from the National Science Foundation and the Noyce Foundation, Build IT is now managed by the Girls Inc. national organization, which provides professional development for all its affiliates.

This paper outlines the need for sustainable, scalable afterschool computer science programs targeting girls and describes the development of one such curriculum. Evaluation research on girls' learning of computer science and on the capacity of afterschool staff and organizations to provide computer science programming leads to our description of a research-based approach to sustaining and scaling the program nationally—an approach that other programs might use to expand their reach and impact.

Nationally, women make up half of the workforce but hold one-quarter or fewer of the positions in engineering and computer-related fields.

The Need for Sustainable and Scalable IT Afterschool Programming

Policymakers, educators, and industry professionals advocate for teaching technology fluency and computer science in and out of school, especially for underserved populations including girls, Latinos/as, and African Americans. Unfortunately, "computer science programs are often overlooked and underfunded, leading to insufficient curricula, a lack of teacher training in computer science, and decreased gender and ethnic diversity in computer science programs and careers" (Coalition for Science After School, 2010). Each year, afterschool educators and learning science researchers create numerous afterschool programs, but many of these programs end with the initial funding. Starting with an important national need, such as the one that Build IT addresses—increasing the number of girls interested in pursuing computer science learning and possibly careers—is an important first step toward building a sustainable and scalable program.

Nationally, women make up half of the workforce but hold one-quarter or fewer of the positions in engineering and computer-related fields. Fewer than seven percent of Latina or African-American women have degrees or careers in these fields (National Academy of Sciences et al., 2010). Yet these occupations are predicted to grow at a rate faster than the average rate for all occupations (Lacey & Wright, 2009; National Science Board, 2010). The fundamental obstacles to girls entering the workforce in science, technology, engineering, and mathematics (STEM) today are the value girls place on STEM careers, their interest in STEM topics, and their expectations of success in STEM fields (Barman, 1996; Brickhouse, Lowery, & Schultz, 2000; Chambers, 1983; Eccles, 1994, 2007; Eccles, Wong, & Peck, 2006). To be convinced of the value of STEM careers and their potential success, girls need to see their interests reflected in STEM courses and informal learning opportunities so that science and math become a central part of the "girls they are" (Brickhouse et al., 2000). Girls should participate in tasks that are relevant to their lives and have social impact; they should also connect with role models in STEM professions and receive feedback and encouragement (Eccles, 1994; Halpern et al., 2007; National Center for Women and Information Technology, 2007). Afterschool settings show promise as places for youth from all backgrounds to gain confidence and interest in STEM careers (National Research Council, 2009).

Reaching Girls and Young Women: Build IT Participants

Programs like Build IT are needed to overcome these obstacles and change the statistics on numbers of women and minorities in STEM careers. More than 65 percent of the girls participating in Build IT are African American or Latina and from low socioeconomic status homes. For many participants, Build IT is one of the few venues that gives them regular access to technology, opportunities to design technological solutions, and exposure to IT careers. The program also uses educative curriculum materials and a train-the-trainer approach to target staff learning, since afterschool staff often see computer science content as daunting. All of the 31 staff members currently facilitating Build IT are women, and 55 percent are women of color. The majority are in their 20s and 30s and were not familiar with computer science concepts when they began the program.

Developing for Scaling and Sustainability

Education research has articulated the features for scaling and sustaining innovations in schools (Coburn, 2003; Schneider & McDonald, 2007; St. John, 2003), includ-

ing school science programs (Blumenfeld, Fishman, Krajcik, Marx, & Soloway, 2000; Fishman & Krajcik, 2003). In developing this program, we adapted this research base for afterschool learning. Just as the absence of a clear plan for implementation and scaling hampers efforts to scale STEM innovations in schools (Confrey, Lemke, Marshall, & Sabelli, 2002; McLaughlin & Mitra, 2001), so too does the absence of such plans hinder afterschool programs.

