

Afterschool Matters

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Who's Afraid of the Big Bad Core? *The Common Core Standards and Out-of-School Time Programs*

Suzanne Marten, Sara Hill, and Anne Lawrence

The Role of Out-of-School Time in Reducing Hunger and Preventing Obesity

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"Writing Is Not Really Something I Do": Engaging Reluctant Male Writers

Steven W. Garlid



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Cover, pages 13, 21: American Museum of Natural History

Pages 1, 28: Summer CARE Camp of Wareham Public Schools in Wareham, MA. CARE is a 21st Century Community Learning Center summer program at Wareham Middle School serving over 200 children in grades K–8 for six weeks with a special program emphasis on science, technology, engineering, art, and math (STEAM).

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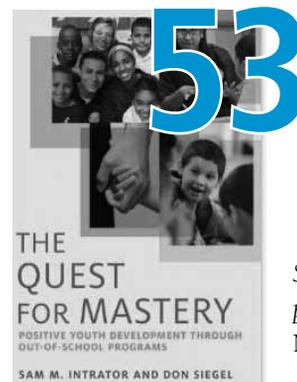
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WELCOME

The mention of “habits of mind” in the first article in this issue of *Afterschool Matters*, “Who’s Afraid of the Big Bad Core?,” reminds me of a backyard baseball game last summer. When my 30-something cousin stepped to the plate, the young players in the field all stepped back, shouting, “Justin’s up, move back.” With a big smile on his face, my cousin dropped his bat and walked to the pitcher’s mound where I stood. He told me that he had been waiting all his life for someone to say that.

It’s easy to grow up believing you are an easy out.

High-quality out-of-school time (OST) programs nurture attitudes and behaviors that lead to productive actions—the habits of mind Marten, Hill, and Lawrence describe. OST programs instill in children and youth positive messages about their lives, their selves, and their potential. These fundamental messages become part of who they are, how they describe themselves, and how they relate to others. Thus, OST programs build the habits of mind that enable young people to succeed through persistent effort and struggle.

The papers in this issue of *Afterschool Matters* reflect many of the vital messages young people are getting from OST programs:

- **You can learn and excel.** Sequencing activities in OST programming helps learners build knowledge in small steps so that everyone can learn, as shown in “Curriculum and Professional Development for OST Science Education.”
- **You can teach each other.** Peer leadership has a role in promoting youth wellness in “The Role of Out-of-School Time in Reducing Hunger and Preventing Obesity.”
- **Girls are natural scientists, too.** “Long-Term Participants” shows how an OST STEM program is changing the science learning trajectory for girls.
- **Boys can write, too.** “Writing Is Not Really Something I Do” shows how following children’s interests and inclinations helps them write more.
- **We will protect you.** “Keeping Children Safe” reminds us that children and youth need caring adults around them to shelter them from harm.
- **We know how to help you develop your potential.** OST program participants depend on having well-trained staff, as described in “Paper Copters and Potential.”

As these articles show, OST programs engage in many and varied aspects of academic and youth development. The OST program may be the only place in some children’s lives where they learn that they are valued and valuable. As we embark on this new program year, let’s make positive messaging one of our own habits as OST workers and leaders.



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Afterschool Matters is a national, peer-reviewed journal dedicated to promoting professionalism, scholarship, and consciousness in the field of afterschool education. Published by the Robert Bowne Foundation and the National Institute on Out-of-School Time, the journal serves those involved in developing and running programs for youth during the out-of-school hours, in addition to those engaged in research and shaping policy. For information on *Afterschool Matters* and the Afterschool Matters Initiative, contact Georgia Hall Senior Research Scientist National Institute on Out-of-School Time Wellesley Centers for Women Wellesley College 106 Central Street Wellesley, MA 02481 asmsubmission@wellesley.edu



Who's Afraid of the Big Bad Core?

The Common Core Standards and Out-of-School Time Programs

Suzanne Marten, Sara Hill, and Anne Lawrence

"I have kids breaking out in tears over homework this year! That never used to happen before."

"Yeah, I know; we have had that happen too. Kids are stressed, teachers are stressed, and now I feel like we are getting stressed. It seems like a lot of the pressure is coming from the Common Core Standards."

"We are not school, so what do these Common Core Standards have to do with us?"

"And what is wrong with the work we do with kids anyway?"

These and similar comments and questions bubbled to the surface at the beginning of a networking meeting sponsored by the Robert Bowne Foundation for out-of-school time (OST) providers in New York City in the fall of 2013. This meeting, organized by the Center for

Education Options and facilitated by Suzanne Marten, was entitled "Introducing the Common Core Learning Standards: What Are They? What Do We Need to Know?" The response was so great that a second session

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SARA HILL is the editor of the OST Hub at Kennesaw State University's Center for Sustainable Journalism. She has conducted research on community-based youth programs in the U.S. and Belarus and has published articles and edited a book in the areas of literacy, afterschool, and community-based education. She worked on a team that documented innovative practices in 21st Century Community Learning Centers for the U.S. Department of Education. She can be reached at sara@sarahill.net.

ANNE LAWRENCE began working for the Robert Bowne Foundation in 1987 and became the program officer in 2002. In 30 years in adult and youth education, she has served as associate director of education for Literacy Partners of New York City and has managed professional development, evaluation, and adult literacy programs at the Literacy Assistance Center, the City University of New York, and the New York Public Library Centers for Reading and Writing.

had to be added to accommodate all the people who wanted to attend, a clear indication of the interest of OST providers in getting to know the standards, considering what to do about them in their programs, and sharing their questions and concerns.

The Robert Bowne Foundation supports the development of quality programs that offer literacy education in the out-of-school hours to children and youth of New York City, especially young people from disadvantaged communities. The foundation's networking meetings, now in their 10th year, offer quarterly forums in which participants from a wide variety of programs across the city can share their work, develop new ideas for their programs, and discuss important issues in the field.

The process of gathering topic ideas from the previous year's networking meeting evaluations and from meetings with the foundation's grantees revealed that the Common Core Learning Standards—New York's version of the Common Core State Standards—were on many OST providers' minds. Funders are increasingly asking grantees how their OST programs are supporting the standards—even though the standards were designed explicitly for in-school education, not for OST. Providers are concerned about being asked to meet academic standards designed for school while still pursuing the traditional focus of OST programs on positive youth development. How can OST programs support academic progress while pursuing their goals, traditions, and mission? This article will demonstrate how understanding the Common Core Standards can support the work of OST providers and the youth and families they serve. In fact, in many ways, the work OST programs do every day is already aligned with the standards.

The Controversy Over the Common Core

Even in the arena of in-school education, the Common Core Standards are the subject of debate (Ravitch, 2013). How should they be implemented? What training and support should teachers receive? How should the standards be taught to children, using what curriculum? How should they be assessed, using what standardized test? This debate is not so much about the standards themselves as about teacher professionalism and high-stakes testing. The effect of the standards on academic achievement remains to be seen.

Meanwhile, OST providers face the challenge of finding ways to support the academic achievement of children and youth while recognizing that OST programs are not—

and should not be—school. OST programs have traditionally engaged young people in positive youth development through the arts, sports, civic engagement, and youth leadership. Though much of this work supports academic learning, it is designed to provide children and youth with enriching experiences they may not find elsewhere. School budgets have cut back sharply on the arts, sports, socio-emotional learning, and other enrichment activities in favor of preparation for high-stakes testing, including for new tests that are advertised as being aligned with the Common Core. In light of this reality, the experiential and hands-on nature of many OST programs can complement school-day academics. OST programming has been seen as an “extended platform” that is “uniquely situated to provide targeted opportunities for students to deepen their learning by applying new concepts through enrichment activities” (Givens, 2014, p. 4).

Respected leaders, practitioners, and researchers in the field disagree about the place of the Common Core Standards in OST programming. A recent article in *Youth Today* (Simonton, 2014) highlighted the controversy. It quotes Jodi Grant, executive director of the Afterschool Alliance, as saying that the new standards take an approach to learning that is well suited to afterschool programs. “There’s a lot we can do” to align with the Common Core, she said (as quoted in Simonton, 2014). Meanwhile, Professor Robert Halpern of the Erikson Institute disagrees. It is the role of schools to deal with academics, he said. “There is no reason afterschool programs should have to relate to standards focused on what schools need to accomplish” (as quoted in Simonton, 2014).

Nevertheless, OST practitioners want to see children and youth thrive academically. Most realize that OST programs play an important role in academic success. Given that the Common Core Standards are now a reality in young people's academic lives, what can—or should—OST programs do to help children and youth meet those standards? The first step to answering that question is to understand just what the standards entail.

What Exactly Are the Common Core Standards?

The Common Core State Standards were initiated in response to the failure of No Child Left Behind to raise the quality of education consistently across states. The National Governors Association (NGA) and the Council of Chief State School Officers (CCSSO) appointed representatives,

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programming.

including educators, to work toward consensus on what the U.S. educational system needs to do to ensure that all youth are “college and career ready.” The group articulated standards for pre-K through 12th grade, beginning with English language arts (ELA) and mathematics (NGA & CCSSO, 2008). The substantial federal funding attached to what have been framed as national standards creates a powerful incentive for states to ratify them (Ravitch, 2013), though states are free to accept or reject the standards. As of December 2013, most states had formally adopted the standards, with a few exceptions. In New York, state education officials tweaked the language in a few places and adopted the result as the Common Core Learning Standards.

Habits of Mind

The Common Core Standards go beyond traditional academics and content to include *habits of mind*: “knowledge, skills, and dispositions that operate in tandem with the academic content” (CCSSO, 2011, p. 5), as illustrated in the box on this page. The standards have a strong focus on achieving 21st century skills, such as “cogent reasoning and evidence collection skills that are essential for success in college, career, and life” (“English Language Arts Standards,” 2014). This emphasis benefits OST programs, as it reflects “skills that youth organizations have long championed (e.g., problem-solving, perseverance, independence, understanding other cultures)” (Devaney & Yohalem, 2012, p. 5).

OST programs often can “accelerate” (Givens, 2014) and support learning because they have more flexibility in their programming and staff than schools do. Indeed, the habits of mind are in line with OST programs’ current practices, traditionally focused on positive youth development, enrichment, youth leadership, and civic engagement. Youth must be able to understand other perspectives and cultures in order to be productive and positive group members. They must be able to respond to varying demands of audience, task, purpose, and discipline to be effective leaders. They must be able to comprehend as well

ELA HABITS OF MIND

According to the ELA Common Core State Standards, “students who are college and career ready in reading, writing, speaking, listening, and language” demonstrate “these capacities of the literate individual”:

1. They demonstrate independence.
2. They build strong content knowledge.
3. They respond to the varying demands of audience, task, purpose, and discipline.
4. They comprehend as well as critique.
5. They value evidence.
6. They use technology and digital media strategically and capably.
7. They come to understand other perspectives and cultures.

Source: Common Core State Standards for ELA, 2010

as critique in order to be engaged in their communities. Focusing on habits of mind “that are now considered instrumental competencies for college and career readiness should increase the relevance of programs and demonstrate their value to school partners” (Devaney & Yohalem, 2012, p. 7).

How the Standards Are Structured

The Common Core State Standards document is a thick tome that requires time and thought to digest. Since the Robert Bowne Foundation’s grant making focuses on literacy development, the net-

working meeting focused on the Common Core Standards for ELA. These standards are grouped according to grade: pre-K–5, 6–8, and 9–12. They fall into sections that generally run across grade ranges: writing, reading literature, reading informational text, and speaking and listening. At the elementary level, an additional section on reading foundations encompasses phonics and basic conventions of English.

As shown in Table 1 (next page), the Common Core Standards can be read “down,” going through all the skills and strategies expected for an age group. The language is consistent across sections. For example, a reading standard asks sixth graders to identify the main idea and supporting details in a text. A writing standard asks that same age group to present a main idea or claim and support that claim with evidence. Similarly, a speaking and listening standard asks sixth graders to orally articulate a position or claim and back it up with reasons, evidence, or details.

The standards can also be read “across,” looking at how a particular skill or strategy develops from kindergarten through 12th grade, as illustrated in Table 2 (next page). Shifting from one age-level descriptor to the next, the language indicates new levels of independence and sophistication. In Table 2, the description of the skill for kindergarten includes the words “with prompting and support.” In first grade, children are expected to use this skill without help. By second grade, children are expected to be able to give more specific information in their an-

Table 1. Reading “Down” Grade 6 Standards

Category	Sample Grade 6 Standard
Reading Literature	Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.
Writing	Write arguments to support claims with clear reasons and relevant evidence.
Speaking and Listening	Delineate a speaker’s argument and specific claims, distinguishing claims that are supported by reasons and evidence from claims that are not.

Source: New York State P–12, 2011

swers. To take another example, by high school, a skill descriptor would include the phrase “opposing viewpoint”; identifying opposing viewpoints would not be expected in earlier grades. The same standards thus are addressed at all age levels, with more sophisticated expectations for older students. This structure helps educators to understand children’s development and plan curriculum accordingly.

The language of the standards is quite general, reflecting thinking skills rather than academic content. What is often misunderstood about the Common Core Standards is that they are *not* a curriculum. They do not tell teachers or practitioners what materials to use. The door is open to a variety of themes and approaches to the standards’ skills and strategies. OST staff are free to develop their own activities to help young people learn and practice to meet the standards.

Relating the Common Core to OST Programming

The initial reaction of participants in the Bowne Foundation’s networking meeting was that the language of the Common Core Standards was not easy to grasp. Participants were not clear on how they should work with the standards. One participant noted that the standards were “high.” Another, looking at a writing standard for second grade, said, “My kids are not here!” She felt that the standard described work her second graders were unable to do. However, when she looked at the continuum of the standard both “across” and “down,” she saw where the children she serves do fit in.

How OST Programs Are Already Addressing the Standards

Participants felt that the language of the standards was unnecessarily dense and academic, obscuring the meaning.

Table 2. Reading “Across” Literature Standard 1

Grade Level	Wording of Reading Literature Standard 1: Details in Text
Kindergarten	With prompting and support, ask and answer questions about key details in a text.
Grade 1	Ask and answer questions about key details in a text.
Grade 2	Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text.

Source: New York State P–12, 2011

They saw terms not often used in OST, such as “narrative” and “multi-modal.” However, as they translated the standards’ language into more common OST terms, they saw that they were fostering these skills and strategies in program activities every day. For example, “collaborative discussion” in the standards for kindergarteners becomes “snack and chat” in an OST program. “Narrative” really means a sequenced story—and OST programs often engage children in storytelling and reading books. A cloud lifted as participants began to see that the standards could be translated into the language of OST culture.

With their new grasp of the Common Core language, participants looked at their own lessons and activities. They were quickly able to identify how the standards aligned with what they were already doing. In fact, working from their own activities and lessons allowed participants to see the standards in action. Then they used the language of the Common Core Standards to describe the work of their OST programs. They realized that OST programs are doing quite a lot in support of the Common Core Standards. For example, participants from Hudson Guild shared the lesson excerpt shown in Table 3 (next page). We added the standards addressed by each component. As shown in the second column of Table 3, the lesson touches on many habits of mind and aligns with several Common Core Standards in the areas of reading literature and of speaking and listening—and these are excerpts from only one lesson! Using this example as a model, participants in the networking meeting began to see what their OST programs could do to support children in meeting the Common Core Standards.

Questions and Tensions

Participants in the networking meeting learned that, with intention and careful thought, OST programs can align their work with the Common Core Standards, supporting the work of schools and helping young people to prepare for college and careers. In order to succeed in this endeavor, the field needs to address the questions and tensions that emerge as providers look for points of alignment and try to design activities that support the Common Core Standards.

The Focus on “Text” in the Core

The term “text” is used consistently across the Common Core Standards at all levels. The common understanding of “text” is written materials: books, articles, online materials such as blogs, and the like. In OST, commonly used texts include films, recipes, games, and art objects, among others. In addition, students participate in highly experiential activities, such as community service and sports. In these activities, they often engage in the work of analysis, com-

pare and contrast ideas or elements, and describe and assess their work. We need to learn to define “text” broadly and to draw clear and intentional connections between the Common Core and the texts and activities used in OST.

How Much OST Programs Should Focus on the Core

The primary mission of OST programs is to help children and youth develop a wide range of skills and abilities and to promote positive youth development. OST programs focus on the whole child rather than solely on academic outcomes. Robert Halpern points out that “children and young people have a variety of developmental needs that schools don’t address” (as quoted in Simonton, 2014). Halpern (2005) identifies a number of ways that OST support young people, developing “capacities and dimensions of self such as creativity, aesthetic sense, growing skill in specific domains, self-expression, interpersonal skill, sense of agency and voice, identification with home and community culture, individuality and relatedness, compassion, and physical vitality” (p. 212). He warns that many OST programs do a disservice to their mission if they say that they will deliver major changes in academic achievement (Halpern, 2005).

The development of social and emotional competencies is a particular strength of the OST field. A solid body of research shows that a focus on socio-emotional learning, rather than just on academics, has a positive causal relationship with school success (Durlak & Weissberg, 2007). This finding suggests that OST programs can address the Common Core while remaining true to their traditions and mission. The question is how to achieve balance between academic progress and socio-emotional development.

