



Extending Learning

Focus for Learning
Shirley Brice Heath

**Across the Doorsill:
Extending Learning with Students in
Mind and Body**
Eileen Landay

**Understanding and Supporting Children's
Mathematical Learning Lives**
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**Alternative High Schools:
Pioneering Promising Practices for
Blending Academic and
Extended Learning Opportunities**
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**Volunteers in Service to Youth:
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Warren Simmons, Executive Director

Editor
Robert Rothman

Managing Editor
Susan Fisher

Copy Editor
Margaret Balch-Gonzalez

Production & Distribution
Mary Arkins Decasse

Design
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Illustration
Carolina Arentsen

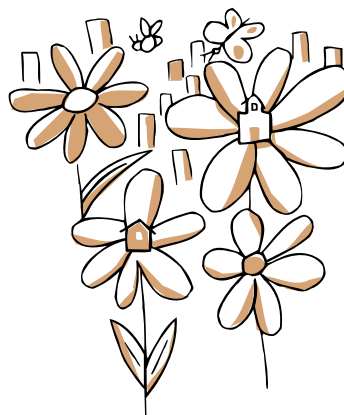
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Annenberg Institute for School Reform
Brown University, Box 1985
Providence, Rhode Island 02912
Tel: 401 863-7990
Fax: 401 863-1290
Web: www.annenberginstitute.org

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Leveling the Playing Field: The Promise of Extended Learning Opportunities and Supports for Youth

Heidi Harris Lemmel and Robert Rothman

There is a growing realization that reaching our goal of ensuring that all young people can graduate from any public high school with competitive, marketable skills will require high-quality educational opportunities both during and beyond the school day. The inequities in educational opportunities in schools have been well documented. But the significant gaps within school-day learning opportunities tell only part of the story. There are larger gaps outside the proverbial schoolhouse in the kinds of supplemental services that are essential for young people to develop the “capital” needed to succeed.

We at the Annenberg Institute for School Reform refer to out-of-school-time and supplemental learning activities as *extended learning opportunities and supports* (ELOS). This definition speaks to the extensive range of activities and learning experiences in a young person’s life beyond the requirements of the school day and core curriculum. Services and activities range from participating in a book club during school hours to partaking in federally funded after-school programs or a community-operated homework help center. Experiential and other non-academic activities, like urban sailing programs, are also included within the ELOS definition. These opportunities occur in school, during the academic day through events such as internships, or outside of the building after school and during weekend academies, school vacation breaks, and summer recess periods.

High-functioning extended learning activities should promote socially and academically nurturing environments while maintaining the interest and

Heidi Harris Lemmel is a senior associate at the Annenberg Institute for School Reform. Robert Rothman is a principal associate at the Annenberg Institute for School Reform and editor of *Voices in Urban Education*.

norms of students from diverse cultures. Access to high-quality enrichment activities can narrow the opportunity and achievement gaps by helping students develop a variety of necessary competencies to transition into adulthood and awareness of the larger world around them.

These competencies include not only *academic* abilities; they also include *social* competencies that enable young people to succeed in the workforce and society. As the cultural anthropologist Annette Lareau has suggested, concerted strategies employed by middle-income families both at home and during out-of-school activities encourage students to ask questions, negotiate rules, and challenge assumptions. These skills lead students to become active participants in their overall education process.

By contrast, extended learning opportunities available to youths from low-income homes often stem from a deficit model and seek to prevent bad outcomes, rather than develop the social competencies that would enable young people to achieve good outcomes on their own.

Consider the ways that differentiated access to extended learning opportunities play out in two important sectors: college preparation and youth employment. To help in college preparation, the federal government and many private agencies have created programs for low-income youths that provide guidance and other services. However, such programs do not offer the social networks that students from middle-income families are more likely to be part of,



which help prepare youths for the transition to higher education.

Similarly, internships offer students learning opportunities and a glimpse into career worlds that after-school jobs available to high school students do not.

What would a high-functioning system look like that provided equitable opportunities and that integrated in-school and extended learning? This issue of *Voices in Urban Education* suggests some possibilities.

Shirley Brice Heath discusses ways that extended learning opportunities use language as a vehicle to offer students the chance to “focus” their learning.

Eileen Landay describes an effort to create a “third space” between children’s worlds in and out of school that links the two in an educative and engaging way.

Sophia Cohen and Dennie Palmer Wolf show how a documentation of students’ “learning lives” reveals an untapped opportunity to connect mathematical learning in and out of school.

David Lemmel and Samuel Steinberg Seidel describe an initiative to create alternative high schools that erase the line between in-school and out-of-school learning.

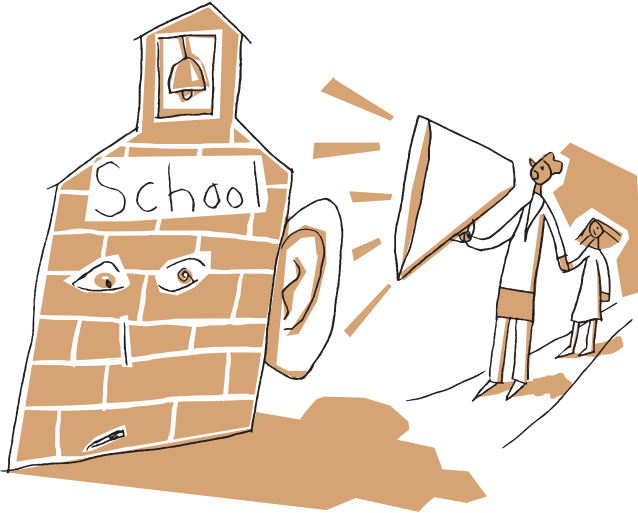
Heather Harding, Ned Rimer, and Camrin Fredrick describe an effort to engage a broad set of community volunteers to provide learning opportunities to youths.

Mayor David N. Cicilline of Providence, Rhode Island, discusses that city’s effort to develop a system to support after-school opportunities for middle school students.

These essays show that extending learning helps develop not just academic knowledge and skills, but a broader set of outcomes as well. And they show that

creating meaningful opportunities involves a deliberate effort to link schools with community organizations and agencies. Such partnerships are new in many cities.

Fortunately, municipal leaders, educators, and community groups appear eager to develop such partnerships and work together to build systems that support student learning in and out of school. Such efforts are essential if young people are to grow and develop to become engaged citizens and productive adults. But the efforts also recognize, as Mayor Cicilline puts it, that communities have a responsibility for the healthy development of young people. It's time we all took that responsibility seriously.



Focus for Learning

Shirley Brice Heath

Community organizations offer possibilities for young people to focus their learning by using language and communication as vehicles for developing understanding.

It would be difficult to find anyone who would not, with some reflection, agree that we all need and want to extend our learning. Schools expect learners to extend curricular knowledge and skills from classroom to daily life and future planning. Families hope the young will carry their learning beyond the achievements of past generations. Nearly everyone agrees that when young people go beyond direct instruction to apply and test their learning, they practice, experiment, confirm, and supplement skills and information. When Maria, an eager geometry student, starts a conversation with a team of surveyors on site in her local neighborhood, she grasps for the first time where geometry actually works in the “real” world. When the family doctor explains to Ehud’s family the allergies of his younger sibling, Ehud sees some of what he has learned in his science class come to life. Such occasions *focus* the processes and practices of learning.

But such occasions of attention to when, how, and where knowledge and skills matter cannot simply be *made* to happen. As teachers and parents, we cannot create beneficial accidents of discovery. In particular, when young people in middle and secondary school

become disillusioned or ask, “What good is this kind of learning for *me*?” we want to shower these students with opportunities that will focus their attention on just what learning can and will do for them.

This article explores possibilities for such “showering.” We find these possibilities in community organizations that extend the learning of young people. They provide pathways, incentives, and apprenticeship opportunities, models of excellence, and career and further education options. Many center their activities in community service, enabling the young to engage directly in civic affairs. Others immerse young people in sciences and arts, often with an eye toward entrepreneurship and employment in marketing and advertising, environmental architecture, or arts performance and education.

All these community organizations need the oral and written skills of young people, and they offer plenty of opportunity for learners to advance in their understanding and uses of literacy. But these organizations also depend on the savvy of young people to bring together the visual, communicative, and performative with evolving technologies.

Shirley Brice Heath is a professor-at-large at the Watson Institute of International Studies at Brown University and teaches in the anthropology and education departments.

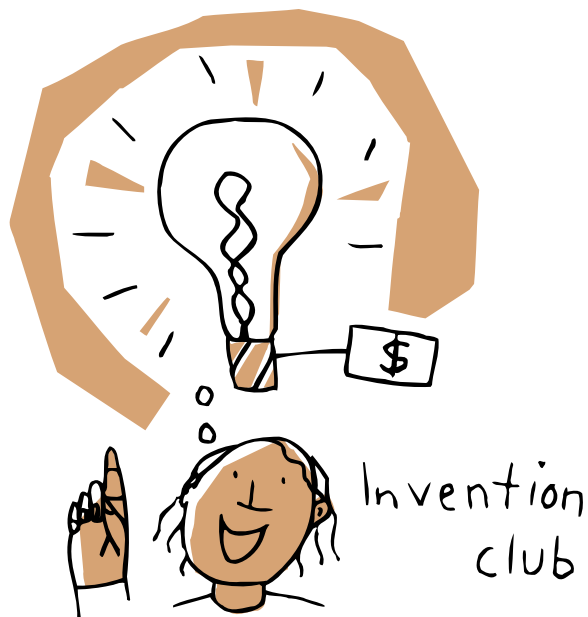
Language as a Vehicle of Learning

For several centuries, formal education has looked upon language as a *subject* of learning – not as a *vehicle* for learning. Community organizations that engage young people in multiple roles, such as that of artist, publicist, or community advocate, have to count on the language of the young to carry their work. Community organizations often have a mission to look beyond their own doors to develop communities economically; work with local populations to meet felt needs; and build family interest in local museums, parks, and community centers. In all this outreach work, community organizations depend on young people as resources who can speak and write as advocates and promoters. They rely on the skills of the young to persuade, deliberate, inform, and explain. Even the brief glimpses of two such organizations, portrayed in this section, will suggest how community organizations see language as their central vehicle of learning.¹

Invention Club

In a rural Midwestern state hard hit by losses in the dairy industry, young people gather after school several times a week in an equipment-storage barn on their school grounds with the high school's shop teacher. The mission of their club is to invent, each year, several products that local populations need.

First, however, they have to find out what locals think they need. To do



Community organizations that engage young people in multiple roles, such as that of artist, publicist, or community advocate, have to count on the language of the young to carry their work.

¹ Numerous longitudinal case studies of community organizations that engage young people in rich learning roles explicate their organizational structures, programmatic rules, and modes of learning; see Heath 1998, 2000, 2001, and Heath and Smyth 1999. In addition, a DVD, *ArtSHOW 2 Grow*, introduces several of these organizations and is available from Partners for Livable Communities, Washington, DC, at <www.livable.com>.

so, the young people go out to senior citizens' groups and other gatherings of local residents to talk about how certain recent favorite products were developed and urge people to think about innovations that could benefit their lives. To prepare for these meetings, young people read about inventions, successful companies, marketing research, and ongoing product assessment. They practice interviewing one another, imagine their own wished-for inventions, and consider projects their club undertook in past years. Once their initial survey work has been completed, they select inventions to undertake, test them through development with locals, and then plan distribution and sales.

Artists Sustaining the Environment

In an old warehouse district near an urban center, young people gather three afternoons each week to create projects they have pitched to non-profit and for-profit companies. The young artists create murals for restaurants, adolescent health centers, and sports fields; they collaborate with vet-

erans' groups on arts exhibitions; they design furniture from recycled periodicals and aluminum barrels; they take on photographic representations of neighborhoods in transition.

While carrying out projects, they study painting, photography, sculpture, welding, woodworking, and graphic design. Their work forces them to explore aspects of several sciences, put their calculation skills to work, and understand numerous cross-cutting principles of science, such as interdependence, dependent and independent variables, and adaptation. On a practical level, creating and perfecting their projects requires that they understand health and safety regulations related to toxins and the chemistry of paints and plastics.

In all phases of the work of these two organizations and of many others that involve young people in representing themselves and what they can do in their communities, communication is central. Facts flow into marketing projects, developing interview questions, planning promotional talks to civic groups, and assessing projects in various stages of development. Argument and deliberation find their way into conversations that explore ideas, make practice sessions meaningful, and bring the diverse experiences of the young people to bear on a current project.

In addition, while learning the manual skills necessary to create an invention, design a mural, or mount an exhibition, the young people work with professionals who demonstrate, guide, and question. The projects at hand frame the talk of these sessions, so that questions, proposals, and explorations



of possibilities mark most of the talk. Work spaces are large, multipurpose, and often noisy, so many people talk at the same time. Small-group conversations, two-party instructional sessions, and large-group interactions take place simultaneously. Cutting through the apparent chaos is a collective focus on being part of and pitching into the current project by learning. Motivating the participants is the sense that their collective knowledge and skill base have to expand in order to ensure that members of the group learn what they need to know to make the project happen successfully.