To anticipate the challenges of building a scalable, sustained program, developers designed Build IT to unfold in multiple stages. Rather than waiting to think about sustainability and dissemination until after the program design had been articulated, scale and sustainability plans were integral to the concept.

The co-design process played a key role in these plans. In co-design, researchers and developers lead a highly facilitated, team-based process with practitioners to design and implement prototypes of the innovation. To this process, SRI team members brought their expertise in research and development in the learning sciences, and the GIAC team brought its expertise in implementing youth development programs for girls. This Build IT team worked for three years to develop, implement, and refine the program. In later years, other Girls Inc. affiliates implemented the program, with the national organization leading the professional development.

Rather than waiting to think about sustainability and dissemination until after the program design had been articulated, scale and sustainability plans were integral to the concept.

Evaluation Findings

Throughout the life of Build IT, internal and external evaluators have used a mixed-methods approach to document changes both in girls' attitudes toward and understanding of IT and in staff members' capacity to sustain and scale computer science programming, examining changes at both individual and organizational levels. Researchers surveyed girls about their perceptions of and interest in IT fields and about their computer usage and skills. The evaluators also assessed participants' understanding of IT concepts. In the first three years of the program, a comparison group from the same schools and communities as program participants responded to the surveys and assessments. In most of its settings, Build IT is part of a larger afterschool and summer program rather than an independent program for which participants sign up. Attendees are thus no more likely than other similar girls to have positive attitudes toward technology or to be interested in IT careers. Researchers also interviewed and observed girls in the program, capturing qualitative data on girls' interest and engagement in IT.

The evaluation team interviewed, observed, and collected implementation reports from staff. Staff also completed online surveys to document their impressions of how well the program met the needs of the girls and of the organization, how well the program addressed professional development needs, their plans to continue or discontinue the program, and their own IT learning and career interests.

Research questions for the evaluation included:

- Are girls engaged, achieving IT fluency, and interested in pursuing IT careers, including taking the necessary high school mathematics and computer science courses?
- Is staff capacity at each site increased and supported to offer this IT fluency programming?
- Is this curriculum sustainable in different settings?

Evaluation results, outlined below, show that Build IT is achieving its goals. Girls' attitudes toward IT and understanding of IT concepts improved. Afterschool staff members increased their capacity to offer the program and developed interest in IT education and careers for themselves. These findings provide evidence for the sustainability and scalability of the program.

Growth in Girls

The data show that Build IT motivates girls to explore IT and pursue IT careers. Girls who saw IT careers as solitary and boring began to see them as collaborative, fun, and intellectually stimulating; many participants started to see IT as a possible career. Their attitudes toward math also changed. In the pilot scale-up, we saw statistically significant improvement in girls' confidence in math and belief in its usefulness. We saw modest (but not statistically significant) improvements in girls' confidence with computers, attitudes toward IT careers, and gender-neutral views of careers. Excerpts from interviews with girls illustrate these changes:

I might be able to do that.

You could do amazing things.

I thought [the jobs] were hard but seemed kind of fun.

Girls in Build IT strengthen their technology fluency. In the pilot scale-up, girls reported an increase in their technology skills, and assessments showed improved IT knowledge. We saw statistically significant improvements in girls' frequency of computer use, self-reported computer skills, perception of the usefulness of mathematics, and confidence in using math. Similarly, in initial implementation at one affiliate, we saw a statistically significant change in participants' conceptual understanding, as compared to that of a similar group of girls not participating in the program. In addition, girls who participated in two years of the program scored higher on assessments of IT conceptual understanding than girls with one year or less of participation. Finally, data from the initial implementation with one affiliate indicate that Build IT participants with multiple years of exposure to the curriculum increasingly planned to take computer-related courses and college-track math courses.

Growth in Organizational Capacity

To achieve scale and sustainability, a program must not only meet its goals for youth participants, but also build organizational capacity. During the first three years of Build IT implementation and subsequent two years of pilot scaling, all staff and organization leaders reported that the program was a good fit with the needs of their organization, community, and girls; they said that they would implement the program again. Affiliate executive directors found that they could secure local funding for Build IT and similar programs. Of the seven affiliates that participated in the pilot scale-up, six are continuing to implement the program. The national organization hopes to scale Build IT to all of its affiliates.