Collaborating with Schools to Address the Common Core

OST providers are sometimes considered to be a “second shift” after the school day (Givens, 2014). The problem with the metaphor is that “second shift” staff are rarely trained as teachers, nor are they compensated equitably with the “first shift,” the school teachers. Givens (2014) calls for “regularly scheduled collaborative sessions” that would share learning “across the implicit boundaries between teachers and OST providers, thereby building a comprehensive and cohesive alignment between the adults who are educating and supporting all students” (Givens, 2014, p. 5). In some places, this collaboration has begun to take place (CCSSO, 2011; Devaney & Yohalem, 2012). Since the standards are intended to be addressed in school, communication with schools could help OST providers develop awareness of what children are being exposed to in school so that they can make explicit connections between what they do and what happens during the school day. However, little research documents how districts

Table 3. OST Lesson Components and Common Core Standards

Activity Description	Common Core Standards Addressed
<p>Group leaders will act out a funny skit using two famous characters. When participants hear the key words (<i>friend, frustrated, and passionate</i>), they will do a pre-assigned physical movement associated with that word. Participants will have a group discussion on how these two characters are similar. Questions will include “What do they have in common?” “How do you think each character would solve that scenario?” and “How do you relate to the character?”(10 minutes)</p>	<p><i>Participants are comparing characters as they develop an understanding of the skit and think with their peers about similarities and differences.</i></p> <p>Habits of mind:</p> <ul style="list-style-type: none"> 2) Build strong content knowledge 4) Comprehend as well as critique <p>Grade 3 reading literature standards:</p> <ul style="list-style-type: none"> 3) Describe characters in a story (their traits, motivations, or feelings) 6) Distinguish their own point of view from that of the narrator or those of the characters
<p>Participants will be broken up into two groups for two different plays. Group leaders will each take a group. Group leaders will assign specific roles to participants in their group. Play 1 is “Pocahontas and the New World.” Play 2 is “Christopher Columbus and the New World.” Groups will plan, rehearse, and perform their skit for the group. (23 minutes)</p>	<p><i>Participants are demonstrating independence and effective collaboration as they prepare the play and compare characters. They are performing a play for an audience of their peers.</i></p> <p>Habits of mind:</p> <ul style="list-style-type: none"> 1) Demonstrate independence 3) Respond to varying demands of audience, task, purpose, and discipline <p>Grade 3 speaking and listening standards:</p> <ul style="list-style-type: none"> 1) Engage effectively in a range of collaborative discussions, building on others’ ideas and expressing their own clearly 6) Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification <p><i>Participants are building strong content knowledge about plays by viewing and then performing them themselves; they are also developing knowledge of characters.</i></p> <p>Habit of mind:</p> <ul style="list-style-type: none"> 2) Build strong content knowledge <p>Grade 3 reading literature standard:</p> <ul style="list-style-type: none"> 3) Describe characters in a story and explain how their actions contribute to the sequence of events <p><i>Participants are answering questions and using evidence to support what they say.</i></p> <p>Habit of mind:</p> <ul style="list-style-type: none"> 5) Value evidence <p>Grade 3 reading literature standard:</p> <ul style="list-style-type: none"> 1) Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers <p>Grade 3 speaking and listening standard:</p> <ul style="list-style-type: none"> 2) Determine the main ideas and supporting details of a text read aloud or information presented in diverse media and formats, including visually, quantitatively, and orally

(continued)

Table 3. OST Lesson Components and Common Core Standards (continued)

Activity Description	Common Core Standards Addressed
<p>Participants will work in assigned pairs to compare and contrast how they relate to a character of their choice that they observed in either skit. (10 minutes)</p>	<p><i>Participants come to an understanding of perspective, distinguish between their own perspective and that of the character, and critique the “text” in order to relate to and compare themselves to a character.</i></p> <p>Habits of mind:</p> <p>4) Comprehend as well as critique 7) Come to understand other perspectives and cultures</p> <p>Grade 3 reading literature standard:</p> <p>6) Speak in complete sentences when appropriate to task and situation in order to provide requested detail or clarification</p>

“who are hard-pressed to meet the standards in isolation” (Gonzales, Gunderson, & Wold, 2013, p. 20) assume leadership to engage OST programs in planning and implementing activities to meet the Common Core Standards.

Supporting All Children’s Development

Many children, particularly in low-income communities, need specific supports. Some need English language learning. Others have learning differences or gaps in their educational experience that mean they do not meet academic expectations for their age. OST programs don’t have adequate funding, resources, or expertise to address the full range of children’s needs.

However, one of the advantages of OST is that staff create an environment in which children have a different, often richer, experience from the one they have at school. Children for whom academic work does not go smoothly can experience themselves as capable athletes, musicians, artists, and community members. These experiences contribute to the development of the whole child. The field needs to consider how OST providers can, despite their limited resources, use their strengths to support children who need help to catch up academically.

From “Huh?” to “Aha!”: Reflections and Recommendations

Participants in subsequent Robert Bowne Foundation networking meetings about the Common Core noted changes in their thinking. One program director reported that she approached the standards initially with some trepidation. However, she found that her funding sources required her to delve into them. Through the networking meetings, she realized that she could use the Common Core to articulate her program’s practices and outcomes.

The language of the Common Core also gives us a way to address families’ questions about what their children are

learning and teens’ concerns about what it means to be college and career ready. Some of the media coverage and talk in schools about the Common Core Standards has been fueling panic. However, OST programs could be a voice of reason and clarity in talking to families. The standards also give the field a way to talk with schools about what they do, what we do, and how we support each other.

Another critical question is, “How can we get OST staff on board?” Staff need professional development that helps them to understand what they need to know about the Common Core Standards and how to integrate them into their practice. The response to the Robert Bowne Foundation networking meetings is evidence that OST staff need help in exploring the standards, translating them into plain language, and connecting them to their current practice. Staff also need long-term, in-depth professional development in designing curriculum and planning lessons that align with the Common Core Standards in ways that are appropriate for OST programs’ goals and mission.

Some researchers have suggested that this professional development should be supported by the schools. Givens (2014) notes that “states and districts can structure frequent and robust opportunities for teachers, principals, and OST program staff to learn and work together” (p. 5). Gonzales and colleagues (2013) suggest that districts invite OST staff to grade-level planning sessions and share information and resources on the Common Core Standards. Devaney & Yohalem (2012) recommend that OST practitioners “become knowledgeable” about the standards, “communicate with school staff about academic alignment” and “consider joint training and planning time” (p. 6).

These recommendations mirror previous calls for better and more systematic strategies to improve the partnership between OST programs and schools (Little,

2009, 2013), but the relationship remains tenuous and problematic. Even if OST programs incorporate the Common Core Standards, there is no guarantee that this problematic relationship will improve or flourish. The work of building the relationship is an ongoing task that generally falls on OST programs. Meanwhile, schools are spending considerable funds on staff development that could also include OST practitioners as partners in working to meet the Common Core Standards.

As OST programs continue to negotiate the balance between their overall mission of positive youth development and their desire to also support academic achievement, the Common Core Standards can have a place in the discussion. However, OST practitioners must start with a close look at the work they already do to see what might align with the standards. As one OST provider said following the first networking meeting, “In two hours we went from ‘Huh?’ to ‘Ah, I get it!’” She and her fellow meeting participants discovered that the Common Core Standards are nothing to be afraid of. The standards are both understandable and relevant to the OST community. Looking at programs’ curriculum, activities, and lessons alongside the Common Core Standards reveals that OST programs are already doing high-quality, standards-aligned work with children and youth.

Some of the media coverage and talk in schools about the Common Core Standards has been fueling panic. However, OST programs could be a voice of reason and clarity in talking to families. The standards also give the field a way to talk with schools about what they do, what we do, and how we support each other.

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The Role of Out-of-School Time in Reducing Hunger and Preventing Obesity

by Daniel W. Hatcher, Crystal Weedall FitzSimons, and Jill R. Turley

One in three children in this country is overweight or obese (Ogden, Carroll, Kit, & Flegal, 2012). One in five children lives in food-insecure households that struggle to put food on the table (Bethell, Simpson, Stumbo, Carle, & Gombojav, 2010; Coleman-Jensen, Nord, & Singh, 2013). Both problems affect millions of children. Both can occur in the same child at the same time. Both are linked to poor academic performance, behavior problems, and high rates of school absenteeism (Mustillo et al., 2003).

To address these issues, the Alliance for a Healthier Generation's Healthy Out-of-School Time initiative has been working since 2011 in eight cities to support the adoption of the National Afterschool Association's healthy eating and physical activity (HEPA) standards (Weicha, Gannett, Hall, & Roth, n.d.) by before-school, afterschool, and summer programs. From

Huntington Park, California, to Miami-Dade County, Florida, dedicated out-of-school time (OST) leaders

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are championing health and wellness and finding ways to include young people in the conversation. In addition, a national coalition of organizations including the Boys & Girls Clubs of America, the YMCA of the USA, and the National Recreation and Park Association have been collaborating to empower frontline staff and site directors to advocate for healthy eating and physical activity.

However, the conversation isn't just about obesity prevention. The Food Research Action Center, a national anti-hunger advocacy organization, has been working with these organizations to encourage use of federal nutrition programs to provide snacks and meals to some of the nation's most at-risk youth, with the dual goal of reducing hunger and preventing obesity. The HEPA standards' emphasis on high-quality evidence-based nutrition enrichment further strengthens this bond. This article explains the link between childhood hunger and obesity, describes the importance of high-quality nutrition education, highlights evidence of success from the Healthy Out-of-School Time Initiative, and discusses ways to engage youth in implementing the HEPA standards.

The Connection Between Obesity and Hunger

Obesity affects children regardless of gender, race, or income, but children in low-income or food insecure households are more likely to be affected (Eisenmann, Gundersen, Lohman, Garasky, & Stewart, 2011; Singh, Siahpush, & Kogan, 2010; Townsend & Melgar-Quinonez, 2003). Low-income families face many challenges including limited access to healthy and affordable foods, limited opportunities for physical activity, easy availability of fast-food restaurants (especially near schools), and heavy exposure to food-related marketing (Kumanyika & Grier, 2006; Larson, Story, & Nelson, 2009; Powell, Slater, & Chaloupka, 2004). Also, people who suffer even moderate food deprivation may overeat when food is available, resulting in weight gain (Smith & Richards, 2008).

An important solution for children experiencing both hunger and obesity is increased access to the meals and snacks provided through federal child nutrition programs (White House Task Force on Childhood Obesity, 2010). In tandem with school breakfast and lunch, meals and snacks provided by OST programs can help reduce

hunger. They can also improve nutrition, because the food provided must meet federal nutrition standards.

The Importance of Nutrition Education

Nutrition education is an important component in creating a healthy eating environment. Through evidence-based nutrition education, OST programs can teach youth to exchange the high-calorie foods and beverages they choose today for healthier alternatives, both now and in the future.

A good nutrition education curriculum:

- Is evidence-based and reflects sound nutrition science
- Does not support a particular food industry or food sector
- Is delivered by qualified personnel

In addition, OST programs can help youth try out new foods and beverages through taste-testing and hands-on activities. The afterschool meal and snack programs require educational and enrichment activities; most summer food sites also offer programming. OST providers can conduct nutrition education as a standalone program or

weave it into other enrichment activities, such as arts and crafts, math and literacy, or life skills like cooking.

Success Stories From the Field

As the Alliance for a Healthier Generation works across the country, it collects success stories from sites implementing the HEPA standards. The OST programs profiled below are examples of sites that are using the standards to strengthen

healthy eating and physical activity practices.

SquashSmarts, an OST provider in Philadelphia that teaches children to play squash, has seen firsthand how to move easily from theory to realization. Given its emphasis on physical activity, SquashSmarts decided to use the HEPA standards to promote healthy eating. SquashSmarts is also developing its own evidence-based nutrition education program, NUTRIkeys. The curriculum's nine steps combine themed group lessons with individual projects. When youth complete a lesson and project, they receive one of the letters spelling NUTRIkeys. Staff reported that, during the first implementation of the first lesson, "The 99 Healthiest Foods," students discussed the healthfulness of their favorite foods. After they completed a gallery walk displaying the 99 healthi-

Through evidence-based nutrition education, OST programs can teach youth to exchange the high-calorie foods and beverages they choose today for healthier alternatives, both now and in the future.

est foods in a squash court, they enjoyed a quiz game to learn more. For the first project, students researched specific guidelines on any three of the 99 foods. SquashSmarts staff can already see the success of this curriculum; youth asked to play “The 99 Healthiest Foods” again the following day. Further, the students remembered a substantial number of the foods when asked during a team meeting days later.

Boys & Girls Club of Philadelphia at Wilson Park is involving youth in family and community engagement. The club elicited ideas from youth for sharing information about healthy eating and fitness. Youth members proposed creating a Facebook page to reach youth and families. They created a “Like” campaign for the club’s Facebook page and suggested using Twitter and Instagram hashtags to grow their community audience. Additionally, the Facebook page has maintained youth engagement; youth involved in the program have continued to post and share information with the community.

Vietnamese Initiatives in Economic Training (VIET) in New Orleans made it a priority to supply youth with healthy meals during its six-week summer program. After researching local resources, VIET applied to be a summer food site through the Second Harvest Food Bank, which acts as a sponsor for the federal Summer Food Service Program. Initially, VIET staff were concerned about the amount of paperwork required to apply for the program, but they completed the process with the support of a contact at Second Harvest and qualified for the feeding program. VIET is now able to provide nutritious, healthy meals daily for every camper in its summer program.

Sacramento START (Students Today Achieving Results for Tomorrow), an OST provider in Sacramento County, California, is committed to implementing the HEPA standards. Three START sites constructed concrete action plans to support their wellness goals. Youth have cultivated new fruit and vegetable gardens, visited local farms and grocery stores, and developed mini-farmers markets where they learn about local and sustainable healthy foods. Youth and their families now have greater access to fresh produce, and START staff have seen kids’ fruit and vegetable consumption increase during snack and supper times (which are funded by federal child nutrition programs). To sustain these healthy behaviors, Sacramento START implemented a six-week series of nutrition education classes for families. Because of the enthusiastic feedback the program has received from children and families, it plans to apply these exemplary practices in all its sites, benefiting more than 4,000 youth.

Building Momentum Through Youth Engagement

These success stories reveal tremendous opportunities to engage youth in obesity and hunger prevention. Consider the story of a teenager named Ethan, from Menlo Park, California. Ethan is an alumnus of the Alliance for a Healthier Generation Youth Advisory Board, a group of enthusiastic young people from across the country who are encouraging their peers to eat better and stay active. During his tenure on the Youth Advisory Board, Ethan decided to champion nutrition education and facilitate a healthy-living course called empowerME4Life (Alliance for a Healthier Generation, 2013) with younger students. Ethan also used his interest in technology to create videos that encouraged youth to share the importance of eating fruits and vegetables and of drinking water, 100 percent fruit juice, and low-fat milk.

Organizations seeking to drive the movement toward nutrition education in OST should consider how to find their Ethan and integrate youth leadership into their implementation of the HEPA standards. They might consider the following questions:

- How can we partner with young people to build healthier places and engage youth in making healthy decisions?
- How can we involve youth in program design and implementation?
- What logistical issues should we address, such as providing healthy meals and snacks through the federal children nutrition programs?
- How can we position young people to tell their stories and build momentum?

This work can be challenging, so organizations should seek out collaborators and other networks in their community that promote positive youth development. It’s important to celebrate every small success and focus on continuous improvement. The National Afterschool Association HEPA standards provide a comprehensive framework, and youth engagement provides a powerful mechanism for building healthier communities.

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Long-Term Participants

A Museum Program Enhances Girls' STEM Interest, Motivation, and Persistence

by Jennifer D. Adams, Preeti Gupta, and Alix Cotumaccio

“Had I not been a participant in Lang, I don’t think I would have pursued biomedical engineering in college. I definitely would have been intimidated by it and perceived it as an unapproachable subject. My science background, developed though years at Lang, gave me confidence to succeed at Johns Hopkins through a very difficult freshman year.”

As an alumna of the Lang Science Program at the American Museum of Natural History shared this sentiment, others in the focus group nodded in agreement. They chimed in with their own stories of having built perseverance and confidence in the multi-year Lang program. All of these Lang alumnae were either majoring in STEM (science, technology, engineering, and math) fields or beginning STEM careers.

Out-of-school time (OST) science programs play an important role in influencing the trajectory of science learning for many young people. OST programs are especially important for students from groups un-

derrepresented in science, who, more often than not, attend schools with inadequate science education resources (Rahm, 2008). Programs like Lang Science have great potential for young women of color, who often have to grapple with both race- and gender-based barriers to STEM careers (Modi, Schoenberg, & Salmond, 2012).

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Over the last ten years, OST science programs have multiplied to increase young people's exposure to science (Bell, Lewenstein, Shouse, & Feder, 2009). However, there are still not enough opportunities for *long-term engagement*, which is essential to move youth from having interest in science to having the skills, knowledge, and self-efficacy to pursue careers in science (Hidi & Renninger, 2006). This article describes findings from exploratory research conducted to document the experiences of a small group of young women of color who participated in a museum-based OST program during their middle and high school years. We were particularly interested in learning how their long-term participation in the Lang Science Program mediated their developing interests and identities as people who like science, understand science, want to do science, and can persevere in STEM majors and careers.

Underrepresentation of Women in Science

Underrepresentation of African-American and Latina women in STEM fields is a long-standing issue. The seminal *Double Bind* report of 1976 identified the inequities in STEM fields for women of color (Ong, Wright, Espinosa, & Orfield, 2010). Since that initial report, the numbers of women of color pursuing STEM careers has increased. However, this progress has been "uneven and inconsistent," and "disturbing patterns of racial and gender stratification by STEM discipline" persist (Malcom & Malcom, 2011, p. 165). Although a growing body of empirical research examines the experience of women of color in STEM, research on the environments and experiences that allow women of color to pursue and persist in STEM majors and careers is still needed (Ong et al., 2010)—particularly at the transition points between high school and undergraduate studies (Modi et al., 2012) and beyond to graduate studies.

Museums and STEM Learning

Museums have long played a role in engaging underrepresented children and youth in STEM (Bell et al., 2009). The museum context allows youth to access science in personally meaningful ways, develop positive science-related identities, and, often, pursue science careers (Adams & Gupta, 2013; McCreedy & Dierking, 2013). Middle school is a critical time when youth begin to make decisions about curriculum choices for high school (Akos, Lambie, Milsom, & Gilbert, 2007; Tai, Liu, Maltese, & Fan, 2006). During high school, they solidify those decisions and make choices about postsecondary education based on their career interests. OST STEM

programs can play a critical role in supporting that decision making. Alumni of OST programs often report increased understanding of different types of STEM careers and of how to apply their own interests and talents to possible careers (Sickler & Johnson, 2009).

Many museums offer a continuum of OST programs—including summer camps, afterschool programs, weekend programs, and internships—as youth move from elementary to high school. Often these are stand-alone programs: Kids apply for each new experience, essentially carving their own STEM pipeline. Intuitively, program staff know that youth who participate in a continuum of STEM experiences over time undergo transformations that are not possible with school science alone.

However, there are many challenges in documenting the effects of museum programs. For one, the pipeline youth carve out may be circuitous. They may pick from a menu of programs within one museum and then participate in programs with other organizations, only to return to their initial institution a few years later. Such pathways are not bad, but they make it hard to document impacts and attribute them to specific programmatic factors. In addition, the quality and scope of programs can vary, even within an institution. Although reviewing curricula and sharing best practices are goals for virtually all institutions, the barrier is finding time for staff to engage in these critical dialogues. Frequent staff turnover also subverts program continuity and long-term adult-youth relationships. Finally, unlike schools, museums do not have robust systems for keeping track of individual student data across programs.

Lang Science Program addresses some of these limitations. Lang is a multi-year program through which youth move in cohorts. It is intended to support youth who are traditionally underrepresented in STEM. True, impact can be rarely attributed to one program, and learning takes place across all the spheres of a young person's life. However, examining the experiences of young women of color who participated in this long-term program allows us to connect aspects of that program to the participants' STEM-related career choices, interests, and beliefs.

Our primary research question was "In what ways does long-term participation in OST science programs shape the interest, motivation, and ability of young women of color to pursue and persist in STEM majors?" We used a retrospective approach in which we asked participants to reflect on their experiences in the Lang Science Program. A narrative approach to data analysis enabled us to uncover themes about how these young women built strong interests in STEM and developed

related identities over the years, including how they navigated any challenges they encountered.