Figure 1 illustrates principles of operation that go along with this motivational frame.

When this motivational frame and its ensuing methods of operation come together, the language of interactions that circle within and through the learning looks very different from that of teacher and student engaged in instructional classrooms. Much of the learning around project development cannot be pre-scripted; therefore, questions arise naturally and spontaneously. Experts include adults as well as young people who have been active in the organization for a number of years. Novices or newcomers also bring

Key motivational frame: What do we know, what do we need to know in order to do what we want to do, and how do we learn what we need to know?

Successful and pleasurable learning depends on:

- range of roles available to members (e.g., expert, apprentice, skeptic, critic)
- multiple agents with diverse skill sets and knowledge bases
- collaborative practices
- multimedia communication (both internal and external to local environment)
- goal agreement on desired outcomes and standards to assess attainment of these outcomes
- high valuation on iterative learning
- means of learning that draw upon observation and trial-and-error opportunities
- focused study of printed materials and targeted attention to instruction from experts

Figure 1
Key motivational frame

The language of interactions that circle within and through the learning looks very different from that of teacher and student engaged in instructional classrooms. Much of the learning around project development cannot be pre-scripted; therefore, questions arise naturally and spontaneously.

different areas of expertise: they can map a particular neighborhood well, have past experience with certain software programs, or know neighbors who can provide a truck to transport materials for an exhibition. This crisscrossing by project members of different ages and levels of expertise gives rise to what often seems a chaotic, but energetic environment.

Figure 2 contrasts the language of learning environments of community organizations with the usual classroom question-answer-evaluation sequence of teacher and student.

Language as a vehicle of learning: The studio of artists and inventors

In a two-hour work session of a community organization, young people can hear and use:

- directives to listen, look, feel, imagine – as many as sixty times
- spontaneous demonstrations by a more capable adult or peer of what a performance or product can look, sound, or feel like – fifteen times or more
- small-group talk to work up ideas for a project or to develop a demonstration to be given within a deadline – at least once or twice
- verbal illustration or explanation of a routine, technique, or move – a dozen or more times
- portrayal or reflection – either serious or playful – on some event of today's practice or work session – at least six times
- one-on-one attention from an older youth artist or professional for praise, critique, or request for explication of a particular technique, move, or accomplishment – a dozen or more times
- metaphors and similes that refer to processes and effects – at least six times

Figure 2
Language as a vehicle of learning

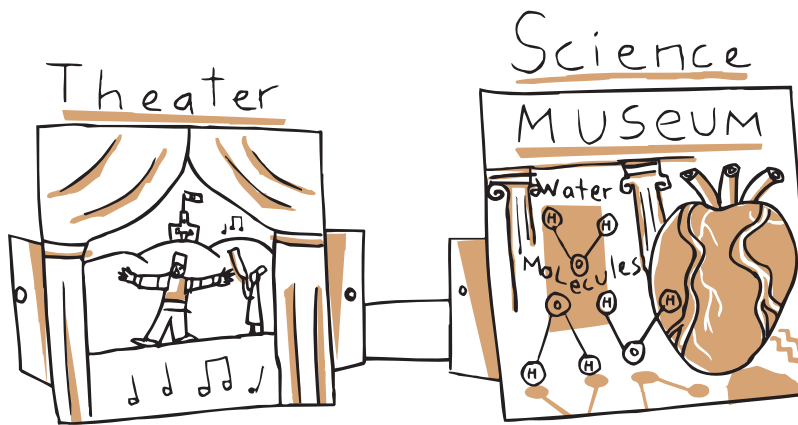
As anyone who has studied a foreign language knows, learning to use language fluently takes practice, meaningful engagement with fluent speakers, and intense motivation and incentive. The same is true of one's native language; fluency comes from practice that makes meaning that matters. Fluency develops in the midst of rich, overlapping, multi-party, meaningful situations.

Engaged and enlisted in the extended opportunities that community organizations offer, young people learn to jump into asking, joking, reporting, teasing, conversing, arguing a point, questioning a process, and critiquing an exhibition, mural plan, or set of color choices for a silkscreening process. Gaining fluency in the kinds of talk that undergird the manual, collective, and public work of community organizations means that young learners gain in language skills that can serve them elsewhere.

Taking Up Roles

In 1997, the *Handbook of Research on Teaching Literacy through the Communicative and Visual Arts* was published (Flood, Heath & Lapp). Many of the chapters talked about all the ways in which illustrative materials, dramatic performance, and technological understanding went along with print literacy. Ten years later, the second volume of this handbook extends all these earlier points, but one feature of this later volume is quite different.

Throughout Volume II of the *Handbook*, the authors emphasize in multiple ways the extent to which young people already know much about multimodal literacies just by living, looking, and being in the contemporary technology- and information-driven world (Flood, Heath & Lapp 2007). How do



they do this? They do so primarily by taking up *roles* with their friends, connecting with the media, and sustaining a curiosity about “What’s next?” in communicative technologies.²

Take, for example, a three-year-old whose grandparents have given him or her a DVD, book, toy, and T-shirt based on one particular story from children’s literature. Only a little more than a decade ago, the counterpart to today’s three-year-old would have sat together with an adult to read and talk about the printed text. Today’s gift from grandparents ensures that the toddler can take on several more roles than that of printed text reader. The T-shirt, particularly if it pictures one character, encourages dramatic play. To watch the DVD, the three-year-old figures out quickly how to insert the DVD, turn on the machine, and listen, while “reading” along with the book, playing with

the toy, or just watching the screen to see others enact the book’s characters.

Multimodal literacies are at work, but along with these come multiple potential roles that can be taken up one at a time or in numerous combinations. No longer is the toddler “just” being read to, but now the toddler takes on roles that make it possible for him or her to be in charge of taking up the full range of potential actions made possible by the grandparents’ gift.

Such explosion of role possibilities continues in the everyday out-of-school life of children and adolescents. The young in most households become the

Young people already know much about multimodal literacies just by living, looking, and being in the contemporary technology- and information-driven world.

2 Studies of out-of-school environments that young people seek out on their own consistently demonstrate the strong socialization force of these learning contexts (see, for example, Maira & Soep 2005; Perret-Clermont et al. 2004). Edmund Gordon and colleagues view the collective work of these environments as developing an “adaptive human intellect” within young participants (Gordon & Bridgall 2006).

No education commentator would be likely to claim that achievement of these three goals for education can be *or ever has been* achieved simply through formal education. Only with numerous types of extended learning environments can young people have a chance of gaining the kind of preparation called for.

experts on technologies, but they also increasingly enter into other roles previously thought to be those of adults only. Families with discretionary income pay to enable their children to take part in camp sessions devoted to enacting Broadway plays. Pre-teen children become the adult characters of classics such as *Oklahoma* and *Guys and Dolls*. YMCA and parks and recreation programs and other community groups serving families from a wide variety of income levels sponsor hip-hop groups and entrepreneurship clubs that draw on media representations of successes. Hospitals enlist youth volunteers who apprentice to long-time adult volunteers. All of these possibilities cast young people as adults, enabling them to experience a variety of positions, attitudes, and production-oriented settings generally closed in the “real” world to all but grown-ups.

Called for in these adult roles are imitation, invention, creation, and talent development, and all these situations depend on learning to work collaboratively with others. Experience in any of these roles (including those characterized in the two community organizations noted above) generates a widening sense of competence. The greater the number of roles and the levels of expertise gained, the more learning from one role extends into another and another and so on. Acquired from playing these roles are “basic” habits, such as those pertaining to consistency, commitment, communication, and the ability to plan, look ahead, and consider consequences. Ideally, these habits remain fundamental for use in all future learning, whether in further education, career development, family membership, or civic engagement.

Living in the Post-industrial World

Commentaries on education invariably express a trio of goals for what education or formal schooling should achieve: prepare students to be lifelong learners, productive workers, and informed, involved citizens.

Yet, if pushed, no education commentator would be likely to claim that achievement of these three goals can be *or ever has been* achieved simply through formal education. Only with numerous types of extended learning environments – from homes and families to religious and community organizations, to sports teams and musical groups, to summer employment for teens – can young people have a chance of gaining the kind of preparation called for in this trio of goals. Ideally, every young person has access to several of these environments over long stretches of time, with caring, competent role models, opportunities to gain expertise in several kinds

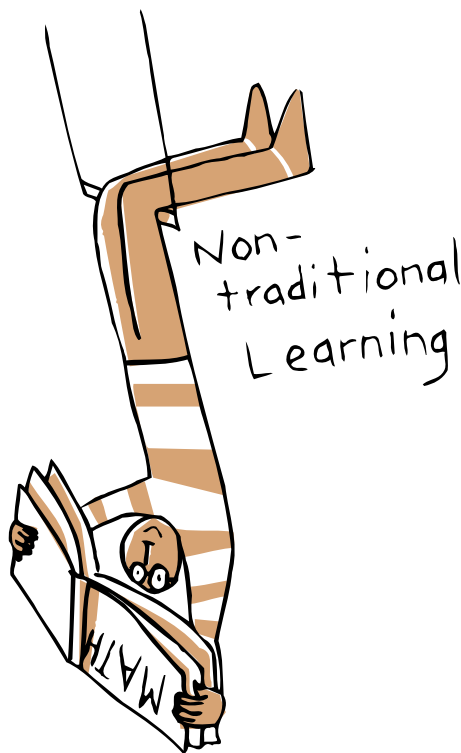
of performance, and closely observing, constructive critics.

Such ideals are, however, out of reach for the young people of many families whose discretionary time and finances prevent their children from having access to such extended learning environments. Here, community organizations, such as the two noted above, can and do complement parental resources. Visitors to the two groups sometimes compare scenes of the young people actively engaged in projects as “beehives,” “my grandmother’s house when I was a child,” or “my great-aunt’s kitchen at Christmastime.” In all these analogies, what is actually being achieved lies out of sight, but the energy and focus of the group is not questioned or interfered with. There is a fundamental faith that actors in all these situations will simply move forward together in their focus on learning while they make something happen.

Extending Learning

Focus is a word we often hear, and we generally mean *pay attention* or *concentrate*. But, like several related words – such as *see*, *perceive*, *visualize*, *imagine*, or *envision* – *focus* draws its primary metaphorical base from the world of *vision*. Children and young people live today in a world in which visual attention flicks from one channel to another, one computer-game-screen scene to another, and from one film or MTV scene to another. All too rare are occasions for holding visual attention on details, grasping links between the parts and the whole, and considering how change in one detail can affect another.

Community organizations such as those described above bring language and roles together to ensure that young people *focus* as they observe, plan projects, achieve progress in their undertakings, and assess their work.



These organizations have an agenda that complements the goals of schools, but they communicate and create experiences in a radically different manner. Some term this as a difference between “learning lessons” and “living knowledge” (Säljö 2004). Schools and community organizations provide learning environments in which the young relate differently to objects and the social practices that surround them. In community organizations, the young have to assume a sense of ownership that bears serious consequences for the social group if neglected or abandoned. Talking, thinking, and representing ideas and processes, both abstract and concrete, reinforce the importance of playing multiple roles. Thinking ahead, creating, inventing, and assessing have to work together for individuals and members of the group as a collective learning body. The work of these organizations involves both leisurely pursuits and possible career opportunities.

It is impossible in these organizations to pinpoint all the ways in which the flow of activities extend the learning of individuals, the communities and organizations with whom they work, and the group that invents and produces together. But they have learned – and we have to learn from them – that children and young people need continuous and rewarding experiences that bring to light their capacities to focus learning.

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Across the Doorsill: Extending Learning with Students in Mind and Body

Eileen Landay

A program designed to develop literacy in and through the arts creates a “third space” between students’ lives in school and their lives outside of school.

Awake

The breeze at dawn has secrets to tell you.
Don’t go back to sleep.
You must ask for what you really want.
Don’t go back to sleep.
People are going back and forth across the doorsill
where the two worlds touch.
The door is round and open.
Don’t go back to sleep.
—Rumi

The fall term started at Central High School in St. Paul, Minnesota, two days after Hurricane Katrina devastated New Orleans on August 29, 2005. When students arrived in Jan Mandell’s advanced theater class, a discussion began about what was happening several thousand miles to the south. A big storm. Flooding. People on rooftops and crowded into a big building. It was all over the TV. Actually, students conceded, they didn’t really know much.

Mandell herself wanted to know more. She wanted her students to know more and believed that, together, the class could come to understand many aspects of the disaster and perhaps even find ways to help. In Mandell’s classes, students do much more than put on plays; they *create, refine, and perform* original plays based on topics and themes she and the class identify as

being important to them as individuals and, also, to the larger society. After some discussion, the class decided it would create a theater piece about New Orleans and Katrina.