Preliminary data from the recent (2010–2012) scale-up of the Build IT program to 21 affiliates (33 program sites) reinforced the pilot scale-up findings, showing that the program is sustainable and scalable. Ninety-five percent of organization leaders surveyed said that the program met the needs of the community and aligned with their organization's goals. Leaders said that the program had support from their funders and was not expensive to implement; all but one planned to continue offering the program, though a few noted they would need to find funding to continue. Leaders also said the program was rewarding for staff and girls. One said:

> At our site, we serve a large majority of girls from very low-income, single-parent/guardian households who do not have the economic resources to expose their daughters to IT equipment, programs, or mentors. Without a program like [this one], their daughters would have minimal or no exposure to IT fields, careers, and information.

Additionally, the majority of facilitators—73 percent—said they were comfortable implementing the program; the remaining 27 percent report reported that they were comfortable "to some extent."

Growth in Afterschool Staff

The Build IT curriculum is designed to teach staff as well as girls. Data show that staff who implemented the program often became comfortable troubleshooting technical problems and doing computer programming using HTML or object-oriented programming tools. It was not uncommon to see a staff member rooting in the organization's server closet. One said, "My Internet went down the other day and it said ISP and LAN and all that stuff…and I was, like, 'Wow, I know what these things mean.'" Staff members' comfort with curriculum concepts also grew: they began to successfully incorporate and teach important concepts such as the engineering design process of defining the problem, brainstorming, sketching, researching, developing, testing, and using the new technology.

Staff who implemented the program often became comfortable troubleshooting technical problems and doing computer programming using HTML or object-oriented programming tools. It was not uncommon to see a staff member rooting in the organization's server closet.

Researchers also found evidence that staff gained more than the capacity to teach the curriculum. In a survey on staff capacity and IT learning, more than 60 percent of responding facilitators said the program influenced their career and education plans: 58 percent said they were thinking about or pursuing a career involving STEM and 47 percent were thinking about or pursuing further education in STEM. One facilitator, for example, has moved on to a technology job, and another entered an educational technology graduate program. Two others have added a computer science or technology focus to their postsecondary

education. Others have created roles in their organizations as coordinators of the Build IT curriculum, in effect building a career ladder for STEM-focused educators and built-in support for the program. Finally, staff members at the site that co-developed the curriculum have taken on leadership roles by becoming trainers for affiliates new to the curriculum.

Encouraging the facilitators—nearly all of whom are women and many of whom are women of color—to pursue IT careers was not an original goal of the program, but it certainly addresses the national need for more women and particularly women of color in IT. It may seem counterproductive to facilitate staff members' leaving the program; however, from the start, the program development team planned for the high staff turnover that is common in afterschool organizations. In order to promote organizational memory of the program, Girls Inc. affiliate leaders as well as facilitators attend Build IT professional development. Additionally, the curriculum materials themselves are designed to educate new staff members as they prepare activities and use them with the girls.

To achieve "deep and consequential change" (Coburn, 2003) in afterschool STEM learning, our experience and research led us to a co-design process, in which developers from the learning sciences and youth development fields collaborated to develop a rich, usable curriculum that meets the needs of youth and their communities.

Research-based Framework for Sustainability and Scalability of Afterschool STEM

Frameworks for scaling and sustaining school-based innovations provided insights to the program development team for planning the stages of Build IT. Coburn (2003) outlined four interrelated dimensions for scaling and sustaining education innovations: depth, spread, shift, and sustainability. Dede and Rockman (2007) added a fifth dimension, evolution. Developers can think about these five dimensions both sequentially and collectively, as they reinforce one another.