About the Lang Science Program

The American Museum of Natural History has a continuum of programs that are designed to attract children from age 2 all the way through postsecondary education. The Lang Science Program is designed so that youth begin in sixth grade and continue until high school graduation. Youth apply through a competitive process. Since the time commitment is long, the program attracts girls and boys who are motivated in science but may not have the resources to pursue their interests outside of school. The program meets for three consecutive weeks during the summer and every other Saturday during the school year, for approximately 165 contact hours per year. The teaching staff, who serve as mentors as well as instructors, are experienced STEM educators, hold doctoral degrees in a STEM field, or both.

Curriculum and Pedagogy

The curriculum begins in middle school with a spiraled focus on three areas of science in the museum: astrophysics with Earth and planetary science, anthropology, and biodiversity and conservation science. In high school, elective courses continue the focus on the content themes, many of which relate to special exhibits at the museum. All learning experiences include hands-on activities, scientist talks, visits to the museum's behind-the-scenes research labs and collections, and field trips. Starting in eighth grade, the youth work in groups to carry out an authentic science research project each year. Program staff choose research topics that span the museum's areas of expertise and are broad enough to give youth flexibility in what they investigate. Another component of the program is a college and career readiness curriculum for students in grades 11 and 12. As of June 2013, the program had graduated eight cohorts of young people. Though graduation rates were lower in the early years, revisions in program design have brought the current retention rate to approximately 85 percent.

Lang's pedagogical approach gives middle school students structured experiences that expose them to many different topics. In the higher grades, the program invites youth to direct their own learning experiences;

they choose their electives and their research groups. Older high school youth engage in activities that support them to decide where to go to college and what to study. This intentional scaffolded design is supported by recent studies (Deschenes, Little, Grossman, & Arbreton, 2010) showing that middle school youth need structure and exposure to many different sciences, while older youth need more focused, self-directed experiences that give them greater responsibility, deepen their content knowledge, and help them plan their future.

The program design is dynamic, evolving to strengthen youths' experiences. For example, the college and career readiness piece did not exist when the program started; it was added based on alumni feedback.

Another way the program evolved was to develop a more explicit scaffolding structure in the middle school curriculum so that instructors could build on youths' growing knowledge and skills.

Developing Science Identities

When done well, STEM OST programs engage youth in rigorous, high-quality, and purposeful activities (Gupta, Adams, & Dierking, 2011). Youth become actively involved in producing scientific culture as they come to understand

science as a meaningful part of their lives (Bell et al., 2009). In the Lang Science Program, interactions among peers, museum educators, and scientists allow for authentic learning. Youth learn and participate in the culture of science, but they also come to realize that they can contribute to science. They simultaneously learn science, do science, and develop a science *affinity-identity*—that is, they learn not only to like science but also to view themselves as active participants in the scientific endeavor (Gray, 2013). Having a science affinity-identity helps them to make career choices that are congruent with how they see themselves contributing to the science community. The place where this learning occurs is important, because interest development is context-dependent (Hidi & Renninger, 2006). The resources museums offer—exhibits, collections, educators, scientists—mediate the learning that takes place. Without them, the program design and learning experiences would be quite different (Bell et al., 2009; Adams & Gupta, 2013). This context, together with ongoing participation in a science-rich learning community, mediates the development of sci-

Our primary research question was “In what ways does long-term participation in OST science programs shape the interest, motivation, and ability of young women of color to pursue and persist in STEM majors?”

ence identities in young people as they learn science in multiple contexts over time.

Studying the Experience of Lang Alumnae

We invited eight female alumnae of the Lang Science Program, mostly from underrepresented groups, to participate in the study. Of the six who agreed to participate, three were African American, one was Latina, one was South Asian, and one was European American. For this exploratory study, we wanted to collect qualitative data from a small group in order to generate themes that we will later investigate in more formal longitudinal research with a larger sample. We held a focus group at the museum where we invited participants to reflect on their experiences in the Lang program and to share their post-graduation successes and challenges with science-related activities. We prompted discussion with questions but did not limit the direction of the conversation. To promote dialogue, we also contributed our own experiences as researchers, educators, and science learners and practitioners. We probed more deeply into themes that emerged from the focus group with follow-up individual interviews and e-mails. The focus group and interviews were digitally recorded. An additional data source was interviews with museum staff who witnessed the participation of the young women over time.

Through the process of re-storying, “reorganizing the narratives into some general type of framework” (Creswell, 2007, p. 56), we looked for patterns in the young women’s STEM participation in context of the research questions. Grounded theory analysis (Strauss & Corbin, 1998) allowed us to generate themes. We began with open coding of the narrative to establish baseline descriptions of the emerging themes. Then we moved to a constructivist (Charmaz, 2005) framework, which recognizes the centrality of researchers’ prior experiences with and perspectives on the phenomena and their relationships with participants (Creswell, 2007).

What Long-Term Participation Contributed to Science Identity

The primary theme in our data was that the young women felt a sense of belonging both to the program and to the museum. The words “cool” and “comfortable” came

up often. The young women felt that they had access to unlimited science resources at the museum. We can sum up the relationship between long-term participation in the Lang Science Program and the young women’s STEM affinity-identities and career trajectories in four key themes:

- Building a collective identity
- Belonging in a physical place
- Broad exposure to science topics and careers
- Moving from the museum to college

Building a Collective Identity

Building a collective identity, a sense of group membership with like-minded peers, emerged as an important theme in the study. Countering the narrative that being smart and getting good grades isolates teens from their peers in urban schools (Ogbu, 1992), Lang offered participants a space to nurture their science affinity-identities and develop relationships with others who held similar interests and goals. As one participant noted:

I honestly felt like I was meeting people like me. In middle school I loved science and talked about animals and the Discovery Channel all the time, and everyone was just, like,

“You’re a weirdo.” But when I came here I didn’t feel like a weirdo anymore.

For the young women in our study, who were at times outsiders at school because of their science interests, the museum program provided a space where they could bond with peers who shared an excitement about science and where it was safe to, as one participant put it, “be a nerd.” Being recognized by others as a certain “kind of person” is important in developing and confirming identities (Gee, 2001). Carlone and Johnson (2007) found that it was important for women of color to be recognized as scientists by others. The young women in our study belonged to a collective of emerging scientists and science-minded people.

When asked why they returned year after year, the young women consistently gave non-academic reasons, saying, for example, “[You] didn’t want to miss a day because you thought you would miss something cool....” That cool thing might have been a behind-the-scenes visit to the dermestid beetles, but it could also have been

The primary theme in our data was that the young women felt a sense of belonging both to the program and to the museum. The words “cool” and “comfortable” came up often.

the appearance of a plate of gourmet sandwiches in the classroom or an instructor doing or saying something humorously memorable. The focus group participants shared many such stories, starting with the phrase, “Remember when...?” These cool things may not have been planned or have contributed to the program’s science-related objectives, but they produced solidarity and a shared identity as a group of young women who have fun and love science. Months and years later, these stories were points of remembrance that continued to bind the group together. The excitement of creating such social experiences kept study participants attending regularly and fully engaged with the program.

Study participants told us that the collective identity they built in the Lang Science Program helped them continue their studies in college in spite of obstacles they encountered. Some noted that the shared identity and peer support continued in college even though they were attending different schools. They recounted going through difficult times in college, as we explore in more detail below. In these difficult times, they thought back to their Lang experiences and felt that, as one said, “I couldn’t see myself doing anything else.” The identity they built in the program helped them to persist through self-doubt.

Belonging in a Physical Place

The collective identity participants developed in Lang extended to a sense of belonging to the museum both as a physical facility and as a community of science-minded people. The large number of contact hours in the program enabled participants to take advantage of many diverse experiences at the museum, many of which took students behind the scenes, both at the museum and on field trips. One study participant said:

I liked all the opportunities it gave you. We went to all kinds of behind-the-scenes [spaces]. I remember this one day, there was this huge bottle thing, and they opened up and there was a 20-foot lizard thing. And it was really fun and interesting. And it wasn’t a classroom-type thing.... The trips they took us on were totally different from what we would do in school....

Lang students receive museum IDs that give them access to floors that are inaccessible to the general public. They gain an intimate knowledge of the physical facility, encountering “secret” staircases and old exhibits that ordinary visitors never see.... One young woman noted that this access made her feel both “special” and “powerful.”

Lang participants met science professionals in various departments and roles in the museum. They also attended social functions where they engaged informally with, as one young woman put it, “people around the museum [who are] genuinely liking what they are doing in the science field.” These interactions, both formal and informal, allowed participants to develop professional communication skills and build social networks with adults in the field. The program also gave them the confidence to approach these adults for assistance after the program ended. For example, one study participant recounted that she e-mailed the director of one of the museum’s scientific centers to ask for a research internship. She said that she would never have had the courage to do so if she had not been familiar with the museum and its scientists or learned to speak with adults in professional settings. Another student who did a research project with a museum scientist while in Lang continues to stay in touch with her mentor, who is also a woman of color. This young woman said that she really values her relationship with the scientist and her connection back to the museum.

Lang students receive museum IDs that give them access to floors that are inaccessible to the general public. They gain an intimate knowledge of the physical facility, encountering “secret” staircases and old exhibits that ordinary visitors never see. Students who take on leadership roles get magnetic badges that allow them a higher level of access to elevators and offices. One young woman noted that this access made her feel both “special” and “powerful.” The ID, with its special access to the physical space, was a symbol of belonging. It gave study participants a sense of ownership of museum resources and of agency in relation to the science content and processes behind the public exhibits. Coupled with their long-term participation, the ID card helped the young women develop identities as people who participate in the production of science while building social capital from their associations with museum personnel. The museum ID also allowed program participants, as one put it, to “get vouchers and bring our families and friends here” free of charge. These young women took pride in their association with the

museum and became its ambassadors, inviting their friends, families, and even teachers to visit.

Broad Exposure to Science Topics and Careers

An important part of building a science affinity-identity is learning what one does and does not like. All too often, young people are taught to view science as a lab-based endeavor. However, the young women in our study said that their exposure in the program to various ways of practicing science broadened how they defined science careers. They learned that science careers include not only research and teaching but also science writing and communication, outreach, and many others. One study participant described herself as not being “a lab work type of person,” adding that she “enjoyed being in the office and analyzing stuff.” She discovered this preference when she interned on a citizen science project in one of the museum’s departments, where her work involved working on a computer and doing outreach. This experience, she said “changed what I wanted to do in life,” sending her on a trajectory into environmental studies.

Participants also learned that science includes not only the major fields such as biology, physics, or Earth science, but also sub-disciplines and interrelated disciplines such as astro-biology or nanotechnology. Experiencing the many disciplines of science helped the participants develop science identities that were congruent with their individual personalities and interests and to think creatively about their career choices. One participant summed it up:

The good thing about Lang [is that] we took so many classes on so many subjects. . . . I got to learn so much about everything in science. . . . I learned what I like and what I don’t like. [I] got exposed to everything.

At its core, the Lang curriculum is about teaching youth to develop the critical thinking and problem-solving skills necessary both for scientific investigation and for 21st century citizenship. Over many years of thinking and viewing the world in scientific ways, the young women in our study developed fluency in the culture of science. As one said, “[The program] got me used to being outside and doing things; it made me comfortable in the science field.”

Another young woman described an experience that changed her career trajectory. After graduating from Lang, this young woman went to a liberal arts college and majored first in economics and then in philosophy because, as she said, she “did science for a while and want-

ed to try something different.” During the summer, she came back to Lang to work as a teaching assistant. When a program participant had a seizure, she accompanied him to the emergency room. The way the emergency room doctor questioned the youth “reminded me of the Lang program. . . . [The doctor was] an investigator. . . . This was a turning point for me and made me realize that I loved science.” She changed her major to biology and is now doing cancer research data management in a renowned local research hospital.

For other study participants, the specific experiences that influenced their decisions to consider STEM careers may not have been as clear cut. However, all of them agreed that, as they gained a true understanding of what it means to do science, science became a part of who they are. They described science as their “comfort subject” and the museum as their “second home.”

Moving from the Museum to College

For several focus group participants, college presented many challenges. For one, they were not prepared for the culture of science as practiced in the “gateway” or “weeding-out” courses. One young woman started out in chemical engineering at an Ivy League college but found it very competitive and male dominated. She switched to biochemical engineering, where there were “more girls.” Though she was more comfortable there, she still felt that “everyone was looking out for themselves” and that it was “competitive and cut-throat”—in contrast to the museum, where she had experienced a sense of community. Another Lang alum majored in forestry in a rural college, where there were “a lot of girls but not a lot of minorities.” The few minority-group students “stayed together, and the other students did not talk to us. . . . We were left out of study groups.” In contrast, the Lang program offered a collegial and nurturing environment where students engaged with supportive adults and worked in peer groups that included girls and boys of different ethnicities. All but two focus group participants described facing isolation, competitiveness, and an impersonal environment as STEM majors. Furthermore, they felt their professors were not accessible.

Studies have shown that, in light of such college experiences, underrepresented students often switch from STEM majors or drop out of school entirely (Bayer, 2011). When we asked these young women what helped them to persist, they cited several factors, including their participation in Lang. One focus group participant said that her “ego” kept her going: “I did not want to fail out of school. My mother also pushed me.” She added

that reflecting on her Lang years helped her to remember that she was “smart and doing science since middle school.” Another young woman said, “When I was in denial about science, I thought about how much I loved it at Lang, and it kept me going.” These young women persisted in STEM not only because of family support but also because, having gone through a rigorous museum program, they knew they were capable. Furthermore, they were committed to doing science because of their years at Lang.

Offering a Continuum of Participation

In the recent report *Cascading Influences*, McCreedy and Dierking (2013) examine the long-term effects of STEM OST experiences on girls. Like us, they used a retrospective analysis of young women’s memories and reflections to determine the long-term effects of OST STEM participation. They noted, “If our findings showed that program experiences were exceedingly memorable and long-lasting, this would be an indicator of the potential learning and evidence for the cascading influence of these experiences” (p. 9). They use the term “cascading influences” to describe how experiences that young women have in multiple areas—home, school, OST, college, and so on—“build on one another, as well as connect to and reinforce the countless other experiences in a woman’s lifetime” (p. 3).

This concept resonated with our interest in the effects of long-term OST STEM experiences—what we call a “continuum of participation” (Adams & Gupta, 2010)—on the college major and career choices of the young women in our study. Our study offers a window into how a continuum of participation can influence early choices that lead to successful STEM careers. Our results show that long-term participation in the museum’s OST program helped these young women develop positive STEM identities, confidence in their ability to do science, and persistence in the face of challenges.

The design of the Lang Science Program is critical to the effectiveness of long-term participation. Lang offers diverse STEM-related experiences, allowing participants to engage in different ways of practicing science. Plotting out such experiences over several years, the program

enables participants to delve deep into areas that interest them. In addition to traditional lab and research-based activities, Lang gives young women (and men) opportunities to interact with science writers, administrators, artists, lawyers, and others who are engaged in science beyond doing research. Meetings with scientists are woven into the curriculum in ways that feel integral to the science learning objectives. For example, in a course about extinct marine animals, participants take a field trip with a museum paleontologist to collect fossils that they then use, back at the museum, to help them build scientific models. Youth are exposed to scientists and their work by working alongside them. Smaller programs that don’t have access to the resources of a large research-based institution may be able to provide similar opportunities by reaching out to the local scientific community.

McCreedy and Dierking (2013) found that the unique adventures and social connections of the STEM programs they studied were particularly memorable to the young women they surveyed. Our study found that similar experiences led to social bonding and the development of collective science affinity-identities. Because Lang participants move through the program in cohorts, the young women developed peer relationships that lasted many years. Such continuity can be unusual in urban areas, where young people may not stay in school with the same peer group for long. The long-term social bonding fostered at Lang allowed the young women to create memories and develop

connections to peers and adult staff. These memories and connections provided a source of strength alumnae could draw on when faced with challenges in college.

One study participant who is currently employed in science said, “If I didn’t do Lang, I don’t think I would be doing science right now!” This and similar kernels of evidence suggest that long-term OST STEM programs can provide young women of color with key identity-building experiences to help them persevere in college and beyond.

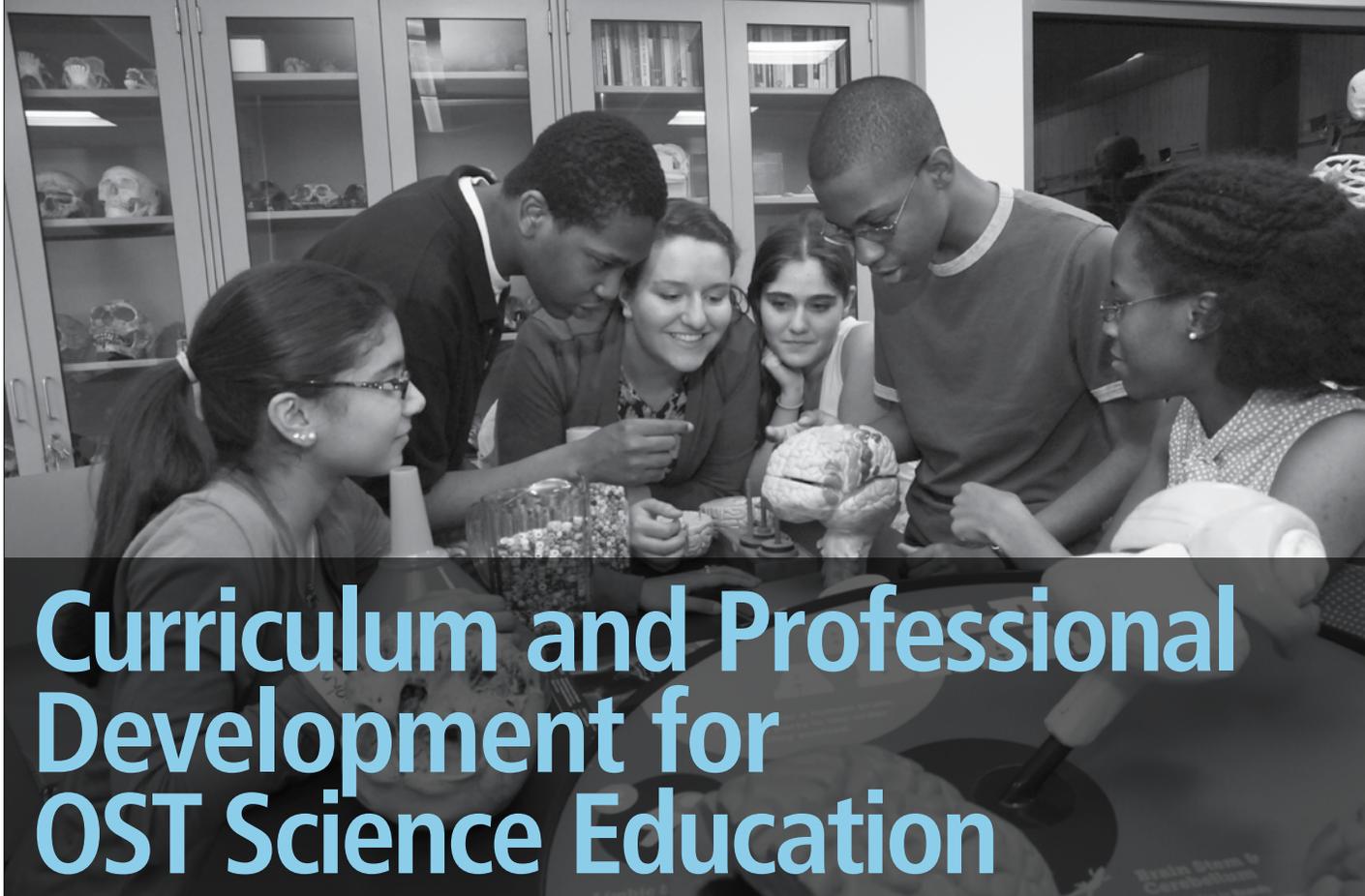
These young women persisted in STEM not only because of family support but also because, having gone through a rigorous museum program, they knew they were capable. Furthermore, they were committed to doing science because of their years at Lang.