In a recent conversation, Mandell explained: “I asked them, ‘Do you want to go any deeper with this? Find a newspaper article or television report about Katrina that you can connect with personally. Where can you find yourself out there?’ They brought in a variety of things. Some people watched TV and wrote about it. Others came in with pictures and articles from the newspaper.”

In this way, the class set about learning about Hurricane Katrina. They shared the information they had. Next, they talked about what they would need to know in order to create an accurate and interesting performance. They brainstormed a list and gave themselves

Eileen Landay is clinical professor of English education (ret.) at Brown University and faculty director of the ArtsLiteracy Project.

assignments: to watch, listen, and read the news to get a full and accurate picture of what was happening; to learn about the geography, history, and customs of New Orleans; to understand as much as they could about the hurricane; and to gather stories of people affected by the storm.

They did all these things and more. Some collected clothing and worked as volunteers at the local Martin Luther King Center, sorting and packing donated clothing bound for Louisiana. By chance, there they met a family who had survived the hurricane and come north to establish residence in St. Paul. Through ongoing interviews, this couple gave the students a personal account of exactly what they had experienced. Other students located local people with firsthand knowledge of life and customs in New Orleans – the school’s principal among them – and invited them to come to class. Over the next

few weeks, the students listened, viewed, read, researched, discussed, debated, improvised, and wrote vignettes and narratives describing what they had learned. With the help of their teacher and volunteer actors and directors, they wove their work into a performance they titled simply *Katrina*.

The performance included monologues and group performance pieces written by the students and incorporating dance, music, and spoken word. Cumulatively, the piece offered powerful images of the hurricane’s effect on the city’s residents and included references to Louisiana’s political and social history.

One month later, in the school’s “black box” theater, the class performed their work for an audience of family, teachers, and friends, including, as guests of honor, the family who had fled the hurricane and who had been an important source of background information. Following the performance, as is customary, the performers participated in a “talk back” in which they answered questions and responded to comments from the audience.

That evening’s performance of *Katrina* was only the first of many. During the next four weeks, the play was presented during the day for students and faculty at Central High School. Later, a subset of the class, called the Central Touring Company, took the performance into the community at large, performing *Katrina* a dozen times at schools, community centers, and local universities.

Over the past twenty-nine years, Mandell and her students have developed and performed plays that touch on social issues as varied as access to education, racial harmony, family structures, and poverty. The effect of Mandell’s work has been widely felt in her school, in the school district, and

Students benefit cognitively from the experience of planning, assuming genuinely meaningful roles in organizing and carrying out the work, observing and focusing on details, and engaging in sustained practice and deliberation.

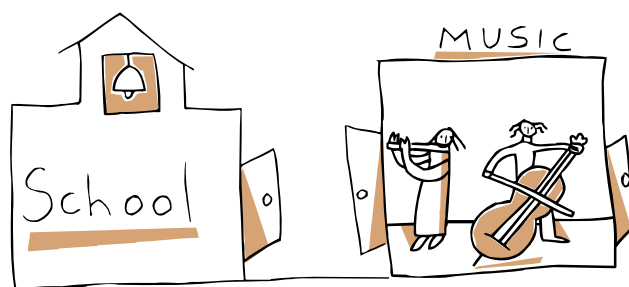
throughout the Minneapolis–St. Paul community. Their play on child abuse, performed for the Minnesota House of Representatives, influenced legislation on the topic. Her students have served as mentors to less-experienced peers and to younger students in schools; they have provided professional development and support for other teachers in the district and in the community.

Graduates of her program have become actors, writers, teachers, youth workers, and social activists. Many have remained in the Minneapolis–St. Paul area, and a number of these former students return regularly to work with her and her Central High School students. In 2003, Mandell and a colleague, Jennifer Wolf, published *Acting, Learning, and Change*, describing Mandell's instructional approach in detail.

Mandell's work has now been taken up by teachers across the curriculum in area schools, as well as teachers and performers in local after-school programs.

Performances as Opportunities for Learning

Projects of this sort serve as powerful means of extending learning, both for those enrolled in the class and, subsequently, for others, in a widening circle of influence. Students in classes such as Mandell's benefit cognitively – as well as in attitude and behavior – from the experience of planning, assuming genuinely meaningful roles in organizing and carrying out the work, observing and focusing on details, and engaging in sustained practice and deliberation (Heath 2000, 2001). They become repositories of expert knowledge and, in sharing that knowledge with others through performance, act as reservoirs



of learning, transmitters of information, and models to peers and others in the wider community.

In preparing and presenting their work, students employ a wide range of artistic forms using language and other media and modalities. Modes of presentation include photography and other visual arts, music, dance, and a wide range of spoken-word genres. Processes involved in information gathering, data collection, and preparation of presentations include interviewing, reading, writing, researching, discussing, summarizing, composing, and revising. James Catterall (2005) describes these processes using the terms *conversations* and *silences*. *Conversations* include the full, rich, inner, and interpersonal dialogues of creation and expression. *Silences* describe subconscious brain functions and cognitive restructuring produced by immersion in – and production of – works of art.

Extending Learning: Creating a Third Space

Experiences such as those of Mandell's students extend well beyond the content and approaches customarily observed in public school classrooms. The metaphor *third space* provides a useful means of describing the original and vibrant environment created by the juxtaposition of students' lived worlds with knowledge drawn from formal learning settings.¹

The *Katrina* project and its extension beyond the classroom into the community illustrate how third spaces do the work of extending learning.

They do so by:

- linking participants' interests, experiences, and knowledge to those valued and formally presented in school settings;
- incorporating performance-based media such as music, theater, and visual arts into the work of academic disciplines;
- connecting classroom learning with concrete, specific, and practical goals and activities in the wider world.

Rumi's poem quoted in the opening of this article urges people to step across the doorsill where two worlds touch. The poem suggests the possibility of entry into a *third space*. What guidance exists for the process of designing spaces of this sort that can be deliberately brought to life and enacted in both in-school and after-school settings?

¹ See, for example Stevenson and Deasy (2005) for examples of school settings they identify as third spaces by virtue of their arts-related focus. Among others who have employed the metaphor for similar, but not identical, purposes are Gutierrez et al. 1999 and Moje et al. 2004.

The juxtaposition of students' lived worlds with knowledge drawn from formal learning settings creates a *third space*.

A Framework for Creating a Third Space: The ArtsLiteracy Project

For the past five years, Mandell and colleagues in Minneapolis–St. Paul have developed a partnership with the ArtsLiteracy Project at Brown University. An initiative that focuses on developing literacy in and through the arts, ArtsLiteracy provides curriculum development and professional development for teachers and artists across the country and abroad that is applicable to both in-school and after-school programs. Founded ten years ago in Brown's education department, ArtsLiteracy introduces participants to a set of principles and a flexible instructional framework that outlines a process, or "roadmap," and establishes a common vocabulary for creating third spaces that combine participants' knowledge and interests with the content of academic disciplines as a way of addressing significant questions and social issues. The staff hold courses, conferences, professional development workshops, and seminars

for teachers, artists, community activists, youth, and others at Brown, at partner sites such as the St. Paul schools and in a variety of other school and university settings. They develop, document, and disseminate curriculum within and across settings in face-to-face meetings and online.²

ArtsLiteracy’s focus is not on producing a standardized off-the-shelf literacy or arts curriculum, nor offering a set of methods. Instead, it draws on a full repertoire of art-making and literacy-development tools and identifies a *process* that supports participants’ learning and development (Landay 2004). Literacy practices are embedded in community-oriented, performance-based work.

The instructional framework described in this section and depicted in Figure 1 – *the performance cycle* – is not intended to be a template for “systematic instruction” but, rather, a guide for shaping teaching and learning experiences. Drawing on and incorporating the diverse talents of individual participants, it is adapted to the context in which it is being used, while providing a common vocabulary for designing and discussing teaching and learning. While the example and discussion offered here center on literacy and the arts, the performance cycle can be adapted to curriculum in any content area designed to be student centered and project based.

Building Community

By focusing on building community as a first step to literacy instruction and by returning regularly and often to that aspect of the cycle, participants acknowledge what is widely understood but

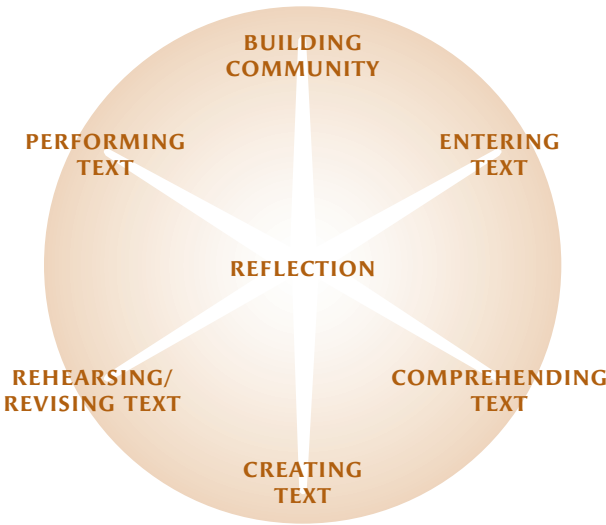


Figure 1
The performance cycle (developed by Eileen Landay and Kurt Wootton)

ArtsLiteracy outlines a process, or “roadmap,” and establishes a common vocabulary for creating third spaces that combine participants’ knowledge and interests with the content of academic disciplines as a way of addressing significant questions and social issues.

² For more information, see the ArtsLiteracy Web site at <www.artslit.org>.

At its most effective, a learning community is one whose members have a shared purpose; supportive relationships among people of varying levels of expertise; and a repertoire of routines and activities.

seldom acted upon in educational settings: the fundamental connection between social relations and learning. Building a community of practice “does not necessarily refer to a sense of harmony, but rather a shared set of social practices and goals” (Lee & Smagorinsky 2000, p. 5). At its most effective, a learning community is one whose members have a shared purpose; supportive relationships among people of varying levels of expertise; and a repertoire of routines and activities to which everyone contributes and within which everyone grows (Wenger 1998). Well-structured and well-implemented performance work creates effective classroom communities that, in turn, act as a scaffold that supports the development of literacy skills.



Entering Text

The focus in this step is on introducing a topic or raising a question that students will find compelling and feel they can contribute to. Activities create “a reason to read and write” (Landay 2001, 2005), especially for those students who have not yet had extensive positive interactions with text. Participants use a range of tools including improvisation, discussion, and image making in preparation for exploring relevant texts and addressing the question at hand.

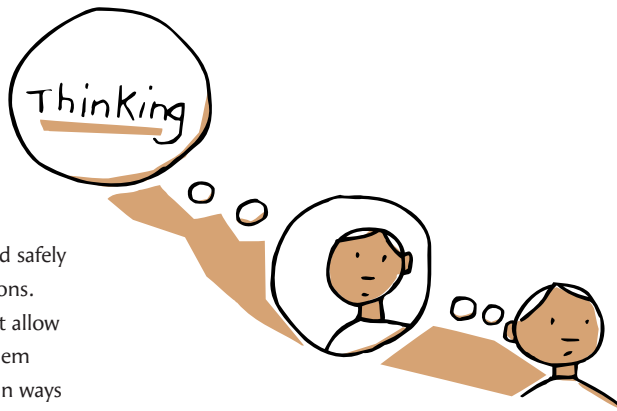
Comprehending Text

Students undertake in-depth encounters with text in order to address questions and concerns that are the focus of their work. Students may read difficult and challenging texts in order to draw on wisdom and beauty produced by minds they may not be able to encounter in person. Taxonomies for comprehending texts may range from the simplest – What does it say? What does it mean? Why does it matter? (Blau 2003) – to the more comprehensive and complex. In an updating of Bloom’s classic taxonomy, for example, Lorin Anderson and colleagues (2001) identify both *comprehension* processes, ranging from remembering to creating, and *types of knowledge to be comprehended*, including factual, conceptual, procedural, and metacognitive.

Creating Text

Participants generate, plan, and produce an original script that addresses core questions and incorporates texts they have read and written. By so doing, they

generate a trace in a format that opens up a range of new possibilities. [It then becomes possible to] inspect and reinspect the same ideas, coming at them from many different angles and in many different frames of mind. We can hold the original ideas steady



so that we may judge them, and safely experiment with subtle alterations. We can store them in ways that allow us to compare and combine them with other complexes of ideas in ways that would quickly defeat the unaugmented imagination. In these ways... physical text transforms the space of possible thoughts. (Clark 1998, p. 208)

The texts students create represent responses to questions raised and issues identified in prior discussions, as well as in their own and other people's texts.