- *Depth* refers to the effect of the innovation on youth learning and educators' practice. Coburn (2003) states that "reform must effect deep and consequential change" (p. 4).
- *Spread* is the traditional notion of scale: the spread of a reform to a greater number of sites.
- *Shift* in ownership requires that the practitioners responsible for implementation, not the developers, have full authority, including over ongoing support, professional development, and future implementations.
- *Sustainability* means maintaining the depth of the program—and allowing for acceptable adaptations—over time, under less than ideal conditions.
- *Evolution* of the innovation for sustainability involves three types of innovators: developers, researchers, and practitioners. Practitioners' implementation influences future research and development. Evaluations and assessment tools that informed the original innovation can help practitioners to adapt the innovation and can provide data for funders of the sustained program.

Cutting across all five of these dimensions, researchers developing science curricula at the University of Michigan (Blumenfeld et al., 2000; Fishman & Krajcik, 2003) have identified *usability*—by students, teachers, and administrators—as key to the sustainability of an innovation in schools:

> If an innovation is "usable," this means three things: (1) that the innovation is adaptable to the organization's context, (2) that the organization is able to enact the innovation successfully, and (3) that the organization is able to sustain the innovation. (Fishman & Krajcik, 2003, p. 565)

These researchers note that the innovation is more than the curriculum materials; it includes planning for ongoing support of the organization's capacity to implement effective science curricula. Not only must teachers and students be able to use the materials, but also the organization must have the capacity to use the program. Other researchers of in-school science learning have noted the importance and interplay of the usability of the curriculum and the building of the organization's capacity to offer the curriculum (Cohen & Ball, 1999; St. John, 2003), a capacity that includes alignment with the organization's culture, policy, and management initiatives (Blumenfeld et al., 2000; Fishman & Krajcik, 2003).

Achieving Depth through Co-Design

To achieve "deep and consequential change" (Coburn, 2003) in afterschool STEM learning, our experience and research led us to a co-design process, in which developers

from the learning sciences and youth development fields collaborated to develop a rich, usable curriculum that meets the needs of youth and their communities. Penuel, Roschelle, and Schectman (2007) define co-design as a "highly facilitated, team-based process in which educators, researchers, and developers work together in defined roles to design an educational innovation, implement the innovation with educators and students as a prototype, and evaluate each prototype's significance for addressing a concrete educational need" (p. 51).

The Build IT team used philosophies and pedagogical approaches from the learning sciences and youth development fields to develop a constructivist, problem-based curriculum. The program's hands-on experiences are not solely computer based; they enable youth to use their bodies, creativity, energy, and visual representations to act out computational approaches to solving problems. The co-design process allowed constant checking of the program's usability for youth and youth development leaders. In addition to iterative co-design, we incorporated the *Understanding by Design* approach (Wiggins & McTighe, 1998) to identify learning goals and ways of achieving them. Learning goals, assessments, and activities were articulated in a language consistent with youth development.