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Curriculum and Professional Development for OST Science Education

Lessons Learned from California 4-H

by Steven M. Worker and Martin H. Smith

A wide variety of out-of-school time (OST) programs across the U.S. offer science education opportunities that cover many scientific disciplines and use diverse pedagogical practices (National Research Council [NRC], 2009). However, to improve youth's scientific literacy, OST educators need to "have the disposition and repertoire of practices and tools at their disposal to help learners expand on their everyday knowledge and skill to learn science" (NRC, 2009, p. 309). Thus, OST educators need both essential pedagogical skills and high-quality curriculum materials.

Grounded in literature on best practices in science education, this article describes a systematic and intentional approach to developing OST science curricula and professional development models. Examples from the California 4-H Science, Engineering, and Technology Initiative demonstrate promising practices in action.

How the 4-H Youth Development Program Strengthens Scientific Literacy

4-H is a national community-based youth development organization administered through the Cooperative Extension System, an educational partnership among the U.S. Department of Agriculture (USDA), state land grant universities, and county governments (Kellogg Commission on the Future of State and Land Grant Institutions, 1999). Grounded in Cooperative Extension's

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mission and history related to agriculture, science, mechanical arts, and education, county-based 4-H programs provide hands-on, experiential education opportunities to youth in all 50 states and the District of Columbia (USDA, 2003).

In response to research that indicates low levels of scientific literacy among K–12 students in the U.S. (National Center for Education Statistics, 2011), the national 4-H program strengthened its commitment to science education by introducing the 4-H Science Mission Mandate (Kress, McClanahan, & Zaniewski, 2008). With the goal of improving scientific literacy among youth, 4-H Science provides coordinated plans of action to state 4-H programs. Specific areas of focus include curriculum development; improved professional development for staff and volunteers; enhanced development of local, state, and national partnerships; systematic program evaluation; and targeted funding development (Schmiesing, 2008).

In support of 4-H Science, the California 4-H Youth Development Program established the 4-H Science, Engineering, and Technology (SET) Initiative (University of California Agriculture and Natural Resources [UC ANR], 2008). Two key goals of the initiative are to:

- Develop curricula that meet the environmental and social needs of Californians, as outlined in the UC ANR *Strategic Vision 2025* (Regents of the University of California, 2009)
- Build staff capacity through effective professional development for informal educators

Developing Curricula

High-quality curriculum materials are critical for effective science education. According to Tyler (1949) and Wiggins and McTighe (2005), curricula should:

- Be based on identified needs
- Include targeted learning objectives
- Organize content to build learning over time
- Be structured around effective approaches to teaching and learning
- Provide opportunities to evaluate outcomes
- Include explicit, real-world applications
- Provide opportunities for focused reflection

Inquiry, a constructivist process, engages youth in learning and applying science content in ways that have been shown to be effective in fostering scientific literacy (Beerer & Bodzin, 2004). Activities are sequenced to “spiral” major concepts, revisiting and reexamining them over several lessons so that learners build knowledge in multiple small steps (Bruner, 1996).

A curriculum should be more than a list of facts to be memorized; rather, the content should present major scientific concepts in a systematic fashion (Bybee, 2002). Additionally, science curriculum content should emphasize the development of scientific abilities, such as asking questions and defining problems; planning and implementing investigations; and collecting, analyzing, and interpreting data (Bybee, 2002; Bybee, 2011; NRC, 2012). Curriculum content should be developmentally appropriate (Seimears, Graves, Schroyer, & Staver, 2012) and build on learners’ prior knowledge (Strangman, Hall, & Meyer,

2004). A curriculum’s learning experiences must connect to target learning objectives (Wiggins & McTighe, 2005).

The prevalent model of science pedagogy has been the *transmission* model, which uses lectures, presentations, and assigned readings to convey science knowledge. However, this model has no theoretical justification and is not effective (Seimears et al., 2012). In contrast, the *constructivist* model involves learner-centered experiences and inquiry, in which individuals make sense of new information using their prior knowledge (Mestre, 2005).

Evaluation of a curriculum helps to confirm that learning has occurred (Wiggins & McTighe, 2005). Systematic collection and analysis of data help to ensure that a curriculum is more than just content to memorize or a disconnected series of learning activities. To facilitate effective evaluation, program developers should decide in the early stages of curriculum development how to define and measure acceptable evidence of understanding (Wiggins & McTighe, 2005).

Curriculum developers in the California 4-H SET Initiative have focused on designing and evaluating needs-based curricula that use sequenced activities to guide inquiry into science content, thereby building scientific skills. Inquiry, a constructivist process, engages youth in learning and applying science content in ways that have been shown to be effective in fostering scientific literacy (Beerer & Bodzin, 2004). Activities are sequenced to “spiral” major concepts, revisiting and reexamining them over several lessons so that learners build knowledge in multiple small steps (Bruner, 1996). Experiential education promotes a deep understanding of subject matter; it includes application of new knowledge and skills in authentic settings (Eyler, 2009). Applying new knowledge to additional ex-

periences is congruent with service learning components in 4-H curricula. Practical application of new skills nurtures youth participation in community and social settings (Lave & Wenger, 1991).

California 4-H SET curricula are intentionally structured to promote positive youth development, which involves programmatic strategies that help youth transition successfully to adulthood (National Research Council & Institute of Medicine, 2002). Positive youth development helps youth build skills and develop healthy relationships, both of which are necessary for youth to achieve desirable life goals (Lerner et al., 2011). It also entails giving youth opportunities to work as partners in their own development, support their own growth, and achieve their potential (Small & Memmo, 2004).

To develop new curricula for California SET, academic and program staff used Wiggins and McTighe's (2005) *Understanding by Design*, a framework with three steps:

- **Identify desired outcomes.** Learning goals might include deepening knowledge, enhancing skills, improving attitudes, changing behavior, and promoting positive youth development.
- **Determine acceptable evidence of learning.** How will educators know if learners have achieved the desired outcomes? Evidence of learning may include success indicators, such as performance tasks, discrete skills, or generalizations to real-world examples, as well as other kinds of embedded assessment relevant to OST.
- **Plan and design learning experiences.** The *Understanding by Design* process enables curriculum developers to connect activities to desired outcomes and to sequence activities so that learning is systematic over time.

Using these principles to develop science curricula is a core component of the California 4-H SET Initiative. Three examples of curricula developed using Wiggins and McTighe's framework are outlined below.

Bio-Security in 4-H Animal Science

Cooperative Extension staff, in collaboration with veterinarians, developed and tested the *Bio-Security in 4-H Animal Science* curriculum (Smith et al., 2011) to help youth learn about managing endemic and invasive pests and diseases (Regents of the University of California, 2009). The curriculum covers disease transmission, disease risks, and risk mitigation strategies. Activities allow youth to apply new knowledge and skills directly to the raising of their 4-H project animals.

Evaluation of the curriculum focused on perceived changes in youths' knowledge of curriculum content.

Outcome data were collected using retrospective surveys (Pratt, McGuigan, & Katzev, 2000) of participating youth. This type of survey design reduces the problem of response-shift bias that often occurs when using pre- and post-participation surveys. Response-shift bias occurs when participants have such limited knowledge to apply to pre-participation survey questions that their responses overestimate their abilities (Raidl et al., 2004). Analysis of outcome data on *Bio-Security in 4-H Animal Science* revealed significant ($p < .05$) gains in youth's understanding of bio-security science.

Junk Drawer Robotics

Robotics has been shown to be an effective cross-disciplinary content area for SET education (Barker, Nugent, Grandgenett, & Adamchuk, 2012) with potential connections to an array of agricultural and natural resource issues (Regents of the University of California, 2009). Employing an iterative development process, California 4-H academics developed the *Junk Drawer Robotics* curriculum to be used with middle school youth (Mahacek, Worker, & Mahacek, 2011). The content of each module is intentionally organized to spiral education in three phases:

- To Learn (Science) activities emphasize exploration and form the foundation on which youth build conceptual understanding.
- To Do (Engineering) activities build on the conceptual knowledge gained in the exploration phase.
- To Make (Technology) activities put youth to work in groups to build and test a solution to a design problem while solidifying their understanding of concepts.

Youth outcomes were assessed using a pre-post instrument with Likert scale questions and open-ended content questions. Participating youth demonstrated increased interest in science and engineering and deeper conceptual understanding of science, engineering, and robotics (Mahacek & Worker, 2011).

There's No New Water!

In response to a call for education on water issues ("Present U.S. Water Usage," 2008) and in connection with an organizational initiative to improve water quality, quantity, and security (Regents of the University of California, 2009), Cooperative Extension staff and a team of undergraduate students developed and tested *There's No New Water!* (Smith et al., 2010). The curriculum, which targets youth of middle and high school age, is framed around an experiential education cycle. It promotes youth inquiry into topic areas including the natural water cycle, human interventions

that affect water quality and quantity, and the mapping of watersheds. The curriculum also emphasizes service learning projects that address local water issues.

Evaluation of the curriculum used a retrospective Likert-style survey in which youth participants reported on changes in their content knowledge. Youth also completed a post-participation survey on life skills development. Outcomes showed statistically significant ($p < .01$) increases in content knowledge around topics such as water distribution, water conservation, water quality, source pollutants, and watersheds. Advances in life skills were seen in the areas of citizenship, leadership, responsibility, and cooperation and communication (Smith, Heck, & Worker, 2012).

Developing Educators

Effective professional development of science educators is one of many factors that contribute to improving scientific literacy among youth (Loucks-Horsley, Love, Stiles, Mundry, & Hewson, 2003). Ensuring that practitioners are prepared to teach science effectively requires professional development that focuses both on science content and on pedagogy (Garet, Porter, Desimone, Birman, & Yoon, 2001; Loucks-Horsley et al., 2003). Community-based OST programs can help address the need to improve scientific literacy among K–12 youth (Kress et al., 2008; NRC, 2009). However, many OST educators have not participated in science education professional development (Chi, Freeman, & Lee, 2008).

The 4-H Youth Development Program relies heavily on volunteers—adults and teens—who facilitate educational activities with youth (Stedman & Rudd, 2006). Discrete in-person workshops represent the most common approach to professional development for these volunteers (Kaslon, Lodl, & Greve, 2005). However, many researchers consider such workshops to be ineffective because they do not model effective science pedagogy and do not produce significant change in educators' practice. In contrast, research supports professional development that is offered over an extended period of time; uses active, constructivist strategies; and emphasizes both subject matter and pedagogical knowledge (Garet et al., 2001; Guskey & Yoon, 2009; Loucks-Horsley et al., 2003).

Development, evaluation, and use of effective professional development strategies are key components of the

California 4-H SET Initiative. Examples grounded in literature on best practices in professional development of science educators are outlined below.

The “Step-Up” Incremental Training Model for Teens

The “Step-Up” Incremental Training Model targets 4-H teen volunteers who implement science curricula with 4-H youth (Smith & Enfield, 2002). A sequence of three workshops engages teen volunteers in hands-on, inquiry-based science activities and effective teaching techniques. The volunteers alternate between workshops and actual implementation of the curriculum. Allowing time for implementation between workshops provides opportunities for individuals and groups to reflect on their practice over several weeks.

Analysis of pre- and post-participation survey and observational data provided statistically significant ($p < .01$) evidence that the Step-Up model was effective in improving teens' understanding of and ability to use effective question-

ing strategies and inquiry methods (Smith, Enfield, Meehan, & Klingborg, 2004). Furthermore, the teens were successful in the role of cross-age science teachers. Data on critical thinking skills were collected from children using an objective measure; results revealed statistically significant ($p < .05$) improvements (Smith et al., 2004).

Lesson Study

Lesson study is constructivist professional development that engages educators in developing an inquiry stance toward their practice through active reflection; it is situated in authentic contexts and occurs over time (Lewis, 2002; Wiburg & Brown, 2007). In lesson study, teams of educators formulate collective goals, collaborate to improve lessons, and explore issues of teaching and learning (Lewis, 2002; Wiburg & Brown, 2007). Lesson study has been shown to have positive effects on classroom educators' knowledge, skills, and confidence (Rock & Wilson, 2005; Wiburg & Brown, 2007) and their abilities to design and teach science lessons (Marble, 2006).

A recent study—the first on lesson study for OST practitioners—investigated the influence of lesson study on 4-H volunteers' understanding and use of inquiry methods and on their veterinary science content knowledge (Smith, 2013). Retrospective survey data showed a significant effect

A sequence of three workshops engages teen volunteers in hands-on, inquiry-based science activities and effective teaching techniques. The volunteers alternate between workshops and actual implementation of the curriculum.

($p < .01$) of time on both constructs. Focus group interviews elaborated on participants' understanding and use of inquiry processes, including questioning strategies, learner-centered explorations, and application of knowledge.

Tools of the Trade II

California and Nevada 4-H prepared the professional development curriculum *Tools of the Trade II: Inspiring Young Minds to Be Science, Engineering, and Technology Ready for Life!* (Junge, Manglallan, Reilly, & Killian, 2010). The curriculum includes 21 hours of activities to help adult educators improve their ability to facilitate OST science education. Modeling effective practice by using a hands-on approach, the curriculum is designed to increase staff knowledge, skills, and confidence in delivering high-quality science experiences.

To assess the effectiveness of *Tools of the Trade II*, a multi-site evaluation using a retrospective survey was employed with staff from a diverse cross-section of afterschool providers throughout California. Outcomes demonstrated a significant improvement ($p < .01$) in participants' understanding of science processes and of how to create science-rich environments. Participants reported that the most important strategies they learned were inquiry, experiential education, and effective questioning (Junge & Manglallan, 2011).

Promising Practices in Out-of-School Time Science Education

In addition to the agriculture programs for which it is known, 4-H in the 21st century offers programming in many other content areas, including astronomy, aviation, computer science, ecology, and plant science; it has expanded beyond the traditional club setting to include more venues, such as afterschool programs and summer camps (Enfield, 2001). To address youth scientific literacy across these subject matter areas and settings, the California 4-H SET Initiative has systematically and intentionally developed, implemented, and evaluated curricula and professional development models for adult and teen volunteers.

Effective curricula involve youth in constructing knowledge and making meaning through learner-centered activities and authentic application of new knowledge and skills. These strategies have a theoretical foundation (Kolb, 1984; Vygotsky, 1978), have been shown to be effective in teaching and learning science, and are congruent with national standards. As our examples show, curricula developed by the California 4-H SET Initiative focus on the use of effective pedagogy, including inquiry and experiential education. Subject matter is determined by organizational

priorities, which were developed through a needs assessment involving internal and external stakeholders (see Regents of the University of California, 2009).

Effective professional development for science educators also uses constructivist strategies. Active, learner-centered activities position educators as learners in relation to their own practice, and professional development occurs over an extended period of time (Smith & Schmitt-McQuitty, 2013). These features increase educators' investment in professional development and help them acquire new knowledge and skills.

Future Opportunities for Research and Practice

OST science education has been recognized as an important contributor to youth scientific literacy (Afterschool Alliance, 2011; NRC, 2009). The national 4-H Science Mission Mandate and the California 4-H SET Initiative are examples of organizational efforts to address youth scientific literacy through OST programming.

Curriculum development and professional development are critical priorities in 4-H, but applied research in other areas of OST science is also essential. Research in the California 4-H SET Initiative is focusing on the effects of frequency and duration of science programming, the effects of positive youth development on science learning outcomes, and service learning as a way for youth to apply their scientific knowledge and skills while contributing to the community in meaningful ways.

The California 4-H SET Initiative is advancing promising practices in OST science education through systematic research, development, and evaluation. These efforts not only are applicable to 4-H programming nationally but also can inform the work of other organizations looking to design and implement effective OST science programs for youth.

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Keeping Children Safe

Afterschool Staff and Mandated Child Maltreatment Reporting

by Maria Gandarilla and Julie O'Donnell

Every year, an estimated 3.4 million referrals alleging abuse or neglect to children are made in the United States (U.S. Department of Health and Human Services, 2012). In 2011, the U.S. Department of Health and Human Services (2012) reported that, of the 3.4 million referrals made, about 18.5% were substantiated, or determined to be actual maltreatment. Abuse is defined by the Child Abuse Prevention and Treatment Act (1974) as “physical or mental injury, sexual abuse, negligent treatment, or maltreatment of a child” (Section 5106).

With 8.4 million children in the U.S. spending an average of eight hours a week in afterschool programs (Afterschool Alliance, 2009), afterschool providers are an important part of the network of caring adults who can help to keep children safe. In addition, afterschool staff are “mandated reporters.” Whether or not the laws specifically mention afterschool staff, every state re-

quires people whose employment puts them in contact with children to report suspected child abuse or neglect (Child Welfare Information Gateway, 2010). The close relationships that staff, children, and families often form in afterschool programs make it quite possible that children will disclose maltreatment or that staff will identify maltreatment warning signs (Friedman, 2007a). However, it is not clear that afterschool staff understand their responsibility to report this information to authorities.

No research on mandated reporting of child maltreatment by afterschool staff has been published.

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Studies in the distinct but related field of child care suggest that child care workers report maltreatment at lower rates than other mandated reporters (Hagen, 2000; McKenna, 2010). In 2011, child care providers made less than one percent of all professional child maltreatment reports nationwide (U.S. Department of Health and Human Services, 2012).