Rehearsing/Revising Text

Rehearsal involves demonstration, discussion, justification, explanation, and modification. Students address and improve the quality of the work. They develop partial solutions and conjectures that are "passed around, amended, completed by others" (Clark 1998, p. 206), resulting in a "process of externally encoded cognitive change and discovery" (Donald 1991, p. 343). In the rehearsal/revision process, participants engage in purposeful repetition and make their thinking visible and explicit.

Performing Text

All work results in a performance, though the forms, purposes, and audiences may vary widely. Sometimes, performances are brief and informal,

intended for a small audience of peers; sometimes performances are formal and intended for a large, public audience. The performance crystallizes the experience and provides a shared sense of common purpose. Often, after a group has gone full circle from initial community building to final performance, students will say that for the first time they truly have begun to experience a sense of community.

Reflection

Reflection takes place regularly in every step of the performance cycle. Clark (1998) points to "thinking about thinking" as a good candidate for a distinctively human capacity, one not evidently shared by the non-language-using animals that share our planet and that may be characteristic of the cognitive landscape of *Homo sapiens*." This "cluster of powerful capacities involv[es] self-evaluation, self-criticism, and finely honed remedial responses" (Clark 1998, p. 209). Reflection provides the opportunity for participants to step

Clark points to "thinking about thinking" as a good candidate for a distinctively human capacity, one not evidently shared by the non-language-using animals that share our planet."

back from experience, consider its significance, and reshape both their internal inclinations and capacities and external behaviors.

Crossing the Doorsill: Entering a Third Space

If, as the examples and research cited here claim, creating and maintaining third spaces is an effective means of anchoring and furthering student learning, how do the educators who hold primary responsibility for designing and implementing the formal academic environment of schools contribute to such an effort? While it may appear to make sense from an organizational perspective for school administrators to narrow their focus – to “wall off” their organization and its work from the larger world by establishing and measuring goals and procedures specific only to their enterprise – such an approach best serves students who have already aligned their interests and efforts with that of the organization. It can be positively detrimental to those students whose *funds of knowledge* (Moll, Tapia & Whitmore 1993) and discourses reflect different backgrounds, interests, and experience.

“Walling off” schools from the larger world can be positively detrimental to those students whose *funds of knowledge* reflect different backgrounds.

In a recent talk to educators, Harvard Project Zero director Steve Seidel (2007) asked the audience to be mindful of the distinction between quality learning experiences and what he called “proxies,” a term I understood to mean activities that *stand in for learning*, in which students go through the motions of learning without being truly engaged. In Seidel’s words, “For young people, none of the proxies matter very much. I believe they say to themselves, ‘If the quality of the experience is not compelling, what am I doing this for?’”

The distinction between engaged learning and its many proxies is useful for educators committed to creating environments in which students truly have high-quality learning experiences. To create such an environment, they must develop and maintain a clear picture of the context within which students live and work; understand their students “in the process of defining themselves” in school and out (Greene 1995, p. 13); understand the expectations and demands of the system; and contribute to the creation of third spaces that serve the needs of students and society.



By acknowledging the value and richness of varied contexts for learning and the importance of real-world outcomes, by introducing and supporting flexible processes such as the performance cycle and building on models such as Jan Mandell's in St. Paul, administrators are bound to extend the potential for success in learning to all students and help to open wide the door that allows them to step across the doorsill into a vibrant and lively third space.

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Understanding and Supporting Children’s Mathematical Learning Lives

Sophia Cohen
and Dennie Palmer Wolf

A documentation of students’ “learning lives” reveals an untapped opportunity to connect mathematical learning in and out of school.

Children build a foundation for logical and mathematical thinking from their actions and reflections. Logical and mathematical thinking further evolves as children engage in social interactions, games, commercial transactions, and discussions with others. As students they encounter conventional representations and reasoning practices that will affect the course and even the nature of their mathematical thought. A theoretical account of mathematical reasoning requires uniting the findings of developmental psychology, everyday mathematics, and mathematical learning in schools. It will also require a careful analysis of the structure and semiotics of mathematics itself.

—*Analucia Schliemann and David Carraher, “The Evolution of Mathematical Reasoning”*

Schliemann and Carraher (2002) remind us that children create their mathematical understanding not only in mathematics class, but also in a variety of other activities. For example, children experiment in science with race cars on ramps, engage in the quick, implicit calculations of catching a fly ball, or watch in amazement as a grandmother does her neighbor’s taxes without ever reaching for a calculator. This lived quality of children’s mathematics – and its implications for their learning – is our focus in this article.

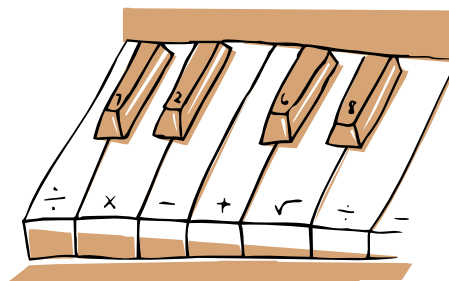
Using data on mathematics teaching and learning in an urban district, we explore three main points:

- Young people’s mathematical thinking develops across many contexts, both in school and out of school. For instance, what a student learns in mathematics class may shed new light on a fence the student helps build at home; and what that student learns while building the fence may provide a sharper understanding of topics explored in mathematics class, like measurement or shape.
- We need to understand the particular “genius” of each of these different mathematics contexts in order to

Sophia Cohen is a consultant in mathematics education and mathematics education research. Dennie Palmer Wolf is director of opportunity and accountability at the Annenberg Institute for School Reform.

figure out how each one might support children's engagement with and understanding of mathematics.

- We need to consider how best to connect these multiple resources into comprehensive learning systems for mathematics that make use of the many contexts in which children develop their mathematical thinking.



The Broad Context for This Work

Research and reform efforts in mathematics education have highlighted two vital lessons. First, students walk into class – even at the earliest grades – with mathematical knowledge and with the ability to take an active role in further developing their existing mathematical understandings. They do so by building models of problems, drawing diagrams, working with equations, wondering, making generalizations, and posing questions of themselves and others. While this image of the child as an active learner has played a central role in the mathematics education reform efforts of the past twenty-five years, we do not have much information beyond the earliest grades about what this proclivity looks like outside the mathematics classroom setting.

A second important lesson is that mathematical proficiency is complex. In *Adding It Up* (2001, p. 116), Jeremy Kilpatrick, Jane Swafford, and Bradford Findell describe mathematical proficiency – what we aim for students to develop – as composed of five interwoven strands:

- *conceptual understanding* – comprehension of mathematical concepts, operations, and relations
- *procedural fluency* – skill in carrying out procedures flexibly, accurately, efficiently, and appropriately

- *strategic competence* – ability to formulate, represent, and solve mathematical problems
- *adaptive reasoning* – capacity for logical thought, reflection, explanation, and justification
- *productive disposition* – habitual inclination to see mathematics as sensible, useful, and worthwhile, coupled with a belief in diligence and one's own efficacy

Mathematics educators have thought carefully about how classroom instruction might support the development of this many-stranded proficiency. Much of what we have learned is embodied in a new generation of curricular materials for use in mathematics classrooms and new approaches to professional development to support teachers as they use these materials. Yet, we have not wrestled in any systematic way with the question of what the

Students walk into class with mathematical knowledge and with the ability to take an active role in further developing their existing mathematical understandings.

many hours and activities outside of the classroom can – and can't – provide toward the development of this many-stranded mathematics proficiency.

Some school reform organizations and researchers are calling for a new vision of public education in which schools are central but are only one part of a much larger, interconnected, and coherent set of learning opportunities for children, youth, and families (Gordon, Bridglall & Meroe 2005; Harvard Family Research Project 2006; Time, Learning, and Afterschool Task Force 2007; Rothman 2007). We see the work of understanding the learning lives of young people as a key ingredient in building such systems so that they are genuinely responsive to and respectful of what young people offer and need.

The Immediate Context for the Work

In this article, we examine the mathematical learning lives of urban middle school students in a small city of 73,000 in the post-industrial Northeast. The district is representative of the efforts and tensions that are playing out in many districts which serve high numbers of culturally, linguistically, and socio-economically diverse students in

a period of both high standards and tough accountability (Cahnmann & Remillard 2002). Responding to the call for higher standards for all students, over the last six years this district has invested in high-demand mathematics curriculum materials at the elementary, middle, and high schools: Growing with Mathematics; Connected Mathematics Project; and Interactive Mathematics Program.

We focus here on the middle school grades, where the mathematical topics (e.g., exponential decay, operating with negative numbers, surface area, and linear equations) become more challenging and less familiar to the many adults in a child's life (both family members and after-school personnel) and where the topics are less likely to be part of the child's everyday experiences (or less likely to be noticed in their everyday contexts) than the computations and simple measurements characteristic of the curriculum during the elementary years.

Tools to Look at Students' Mathematical Learning Lives

Over the past three years, the Annenberg Institute for School Reform has developed a set of tools for examining students' learning across multiple contexts. One major suite of tools is the Teaching and Learning Review, a process in which professional educators and community representatives train together to become skilled observers and interviewers and then conduct a multi-day examination of instruction and students' learning. A second set of interview and survey tools creates data on where and how students engage in after-school programs. A third tool, Student Learning Lives, is a "learning log" that asks students to keep track of their activities and thoughts related to particular con-

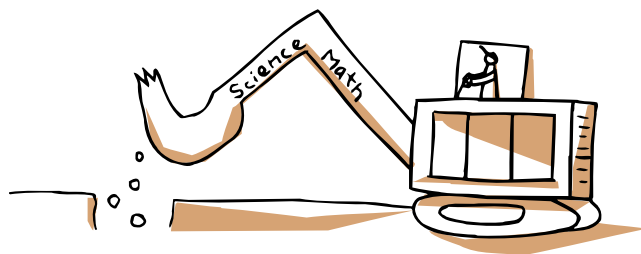
We see understanding the learning lives of young people as a key ingredient in building such systems so that they are genuinely responsive to and respectful of what young people offer and need.

tents (e.g., mathematics, reading, the arts) across a twenty-four-hour period in order to create in-depth portraits of the learning opportunities students are offered in school, as well as the learning opportunities they create for themselves, either by seeking out activities or by formulating projects and pursuing interests on their own.¹

We used a combination of these tools to create a detailed scan of mathematics learning in and outside of the district's middle schools, asking: Where are students encountering mathematics? What mathematics? With whose help? And to what effect?² In the rest of this article, we use our preliminary findings to offer an initial sketch of the mathematical lives of the middle school students we studied and to consider the questions raised and the potential synergies suggested by them.

Students' Mathematical Lives in Schools

Within school, we see students engaging in mathematics in mathematics class, in other classes such as science or geography, with peers, and in their private thoughts. Both in class and out of class, the middle school students we studied showed an interest in mathematical thinking and took active roles in their own mathematical learning and



in that of others. Students were mathematically engaged at many points and in many contexts during the school day.

Learning in Mathematics Classrooms

Mathematics class (and its associated homework) was where students and teachers tackled the mathematical topics of the middle school curriculum. However, the ways in which these topics were addressed differed across mathematics classrooms.

The following problem from *Covering and Surrounding*, a unit of the Connected Mathematics Project (CMP) curriculum, will give a sense of the nature and the challenges of these materials for both students and teachers. They call on students to play a very active role in developing their understanding of a topic, and they work simultaneously to develop a multi-stranded proficiency. For example:

The Sole D'Italia Pizzeria sells small, medium, and large pizzas. A small is 9 inches in diameter, a medium is 12 inches in diameter, and a large is 15 inches in diameter. Prices for cheese pizzas are \$6.00 for small, \$9.00 for medium, and \$12.00 for large.

- A. Draw a 9-inch, a 12-inch, and a 15-inch "pizza" on centimeter grid paper. Let one centimeter of the grid paper represent one inch on the pizza. Estimate the radius,

¹ The Teaching and Learning Review was developed with funding from the Bill & Melinda Gates and MacArthur foundations. The tools that focus on out-of-school time were funded by the Gates Foundation. The Student Learning Lives tool was developed with funding from the Ford Foundation.

² Our data set included fifty-four classroom observations, twenty teacher interviews, thirty-seven student interviews, 227 student surveys concerning after-school mathematics help and activities, and seven student mathematics learning logs with follow-up interviews.

circumference, and area of each pizza. (You may want to use string to help you find the circumference.)

- B. Which measurement – radius, diameter, circumference, or area – seems most closely related to price? Explain your answer.

(Lappan et al. 2002, p. 70, problem 7.1)

In using this kind of material, different mathematics teachers struck different balances between developing students' procedural fluency and developing their conceptual understanding. Some teachers taught formulas first and then used the CMP problems as practice or illustration; others used the materials as the CMP authors intended, allowing the investigation to help build conceptual understanding, from which computational procedures were derived.

So, while the district had staked out a position in adopting the conceptually rich curriculum materials, the access of individual students to the various strands of mathematical proficiency described by Kilpatrick, Swafford, and Findell (2001) depended, in large measure, on the beliefs and practices of their current teacher – and, ultimately, on the sequence of teachers they had had across their school years. As a result, different students carried different knowledge and proficiencies with them beyond the classroom.