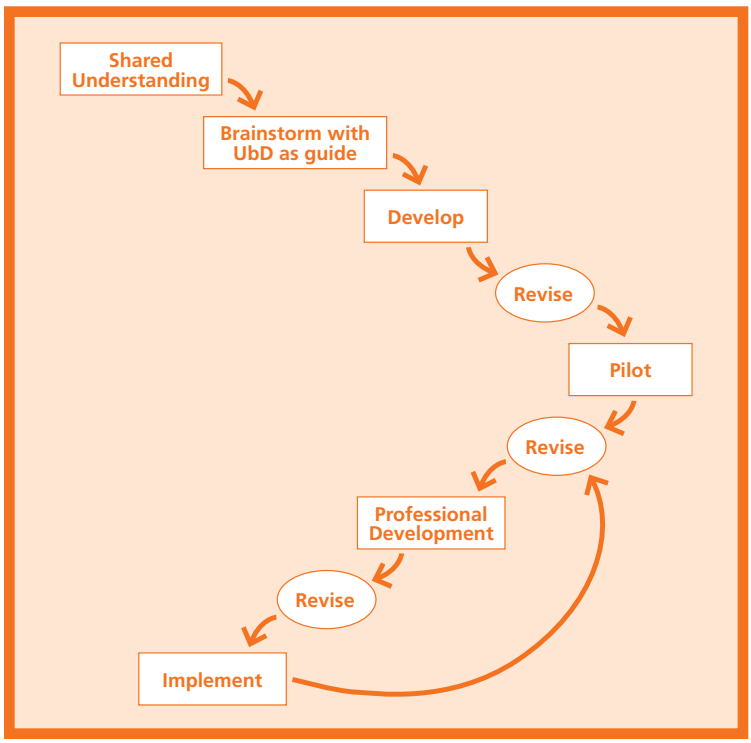
Throughout development, the Build IT team incorporated educative elements in the curriculum that were designed to teach afterschool educators as much as the girls, so that the staff can understand and implement the curriculum. Educative curriculum materials increase educators' knowledge in specific instances of instructional decision making and help them develop more general knowledge that they can apply flexibly in new situations (Ball & Cohen, 1996; Davis & Krajik, 2005). Build IT's educative elements include computer science and IT concepts along with research-based practices for engaging girls in these concepts. These elements reveal the developers' pedagogical judgments and help staff to access information, learn subject matter, anticipate and interpret what learners may think or do, and relate units and big ideas.

Figure 1 outlines the Build IT team's co-design approach. To begin, the Build IT team developed a shared understanding of co-design, the afterschool learning environment at Girls Inc., and the role of each contributor. Next, the team conducted one or two brainstorming meetings using the Understanding by Design approach. The team identified the "enduring understandings" (big ideas) in computer science, discussed products youth could produce or actions they could do to demonstrate their understanding of the concepts, and shared activity ideas that could elicit these products or actions.

Once an outline was agreed on, SRI team members drafted the curriculum, based on their computer science and mathematics expertise, and Girls Inc. team members reviewed it. The groups revised until both teams deemed drafts to be ready for implementation. The team then prepared selected activities to pilot with a few girls and shared the curriculum draft with advisors. The team revised the curriculum again based on this feedback. Another round of revisions came after staff gave feedback on initial professional development sessions. Next, the unit was fully implemented with 15 or more girls. Formative evaluation of the implementation and feedback from girls and staff informed the next phase of revisions. Each unit went through about three rounds of drafting, piloting, and revising.

At first glance, co-design may seem overly difficult: agreeing on curricular goals and following a structured iteration process are time-consuming. Yet co-design can help develop greater ownership over designs, strengthen STEM content, and make designs more usable in real settings (Penuel et al., 2007).

Figure 1. Co-Design Approach



Achieving Spread by Building Partnerships

In order to spread and achieve scale, an innovation must influence the organization's norms and principles, including policies, curriculum implementation, and professional development (Coburn, 2003). Proven impact, ease of use, and fit with the organization are critical factors in achieving scale.

Partnerships can support an innovation's spread. A report on the sustainability of 21st Century Community Learning Centers by The Finance Project (2006) finds partnerships to be essential for long-term sustainability. Specifically, partners should have shared goals, clear roles in program development and refinement, and credibility with funders. Partnerships also have the potential to expand the capacity of programs to coordinate educational and social services for children living in need, so that afterschool programming can be as effective as possible (de Kanter, Adair, Chung, & Stonehill, 2003).

For Build IT, the work began with key partnerships among the two developers, SRI and GIAC, and the Girls Inc. national office, which would provide professional development and scaling support for its network of more than 150 affiliates. Each affiliate has developed further partnerships with local tech organizations, since the curriculum includes connecting girls with women STEM professionals. This strategy of establishing ongoing partnerships with the local STEM community has the potential to keep the program current with STEM changes and to attract new funders.