To begin to understand reporting of suspected child maltreatment by afterschool staff, we surveyed staff in a large California afterschool program about their knowledge of child maltreatment and mandated reporting. We also asked about their training in this area and about the factors that might influence their decision to report suspected abuse or neglect. Our results suggest that further training may be necessary to help afterschool providers understand their responsibility to report and the process of making a report.

The Unique Position of Afterschool Providers

Friedman (2007a) suggests that afterschool staff can play a vital role in identifying child maltreatment. Children spend a substantial amount of time with afterschool staff, often forming significant positive relationships (Hall, Williams, & Daniel, 2010; Huang et al., 2007; Rhodes, 2004). Hall and colleagues (2010) found that students believed afterschool staff genuinely cared about them and wanted them to do their best. Rhodes (2004) notes that youth see afterschool staff frequently and “thus have increased opportunities for relationship formation and spontaneous disclosure” (p. 147).

Afterschool staff also develop positive relationships with parents—relationships that parents may not share with school staff (Afterschool Alliance, 2008). In one study (Hall et al., 2010), afterschool staff reported that building rapport with parents was an important component of their jobs. The parents said that they respected staff members because they acted as a liaison between the school and the family (Hall et al., 2010).

These bonds put afterschool staff in a prime position to observe signs or hear disclosures of abuse and neglect (Friedman, 2007a; Friedman, 2007b; Rhodes,

2004). In programs that incorporate positive youth development practices, where safety and supportive relationships are integral to the approach (Community Network for Youth Development, 2001), disclosure may be particularly likely.

Child Maltreatment and Mandated Reporting

In California, where we conducted our study, the Child Abuse and Neglect Reporting Act (1963) delineates who is considered a mandated reporter, the types of reportable abuse, and guidelines for reporting and dealing with abuse. Reportable maltreatment includes physical, emotional, and sexual abuse and neglect. When mandated reporters suspect child maltreatment, they are required to make a phone report as soon as possible, followed by a written report within 36 hours. Mandated reporters receive immunity when reporting in good faith. Consequences including fines and jail time deter them from failing to report.

During 2011, mandated reporters made over half (57.6%) of child maltreatment reports in the U.S. (U.S. Department of Health and Human Services, 2012). However, research suggests that mandated reporters do not always report when they suspect maltreatment (Gunn, Hickson, & Cooper, 2005; Kenny, 2001; Webster, O’Toole, O’Toole, & Lucal, 2005). VanBergeijk (2007) found that, during their careers, school staff reported only about 64% of the cases they had suspected; one-fourth had failed to report suspected child maltreatment.

Factors Limiting Child Maltreatment Reporting

Several factors have been shown to reduce the rates at which maltreatment is reported. One is limited knowledge either of the signs of maltreatment or of reporting laws and procedures (Flaherty, Jones, & Sege, 2004; Kenny, 2004). Research using vignettes of maltreatment episodes shows that some mandated reporters say they would not report even when the incidents clearly describe maltreatment (Kenny & McEachern, 2002; Webster et al., 2005).

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Another barrier to reporting suspected maltreatment is fear of making an inaccurate report (Kenny, 2001; Vulliamy & Sullivan, 2000). Kenny (2001) found that 60 percent of teachers who had failed to report indicated that this fear was a factor. The belief that an inaccurate report would negatively affect the child and family is another barrier (Jones et al., 2008). Mandated reporters may also fear that making a report will impair their relationship with the child and family (Flaherty et al., 2004; Vulliamy & Sullivan, 2000, Webster et al., 2005). Other reasons include concern for the trauma that the child and family would face during the investigation of an unfounded report and the potential loss of the family as a client (Jones et al., 2008).

Negative perceptions of child protection agencies may also reduce the likelihood that suspected maltreatment will be reported (Flaherty et al., 2004; Jones et al., 2008; Kenny, 2004). In one study, pediatricians who failed to report identified negative experiences with child service agencies as a decisive factor (Gunn et al., 2005). Mandated reporters have also cited the belief that their organization could provide resources or treatment to address the abuse as a reason not to report (Strozier et al., 2005; Svensson & Janson, 2008).

Training of Mandated Reporters

Training requirements for mandated reporters vary by state. California law strongly encourages employers to provide training on identifying and reporting child maltreatment, but school districts are the only employers actually required to provide training. The training suggested by California law often covers legal mandates, with a focus on the types of reportable maltreatment, their signs and symptoms, and the child abuse reporting process (Child Abuse and Neglect Reporting Act, 1963). Mandated reporter training may take place online or in person; it often combines lecture and vignettes (Hawkins & McCallum, 2001; Kenny, 2007; Reiniger, Robison, & McHugh, 1995).

Research suggests that training does improve participants' knowledge of child maltreatment (Starling, Heisler, Paulson, & Youmans, 2009). However, findings are mixed on whether training results in higher levels of reporting (Fraser, Mathews, Walsh, Chen, & Dunne, 2010; Hawkins & McCallum, 2001; McKenna, 2010). Multiple studies have concluded that mandated reporters would benefit from additional training that addresses the definitions and forms of child maltreatment, reporting procedures, legal issues, and interactions with clients after a report is made (Flaherty et al., 2004; Kenny, 2007; Smith, 2006).

Table 1. Study Sample

Characteristic	Percentage (N = 71)
Gender	
Female	62.0%
Male	35.2%
Not reported	2.8%
Ethnicity	
Latino/Hispanic	39.4%
African American	19.7%
Asian/Pacific Islander	15.5%
White/Caucasian	9.9%
Multiracial	4.2%
Other	4.2%
Not reported	7.0%
Staff Position	
Direct line staff/team leader	83.1%
Supervisory staff	11.2%
Not reported	5.6%
Education	
High school graduate	11.3%
Some college	52.1%
Bachelor's degree	31.0%
Master's degree	2.8%
Not reported	2.8%
Length of Employment in Afterschool	
Less than a year	35.2%
1–2 years	22.5%
More than 2 years	23.9%
Not reported	18.3%
Number of Child Abuse Reports Made	
None	73.2%
One	18.3%
Two	4.2%
Three or more	4.2%

Studying Mandated Reporters in an Afterschool Program

This study used a self-administered survey to investigate afterschool staff's knowledge of mandated reporting of child maltreatment and the factors that would influence their decision to report. With approval of a university institutional review board, surveys were distributed to afterschool staff during two staff meetings at an urban youth-serving nonprofit organization in Southern California. The survey took about 10 minutes to complete. The response rate was 86 percent.

Sample

The sample was composed of 71 afterschool staff members. As shown in Table 1, the majority were female. The largest proportion of participants described themselves as Latino. About 86 percent had some college education or a degree. Most were employed as team leaders; that is, they were direct line staff. Length of employment in afterschool ranged from one month to nine years, with an average of 22 months. About one-third of respondents had worked in the field less than a year. Nineteen, or 27 percent, had made a child maltreatment report. Of those, 68 percent had reported only once.

Instruments

Our survey included questions from the Educators and Child Abuse Questionnaire (Kenny, 2000), modified for this population with permission from the author. The first section assessed what respondents had learned from mandated reporter training. On a four-point scale ranging from "strongly agree" to "strongly disagree," participants responded to such prompts as "Have you ever received mandated reporter training?" and "Based on this training, I am able to recognize signs of physical abuse." Participants were also asked to rank "To what extent would the following factors influence your decision whether or not to report?" Factors included, for example, "Knowing parents and feeling they are motivated for treatment and remorseful" and "Feeling as though [the child and family service agency] does not generally offer help to maltreated children."

The second part examined respondents' ability to recognize child abuse and neglect. Participants were also asked to identify what they would do in response to two vignettes depicting physical abuse and neglect. Here is one of the vignettes:

During recreation, Ethan, an eight-year-old student, says to you that he cannot participate in the team activity because his hand and feet hurt. Upon closer

inspection, you notice several round burns on Ethan's palm. When you ask Ethan about the burns, he simply states that his mother told him he was bad for not finishing his food.

The other vignette described neglect rather than physical abuse: Young children have been left alone at night, and a child reports that there has been no food in the house for several days. For both vignettes, possible responses included reporting to the authorities (police), reporting to child protection services, waiting for clearer evidence of abuse, speaking to parents or caregivers, and taking no action.

We also created an 11-item questionnaire measuring factual knowledge of California mandated reporting laws. The true-false questions included "Reasonable suspicion is sufficient for a mandated reporter to make a child maltreatment report" and "Failure to report child abuse by a mandated reporter can result in 6 months in county jail and/or a \$1,000 fine." The number of items answered correctly were added together to create a knowledge scale.

Analysis

Comparisons of knowledge with the factors related to reporting, training experience, and position type were completed using independent *t*-tests and chi square analyses. Results are reported at the .05 and .10 significance level.

Survey Results

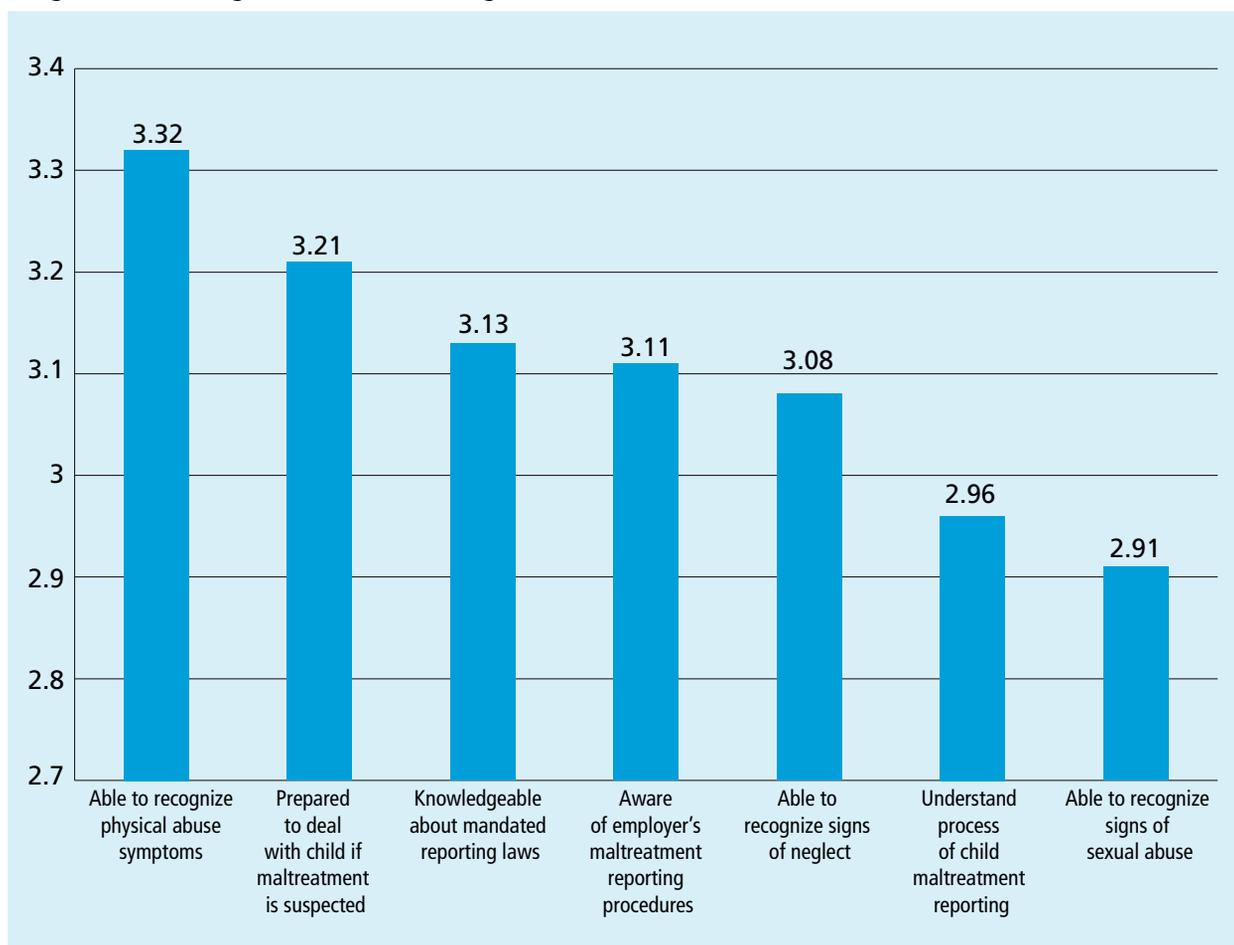
Our findings are presented here, with implications following in the next section.

Knowledge About Mandated Reporting

Of the 71 survey respondents, 15, or 21 percent, had never received mandated reporter training; 49 percent had received training only from an employer; 10 percent had received training only as part of their educational programs; and 20 percent had received training both in school and at work.

Figure 1 displays respondents' perceptions of the competence and knowledge they gained from training on child maltreatment and reporting. The highest levels of competence reported were in recognizing signs of physical abuse and being prepared to deal with a child if maltreatment was suspected. The lowest were in recognizing the signs of sexual abuse and understanding the process of making a child abuse report. The vast majority of respondents (89 percent) reported that they wanted more training.

Figure 1. Knowledge Gained from Training (N = 48)



Scores on the reporting knowledge scale ranged from 3 to 10 out of 11, with an average score of 7.14. As shown in Table 2, almost all staff knew they were responsible for reporting suspected maltreatment and most knew that reasonable suspicion was sufficient for making a report. However, about 80 percent did not know how soon they needed to make a report. More than half did not know the consequences of failure to report or that they were immune from liability. About one-third did not know they were mandated to report reasonable suspicions even if their supervisor disagreed or that they could not be reprimanded by their employer for reporting suspected maltreatment. There were no significant differences in knowledge between staff who had and had not received training or between supervisors and line staff.

In response to the physical abuse vignette, about 81 percent of respondents indicated they would report to child protective services or to the authorities. For the neglect vignette, 70 percent said they would report. In response to both vignettes, the next most popular response was speaking to the parents or caregivers about their suspicions. For the physical abuse vignette, 12 percent said

they would speak to parents, while 6 percent said they would wait for more signs of abuse. In the neglect situation, 20 percent would speak to parents and 11 percent would wait for evidence. Again, there were no significant differences between staff who had and had not been trained or between supervisors and line staff.

Factors Influencing the Decision to Report

Participants were asked to rate the extent to which factors might influence their decision to report suspected maltreatment. As shown in Figure 2, being unsure of whether actual maltreatment happened was the highest-rated factor, followed by anticipating unpleasant consequences and fear of making an inaccurate report. Feeling as though reporting was not their job and not wanting to appear foolish were the lowest-rated factors. None of the factors reached a score of 2 on the four-point scale, meaning that, on average, no factor was very likely to influence the decision.

Analyses were run to explore whether these factors differed by training experience. As shown in Figure 3, participants who had received training were significantly more likely than those without training to say that their

Table 2. Knowledge of Mandated Reporting Laws

Question	Respondents (N = 71) answering correctly
As a mandated reporter, I am legally responsible for reporting child maltreatment when I suspect it.	97%
Reasonable suspicion is sufficient for a mandated reporter to make a child maltreatment report.	87%
Physical and sexual abuse are the only types of reportable maltreatment.	86%
Failure to report child abuse by a mandated reporter can result in 6 months in county jail and/or a \$1,000 fine.	72%
When filing a child abuse report, a mandated reporter must make a phone call but a written report is optional.	69%
If, as a mandated reporter, I suspect child abuse, but my supervisor says I should not report, I am not breaking the law.	69%
I can be reprimanded by my employer if I report suspected maltreatment if my supervisor tells me not to do so.	69%
Under California law, spanking a child with an open hand on the buttocks is an acceptable form of discipline.	55%
If I report abuse, I am immune from liability.	48%
Failure to report child maltreatment can result in mandatory state-required training.	42%
A mandated reporter has 48 hours between the time child maltreatment is suspected and the time it must be reported.	20%

decision to report would be influenced by the belief that the child protection agency does not help children or that reporting brings only negative consequences for the child and family. Those who had received training were also significantly more likely to be influenced by their feeling that the parents were remorseful and motivated for treatment. Participants with training were also somewhat more likely to report fear of making an inaccurate report and not wanting to appear foolish.

What the Results Mean

Our findings suggest that staff need to be more fully informed about child maltreatment, their responsibility to report, and how to make a report.

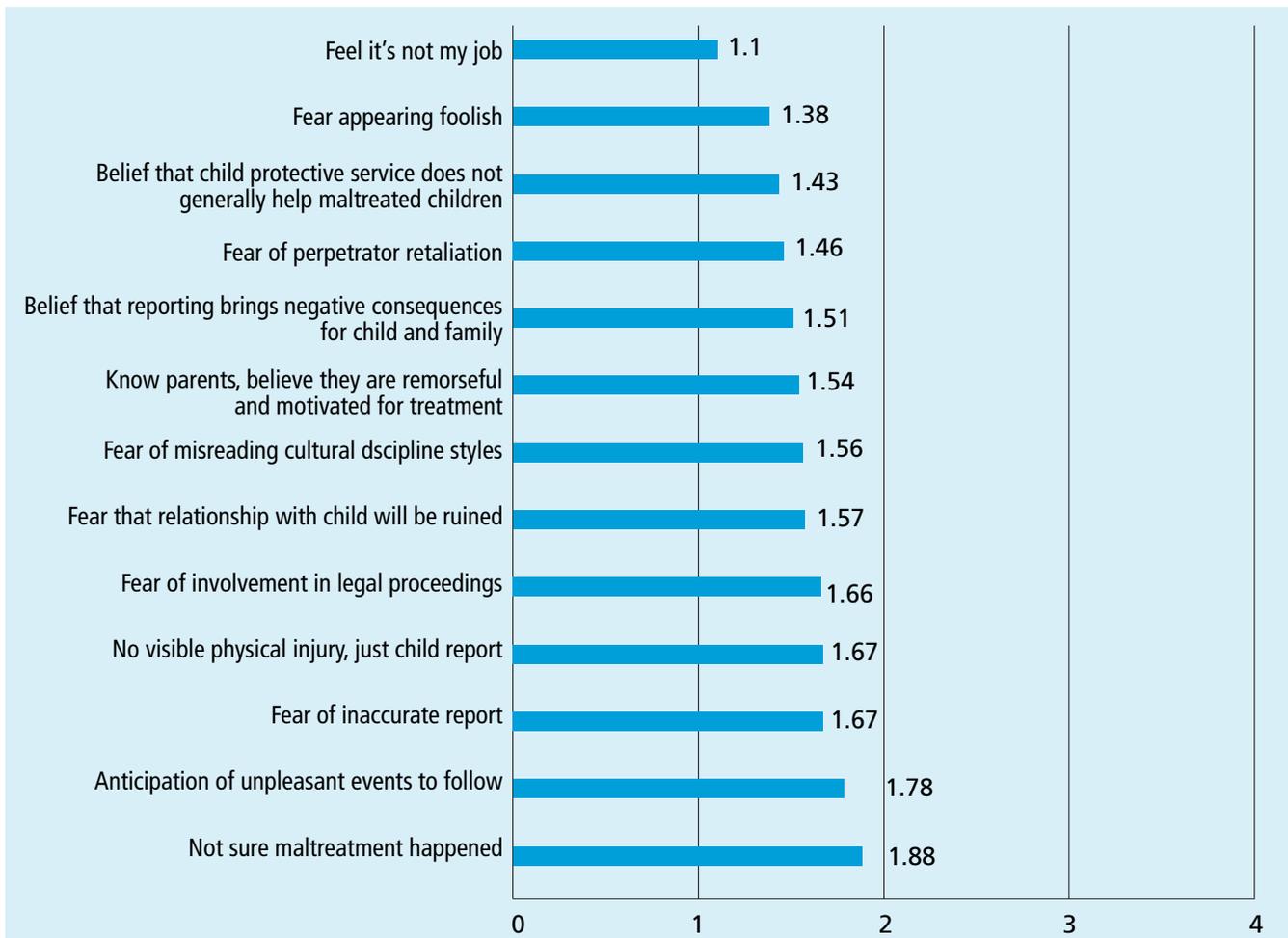
What Staff Need to Know About Mandated Reporting

Staff answered an average of 64 percent of the questions on mandated reporting laws correctly. Eighty percent in-

correctly thought that they had 48 hours to report suspected abuse. More than half believed that a consequence for failing to report abuse was training; a similar percentage were unaware that reporters are immune from liability. If these results hold true for other after-school staff, additional training may be necessary, particularly on the timeline to report, potential consequences of failure to report, and protections for mandated reporters.