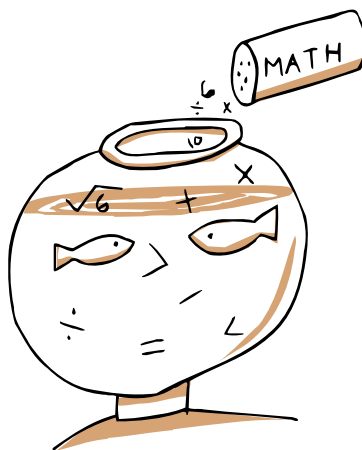
In striking different balances between conceptual understanding and procedural fluency, teachers enculturate students to different practices of mathematics and teach different stances in relation to mathematics learning. For example, with respect to what Kilpatrick, Swafford, and Findell refer to as *productive disposition*, the two kinds of instruction send very different messages to students about *diligence* and *their own efficacy* as mathematical thinkers. Thus,

students are learning differently, not only about the mathematical concepts and procedures, but also about how avid to be in constructing their own and engaging with others' mathematical learning lives. This may be one point where what is learned in school has significant consequences for students' mathematical learning out of school.

As a mathematics education community, we are accustomed to asking about how these differences affect the following years' mathematics classes and student learning in class. We are less accustomed to asking how these differences may affect students' mathematical lives in other contexts – their private mathematical musings, their interactions with family members, and their engagement in after-school programming – or how students' mathematical experiences outside of mathematics class could complement or enrich their in-class mathematical learning.

Beyond Mathematics Classrooms

Our data indicate that in classes other than mathematics, students were engaged primarily with topics of the *elementary* mathematics curriculum – arithmetical computation, ordinal properties of numbers, and measurement.



But there were important exceptions. Students shared multiple examples of units or activities that were well connected to middle school mathematics topics, with science class as the most common location. Students described, for example, creating scale models of the solar system, studying the linear relationship between altitude and air temperature (so many degrees cooler/warmer for every thousand-foot increase/decrease in altitude), or exploring the relationship between two variables such as the distance traveled by a toy car beyond the end of a ramp and the height of that ramp.

Experiences such as these – of mathematics as it relates to a physical system – would seem to be rich opportunities for deepening students' sense of the underlying mathematical relationships. Teachers reported that, where possible, they collaborate across subject matter to make these convergences occur. Indeed, integrating the study of mathematics with other subject-matter areas is an idea that has long had appeal (e.g., Kleiman 1991).

However, we know that mapping between different representations of the same mathematical content (e.g., tables to graphs or even different

algorithms for the same computation) is important but difficult work (e.g., Carraher, Carraher & Schliemann 1987; Noble et al. 2001). Thus, to capture the potential synergy – for students to reap additional mathematical understanding from convergent lessons in math and science – there is much we will have to learn.

Our observations, interviews, and student learning logs suggest that we also have much to learn about students themselves as a source of mathematical learning. These data showed that at various points in their school day, students paused to quantify something of interest. Without being asked, simply as a matter of interest or amusement, students calculated such things as the number of pages read in their language arts book, the number of years difference between a student's father's age and his own, the fraction of class time missed when a teacher was late, the total cost of items to purchase at lunch, or the time remaining until class ended.³

There are two aspects of these data that are particularly striking. First, the content and questions are relatively simple. Second, this non-mathematics-class mathematical thinking was not especially prominent or even visible to

We have much to learn about students themselves as a source of mathematical learning: at various points in their school day, students paused to quantify something of interest.

³ There was some mention by students of geometric/spatial thinking, as well; but this is less often described than is quantification.

the students themselves until they were asked to keep a log of it. When students weren't keeping logs but were just asked in an interview about where in school they used mathematics other than mathematics class, most students offered only a single response. All of the students who kept logs of their mathematical thinking across one day reported being surprised at how many different times during the day they had mathematical thoughts, ideas, questions, or feelings. Many of these, it turns out, are private, self-generated events. We wonder what the effect might be of simply bringing students' own non-class-time mathematical thoughts more into view? What might be the effect of mathematical thinking having a higher profile in the cultures of both school and home?

Finally, our data offer substantial evidence that middle school students in this community are important participants in one another's mathematical lives. Thus, there is an informal peer-to-peer system for teaching and learning mathematics. Roughly a third of students we interviewed said that during mathematics class they sought help from friends *first*, before asking teachers or teaching assistants for help. Across homework and in-school settings, students identified their friends and siblings as sources of mathematics help as frequently as they identified their math teachers (about 90 percent each). A similarly large majority of students who kept mathematics learning logs had helped a sibling or friend with homework in the single day they were

Students are important participants in one another's mathematical lives; there is an informal peer-to-peer system.

recording. Here, then, is a second instance of possible, but yet-to-be-captured, synergy: If so much mathematical exchange is going on between peers and siblings, what could schools and districts reasonably do to inform and support that learning system?

Out-of-School Mathematics Learning

Middle school students' mathematical lives continued well beyond the designated times and places of school. While this was not something they usually documented, students who recorded their mathematical thoughts, ideas, questions, and feelings across a twenty-four-hour period were often surprised and delighted to discover the frequency and variety of their mathematical thinking. One student recounted thinking about, in the span of a single day, how the tempo markings in music worked to hold a performance together, how her younger brother's block building resembled the work she was doing in math class on calculating volume, and how her grandmother's acumen with numbers has made her a valuable member of her workplace and community. How do we capitalize on this appetite to think mathematically outside of school time?

After-School Programs

Only about 15 percent of the students we studied were participating in organized after-school programs. In thinking about what after-school programs can contribute and how students use them, it is helpful to distinguish between types of programs. The students we interviewed described two kinds of after-school programs: school-based tutoring and community-based programs.

SCHOOL-BASED TUTORING

Some students attended school-based tutoring sessions, offered to students who were falling behind, struggling with new concepts or skills, or failing to do their assignments. These programs typically took the form of individualized tutorials on the content of current lessons, either by school-based mathematics teachers or by tutors drawn from service organizations like City Year, local colleges and universities, and individual community members. While these opportunities can supplement school learning effectively, there are professional development challenges to be met: the style and content of the tutoring can vary widely, depending on the mathematical and pedagogical knowledge of the tutors, as well as their understanding of the specific middle-grades curriculum materials the students are working from.

COMMUNITY-BASED PROGRAMS

Other students attended community-based programs that combined homework sessions and free-choice activities. These programs were sponsored by providers such as the Boys & Girls Clubs, the Y, the public library, or the city's parks and recreation department. As currently conceived, the primary mathematical responsibility of these programs is to support students as they get their homework done. Translated into prac-

tice, this means that program staff carved out time in which students worked on homework assignments, but there was little evidence of any substantive engagement with students around this homework. When we asked students during interviews about additional opportunities to think mathematically in these settings, they spoke chiefly about playing board and computer games (e.g., Pay Day, Monopoly, or adventure games that were won by scoring points).

Family-Based Mathematics Learning

Students reported numerous examples of using mathematics at home or in family settings. In terms of mathematical content or topic, the (non-homework) mathematics that students described as part of family or home situations focused more on arithmetical computation and measurement and less on rational numbers and algebra than does the middle school mathematics curriculum. But students underscored how much their families did to support their mathematics learning, help them navigate the demands of a rigorous curriculum, and show them about the potential power of mathematics in the world (Jackson & Remillard 2005). Our analysis of these data builds on and extends existing understanding of family engagement (e.g., Barton et al. 2004; Peressini



One of the things that stood out was the extent to which mathematics was woven into the fabric of the relationship between some students and family members.

1998; Sheldon & Epstein 2005) and its potential contributions to mathematical learning.

To begin, many students described times when they and the adults who care for them worked together, sharing the responsibility for learning. In these descriptions, one of the things that stood out was the extent to which mathematics was woven into the fabric of the relationship between some students and family members. The following quotes offer examples.

I think about it [homework] in my room and my dad gets home at 5:30 and he usually helps me when he gets home. And I usually do most of it in my room lying on my bed working on it, and if I don't get a question or two, I put it aside for later and when my dad gets home, I go down to the kitchen table and discuss it with him. And he tells me, like, different ways of approaching it.

But, significantly, homework was not the sole context in which this family involvement occurred. One seventh-grader explained how mathematics was a current running through her late

afternoons, which she spends with her grandmother and her younger brother:

He's only four...but he's really smart so, like, when he was two years old, he lined up all his blocks in a perfect line from the darkest color to the lightest color, like a rainbow almost. So, he is very smart.... The book that we are on is *Filling and Wrapping*, so it is, like, if you have a rectangle, it can be a four by two by four, and, when he builds his squares or whatever he builds, he can tell you, "Oh, that's a two-four-two." He already knows it. He, like, knows the stuff that I am learning right now.

Students also described their home-based encounters with mathematics in social and emotional terms. Families went through the mathematics curriculum with students – feeling upset and concerned when they struggled and immensely proud when they worked hard and succeeded. And it seemed that, at least for some children, parents helped provide a narration of a student's mathematical history that became part of how students viewed themselves mathematically – part of their productive disposition. For example:

In sixth grade I wasn't very good at math and Mr. C was my teacher [at school]. He used to always call me up [at the board] 'cause I didn't get math so much.... He always helped me and he gave me problems that I didn't know and then I figured it out. And, right now, my mom says I'm, like, one of the smartest kids she's ever seen in her life because math is not my favorite subject and it is the one I really put more energy into than all my other ones, even gym, because I like math a lot more.

Further, the students explained how their families helped them navigate a high-demand mathematics curriculum, even when the content might not

be familiar to family members: giving students rides to school early in the morning to talk to their teachers, helping them understand that it is better to put down evidence of having tried than to leave homework examples blank, urging them to call a friend to get help with homework, or helping them to practice on weekends.

Finally, students recorded how their families showed them the power of mathematics and gradually admitted them to the world of adult decision making, where hopes, plans, realities, and sudden turns of events often contended. One student talked about helping her mother figure out how much she could spend at Christmastime:

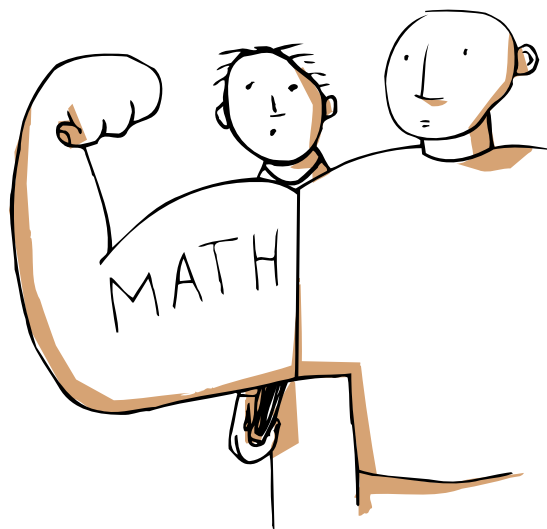
At Christmastime, actually, my mom was doing her bills, and she said that she was going to have this much for Christmas shoes. She didn't have her calculator, so she said, "[Child's name], come here," 'cause she wanted to see if I could get it. So she asked me and then I got it. How much she would have to split it between them.

One other aspect of students' mathematical lives within the family context was that older siblings who had traveled through CMP informally tutored their younger brothers, sisters, and cousins in ways that adult relatives couldn't. Thus, within the family context, as within the school context, there were peer-to-peer teaching opportunities. Since for the older child these within-the-home opportunities revisited more elementary topics, they may be particularly helpful to those students who are struggling with mathematics at their own grade level.

Building a Linked System for Mathematical Learning

The evidence from this small city suggests that students' varied mathematical experiences across the many contexts in which they live are, at present, only weakly linked. Even relatively modest synergies have yet to be exploited.

For example, could older high-school students who excelled in middle school in the mathematics curriculum currently in use be trained as tutors in after-school programs, earning wages in what might serve as a teaching internship for them and provide significant help for the middle school students and teachers? Might skilled science teachers occasionally collaborate on the design of after-school sessions so that students could see how the concepts, relationships, and algorithms they are learning apply in a variety of contexts? In school-based tutoring, could this energize the routine of doing additional problems from the textbook? Would it provide a setting in which mathematics and science



teachers could become stronger mutual supports for one another's curricula?

Or, in community-based settings, could providers participate in professional development sessions with skilled mathematics teachers that focus on strategies for supporting students' building their own answers to homework problems out of what they already know and capturing and articulating remaining questions to bring back to mathematics class? At a bolder level, how might community-based after-school programs contribute to students' mathematical learning if communities and providers were to re-imagine the hours between 3:00 and 6:00 p.m. in less custodial ways?