Developing Ownership from the Beginning Rather Than Shifting

During the initial stages of design and pilot implementation, curriculum developers and researchers typically drive the process. For the Build IT program, the co-design process facilitated a partnership that capitalized on the skills of both organizations. It also anticipated the end of grant funding, so that design decisions were based on how to support ongoing implementation within the larger afterschool program. The youth development organization led implementation from Day One of the project. The Build IT team used the implementation of the curriculum by girls and facilitators as a source of information for making refinements. Professional development began as the responsibility of the learning sciences organization, with an articulated plan for transferring ownership to the youth development organization.

The youth development organization led implementation from Day One of the project. The Build IT team used the implementation of the curriculum by girls and facilitators as a source of information for making refinements.

Sustaining Programs through Professional Development Infrastructure

Professional development plays a key role in sustaining a program. As programs move toward sustainability, resources for professional development and other assistance often dissipate, especially for programs attempting to achieve scale as well as sustainability (Coburn, 2003). In youth organizations, staff turnover is high. Organizations may train staff to implement a program one year, only to lose those staff the next year. A process for inducting new staff to support the program and providing for ongoing professional learning can help maintain capacity.

Build IT addressed this issue by sharing professional development responsibilities with sites from the beginning. A program manager worked side-by-side with learning sciences researchers and program developers to design and deliver professional development. SRI staff led the initial professional development for each unit; for the second implementation, both organizations co-led the professional development. By the third implementation, Girls Inc. staff led the professional development.

Build IT is successful in part because ongoing professional development is part of the infrastructure of Girls Inc. at each affiliate and nationwide. Like many other youth-serving organizations, affiliates experience frequent staff turnover but have a relatively stable core of program managers. The national organization provides professional development on many of its programs; its professional development staff includes Build IT in a suite of STEM programs offered to affiliates. Having a professional development staff and a training infrastructure for face-to-face sessions, webinars, and online support makes Girls Inc. capable of sustaining innovations.

Developing and Aligning Frames That Allow a Program to Evolve

A single project that initiates a cycle of program development typically presents a single "frame" to a potential funder. The term *frame* (Goffman, 1974; Snow & Benford,

1988) refers to a specific definition of a problem, a path to its solution, and a rationale that makes the solution compelling.

A proposal frame—the initial rationale for winning funding—is rarely enough to sustain a program across multiple projects or to convince new groups to fund new development or implementation in new settings. A key task for sustainability is to develop multiple frames for defining problems and to establish congruence among them. This activity of aligning frames cannot be simply "chasing the money," but rather must be a genuine bridging or extension of activity in ways that allow the program to adapt, grow, and even transform as it moves to new contexts.

The frame for funding Build IT has varied according to the needs and resources of the affiliates and their communities. For example, one affiliate's search for women STEM professionals led to the discovery that the city had an initiative to attract IT businesses. Through collaborations with the city and a local university, this affiliate secured funding for Build IT, identified field trip opportunities, and established relationships with STEM professional role models who regularly participate in the program. This affiliate's frame combined the need for funds with the need for role models. The level of local interest in IT jobs enables this affiliate and others to use Build IT as a marketing tool to fund not only Build IT but other programs as well.

A key task for sustainability is to develop multiple frames for defining problems and to establish congruence among them. This activity of aligning frames cannot be simply "chasing the money," but rather must be a genuine bridging or extension of activity in ways that allow the program to adapt, grow, and even transform as it moves to new contexts.

Build IT started with framing a need to encourage girls to pursue computer science and IT careers. At the national level, Build IT's success has made it part of the frame on using evaluation data to show how Girls Inc. programs affect girls. The national organization uses multiple frames of funding, professional development, scale, research, and evaluation to achieve its goals, which include making sure all affiliates can implement Build IT.

Conclusion

Planning for sustainability and scalability from the beginning is an important means of ensuring that programs continue beyond their initial grant funding. The Build IT development team successfully achieved scale by engaging youth development and learning sciences experts in a co-design process, using professional development to continually support the program and transfer ownership to practitioners, and working within an established network of affiliates. As a result, Build IT is having a positive effect on girls and afterschool staff throughout the nation.