Analysis of responses to the vignettes suggest that afterschool staff may find neglect more challenging to identify than physical abuse, or perhaps they believe it is less harmful. This finding is troubling in light of the fact that neglect is the cause of 71 percent of maltreatment-related fatalities (U.S. Department of Health and Human Services, 2012). Training for afterschool staff should cover the warning signs of all types of maltreatment, including sexual abuse, as knowledge of this form of maltreatment was lacking even after training.

Figure 2. Factors Influencing Decision to Report (N = 70)

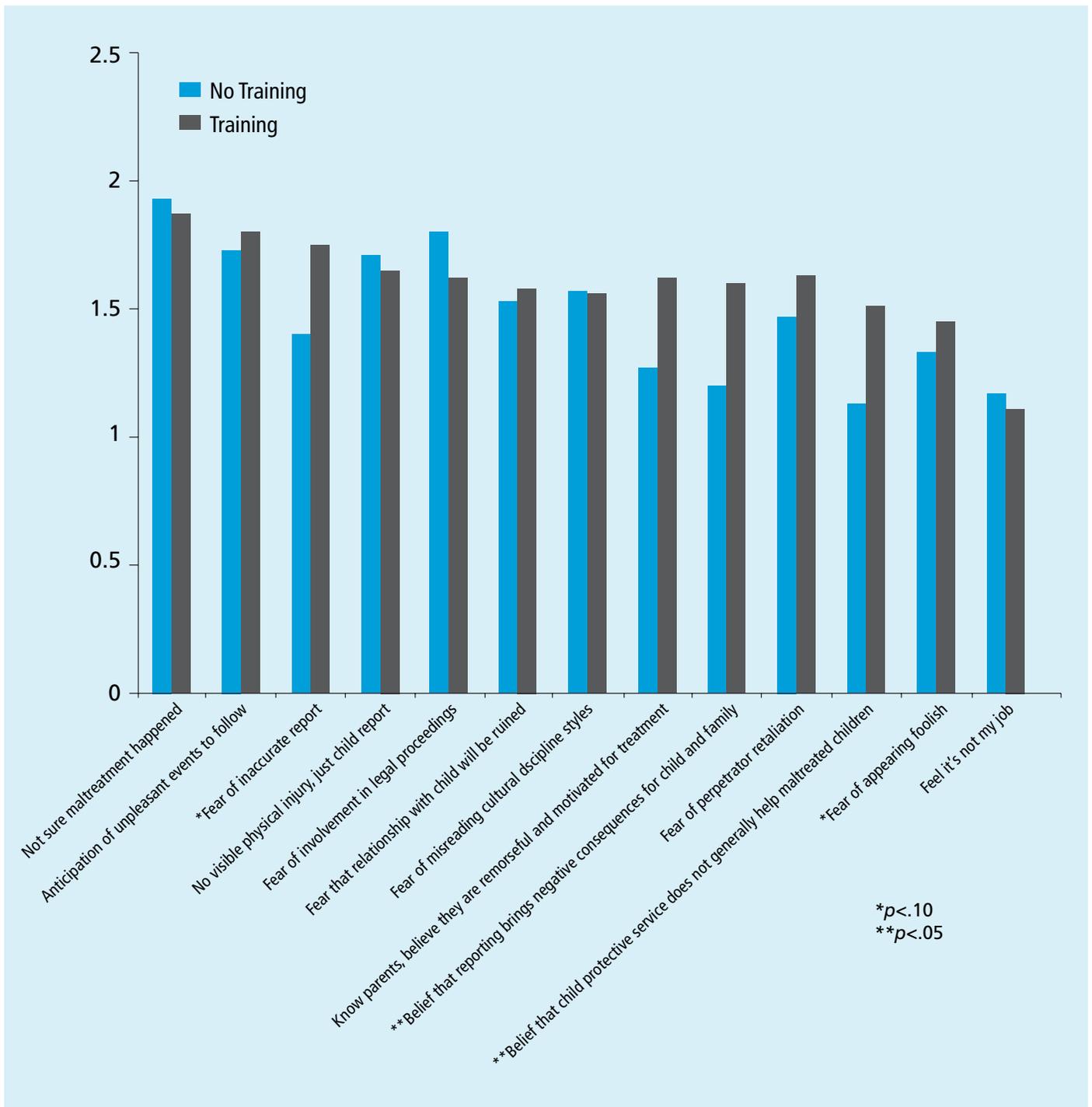


The fact that 20 percent of respondents said they would talk to the parent about their concerns rather than report neglect might not be unexpected given the close relationships afterschool staff often develop with families. However, disclosing maltreatment suspicions to parents can have negative consequences including withdrawal from the program, pressure on the child to recant, and increased danger to the child (Office on Child Abuse and Neglect, Children's Bureau, Karageorge, & Kendall, 2008). Training should cover these consequences and offer staff strategies for dealing with children and families when they feel a report must be made. For example, under California law, afterschool staff may decide to tell the family they are making a report if they believe this disclosure will not put the child at further risk or hinder the investigation (Gil & California Department of Social Services, Office of Child Abuse Prevention, 2005). Staff should know—and may communicate to families—that only child protective service workers, not mandated reporters or their supervisors, are legally responsible for investigating to determine whether maltreatment has occurred.

Staff who had been trained believed that training had prepared them to identify physical abuse and to deal with children who disclosed maltreatment. Participants also said that training made them knowledgeable about mandated reporting laws and their employer's procedures for reporting. This finding is encouraging, because mandated reporters are not always aware of their employers' reporting procedures (Gunn et al., 2005; Kenny, 2004). However, most participants still did not understand the state mandated process of reporting, and the vast majority wanted further training. Thus, training may need to be more comprehensive and to delineate more clearly the steps of the reporting process.

Although staff who had received mandated reporter training said it increased their knowledge, their actual performance on the factual questionnaire was no different from the performance of those who had not been trained, nor were trained staff more likely to say they would report the maltreatment in the vignettes. Hawkins and McCallum (2001) also found that training did not make a difference in the likelihood that participants would identify and re-

Figure 3. Training Differences in Factors Related to Decision to Report



port physical abuse or neglect described in vignettes. These findings could be a result of the extent or quality of training participants received, or perhaps the training was inadequate or was not tailored to the afterschool environment. The fact that supervisors did not demonstrate more knowledge of child maltreatment reporting than line staff suggests that afterschool programs will need to bring in trainers with expertise in this area.

How Staff Decide Whether to Report

The findings on factors that influence staff members' decision to report reinforce our suggestions about training topics. Although none of the factors was rated even "somewhat" influential in the decision to report, the highest-rated factors were being unsure that maltreatment had happened and anticipating unpleasant consequences. Thus, training may need to focus on maltreat-

ment indicators, on what happens after a report is made, and on potential consequences of failure to report—for both children and staff.

Other studies (Gunn et al., 2005; Kenny, 2001; Kenny & McEachern, 2002; Strozier et al., 2005) have found that the belief that child protective agencies do not help children influenced mandated reporters' decisions. Participants in our study, however, rated that factor third lowest. One reason may be that only about 27 percent had made a child abuse report. As a group, they may not have had much interaction with child protective services or experienced the frustrations noted elsewhere.

Other factors commonly reported in previous studies (Flaherty et al., 2004; Jones et al., 2008; Webster et al., 2005)—fear that relationships with children would be ruined or that reporting would bring negative consequences for the family and child—were less influential for participants in this study. This finding is encouraging in light of research indicating that afterschool staffers establish positive, meaningful relationships with children and families. Perhaps these close relationships make afterschool staff more likely to report possible maltreatment. Afterschool staff may be more likely than some other mandated reporters to understand that positive youth development cannot occur unless children are in safe environments.

Participants who had received training were more likely to believe that child protective agencies do not generally help children and that reporting abuse brings only negative consequences for the child and family. This finding is troubling, because these factors have been shown to decrease the likelihood that people will report suspected maltreatment (Flaherty et al., 2004; Jones et al., 2008; Kenny & McEachern, 2002; Strozier et al., 2005). Another factor that was rated more highly by trained staff was feeling that parents were remorseful and motivated for treatment. Perhaps training should integrate more content on the supports and services children and families can receive after a report is made. Afterschool staff also need to understand that remorse alone may not be sufficient to stop maltreatment.

Implications for Afterschool Administrators

Our study found that afterschool staff, both line staff and supervisors, lacked sufficient knowledge about certain forms of child maltreatment and about reporting laws. Afterschool staff need access to comprehensive information and training that address the potential barriers to reporting found in this study and in the literature. The inclusion of vignettes in training may help determine whether the training actually results in an increased ability to recognize reportable maltreatment. Training should be provided to all afterschool staff when they are hired, with refresher training every year. Furthermore, staff may benefit from being frequently reminded of the law regarding mandated reporting through such means as posters in the workplace. Supervisors—who, according to our study, may be no more knowledgeable than line staff—may require specialized training to enable them to answer staff questions or provide guidance when maltreatment is suspected.

Afterschool programs might collaborate with child protective or social service agencies to train staff. Having social workers provide the training and serve as consultants may help staff develop more confidence in the child welfare system, understand how the decision to investigate is made, and know what supportive services are available to families. Social workers have the expertise to train supervisors so that they are prepared to support their line staff. They can also help afterschool staff develop strategies to deal effectively with families and

maintain relationships after a report has been made.

Although this study is one of the first to explore the knowledge and perceptions of afterschool staff related to mandated reporting, the findings should be interpreted cautiously. Our study used a convenience sample from a single agency, so results may not be generalizable. We could not determine the extent, type, or quality of the training participants had received. Our survey, although it was adapted from other studies, was not field tested with afterschool staff to ensure that questions were not open to interpretation. Additional research exploring the relationship between training and reporting would prove beneficial to afterschool providers and the children they serve.

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Paper Copters and Potential

Leveraging Afterschool and Youth Development Trainers to Extend the Reach of STEM Programs

by **Stephanie A. Lingwood** and **Jennifer B. Sorensen**

October 6, 2012: 109 adults simultaneously threw their heads back and shouted “I discovered!” at the top of their lungs. Slightly mangled bright-green paper helicopters littered the floor. We were six minutes into a daylong journey of discovery, during which this group of volunteer trainers would learn to facilitate a curriculum

that uses inquiry-based science to teach youth development concepts. Our first step, though, was to shout, squeal with joy, and send paper helicopters fluttering through the air. Why? Because no other way would have been appropriate.

What would it take to increase the number of youth-serving volunteers who can competently lead science, technology, engineering, and math (STEM) activities? This question has guided our work in the Inquiry in the Community project, launched in 2008. Along with Girl Scout staff colleagues and many dedicated volunteers, we have created a system for embedding inquiry-based science into a youth development organization. We achieved this goal by training staff and volunteers

on inquiry facilitation techniques and then building support networks to reinforce these new skills. When co-author Stephanie was accepted into the National Afterschool Matters STEM Practitioner Fellowship, we decided to use the action research component of the fellowship to dive deeper into a facet of Inquiry of the Community we hadn’t yet been able to investigate: the experience of volunteers participating in the project’s train-the-trainer program. The lessons learned in the resulting action-research project can apply to other

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JENNIFER B. SORENSEN, Ph.D., director of general science and assistant professor of chemistry at Seattle University, was co-principal investigator of Inquiry in the Community. Her scholarly interests are science educator training and access to science engagement for girls and young women. Partnering with Stephanie to design, implement, and assess Inquiry in the Community provided a unique community-based venue to explore the intersection of her two interests.

train-the-trainer efforts in afterschool and youth development.

Stephanie takes over the story from here to describe how she and co-author Jen Sorensen implemented the program and how Stephanie's action research examined the volunteers' experience.

Youth Development and Inquiry-Based Science Learning

Jen and I decided to use inquiry science as a tool to teach youth development because facilitating activities in both areas is similar. Youth development organizations seek to build the "abilities and competencies [of youth]...by increasing participants' exposure to supportive and empowering environments where activities create multiple opportunities for a range of skill-building and horizon-broadening experiences" (Roth & Brooks-Gunn, 2003, p. 94). In both youth development and inquiry-based science, learner choice, experiential learning, and cooperative learning strategies are key parts of the equation.

We knew that the Exploratorium's Institute for Inquiry had developed an excellent curriculum, the *Fundamentals of Inquiry* series (Exploratorium, 2006) to teach school teachers to facilitate hands-on, learner-led, and collaborative science learning. What's to stop us, we reasoned, from modifying this curriculum for use with volunteer Girl Scout troop leaders? This volunteer development would serve two purposes. It would increase the number of volunteers who could competently lead inquiry science activities, thus building new audiences for STEM education. It would also improve volunteers' skill in implementing core youth development strategies, in the process better equipping Girl Scouts (or any other youth development organization that implemented a similar project) to achieve its mission. It was a win-win.

Building the Foundation

Over time, Inquiry in the Community took shape. Funding from the National Science Foundation allowed us to adapt and test the *Fundamentals of Inquiry* curricu-

lum with successive groups of Girl Scout volunteers. Our team integrated the curriculum into the standard slate of workshops for troop leaders and explored ways to embed further reinforcement on inquiry science into a volunteer's typical web of support.

The team created activities, designed professional development for staff and senior volunteers who support troop leaders, and trained and provided assistance to numerous troop leaders.

An ongoing evaluation, conducted by Evaluation and Research Associates, helped us see our successes and navigate needed changes. Eventually, the research (Fitzhugh & Liston, 2013) yielded two key findings. The first was that two-thirds of troop leaders who received training and support subsequently implemented inquiry science activities with girls. The second was that large numbers of troop leaders were using inquiry science facilitation behaviors generally in working with their girls (Fitzhugh & Liston, 2013). Those who did not use inquiry tactics primarily cited time constraints, rather than lack of

skill or comfort with inquiry science.

Jen and I then partnered with three other Girl Scout councils, from Maine, Oregon and southwest Washington, and California's central coast, to expand the project's reach and to explore replication in councils with different staff structures, membership profiles, and size. At the same time, we prepared to expand our project's inquiry science curriculum throughout Girl Scouts of Western Washington and with the front-line volunteers who serve more than 26,000 girls.

Scaling up to reach all these volunteers, however, would require a small army. Luckily, Girl Scouts of Western Washington already had this structure in place, in the form of more than 100 "facilitators." These volunteers lead most of the organization's training workshops, facilitating hundreds of classes a year for other volunteers on topics ranging from basic group management to advanced leadership development. Like other afterschool trainers, our facilitators are a passionate bunch. They know they are capable of having a lasting effect by pre-

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paring front-line volunteers—troop leaders, camp volunteers, and others—to work effectively with youth. Some have been facilitating for just a few months; others, for a few decades. Some hold day jobs as educators, corporate trainers, or afterschool and youth development professionals. Others may be accountants, stay-at-home parents, or architects. All of them want to know that they're equipped with the best curricula for inspiring the next generation of Girl Scout volunteers and with the best strategies for implementing those curricula. To make sure that they could deliver the project's curriculum effectively (and happily), we needed to give them a first-hand experience that was engaging, relevant, thoughtful, and fun.

October 6, 2012, the day of the council's annual facilitators' conference, became the day to orient the facilitators to the new curriculum. Coincidentally, two weeks earlier, I had attended my first meeting of the National Afterschool Matters STEM Practitioner Fellowship. The fellowship, the result of a partnership between the National Institute on Out-of-School Time and the National Writing Project, was made possible by funding from the Robert Bowne Foundation and the Noyce Foundation. This fellowship engaged participants in extended action research and reflection on STEM-related topics of professional importance, in collaboration with a cohort of both afterschool professionals and school-time educators. Action research—a practice in which researchers are actively involved in the projects they study, using cycles of data collection and reflection to develop understanding—seemed a natural fit for the similarly cyclical work I was about to undertake with the facilitators.

During the first fellowship meeting, I gravitated toward a particular action research question: How would facilitators experience this switch from didactic, facilitator-centered curricula to an active, learner-centered, inquiry-based curriculum? I was interested not just in their initial experience at the conference, but also in their process of implementing the curriculum through the 2012–2013 school year. What obstacles would they perceive? What potential would they see? In the end, what advice would they give others who want to help afterschool and youth development trainers to facilitate inquiry science curricula?

Early on, my writings for the fellowship reminded me of a core professional development principle we've

used in the Inquiry in the Community project: “fun first.” Inquiry science activities are about active engagement and experience with a topic—the initial fun—followed by rounds of questioning, investigating, and reflecting. Professional development on inquiry should go through the same cycle. My work with the action research project would unfold similarly. And so, on October 6, 2012, I stepped onto the stage at the facilitators' conference, led 109 facilitators in enthusiastically making their first paper helicopter, and dove into my action research to see what I could find.

Initial Training

The scent of easel markers wafted up from the large sheet of paper. “Used open-ended questions” was scrawled on one side. “Gave us choices within the activity” was in the middle. “Sticker voting” was at the top, just above “Introduced the framework.” Not too long ago, I had been leading the group of facilitators in a scientific inquiry about spinning tops. Now, they were deep in a discussion about the specific inquiry facilitation behaviors they had just seen from me and my co-facilitators—what we had said and done, what supplies we had provided, and how we had set up the room. In short, the volunteer facilitators were publicly dissecting every aspect of our facilitation skills—and I was loving it.