In the data that we collected, what we never heard about were mathematics-related activities that capitalized on the unique possibilities of after-school time: the extended hours not broken up by a bell schedule, the heterogeneous and mixed-grade grouping, the informal and potentially sustained relationships between individual students and staff members, the lack of pacing guides and test-based accountability. What would it take for after-school programs to host design and engineering projects with strong mathematics components? Could skilled science teachers or committed business volunteers rotate across programs, training staff to conduct these projects? Could such experiences send the message, "Those ideas that you work on understanding in class – they *matter*; by using them, you can capture patterns, make predictions, and solve problems"?

Finally, within the family context, it is clear that students often learn critical lessons about responsibility, effort, and the power of mathematics at home. How might we build on the natural resources of these home settings? Might

annual mathematics nights or PTO meetings not only discuss the new curricula, but also further open up to a discussion of home contributions, using the experiences of students and family members?

Schools and districts are working hard to raise children who are powerful mathematical thinkers. While we have come a long way in developing teachers' mathematics classroom practices and materials to support strong practice, we are still far from realizing this vision for all children. Taking a broad view of the resources in children's lives and thinking of mathematics as it develops in the many spheres of each child's world is realistic and also has the potential to help meet mathematics educators' goals.

But we face a threefold challenge. First, we need to learn more about what each of these settings can contribute in a sustainable way and how students can learn to draw on this range of resources. What we have been able to outline is the barest sketch. Second, we need to understand how to link the possibilities of each of these individual settings together into what some researchers call a "complementary" or "supplementary" learning system (Harvard Family Research Project 2006; Gordon, Bridgall & Meroe 2005) and what others refer to as "a new day for learning" (Time, Learning, and After-school Task Force 2007) or "a smart education system" (Rothman 2007). Finally, we need to think in terms of sustained pathways for learning. Imagine the day when sixth-graders entering the CMP program in this (or any other) urban district will:

- acquire the many strands of mathematics proficiency, backed by family, peers, and teachers;

- build a strong sense of themselves as mathematical thinkers through keeping learning logs, keeping a portfolio that demonstrates mathematical growth, and setting mathematical goals in teacher-family conferences;
- invest in the mathematics learning of others by learning to tutor peers and younger family members;
- apply for multi-year jobs in high school, working with middle school students on extended mathematics projects in after-school programs;
- attend college with mathematics skills strong enough to enter any field of their choosing;
- become parents who can support the mathematics learning of their own children.

To do this will require new, systemic, and synergistic approaches to supporting students' learning lives.

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Within the family context, it is clear that students often learn critical lessons about responsibility, effort, and the power of mathematics at home.

Alternative High Schools: Pioneering Promising Practices for Blending Academic and Extended Learning Opportunities

David Lemmel and
Samuel Steinberg Seidel

An initiative to create alternative high schools is aiming to erase the line between in-school and out-of-school learning.

The definition of insanity is doing the same thing over and over and expecting different results.

—Attributed to Benjamin Franklin

As educators, we have come to a point at which we should take a close look at this familiar quote often attributed to Benjamin Franklin, a man known for both his grand ideas and his pragmatism. As a founding father of America's principles of democracy, he advocated for freedom of choice for all. But the public education system, formerly cited as the crown jewel of American democracy, has lapsed into a system of disconnection, repetition, and disrepair. Once seen as an accessible road to upward social mobility, public education now functions as a gatekeeper institution that bars this nation's poor and underrepresented youth from choice and free access to twenty-first-century post-secondary education and career opportunities (Allen et al. 1997).

Recently, widespread attention has been given to the burgeoning national dropout crisis: 30 percent of all students drop out before twelfth grade and nearly 50 percent of Black and Latino students do not complete high school (Bridgeland, Dilulio & Morison 2006; Thorn-

burgh 2006). Residential segregation locates many young people in school systems that woefully underprepare them for college and the workplace. Consequently, growing numbers of students face drastically diminished life chances in the form of increased risk exposure to poverty, unemployment, inadequate healthcare, incarceration, increased homelessness, and rising mortality rates (Allen & Lemmel 2006).

Identifying and implementing strategies for engaging and preparing *all* students for future success is one of many important reforms that must take place if we hope to disrupt the cycles of institutional exclusion and racism described above. How can those of us who have dedicated ourselves to transforming public education in this way shake ourselves of the repetitive insanity to which Benjamin Franklin referred?

David Lemmel is national director of the Alternative High School Initiative at the Big Picture Company. Samuel Steinberg Seidel is national project manager for the Alternative High School Initiative at the Big Picture Company.

Extending and Expanding Learning

Recent research points to the importance of extending students' learning experiences beyond the traditional school day and schoolhouse (Gordon 2007; Pittman, Wilson-Ahlstrom & Yohalem 2003). The 8:00 a.m. to 2:30 p.m. school day does not provide enough time to prepare students for the high-stakes tests and high-stakes society they are currently facing. It is not enough simply to extend the amount of time students are in traditional classes or increase the time they spend on traditional work. The experiences that a young person can have within the confines of a classroom do not reflect the diversity of settings and relationships young people must learn to negotiate in order to thrive in the academy and the workplace.

Many schools and districts have realized this and now partner with community-based agencies to provide "supplemental" services for students through after-school, weekend, and summer programs. Some of the programs in which students have the opportunity to participate feature innovative program designs, but it is uncommon for the programs or personnel to connect directly and consistently with the curriculum and staff of the schools. In the instances in which programs and



We must expand our view of what comprises the essential learning experiences necessary for students to succeed.

schools deliberately align themselves, the assumption is almost always that after-school programs should play the role of supporting students' academic work. It is rare that public schools take on the responsibility of understanding the important work these programs are doing – and even less common for schools to reconfigure their curriculum, schedule, and culture to enhance the impact of such programs.

Beyond *extending* learning opportunities, we must *expand* our view of what comprises the essential learning experiences necessary for students to succeed. If we want our students to do more than simply score well on standardized tests – if we hope for them to go on to pursue higher education, fulfilling and lucrative careers, and lives rich with civic engagement – we need to let go of the dichotomy we have traditionally drawn between class work and out-of-school "enrichment" activities.

The authors of this article have the honor of working with ten leading youth development organizations, all of which are in the business of designing, starting, replicating, and supporting alternative schools. Through innovative curriculum, program structures, and scheduling, these schools attempt to blend academic and real-world learning, so that students' diverse educational experiences in and outside the classroom consistently and seamlessly build upon each other.

As conveners of the Alternative High School Initiative (AHSI), a national network of organizations starting and sustaining small diploma-granting alternative high schools, we have had the opportunity to observe promising practices and strategies that our member organizations successfully employ to prevent students from dropping out or recover those who have dropped out; advance students to graduation; and prepare students for future success. Our network embraces a more comprehensive definition of student success that

Strategies employed by alternative education can help to reestablish equity in public school systems; to be successful, they must exist both in and outside of the traditional school day and classroom.

reaches far beyond simply graduating students and focuses on their awareness and preparation for multiple post-secondary pathways that are professionally and personally rewarding.

We are not suggesting that all public schools should immediately attempt to emulate the structure and pedagogy of the alternative schools in our network. However, we are confident that examining, adapting, and adopting strategies employed by alternative education can help to reestablish equity in public school systems. For these strategies to be successful, they must exist both in and outside of the traditional school day and classroom.

This article highlights some of the work of AHSI and the promising practice it models for enhancing student

engagement by integrating school-based curricula with extended-day and out-of-school learning opportunities.¹

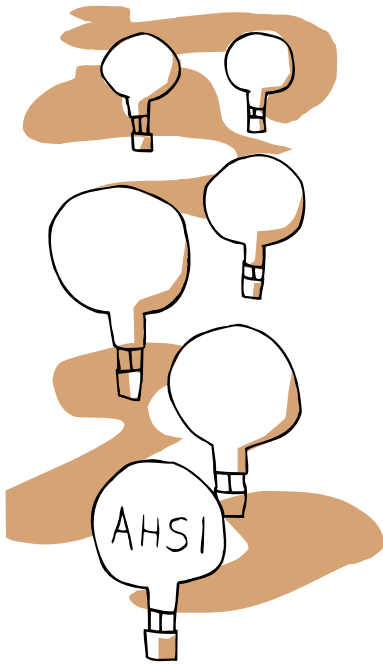
The Formation of the Alternative High School Initiative

Operating from an educational philosophy different from that of mainstream schools, AHSI members work with local communities to develop safe, high-quality alternative high schools for vulnerable youth. AHSI's goal is to create effective, student-centered small high schools where youth voice, participation, and leadership development drive the learning process. AHSI schools provide an alternative route to high school graduation and preparation for post-secondary opportunities.

AHSI was conceived out of a partnership between the Bill & Melinda Gates Foundation and the Big Picture Company as a way to provide essential support for a select group of grantees (intermediaries) to start and sustain networks of quality alternative high schools designed for young people who were not being adequately served by existing institutions.² AHSI began in 2003 with a core group of intermediaries consisting of the Big Picture Company, the Black Alliance for Educational Options, Communities in Schools Georgia, Diploma Plus, EdVisions, the National Association of Street Schools, See Forever Foundation & the Maya Angelou Public Charter School, and

¹ To learn more about the Alternative High School Initiative's work, find links to member organizations, and view a national map of member schools, see <www.ahsi.info>.

² For more information about the Gates Foundation's education initiatives, see <www.gatesfoundation.org/UnitedStates/Education>. For more information about the Big Picture Company, see <www.bigpicture.org>.



YouthBuild USA.³ Since its inception, the network has expanded to include six more grantee members: Communities in Schools (national), Good Shepherd Services, the Portland Community College Gateway to College program, and, most recently, the Association for the Advancement of Mexican Americans. There are currently 176 AHSI schools running nationwide.

Although the grantee organizations were already established forces for education and youth development prior to their involvement in AHSI and although many of the organizations shared pedagogy, values, and geographic proximity, their work was often siloed.

³ For more information about each of these organizations, see <www.ahsi.info/org.htm>.

By and large, they did not collaborate around common purpose, share access to tools and resources, or seek the support of fellow grantees. By convening grantees to have intentional discourse and influence practice around the quality, scale, and sustainability of their networks and schools, AHSI members have accelerated their learning curve to boost student attendance, graduation, and post-secondary college and career readiness rates.

AHSI Distinguishers: Exemplifying Extended Learning

The organizations in AHSI worked collaboratively for a year to establish an in-depth framework for ensuring success for all students. This framework includes specific objectives, strategies, requirements for support, and evaluative methods that encapsulate the guiding concepts behind the school designs of every organization in AHSI.

These design principles now serve as what we call distinguishers of AHSI-affiliated schools. The distinguishers lay the groundwork for the expanded view AHSI organizations possess of the in-school and out-of-school experiences that are necessary components to students' success.

The AHSI distinguishers are presented in abridged form in this section.⁴ After a brief description of each distinguisher, we offer a specific scenario that exemplifies an element of the school design of one of the members of the AHSI network. We have selected examples that illustrate strategies alternative schools are using to

⁴ To download a copy of the AHSI distinguishers and view brief videos featuring AHSI distinguishers in practice across our member schools, see <www.ahsi.info/distinguish.htm>.

“Going into computers gave me a skill that was something I could fall back on. It gave me something real to sink my teeth into and to connect my schoolwork to.”

bridge the gaps between in- and out-of-school learning experiences.⁵

1. Authentic Learning, Teaching, and Performance Assessment

Students learn across a wide range of interrelated experiences. AHSI learning is centered on students’ personal passions, interests, styles, and needs and is deepened through relevant real-world experiences such as internships, apprenticeship programs, college courses, and community service.

Marcus Daniels⁶ was eighteen when he entered the YouthBuild Philadelphia Charter School. He had attended University City High School for a few years, but dropped out because he did not “feel engaged.” Despite being part of a small learning community within the 2,300-student school, Marcus did not feel known or cared about by adults in the school and did not find his classes interesting or relevant to his life. As Marcus reflects on the experience, “I had dreams, but I never thought I’d see them realized.”

5 It should be noted that, while AHSI presents an overarching framework of five essential distinguishers detailed by a range of strategies that can be employed to achieve a specific outcome, the language for equivalent components used by specific networks and schools may vary (e.g., while their functions may be quite similar, an *advisor* at one school may be called a *teacher* at another school).

6 This student’s name has been changed to protect his anonymity.

At YouthBuild, Marcus entered a program to learn computer networking. He and his peers alternated spending six weeks in academic classes and then six weeks in apprenticeship programs. During the networking internship sessions, Marcus participated in hands-on projects that allowed him to work toward a computing certification, while also assisting community organizations and schools by providing a valuable commodity – network repair – at no cost.

On Fridays during internship weeks, Marcus and his classmates attended classes with their academic teachers. The classes focused on the vocation they were studying. Marcus’ math teacher taught binary math and his integrated humanities teacher taught technology-related vocabulary.