References

Ball, D. L., & Cohen, D. K. (1996). Reform by the book: What is—or might be—the role of curriculum materials in teacher learning and instructional reform? *Educational Researcher, 25*(9), 6–8.

Barman, C. (1996). How do students really view science and scientists? *Science & Children, 34*, 30–33.

Blumenfeld, P., Fishman, B. J., Krajcik, J., Marx, R. W., & Soloway, E. (2000). Creating usable innovations in systemic reform: Scaling-up technology-embedded project-based science in urban schools. *Educational Psychologist, 35*(3), 149–164.

Brickhouse, N. W., Lowery, P., & Schultz, K. (2000). What kind of a girl does science? The construction of school science identities. *Journal of Research in Science Teaching, 37*(5), 441–458.

Chambers, D. W. (1983). Stereotypic images of the scientist: The draw-a-scientist test. *Science Education, 67*, 255–265.

Coalition for Science After School. (2010). *Computer Science Education Week: December 5th–11th, 2010*. Retrieved from http://scienceafterschool.blogspot.com/2010/12/computer-science-education-week.html

Coburn, C. E. (2003). Rethinking scale: Moving beyond numbers to deep and lasting change. *Educational Researcher, 32*(6), 3–12.

Cohen, D. K., & Ball, D. L. (1999). *Instruction, capacity, and improvement* (CPRE Research Report Series RR-043). Philadelphia, PA: University of Pennsylvania Consortium for Policy Research in Education.

Confrey, J., Lemke, J. L., Marshall, J., & Sabelli, N. (2002). *A final report on a conference on models of implementation research within science and mathematics*

instruction in urban schools. Austin, TX: University of Texas, Systemic Research Collaborative for Education in Mathematics, Science, and Technology.

Davis, E. A., & Krajcik, J. (2005). Designing educative curriculum materials to promote teacher learning. *Educational Researcher, 34*(3), 3–14.

Dede, C., & Rockman, S. (2007, Spring). Lessons learned from studying how innovation can achieve scale. *Threshold,* 4–10. Washington, DC: Cable in the Classroom.

de Kanter, A., Adair, J. K., Chung, A.-M., & Stonehill, R. M. (2003). Ensuring quality and sustainability in after-school programs: How partnerships play a key role. Yearbook of the National Society for the Study of Education, 102(2), 201–220.

Eccles, J. S. (1994). Understanding women's educational and occupational choices: Applying the Eccles et al. model of achievement-related choices. *Psychology of Women Quarterly*, 18, 585–609.

Eccles, J. S. (2007). Where are all the women? Gender differences in participation in physical science and engineering. In S. J. Ceci & W. M. Williams (Eds.), *Why Aren't More Women in Science? Top Researchers Debate the Evidence* (pp. 199–210). Washington, DC: American Psychological Association.

Eccles, J. S., Wong, C. A., & Peck, S. C. (2006). Ethnicity as a social context for the development of African-American adolescents. *Journal of School Psychology, 44*, 407–426.

Finance Project. (2006). *Sustaining 21st Century Community Learning Centers: What works for programs and how policymakers can help.* Washington, DC: Author.

Fishman, B., & Krajcik, J. (2003). What does it mean to create sustainable science curriculum innovations? A commentary. *Science Education, 87*(4), 564–573.

Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Boston, MA: Northeastern University Press.

Halpern, D., Aronson, J., Reimer, N., Simpkins, S., Star, J., & Wentzel, K. (2007). *Encouraging girls in math and science* (NCER 2007-2003). Washington, DC: National Center for Education Research, Institute of Education Sciences, U.S. Department of Education. Available from http://ncer.ed.gov

Lacey, T. A., & Wright, B. (2009, November). Occupational employment projections to 2018. *Monthly Labor Review, 132*(11), 82–123.

McLaughlin, M. W., & Mitra, D. (2001). Theory-based change and change-based theory: Going deeper, going broader. *Journal of Educational Change, 2*, 301–323.