Planning

Jen and I had been planning for months to introduce the project's curriculum at the facilitators' conference. From the beginning, we involved a small group of facilitators and staff in designing and developing the day's activities. While it might have been faster to plan the conference ourselves, we needed to bring the facilitators' voices and substantial insight into the conference planning. After all, it was as much their conference as ours, and we wanted to involve our audience in planning their experience—just as we would with any inquiry science activity.

First, the conference planning team, 10–15 people including council staff members and facilitators, experienced the project's curriculum as participants, complete with spinning tops. We had good discussions about how inquiry science relates to youth development in general and to their roles as volunteer facilitators in particular. Next, the planning team put together the framework of the day as a whole, decided on the flow of the sessions, and managed logistics and coordination. Even more im-

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CURRICULUM LAUNCH AGENDA

The workshop introducing Inquiry in the Community at the facilitators' conference followed an experiential learning design, detailed below.

Curriculum Overview (15 minutes). In this keynote-style session, participants got their first taste of an inquiry science activity (paper helicopters) and explored the reasons for launching a new curriculum, namely, that inquiry science and youth development share common principles of learner choice, experiential learning, and cooperative learning.

Curriculum Experience (2 hours). Sessions for groups of 20–25 facilitators were led by members of the conference planning team. Facilitators had a chance to experience the new curriculum as participants—spinning tops and all.

Connection to Role (20 minutes). The small groups then discussed how the concepts presented in this new inquiry science curriculum related to their role as facilitators.

Facilitators' Workshop (1.5 hours). In different small groups, the facilitators first identified the challenges they thought they might encounter while facilitating the new curriculum and then developed strategies for overcoming those challenges. Finally, they spent time studying the facilitation guides for the new curriculum in order to familiarize themselves with the set-up, activities, and pacing of the curriculum. These sessions were also led by members of the conference planning team.

portantly, team members took an active role in designing ways to help other facilitators see how inquiry science and the Inquiry in the Community curriculum were relevant to their roles, the workshops they taught, and the organization as a whole. When the day of the conference came, they were right by our sides as workshop leaders and role models for their fellow facilitators.

Introducing the Curriculum

The resulting curriculum launch at the conference followed a simple progression. First, facilitators experienced core elements of the curriculum as participants. Then they explored how the curriculum's inquiry science concepts applied to their role as facilitators. Finally, they looked at the curriculum from a facilitator's point of view. Working in small groups, they anticipated the challenges they might encounter while facilitating the curriculum and devised strategies for addressing those challenges.

Post-Launch Reflections

The Afterschool Matters fellowship gave me the opportu-

nity to reflect on anticipated challenges the facilitators identified: managing logistics and supplies, making the curriculum relevant to their audience of troop leaders and others who work directly with girls, and supporting learners who have a wide range of prior experience.

It struck me that these anticipated challenges were similar to those voiced by other afterschool and youth development trainers, such as those engaging front-line staff with science and engineering activities in the National Partnerships for After School Science 2 (NPASS2) project (Manning, Stazesky, Lin, Houseman, & Goodman, 2011). This congruence meant two things: that I could use other afterschool train-the-trainer models as inspiration and that what we learned in this experience could inform best practices for other train-the-trainer models in afterschool and youth development.

I also took some time to reflect on the success of the conference as a whole and of the launch of the inquiry science curriculum. Involving a small group of facilitators in planning and executing

the conference had been critical to our success. The planning team had indeed been able to foresee potential obstacles in the rollout of the curriculum. Team members also found ways to help participating facilitators see how inquiry science could be used to teach adults about broader youth development concepts.

I was also pleased that we had woven one of our key professional development practices—modeling—into all levels of the design and execution of the conference. Specifically, we had modeled our desired inquiry facilitation behaviors throughout the conference, from using the inquiry cycle to shape the day's activities to giving the facilitators time to identify their own questions and start finding their own answers. Modeling and talking about these facilitation behaviors gave our volunteer facilitators a common understanding of what inquiry science facilitation looks like in real life, plus practical tactics for using these facilitation behaviors in their own workshops.

Those workshops were beginning soon. Our facilitators now had a stockpile of inquiry facilitation behaviors

to draw on, as well as some potential solutions to the challenges they anticipated. It was time to move on to the next phase: providing ongoing support to our facilitators as they implemented the Inquiry in the Community workshop with hundreds of front-line volunteers.

Challenges, Opportunities, and Ongoing Support

In Girl Scouts of Western Washington, facilitators complete a standard self-evaluation survey after each workshop they lead. The questions invite reflection on the participants' experience, the facilitator's skills, and the structure of the workshop. I was impressed by our facilitators' honesty as I read their self-evaluations of their first attempts at inquiry science training. "[It was] more fun than I expected, but also more hectic," said one facilitator. "These participants really got it—that was encouraging," said another. I could tell they weren't quite comfortable with the curriculum yet when I read such comments as "I felt I messed up. Very stressed and nervous." Many facilitators were dealing with how to manage expectations, since their participants often expected lecture, not experiential learning. As one facilitator put it, "I'm thinking 'set-up, set-up, set-up.' . . . Setting up [the importance of experiential learning for adults] in participant's minds as they walk in the door."

The facilitators were a busy group between October 2012 and April 2013. During this time, they facilitated 56 Inquiry in the Community workshops, serving 435 front-line volunteers (Girl Scouts of Western Washington, 2013). That adds up to a lot of impact, when you consider that each front-line volunteer works with 8–15 girls. The number of volunteers receiving training on inquiry science and youth development practices was steadily increasing, and the number of girls affected by these volunteers was already in the thousands. In the council offices, there was a hum of activity to support volunteer facilitators as they led these workshops. Supply boxes were checked out, checked in, and restocked. Workshop sites were booked. Facilitators were scheduled so that they could co-facilitate in pairs. Through it all, we kept tabs on how our facilitators were doing and what support they needed.

This support occurred in several ways. First, we conducted quarterly check-in meetings, where regional groups of facilitators would share ideas, collaborate, and get updates. We used those meetings to discuss the new curriculum, find out what the challenges were, and collaboratively identify solutions. Similar work happened in individual conversations with facilitators before and after

their workshops. We also could see their ideas and challenges in their post-workshop self-evaluations. A substantial amount of peer-to-peer support took place as co-facilitators debriefed the workshops together and gave each other feedback.

To gain a deeper understanding of the facilitators' experiences, I collected both survey and focus group data as part of my action research. The survey data were compiled from curriculum-related comments on the self-evaluations ($N = 27$). Focus groups were conducted during quarterly check-in meetings, where open-ended questions such as "How is the workshop going?" sparked free-ranging discussions. Asking these open-ended questions gave the facilitators the chance to name whatever challenges were on their minds.

After collecting these data, I conducted a thematic analysis, coded the data, analyzed these codes to find common themes, and then reviewed and defined these themes. The result was five themes that describe the facilitators' experiences.

Logistics. Facilitators discussed the management of workshop time, people, supplies, and resources. Some common challenges were covering the activities and content in the time allotted, ensuring enough set-up time, working with different-sized groups, and managing workshop supplies. The facilitators shared comments such as "We should have prepped more and set up our supplies ahead of time," and "We had a spreadsheet with times written out and had a cell phone on silent next to [the] spreadsheet with [the] time."

Facilitation skills. This theme is about how facilitators put the curriculum into action. Their comments suggested that the facilitators were, indeed, using inquiry facilitation behaviors such as asking open-ended questions, minimizing lecture, and helping participants find their own answers and apply them to their unique situations. When asked whether she had avoided telling her own stories in order to allow the participants to engage in dialogue, one facilitator noted, "Oh, yes! No time [to do otherwise] in this workshop."

Safe space. Many comments dealt with creating a safe space for the participants. The curriculum design relies heavily on having the facilitators model different facilitation styles, from very directed activities to more open inquiries. The facilitators noted the need to clarify with participants that they were, indeed, playing roles and modeling specific behaviors for a reason. Otherwise, they felt it was difficult to maintain the safe space needed for candid discussion. One facilitator, when describing her first experience of the curriculum as a participant,

echoed these concerns: “I wasn’t aware that [the facilitator was] playing a role. I walked in and she took the top away. I thought it’s just who she was. It wasn’t until we discussed it that I got it.”

Comfort. Facilitators expressed a range of levels of comfort with leading the workshops. Many of them mentioned feeling stressed and nervous, less prepared than usual, and not familiar with the material, especially the first time they facilitated the workshop. Facilitators who did the workshop more than once indicated that they felt more prepared and more comfortable. “[I] felt better doing it the second time,” said one.

Expectations. Facilitators expressed the need to manage participants’ expectations about the workshop and to help them understand why the curriculum takes an active, inquiry-based learning approach. Many volunteers are used to lecture-style learning environments. When they are instead presented with an inquiry-based workshop, they often need help to understand why this approach is valuable. If facilitators don’t deal with this “why,” the rest of the learning process can suffer. Many facilitators emphasized the importance of stating repeatedly why the curriculum uses inquiry science activities to teach about leadership concepts and why the workshops used inquiry-based learning processes. As one facilitator commented, “Once you let the participants know they’ll be ‘doing’ instead of ‘sitting,’ then they have fun. Their expectation was that they’d come and we’d tell them stuff.”

With my themes and analysis in hand, it was time to think about the bigger picture. How could my experience with this group of Girl Scout facilitators inform best practices in inquiry science train-the-trainer models in afterschool and youth development? To answer that question, I examined the afterschool science landscape and asked our facilitators to provide advice for other train-the-trainer efforts.

Broader Insights

Afterschool and youth development organizations represent an excellent opportunity for extending science education to more youth. They have extensive reach into a population critically in need of inspirational STEM experiences: children in grades K–8. One study showed that youth who expressed interest in science careers by eighth

grade were three times more likely than those who did not to earn an undergraduate degree in science; this interest was a better predictor of STEM degree attainment than were test scores (Tai, Liu, Maltese, & Fan, 2006). With its ability to offer flexible, youth-centered programming, the afterschool community is uniquely positioned to create the inspirational, engaging STEM experiences that build children’s interest in STEM fields. STEM-rich experiences are also an excellent tool for advancing other youth development outcomes. In a summary of evaluation reports from 19 afterschool STEM programs, the Afterschool Alliance found that, besides improving STEM learning outcomes, participants reported gains in skills such as communication, teamwork, and analytical thinking—skills often measured in afterschool program outcomes (Afterschool Alliance, 2011). Others have noted afterschool programs’ ability to move beyond a simple STEM “pipeline” concept, focused exclusively on workforce development, to one that “supports youth development goals as well as STEM learning” (Lyon, Jafri, & St. Louis, 2012, p. 56).

Recognition of the power of out-of-school settings to effect science engagement is growing. According to Falk and Dierking (2010), “[A]verage Americans spend less than 5 percent of their life in classrooms, and an ever-growing body of evidence demonstrates that most science is learned outside of school” (p. 486). Against this backdrop, the President’s Council of Advisors on Science and Technology (PCAST) has called for, among other things, development of “opportunities for inspiration through individual and group experiences outside the classroom” (Executive Office of the President, PCAST, 2010, p. 13) to “meet our needs for a STEM-capable citizenry, a STEM-proficient workforce, and future STEM experts” (p. 12). These opportunities would be realized through “high-quality STEM activities in afterschool and extended day programs, together with support for programs to train providers and develop high-quality instructional materials” (p. 102).

As PCAST says, training providers is an essential piece of creating STEM capacity in afterschool organizations. Luckily, many networks of trainers are already in place: Youth development organizations such as Girl Scouts, 4-H, and the YMCA typically maintain their own sizable cadres of trainers, and many afterschool interme-

As one facilitator commented, “Once you let the participants know they’ll be ‘doing’ instead of ‘sitting,’ then they have fun. Their expectation was that they’d come and we’d tell them stuff.”

diary organizations have a network of trainers to serve the afterschool community. Even if these trainers have no STEM-specific training experience, they are often already doing training on topics that are in sync with inquiry-based science and STEM practices, such as cooperative learning, experiential learning cycles, and learner-led environments. With some focused professional development of their own on STEM practices and content, these trainers represent a resource that can easily be leveraged to train and support front-line volunteers and staff.

Advice from the Facilitators

The final piece of my action research was to ask Girl Scouts of Western Washington facilitators what advice they would give to other organizations who wish to engage their trainers in delivering inquiry science curricula. Using the themes that emerged in their previous comments, I developed a survey that asked facilitators open-ended questions about their experiences with learning and then implementing the inquiry science curriculum. The sample size was small ($N = 7$), but the insights these facilitators shared echoed many of the larger facilitator group's earlier comments.

These insights fell into three categories. First, the facilitators highlighted the importance of making logistics management as easy as possible. Clear curriculum guides, participant handouts, and organized supply kits (or instructions for quickly creating their own) were all important to the successful delivery of the curriculum. One facilitator summed it up: "GSWW staff and volunteers provided introductory training, provide[d] materials, [and] provide[d] curriculum that includes scripts and timing, and I have found all of this to be helpful."

Next, every single respondent mentioned that it was critical to have the facilitators first experience the curriculum as participants and then examine how to facilitate it. One facilitator's comment summarized this common refrain: "Last, but almost first, the . . . conference introductory session was very, very essential." Another facilitator said, "Be sure to demonstrate [inquiry-based science learning] by having your facilitators experience it. Then they will see it is *fun* . . . just as we did."

Finally, facilitators recognized the importance of creating and maintaining an ongoing culture of skill build-

ing and learning in their cohort. They had several specific suggestions related to this concept, such as promoting co-facilitation and supporting peer feedback, providing periodic opportunities to network and share ideas, encouraging and modeling a willingness to try new things, and creating a safe space where it's acceptable to take risks and make mistakes. As one facilitator noted:

Hearing staff say things like, "That exercise didn't go as we expected, so we are learning too" [was helpful]. I think having a sense of humor and fun is really important to create a safe space. If we can laugh at our mistakes, then it is easier for me to try new things because it feels like there is very little risk.

Moving Forward

Though my action research focused on the Inquiry in the Community project's efforts to engage a group of Girl Scout facilitators in delivering inquiry science curricula to front-line volunteers, the lessons learned can apply to other train-the-trainer efforts in afterschool and youth development. The structure of our facilitators' engagement with the new curriculum—an initial kickoff followed by continued support—allowed both for sustained focus on the curriculum and for ongoing, just-in-time learning. Our facilitators identified the critical importance of allowing trainers first to experience inquiry science professional development as participants and to focus on why it is relevant to their role. Then they can explore the logistics of the curriculum, the required facilitation skills, and perceived challenges and potential solutions. I would add that involving a subgroup of trainers in the design and delivery of professional development ensures that the resulting efforts meet the unique needs of the trainer audience.

A final lesson is that the substantial networks of afterschool trainers that already exist can be leveraged to provide professional development on inquiry science and other STEM practices to front-line volunteers and staff. Using science facilitation curricula that have been specifically designed for the afterschool context, such as those developed by Inquiry in the Community, increases these trainers' chances of success. These trainers also provide access to their organizations' existing resources, such as training space, staff who support training, and access to potential audiences for the trainings. Using these resources can promote the sustainability of after-

"Be sure to demonstrate [inquiry-based science learning] by having your facilitators experience it. Then they will see it is *fun* . . . just as we did."

school science initiatives. Engaging these existing networks in building STEM capacity can create a world where sustainable, high-quality STEM experiences inspire millions of youth—and adults—to experience, investigate, and ultimately shout “I discovered!” at the top of their lungs.

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“Writing Is Not Really Something I Do”

Engaging Reluctant Male Writers

by Steven W. Garlid

In fifth grade, I went to the dark side. Mr. Ruskin, our teacher, had assigned us to write a short story. Inspired by *Jaws*, which I had recently seen, I wrote the most violent, blood-splattered short story I could come up with. My story, “Pick up the Pieces,” was about a man named Fred Dotslop who returns from work to find body parts hidden all around his house. At the climax, Dotslop finds

an eyeball floating in an olive jar. I can’t say what possessed me to write it (and its sequel), or what inspired me to turn it in to my teacher. What I can say is that Mr. Ruskin read it to the class, in what ended up being one of my proudest moments of middle school. What was he thinking? Writing like this would not be permitted in most schools or afterschool programs today.

For many students, that’s the problem.

Of the many trends I have observed in 20 years as a classroom teacher, one of the most disheartening has been a deteriorating interest in writing among male

students. Their disengagement manifests in many ways, from quiet malaise to blunt verbalization. “Writing is not really something I do,” Aidan, a fifth-grade boy, reported. “I’d rather read, which is kind of the opposite of writing.”

Despite my focus, over the last decade, on *process* rather than *product* in writing, the majority of boys I taught continued to show a lack of enthusiasm. Writers’ workshop models that focused on developing “seed moments” through personal narratives did little to spark their interest. I prodded them to write descriptive, clearly organized essays, but they showed little commitment. As a result, I saw well-organized writing that was

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fairly impressive, but behind it was an absence of passion and a growing disdain for the subject.

To explore the problem further, I joined the Afterschool Matters Practitioner Research Fellowship program in Seattle through School's Out Washington, a local nonprofit advocacy group for out-of-school time instruction. Supported by the National Institute on Out-of-School Time and the National Writing Project, the fellowship brought teachers like me together with afterschool practitioners. Inspired by this collaboration, I began to see new solutions to the problem of dwindling engagement among male writers. I began to realize that the school-time context of writing instruction contributed to the problem. The pressures on students and teachers to meet deadlines, reach achievement goals, and address standards encouraged more compliance than creativity. What if students could write in a more liberated context—where grades, products, and achievement goals were no longer factors?

These questions led me to develop Write After School, an afterschool writing program. Write After School offers choice within structure and encourages interaction in ways designed to engage reluctant male writers. Kids choose their own topics, receive feedback, and have chances to share and talk about their work. Although I don't encourage the kids to use the same blood-spattered butchery I wrote about in Mr. Ruskin's class, I do encourage them to follow their interests and trust their instincts. These attributes help to address the issues that can make it difficult for boys to feel engaged in writing as it is traditionally taught in the classroom.

Legacy of Struggle

The difficult relationship between boys and writing is well documented; its causes and solutions are the source of passionate debate. According to Peg Tyre (2008), boys get expelled from preschool at five times the rate of girls. They are more often diagnosed with attention-deficit disorder and more likely to be held back. They lag significantly behind girls in reading and writing (Tyre, 2008). "Boys and girls started off the same," Tyre writes in *The Trouble with Boys* (2008). "Around fourth grade, though, girls pulled ahead" (p. 19).

Although I don't encourage the kids to use the same blood-spattered butchery I wrote about in Mr. Ruskin's class, I do encourage them to follow their interests and trust their instincts. These attributes help to address the issues that can make it difficult for boys to feel engaged in writing as it is traditionally taught in the classroom.