“I knew my long-term goal wasn’t going into computers, but I was glad to do it anyway. It’s something I am good at and it gave me a skill that was something I could fall back on. . . . It gave me something real to sink my teeth into and to connect my schoolwork to,” Marcus explained.

Once Marcus connected to his schoolwork, his academic career blossomed. Prior to YouthBuild, he had never read an entire book. He is now a voracious reader who is enrolled at the Community College of Philadelphia. He used his computer skills and certification to get a part-time job at CompUSA to support himself while attending college.

2. Personalized School Culture

Personalization is a critical component to all aspects of AHSI school culture. At every level – student, teacher, principal, school, intermediary – individual uniqueness is honored, engaged, and respected. Staff are responsive to students’ cognitive, emotional, and physical needs.

“When I first came to South Brooklyn the staff, counselors, and teachers expressed how much they cared,” a graduate of South Brooklyn Community High School explains. “My immediate reaction was, who do these people think they’re kidding? I was shortly proven wrong. During my second year at South Brooklyn, I was going through a lot. My life had suddenly become real tough. I started to feel as though I had no one except my counselor. . . . [He and] the director stepped out of their roles and became friends to my family and I.” (Doughty 2000, p. 24)

South Brooklyn Community High School is a member of the Good Shepherd Services network. A cornerstone of Good Shepherd’s school design is the “primary person system,” which they implement through Advocate Counselors (ACs). Every student in the school has an AC. Their presence allows teachers to focus on the academic aspects of students’ development, while partnering with trained professionals who can tend to students’ other needs.

Each AC works with approximately twenty-five students. Through daily meetings, which may occur at school or at home, ACs connect students with social service agencies to ensure that all students’ basic needs, such as housing, healthcare, and childcare, are being met; this allows students to focus their attention on their studies.

3. Shared Leadership and Responsibility

School leadership is shared by the intermediary, district representatives, school staff, students, families, and relevant community partners. The school mission, vision, and goals are clearly defined and understood by all. Stakeholders participate regularly in decision making related to student and teacher performance, focused on improving support for student achievement.

“I have been president of Another Level Records for the last three years,” Matthew Brown explains. “Through being president, I’ve taken on a lot of different roles. During the summer I teach the business of music class. Eighteen students came in during the summer to learn about the business of music. Now they take care of most of the record label’s business and I’ve been getting more involved in leading the school.” Matthew is a student at the High School for Recording Arts (HSRA) in St. Paul, Minnesota, which is a member of the EdVisions network. HSRA runs a professional recording studio and record label.

Now a senior, Matthew has been in a leadership position with the record label for three years. His responsibilities have included managing the



budgets and relationships with businesses to produce several CDs, public service publications, and promotional materials. He has also organized events at local venues and coordinates a weekly show on the Twin Cities' major urban radio station, B96. This work has occurred both during and after school hours and in and outside the building. "Lately, I've been doing a lot of public relations and promotions and all of that work is handled at conferences, business meetings, public meetings, business meetings, public meetings, or on the street."

Matthew has put the leadership skills that he developed through his work on the record label to use within the school. He now convenes a student leadership class, which hosts all-school community meetings. They set the agenda for the community meetings by attending staff meetings and by soliciting topics from their peers. They also play an important role in the hiring of new staff members, providing feedback as members of interview panels.

Recently, Matthew has also become his school's research liaison to the Coalition of Essential Schools, for which he handles data analysis, attends national meetings, and facilitates leadership trainings.

"My leadership through Another Level Records came first and that's

what pushed me into leadership in the school. I showed TC and Tony [the school directors] and myself how responsible I am with the record company and it has been building ever since."

4. Supportive Partnerships

The school is seen as an asset to the local community and community members are engaged with the school and with individual students. Community businesses and organizations contribute to student development by providing real-world internships, relevant learning opportunities, and rigorous expectations. These supportive partnerships are maintained through regular communication between school and community partners and intentionally track student activities and performance between these settings through journaling, exhibitions, and other products identified in advance in students' individual learning plans.

Anika Taylor⁷ attended the Met Center in Providence, Rhode Island. The Met is the flagship school of the Big Picture Company. As part of Big Picture's school design, all students at the Met spend the entire school day Tuesday and Thursday at a Learning Through Internship (LTI) placement working on a project with a mentor who has volunteered to help guide the student's learning.⁸ Anika has a passion for photography, so for her senior year she worked with Josh Martin,⁹ a professional portrait and event photographer.

Anika is a bright and personable young woman, but her grades suffered



⁷ This student's name has been changed to protect her anonymity.

⁸ LTIs are one of the main components of every Big Picture student's education. They are real-world experiences in which student projects and ventures are developed, based on students' interests.

⁹ This individual's name has been changed to protect his anonymity.

in middle school. She said, “It was boring! They kept teaching us the same thing year after year. I didn’t wanna sit in rows with a bunch of kids who weren’t interested, listening to a teacher who didn’t even seem interested, so I’d goof off to try to make the time go by.”

The LTI with Josh kept Anika on her toes. Through her project, she learned about the inner workings of cameras, how to measure and adjust lighting and composition, the chemical processes in a darkroom, and the interpersonal and mathematical aspects of running a small business. During each semester, her advisor from the Met would meet with her and Josh. At the end of each semester, Anika would present what she had learned by sharing photographs, budgets, and any other materials that she had worked on during the semester to an exhibition panel composed of several adults from the Met, some of her peers, her mother, her advisor, and Josh.

Josh also helped Anika prepare her application for the Rhode Island School of Design (RISD). They worked after hours at his darkroom to assemble a strong portfolio. Anika was accepted to RISD with a full scholarship.

5. Future Focus

Schools foster students’ intellectual development, empowered sense of self, critical-thinking skills, civic participation, improved life chances, and a commitment to lifelong learning in order to facilitate a successful transition to adulthood. Upon entering an AHSI school, every individual becomes intentionally aware that college is a viable option. All students leave high school ready to access and achieve in post-secondary learning options.

Rochelle Jackson¹⁰ is a student at Gateway to College at the Community College of Philadelphia (CCP). Before attending Gateway, Rochelle attended a large urban high school near her home in Philadelphia. She found her peers were more focused on what they were going to do the following weekend than what they were going to do after they graduated from high school. She eventually became bored and dropped out of school.

Rochelle lost some time by leaving school with incomplete courses and spending a semester out of school, but she has been regaining that time by taking college credit courses at CCP that are aligned with her high school completion requirements. Rochelle now has a 4.0 GPA and is on track to graduate. “I felt like nothing we were doing at King [the school she initially attended] mattered in the real world. Even if I did all my work, it didn’t matter. The classes were a joke. . . . At CCP the professors and students take it seriously. I know that the credits I am getting are going to count.”

The Gateway program provides an initial semester of intensive literacy and study-skill development. Gateway staff members, known as resource

“I felt like nothing we were doing at King mattered in the real world. Even if I did all my work, it didn’t matter. The classes were a joke.”

¹⁰ This student’s name has been changed to protect her anonymity.

specialists, then help students navigate college life, from improving study habits to course selection to arranging reliable transportation. By partnering with school districts and existing institutions of higher education, Gateway is able to grant high school diplomas to students who felt bored or constricted by traditional high schools, while supporting them in becoming accustomed to college environments. Students graduate already on their way to a post-secondary degree and with confidence that they can thrive in actual college settings.

Moving toward Sanity: Achieving Different Results

The schools in our network may not be perfect, but they are not insane. Rather than repeating strategies that have failed to work for some students, the leaders and practitioners in our network have been heeding Benjamin Franklin’s advice and trying new methods, such as integrating learning experiences that have traditionally been differentiated as “high school” and “extended learning.” As a result, students who were previously seen as dropouts and failures are graduating from high school with the skills, confidence, and resources they will need to thrive in the pursuit of their chosen post-secondary pathways.

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Students who were previously seen as dropouts and failures are graduating from high school with the skills, confidence, and resources they will need.

Volunteers in Service to Youth: Citizen Schools

Heather Harding, Ned Rimer,
and Camrin Fredrick

An after-school program that started in Boston enlists volunteers from throughout the community to teach and nurture children.

Nakisha Taylor¹ is a gangly thirteen-year-old girl who lives in Dorchester, an inner-city neighborhood of Boston. Approaching the end of her eighth-grade year, Nakisha is facing one of the most important decisions in her life: selecting a high school. “I guess I could have gone to Metco [the local desegregation busing program], but I wasn’t trying to get on a bus at five in the morning,” she says emphatically. “But now I want to make the right choice.”

Sitting in a semicircle with a group of her peers at the Citizen Schools after-school program, Nakisha turns to listen to her team leader, Jocelyn, who describes the various high school options in Boston.

Nakisha perks up when she hears Jocelyn mention a neighborhood charter school. “I know people who go there,” she says. “I’m putting my name in their lottery.” Across the room, a group of adults in business attire congregate. They are writing coaches who work at a local law firm and volunteer to work one-on-one with

Citizen Schools’ students throughout the year. Nakisha leans over and whispers to a friend. They giggle while packing up their belongings. It’s time to work on the personal statement that can be used in high school applications. Nakisha is practicing what it will take to get into college. High school is simply one leg in a longer journey.

Students like Nakisha are often on the wrong side of the academic achievement gap. School reform efforts have focused a host of programmatic and accountability strategies aimed at addressing the underperformance of adolescent urban youth. After more than a decade of standards-based reforms, school-based educators are beginning to recognize the need for a more comprehensive approach to bridging the gap. Supplemental and out-of-school time services must be a part of addressing the gap in achievements and, more important, the persistent gap in opportunity in low-income communities of color. Citizen Schools, a network of after-school programs that operates at thirty sites in five states, has emerged as a leader in these efforts, based on their programmatic innova-

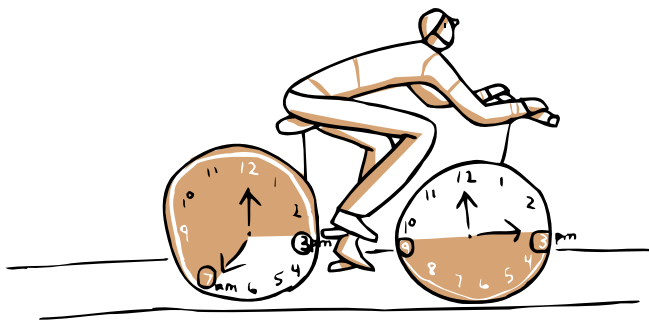
Heather Harding is a principal associate at the Annenberg Institute for School Reform. Ned Rimer is co-founder of Citizen Schools. Camrin Fredrick is director of curriculum and instruction for Citizen Schools.

¹ All names in the vignettes are pseudonyms. The vignettes are based on interviews and observations of real students and staff in the Citizen Schools program.

Citizen Schools emerged from simple idea: to involve *all* adults in a community, not just school teachers, to teach and nurture its children.

tion and the skill with which they have learned to develop cross-sector partnerships and advocate for definitions of *education* and *teacher* that enhance the possibilities for providing quality instruction.

Citizen Schools emerged from a simple idea: to involve *all* adults in a community, not just school teachers, to teach and nurture its children. Citizen Schools takes advantage of two important and largely untapped resources: out-of-school time, which accounts for 80 percent of a child's waking hours; and the diverse talents of diverse adults. Currently serving over 3,000 middle school students and engaging 2,400 volunteers annually, Citizen Schools provides a promising model of how



out-of-school time can be harnessed to re-imagine learning. By connecting adult volunteers to young people in hands-on learning projects, Citizen Schools helps to develop students' academic and leadership skills and puts them on a pathway toward high school graduation, college attainment, and positions of leadership in their careers and in their communities.

Citizen Schools is an attractive partner for individual schools, school districts, and community-based organizations based on two important features. First, the Citizen Schools model was nurtured and developed through a dynamic, ten-year history in one local context. This allowed the organization to learn and respond to important lessons about urban school reform and both the importance and the nature of authentic community engagement in program development. Second, Citizen Schools' long-term commitment to engaging external and internal evaluations provides an important link between out-of-school programming and academic achievement.

The evidence that Citizen Schools has had some success in making this link comes from a sophisticated longitudinal evaluation conducted by Policy Studies Associates (PSA) over the past six years. PSA has reported that:

- Sixth- and seventh-grade students who consistently attended Citizen Schools significantly outperformed a comparison group in six out of seven indicators of school success (including grades, attendance, discipline issues, and standardized-test scores).
- Citizen Schools eighth-grade students were more than twice as likely as their peers to enroll in a top-tier, college-track high school.

- Students who completed two years of participation in Citizen Schools during middle school performed at a higher level than their peers during their ninth-grade year and had a significantly lower rate of suspensions.
- Citizen Schools graduates were more likely than their peers to be promoted to tenth grade on time.