National Academy of Sciences, National Academy of Engineering, Institute of Medicine, & National Research Council. (2010). *Expanding underrepresented minority participation: America's science and technology talent at the crossroads*. Washington, DC: National Academies Press.

National Center for Women & Information Technology. (2007). *Guide to promising practices in informal information technology education for girls*. Boulder, CO: NCWIT and Girl Scouts. Retrieved from http://www.ncwit.org/pdf/Practices_Guide_FINAL.pdf

National Research Council. (2009). *Learning science in informal environments: People, places, and pursuits.* Washington, DC: National Academies Press.

National Science Board. (2010). *Preparing the next generation of STEM innovators: Identifying and developing our nation's human capital*. Arlington, VA: National Science Foundation.

Penuel, W. R., Roschelle, J. & Shechtman, N. (2007). Designing formative assessment software with teachers: An analysis of the co-design process. *Research and Practice in Technology Enhanced Learning*, *2*(1), 51–74.

Schneider, B., & McDonald, S. K. (Eds.). (2007). *Scale-up in education: Issues in practice* (Vol. 2). New York, NY: Rowman & Littlefield.

Snow, D. A., & Benford, R. D. (1988). Ideology, frame resonance, and participant mobilization. *International Social Movement Research, 1*, 197–217.

St. John, M. (2003). *The legacies of the LSCs.* Panel at the Third Annual Conference on Sustainability of Systemic Reform. Retrieved from http://sustainability2003.terc.edu/do/247/show.html

Wiggins, G., & McTighe, J. (1998). *Understanding by design*. Alexandria, VA: Association for Supervision and Curriculum Development.

Afterschool Matters

Call for Papers

Fall 2013 Issue

Afterschool Matters, a national, peer-reviewed journal dedicated to promoting professionalism, scholarship, and consciousness in the field of afterschool education, is seeking material for the Fall 2013 issue. Published by the National Institute on Out-of-School Time with support from the Robert Bowne Foundation, the journal serves those involved in developing and running programs for youth during the out-of-school time hours, in addition to those engaged in research and in shaping youth development policy.

Afterschool Matters seeks scholarly work, from a variety of disciplines, which can be applied to or is based on the afterschool arena. The journal also welcomes submissions that explore practical ideas for working with young people during the out-of-school hours. Articles should connect to current theory and practice in the field by relating to previously published research; a range of academic perspectives will be considered. We also welcome personal or inspirational narratives and essays for our section "Voices from the Field."

Any topic related to the theory and practice of out-of-school time programming will be considered for the Fall 2013 issue. We invite you to discuss possible topics in advance with us. Suggested topics include:

- Physical activity and healthy eating
- STEM (science, technology, engineering, and math) program delivery or STEM staff professional development
- Expanded or extended learning time and the OST hours
- School-community partnerships that support OST programming
- Innovative program approaches
- OST programs and civic engagement, social and emotional development, arts development, or academic improvement
- Research or best-practice syntheses
- OST program environments and spaces
- Key aspects of program leadership and administration
- OST system-building such as cross-city and statewide initiatives
- Special needs youth in OST
- Immigrant and refugee youth in OST
- Youth-centered participatory action research projects
- Gender-focused research and policy initiatives related to OST

Submission Guidelines

- Deadline is January 15, 2013, for the Fall 2013 issue of ***Afterschool Matters***.
- Submissions should be submitted electronically in Microsoft Word or Rich Text format.
- Submissions should not exceed 5,000 words.
- Include a separate cover sheet with the manuscript title, authors' names, addresses, phone numbers, and e-mail addresses.
- The names of the authors should not appear on the text, as submissions are reviewed anonymously by peers.
- Follow the *Publication Manual of the American Psychological Association, 6th Edition* (July 2009), for reference style guidelines. Present important information in the text and do not use extensive footnotes.

Inquiries about possible articles or topics are welcome.
To inquire or to submit articles, contact:

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