In *Raising Cain*, Kindlon and Thompson point out that boys "act and speak in simple terms. Their more slowly developing language skills are apparent in their often blunt and unsophisticated humor or their preference for action over negotiation" (p. 30). In high school, the split between boys and girls grows even more dramatic (Kindlon & Thompson, 1999). In every racial subgroup, boys do worse in school than girls who come from identical environments (Tyre, 2008, p. 45).

The struggles males face with writing have far-reaching implications. Of the fourth-grade students at my school, Bryant Elementary in Seattle, who did not meet standards on the writing portion of the state-mandated Measurement of Student Progress in 2011, 70 percent were boys. On the 2004 Washington Assessment of Student Learning, only 48.6 percent of fourth-grade boys met the standard in writing compared to 67.3 percent of girls—a difference of nearly 19 percentage points (Fletcher, 2006). In his book *Why Boys Fail*, Richard Whitmire (2010) reports that, in the 2007 National Assessment of Educational Progress, female writers reached proficiency at nearly twice the rate of males.

Experts point to numerous diverse factors to explain boys' lack of interest in writing. Video games, medical problems such as attention deficit disorders, a lack of male teachers at the elementary school level, "feminization" of classrooms, and increased emphasis on testing are all identified as obstacles to male success. Another issue is a growing emphasis on male peer pressure: the "boy code," which Martin (2002) defines as "a fear of not living up to popular images of masculinity, fear of being labeled a sissy or seen as feminine in any way, fear of powerlessness, and fear of having their sexuality questioned" (Martin, 2002, p.62).

The proposed solutions vary widely. Some experts demand more active leadership and mentoring around literacy. Others propose single-sex settings for learning, extending school hours, and establishing consistent expectations. Some point to teacher perceptions and low expectations for boys. As Whitmire (2010) notes, "Poor handwriting is just the beginning of what teachers often find dismaying about boys' writing" (p. 69). Peg Tyre (2008) writes:

By broadcasting our cultural expectations about children, we risk conditioning boys and girls to favor certain activities and accept certain limitations. We make them vulnerable to a phenomenon known to scientists as the “stereotype threat.” (p. 180)

David Gurian (2011) points to brain research that suggests that physiological factors could also be responsible. Areas of the brain linking language, thought, and verbal communication develop earlier in females than in males. Furthermore, the female brain has a more highly developed hippocampus and Broca’s area than does the male brain, allowing females to retain memory, develop vocabulary, communicate verbally, and access information more readily than males. Females tend to have more access to emotively descriptive language in written assignments (Gurian, 2011).

To me, these arguments skate around the central problem, which has less to do with boys themselves and more with how writing is taught and when. Many of my male students show intense interest in other subjects including math, science, drama, reading, sports, music, and video games. They throw themselves into math problems, fully focused, only to check out during writing time. This ability to focus in other areas indicates a problem not with the boys as learners, but with the teaching methods and learning environment. The gender of the teacher does not appear to matter, nor does adherence to the boy code or feminization of the curriculum (Cleveland, 2011). What does matter is method.

In my classroom, boys have expressed an increasing disinterest in writing over the last several years. This displeasure can be either subtle or, as in the case of Aidan, overt. Students will ask to use the restroom, sharpen pencils, talk, daydream, doodle, feign illness, ask for bandages, and spill pencil shavings—anything to avoid the writing task at hand. With girls, I see a much higher level of engagement, focus, and persistence during writing. Although girls do not always consider writing to be their favorite subject, most work around their preferences, manage time well, and produce work that meets grade-level standards.

Practical Solutions

To unlock the barriers to male engagement in writing, we must examine the environments in which writing is taught. Regie Routman (2005) suggests multiple approaches, on which I base the recommendations below.

Step 1: Let the students do the talking. Learners respond positively to opportunities to talk throughout the

writing process (Routman, 2005). A study conducted by the Centre for Literacy in Primary Education in the U.K. indicates that talking provides “oral rehearsal for writing” and “a means to inhabit and explore characters or dilemmas” (Barrs & Pidgeon, 2002, p.5). Does this mean allowing continuous off-topic discussion every session? No. However, providing opportunities to talk at various points throughout the writing process allows students to shape and clarify their ideas and to provide feedback in a context of social interaction.

Step 2: Work collaboratively. Routman encourages a practice she calls “shared writing,” in which students and instructor work together on a piece of writing. In my experience, boys often appreciate opportunities to interact verbally in small groups. The process encourages talking and collaborative problem solving—two activities most boys respond to (Routman, 2005). Allowing students to talk about ideas and interact verbally through the early stages of the writing process provides guidance, safety, and interaction: qualities that I have found to engage students.

Step 3: Broaden the spectrum of writing topics we consider acceptable. Newkirk (2002) addresses the issue of violence in adolescent male writing, asserting that, when we limit the scope of the topics we deem appropriate, we fail to support the tastes and values of young male culture. Genres such as comics and topics including violent action and toilet humor have been shunned by the intellectual community. Consequently, Newkirk argues, many boys find little meaning in assigned writing—and therefore underperform. Instead of rejecting the topics boys embrace, Newkirk suggests that we “view boys’ culture as viable, alive, and worthy of attention” (p. 21).

Newkirk calls for a “permeable curriculum,” a broader circle that includes genres teachers might initially dismiss:

In the end, a broadening of the literary spectrum will not only benefit boys; it will benefit any student whose primary affiliation is to the “low status” popular narratives of television, movies, comics, humor, sports pages, and plot-driven fiction. (p.171)

Newkirk invites teachers to meet students more than halfway—to enter into our students’ worlds, to “join the game” (p. 182). Quoting Basil Bernstein, Newkirk concludes, “If the culture of the teacher is to be part of the consciousness of the child, then the culture of the child must first be in the consciousness of the teacher” (p. 120).

Broadening the range of acceptable topics in order to engage boys need not mean that we offer an “anything goes” environment. When I see violence in student work,

I see an opportunity for discussion. In many cases, through conferencing, students can think carefully about the causes and effects of violence. A student who develops a character whose parents both die may not be expressing a hatred of his parents. He may instead be exploring the sensation of losing his parents through divorce or revealing a desire to pull away from them as he matures. The most surprising discovery I've made about providing students with more choices in writing has been how infrequently violence appears at all.

Along with choices, boys need structure. I find that a consistent focus on sentence mechanics, language conventions, and handwriting provide the technical foundation necessary for boys to write competently and develop confidence. Daily writing warm-ups in writing journals can help students learn different sentence constructions. Note-taking strategies such as keywords and fact-question-response bring a balance between factual reporting and student voice. Mini-lessons can teach an array of specific writing techniques such as the use of powerful verbs or figurative language (Fletcher, 2006), providing more colors on writers' palettes. Perhaps the most powerful way to reach male writers is to ask them how they feel about writing and what they want to write about.

Student Attitudes at Bryant Elementary

To investigate the student attitudes about writing at my school, I designed and administered a writing interest survey to 189 students in grades K–5 in spring 2012. The survey asked students to respond to ten statements about writing by circling responses ranging from “not at all” (a score of 1) to “a whole lot” (a score of 5). The results of the survey confirmed my suspicions. Fifth-grade males scored lowest of all groups of students when responding to the following statements: “I write in my spare time,” “Writing is fun,” and “I like to share my writing.” Furthermore, fifth-grade males showed little confidence in sharing their writing compared to males in younger grades.

To assess the adult perspective on writing, I administered a 10-question online survey to parents in the Bryant community. Survey results show that boys' disinterest in writing does not stem from a lack of parental concern. Of the 142 parents who responded to the survey, 97.5% said that they see writing as “extremely important.” When I

asked the question, “How do you use writing in your own life?” parents said that they wrote primarily for work. One parent explained, “Kids should be writing every day, writing about what they are reading, writing about what they are learning in math, science, social studies, etc., in addition to writing for pleasure.”

Developing an Afterschool Writing Program

I designed Write After School to enhance enjoyment and engagement in writing among students in grades 3–5. The program offers a casual setting for up to 18 students to explore ideas and interests through writing, with me as their teacher. Held Tuesdays and Thursdays right after school, the course runs for 12 weeks at a time, three times a year. Parents have shown strong interest in the program: For the Fall 2012 course, I received 51 applications for 18 available spots. Of the 51 applicants, 19 (37%) were boys. I offered the course again in Winter 2013 and Spring 2013, with new participants each session. The ratio of girls to boys remained the same for each session.

I begin each session with a 10–15-minute mini-lesson. Then I allow extensive time for student independent work, peer editing, and individual student-teacher mini-conferences. I permit students to explore a range of genres including comics or graphic novels, short stories, research reports, personal narratives, and poetry. During the course, I teach strategies to help students generate ideas, write for various audiences, peer edit, revise, and present their work. The course is designed to be replicable, students centered, and fun.

I find that using a cue, in the form of a short question or an unusual object placed on a center table, can create an engaging hook for writers. During one session, students responded to the question, “What does a time machine look like?” After drawing and then writing for 10 minutes in spiral notebooks, students shared in pairs. Several asked to share with the whole class. “My time machine is made of wood and covered on the inside with red velvet,” said Ava. Zach's machine looked like a sarcophagus; Henry's, like a sled. Every student conceived of his or her time machine without help, and no two were alike.

Each one-hour session closes with two or three students sharing their work with the whole group. I encourage students to “find something that's working” in their

The most surprising discovery I've made about providing students with more choices in writing has been how infrequently violence appears at all.

pieces. For some, this means two paragraphs. For others, it means just a sentence. The amazing thing is, once they have written, most students can find at least one fragment of success in their work. The question “What’s going well?” provides a positive starting point for conferences and class discussions.

To structure program content, I surveyed student writers to generate ideas for our weekly themes. During the Fall 2012 session, we examined superheroes, humor, freaky stories, animals, science fiction, movie scripts, poetry, adventure, mystery, food, and sports. Students did not always finish a piece during a session. Instead, throughout the term, they began multiple pieces, and they often wrote outside of our twice-weekly sessions. At the conclusion of the spring session, the students submitted a story to a class book of short stories. The students each received a copy as memento of their Write After School experience.

Now in its second year, Write After School seems to be working. Students like Methaab, who were restless and unfocused during the first sessions, settled into a pattern and began to channel energy into their writing rather than off-task behavior. I hear from parents that some boys are beginning to write at home—for the first time ever. I hear students asking to take the course again. The students appreciate the flexibility of topics, lack of deadlines, and emphasis on fun. As the instructor, I use classroom management techniques, but I don’t need to pressure students to finish projects. As in any class, I see a range of needs. While Evelyn needs a way to share her work, Izzy needs help getting started.

The boys have responded positively to the class’ topics and its possibilities. I’ve noticed that many boys make more of a commitment to their topics and write for longer periods of time. When presented with more options, more boys have been making wise choices and pursuing their topics with conviction and personal connection. Having choice gives most boys in my workshop more to say about their topics, so they project a stronger voice and write more pages.

Some boys get so engaged in the process that they suggest additions to the curriculum. William, who in the first weeks expressed little interest in writing, began to open up and make suggestions for course content.

William: Can we invent our own words next time?

Me: Can you share an example?

William: Yeah, how about combining “run-dog”?

Me: That sounds interesting. What else?

William: We could put “-itis” on the end of it: “run-dogitis.”

When we listen to and encourage the language boys use, we affirm their voices and cultivate their connections to written language.

Developing a Boy-Friendly Writing Program

The following recommendations come as a result of my own trial and error in starting an afterschool writing program to engage writers, particularly boys who resist writing.

1. Start by assessing the needs of the community. Will the course be open to boys only? I decided to open the course to both genders, since both boys and girls can benefit from strategies that enhance engagement.
2. Secure a consistent location for the program that is quiet, accessible, and free of visual distractions.
3. Make sure you can be there consistently to facilitate, or choose a facilitator who can.
4. Structure program content around student interest. This step provides many opportunities to become aware of the range of interests students have. Include your own interests as well.
5. Schedule sessions no less than once per week. Twice a week or more is ideal to create a writing community more quickly.
6. Present high expectations in a calm environment. With high expectations, writers expect more of themselves and make noticeable progress. A calm working environment helps writers focus, gain control, and take risks. The combination of high stakes and low pressure helps build confidence.
7. Provide all supplies students will need, including journals, pencils, dictionaries, thesauruses, and so on. Keep students’ journals on site. Provide a separate journal to take home if a student wants one.
8. Maintain communication with parents or guardians regularly. Include them in the process.
9. Provide a course syllabus in advance. Students appreciate knowing what topics will be discussed prior to each class.
10. Reduce emphasis on product, and place more emphasis on process and support.
11. Celebrate student accomplishments by hosting a public reading, publishing a class book, or both.

One way we can give students options is to ask them *when* they enjoy writing. In April 2013, my students completed brief exit-ticket surveys (Fletcher, 2006). The exit slips gave them two statements to complete: “I like to write when...” and “I don’t like to write when....” Their responses are summarized in Figure 1.

Figure 1. Fifth-Graders' Responses to Exit-Ticket Surveys

I like to write when...	I don't like to write when...
<p>I have a good idea. It is quiet in the classroom. There is choice. We get breaks. There is no time limit. We can write about monsters. The lights aren't too bright. It is calm.</p>	<p>It is loud. The teacher assigns it. It isn't as long as you want it. There are no breaks. My hand is sore. It's judged. We're being tested. We're doing something really fun right afterwards.</p>

Addressing Common Core State Standards (CCSS) may help with funding for the program. The key writing strands in the standards ask students to be able to write opinion pieces, informative or explanatory texts requiring research, and narratives—and to do so proficiently, over both shorter and longer time frames. The CCSS also require “clear, coherent writing” and a writing process that includes planning, revising, and rewriting. These requirements could easily fall within the scope of a program like Write After School.

Taking a New Look at Writing Instruction

We must look seriously at the problems boys have with writing. The causes of boys' disengagement with writing stem from a variety of factors—biological, societal, and instructional. To address the problem, we must re-examine our teaching practices and offer alternative settings for writing instruction. An afterschool setting offers freedom from the pressures of state standards and content area coverage that may limit teachers during the day—though it could also embrace those standards, depending on the needs of the community. Afterschool programs like Write After School aim to meet writers where their interests are, instead of demanding conformity.

If we expect boys to grow as writers, we must strive to meet them where their interests and passions lie. Teacher Tom Romano writes, “Students gain self-confidence and develop respect for writing when they engage in frequent conferences carried out in an atmosphere of acceptance and trust” (Romano, 1987, p. 101). The goal of engaging male writers at the elementary school level is within our reach. If we wish to encourage boys to see writing as an ally, rather than an adversary, teachers and out-of-school practitioners must, at the very least, accept and trust the spaces their minds and hearts inhabit.

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The Quest for Mastery

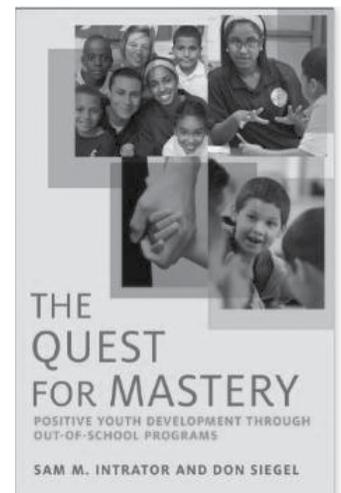
Diane Gruber, M.A., LHMC, National Institute on Out-of-School Time

Intrator, S., & Siegel, D. (2014). *The quest for mastery: Positive youth development through out-of-school programs*. Cambridge, MA: Harvard Education Press.

With low graduation rates affecting many communities, afterschool programs serving at-risk youth look for ways to close achievement gaps and level the playing field for all youth. Intrator and Siegel investigated how teaching youth to master a sport could help close the achievement gap by developing “leadership, communication, and conflict resolution skills” (p. 28). Both authors were interested in finding ways to “bridge the economic, educational, and social division” (p. 177) in an economically challenged community in Massachusetts.

This book provides a detailed account of the interviews, observations, research, and successes and failures that led to the development of Project Coach, a program that helps youth gain life skills through mastery of a sport. Project Coach also empowers and employs teenagers to become coaches and academic mentors to elementary school youth in their community. A deliberate and focused approach to teaching a sport can help youth develop skills they need for success in school and beyond.

In the development of Project Coach, the authors each followed their own professional interests. Intrator was interested in “how people develop expertise and the role that coaching plays in overall development” (p. 8).



Siegel was interested in “how youth engage or disengage, particularly in urban schools” (p. 8). Together the authors, both professors at Smith College, set out to explore emerging trends in out-of-school time programs that teach mastery of a sport—programs that focus more on “super-cognitive” or “soft” skills than on academic learning. Project Coach evolved from insights gained from 10 years of interviews, observations, and lessons learned from other successful sports-based programs. Intrator and Siegel learned from what those programs were doing and implemented the strategies they felt would work in Project Coach. What they found was that successful programs did not just teach youth how to play the target sport. They “infused learning, teaching, and socialization into the process of engaging in the activity” (p. 48).

According to Intrator and Siegel, youth learn the skills for success over time through a five-part process including a community of practice, a mastery mindset, intrinsic motivation, enhanced social capital, and transfer of skills. Detailed examples and supporting research explain how each of the five parts is essential in helping youth develop vital life skills. For example, one youth who was introduced to a new sport said, “I had no idea what I was doing, but I stuck with it . . . and I learned that if I stick with something I will get better at it and can get somewhere” (p. 85).

The book first explores how afterschool programs differ from schools and how they engage youth in educational experiences. The next few chapters examine the structures that need to be in place for successful program implementation and youth engagement. Chapters 4–7 examine four exemplary programs, highlighting how they help youth master activities and make a commitment to the program. The final chapters explain how to help youth transfer the skills they learn in afterschool programs to other areas of their lives. The authors conclude that, if youth are fully engaged in mastering an activity, they develop confidence, learn to regulate their emotions, develop positive social norms, and gain a sense of belonging in their community.

Potential audiences for this book include afterschool program directors, university educators, and community leaders interested in developing sports-based programs. The authors provide specific criteria and strategies for building a sustained and successful program.

Although the book is filled with anecdotes and interview quotations, some sections are a bit dense. The book’s heavy theoretical and research-based emphasis can help the reader understand the intellectual framework but can also distract from the authors’ main point. By providing insight into how afterschool programs can better serve our nation’s highest-need youth, the book leaves the reader with a feeling of hope that its framework can help in closing the achievement gap.

Afterschool Matters

Call for Papers

Afterschool Matters, a national, peer-reviewed journal dedicated to promoting professionalism, scholarship, and consciousness in the field of afterschool education, is seeking material for future issues beginning with Fall 2015. 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. Articles should be relevant and accessible to both practitioners and academic researchers. 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. We are particularly interested in manuscripts that offer practice recommendations and implementation strategies related to the featured research. 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

- 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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