The Out-of-School-Time Sector

There have been three major currents in the recent history of the out-of-school-time field. In the 1960s and 1970s, the field responded to the demographic imperative of women entering the workforce by offering a childcare model, which focused on younger children and helped address the problem of “latchkey” kids – those who returned after school to an empty house. In the 1980s, crime prevention efforts dominated the agenda. Prevention efforts targeted older youth, and programs offered anti-drug and anti-crime activities and alternatives. In recent years, the national focus on standards, accountability, and assessments have reshaped the field again. Today, out-of-school-time programs are academically oriented and focused on generating evidence of gains in achievement.

According to a survey administered by the Afterschool Alliance, 15.3 million American children would be likely to participate in after-school programs if they were available in their communities, and 3.7 million of those children are currently unsupervised during after-school hours. When Eric Schwarz and Ned Rimer founded Citizen Schools in 1995, they recognized both an urgent need to meet the demand for after-school programming, especially for older youth, and an enormous opportunity to use the after-school hours to inspire a zest for learning that would carry over into all domains of a student’s life.

To fulfill the potential of after-school learning to improve in-school performance, expand opportunity, and unify communities, Citizen Schools sought to broaden the concept of who a teacher is or could be. Accordingly, it put into practice the core idea that all citizens can serve as volunteer “citizen teachers” and share their skills, talents, and passions with children. Working alongside their citizen teachers, Citizen Schools’ students learn through hands-on, project-based experiences – apprenticeships – about careers they can pursue and begin to develop the skills, knowledge, and aspirations needed to pursue them.

Schools have not typically engaged volunteers in large numbers or in high-quality projects. Most volunteers are married White women aged twenty-five to thirty-four, serving through affiliated religious organizations. Citizen Schools broadens the volunteer pool by targeting professional sectors such as law, architecture, finance, engineering, and computer science.

In the process, Citizen Schools hopes to transform the lives of volunteers as they help transform the lives of the youths with whom they work. Ideally, the experiences hold the potential to transform peoples’ beliefs about

Students learn through hands-on, project-based experiences about careers they can pursue.

poor kids, while opening their eyes to the realities of urban education. Ultimately, the hope is to galvanize a more informed citizenry to work to improve education in the U.S., whether through voting for effective educational reform policies, contributing to nonprofits or candidates working for education reform, or, in some cases, making career changes to become personally involved in the work, as teachers, nonprofit professionals, politicians, and the like.

Edgar Fernandez laughs as his little brother Hector complains about how much Citizen Schools staff know about his homework. Edgar, now at Eighth Grade Academy, recalls the Edwards campus fondly as the place where he discovered his love of architecture. He encouraged his younger brother to join Citizen Schools after taking an architecture apprenticeship that he says “changed his life.”

“For the first time, I realized why it was important to learn math and especially shapes and angles,” Edgar says. “In the apprenticeship, real architects helped us build a building model. My design was chosen for the WOW fair. I told my brother when he got to the sixth grade, he should do Citizen Schools too.”

Hector, a seventh-grader at the Edwards Middle School in Boston, remembers when after-school tutors simply accepted students’ claims that they “didn’t have homework.” Those days are over. The Edwards Middle School partners with Citizen Schools to provide a mandatory extended-day program for all students that is supported by a grant from the state department of education.

Citizen Schools staff members and Edwards teachers collaborated to develop and implement afternoon curricula that reinforce key mathematics concepts and skills taught during the traditional school-day time through engaging, hands-on activities. In-school

and after-school teachers also communicate frequently about students’ academic progress, including make-up work and behavior challenges. Because the Citizen Schools staff members are in frequent contact with children’s families, they provide a crucial communication link in ensuring that everyone concerned with a child’s success is aware of what is going on and how they can help. Through their efforts, the two educational programs strive to offer seamless support and instruction to students so that it is now hard for Hector to know when “regular” school ends and after school begins.

The Citizen Schools Model

Citizen Schools typically operates in a public school building, four afternoons per week, from school dismissal until 5:30 or 6:00 p.m. Students enroll in the program for a full semester or the entire year, in contrast to other drop-in after-school programs; attendance is mandatory in order to ensure dosage and track program impact.

Initially, the organization worked with individual schools and principals to launch and develop campus-based programs. Citizen Schools staff focused on one-on-one relationships with school-level leaders to negotiate use of

It is now hard to know when “regular” school ends and after school begins.

the building, student recruitment, and shared funding opportunities. The main collaborative goal was focused on sharing real estate. As Boston Public Schools rolled out a districtwide standards-based reform agenda, savvy principals and Citizen Schools leadership realized the opportunities for alignment in curriculum and external funding. A mayoral initiative in after-school programming, in part funded through the federal government, created further synergy.

Apprenticeships

At the heart of Citizen Schools is the connection forged between adults and young people engaged in active learning around their shared passions. Citizen Schools recruits adults to become citizen teachers and lead after-school apprenticeship courses for eleven-week cycles. Each apprenticeship is a hands-on course that introduces students to a new field and in which they create a high-quality product, service, or presentation that demonstrates their mastery of new skills. For example, students publish newspapers, manage stock portfolios, design public spaces, litigate mock trials, and create Web sites. Each apprenticeship culminates in a public celebration of learning – the WOW event. At these events, students teach back what they have learned to parents, teachers, and community members.

Apprenticeships build on sound pedagogy, drawing from principles originally espoused by John Dewey and extending to more recent research by Howard Gardner and Lauren Resnick. They can be especially effective for students who are not thriving in the traditional classroom setting. The apprenticeship approach promotes significant

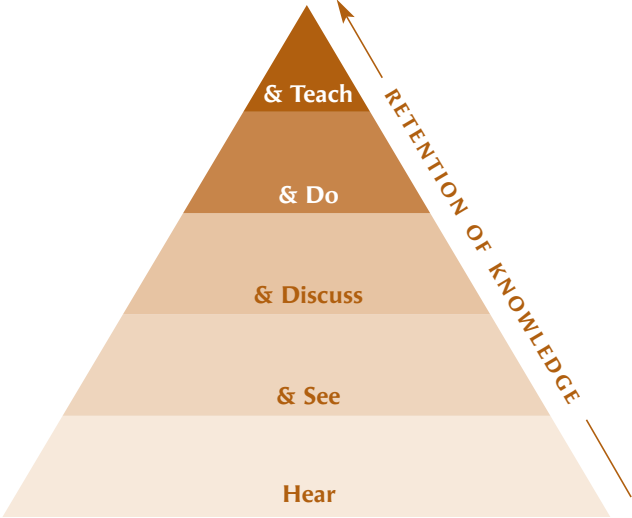


Figure 1
The learning triangle

retention of knowledge by engaging students in doing and teaching as opposed to merely hearing and seeing (see Figure 1). It provides the authenticity and credibility that middle school students crave and, as a result, promotes a high level of investment and participation.

Building from the foundation of apprenticeship, the Citizen Schools model promotes a cohesive program that utilizes community-building activities and fun to support a strong culture of achievement. In addition to apprenticeships, the Citizen Schools program includes daily homework completion, community explorations, a focus on

oral presentation, and leadership development activities (see sample weekly schedule in Figure 2).

The learning environment in which Citizen Schools teaches its lessons is as important as their content. Citizen Schools uses a combination of formal and informal techniques to build a culture of high motivation, personal responsibility, leadership, and fun. Staff members strive to “catch kids doing something right,” and when they see positive values put into practice, they celebrate and reward the student and call the parents to let them know, too. Indeed, Citizen Schools calls each student’s parents at least every two weeks (usually more often) to share information about the student’s progress, to highlight upcoming activities, and to listen to the parents’ concerns and priorities.

School Navigation

A large majority of the low-income students who enroll in Citizen Schools lack the skills they need to succeed in school and to access college and career opportunities. Sometimes it is the

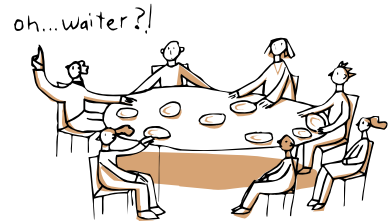
academic content of their courses that blocks students’ path to opportunity. At least as often, however, students lack the essential “school navigation” skills that are a *prerequisite* to academic proficiency – how to take notes, organize assignments, study for exams, and obtain extra help. In addition, they are unable to connect the effort they invest in schoolwork now with the educational and career opportunities they hope to pursue in the future.

To help all children achieve at high levels, Citizen Schools has developed a school-navigation curriculum that is based on the principle, developed by Jeffrey Howard of the Efficacy Institute, that teaching students *how to learn* and motivating them to believe that they *can* become high achievers will enable students to succeed in school and to become stewards of their own futures.

Working feverishly on a paper for her Dimensions of Equity course, Jocelyn Brown types away on her laptop computer trying to capture the details of her Eighth Grade Academy team session earlier in the day. The assignment is to note the apprentices’ reference to

	Monday	Tuesday	Wednesday	Thursday	Friday
3:00	Team Circle	Team Circle	Team Circle	Team Circle	Team Circle
3:20	Homework investment time	Homework investment time	Homework investment time	Homework investment time	Homework investment time
4:20	School navigation Free-choice activity	Apprenticeship #1	Explorations	Apprenticeship #2	Fitness apprenticeship Closing circle
6:00	Dismissal	Dismissal	Dismissal	Dismissal	Dismissal

Figure 2
Sample weekly schedule



cultural identities and to analyze how those various identities inform each student's view of school and education. Tough work, but exactly what Jocelyn hoped for when she applied for the Citizen Schools National Teaching Fellowship.

"I am super busy. But I'm really learning about education from all perspectives. Not only do I work directly with kids on important issues like high school access and college prep, but I'm also learning about housing discrimination and community organizing through my partnership site [a secondary internship, which is hosted by ACORN for Jocelyn]. It really makes what we read in our classes come to life... or you just know when something is totally irrelevant."

Leading the Field

In the past twelve years, Citizen Schools has increased its capacity to impact both citywide and national efforts in out-of-school time. Over time, the organization began to see itself as a leader in building a movement in the field. Based on considerations of demand, capacity building, and improving programmatic quality, the organization focused first on increasing the number of volunteers, developing curriculum, and expanding the numbers of Boston campuses. Citizen Schools then started to consider creating a talent development pipeline to provide the after-school sector with a cadre of highly trained educators to lead quality after-school programs. The result was a two-year Teaching Fellows

program for recent college graduates that not only provided talented staff for the ever-growing campuses, but also maximized that talent through the development of a master's level program with Lesley University. The program seeks to professionalize the field of out-of-school learning and to provide experience-based training for out-of-school-time teachers and leaders.

Citizen Schools has used its ideas and its results to move after-school learning toward the leading edge of education reform. Prominent organizations such as The Education Trust and the Partnership for 21st Century Skills have made after-school learning a central element of their agendas. Citizen Schools is now working to expand its network to seventy-five sites in eight to ten states by 2012. It also served as the model for the Teaching Fellows for Expanded Learning and After School (T-FELAS) Act, introduced in March by Senator Edward Kennedy of Massachusetts to create a new national pipeline of educators who bridge the dismissal bell to serve the nation's neediest students.

The after-school sector can become the example of a place where communities come together to advance the learning of young people and to celebrate their contributions. Citizen Schools is developing new ideas, new models, and new leaders to fulfill its tremendous potential and to restore the promise of educational opportunity in America.

The Providence After School Alliance

David N. Cicilline

By coordinating and expanding after-school programs, Providence, Rhode Island, is extending the time the community is responsible for the healthy upbringing of its youth.

In his first campaign for mayor of Providence, Rhode Island, in 2002, David N. Cicilline promised to strengthen opportunities for youths to participate in high-quality after-school learning activities. He made good on that promise shortly after he was elected. With funding from the Wallace Foundation and Bank of America, Mayor Cicilline created the Providence After School Alliance (PASA) to establish quality standards, build the capacity of recreation centers, and create neighborhood hubs that would enable young people to gain access to affordable, high-quality services.

Currently, PASA serves 1,000 middle school students in five “after zones” around the city. The organization has plans to expand participation by middle school students and create similar opportunities for older and younger children. Mayor Cicilline spoke with *VUE* editor Robert Rothman about enhancing out-of-school-time opportunities for young people.

Why did you decide to focus on after school?

When I first ran for mayor four and a half years ago, during the course of the campaign I heard from many parents and many young people about the lack of opportunities in out-of-school time, particularly in after-school time. And I really heard from people about how they were concerned that there were not worthwhile, enriching things for young people to do after school.

Just as I got elected and, actually, during the transition before I took office, the Wallace Foundation announced an initiative called Learning in Communities, which was intended to help a city design a system of high-quality out-of-

school-time programming – not to fund a particular existing program, but to really organize and implement a systemwide, citywide set of programs and to really lead a systems change, versus just an investment in existing programs. They were originally looking at three cities – the Bronx, Pittsburgh, and Providence – and, after a long deliberation and an appearance before their board in New York City, they ultimately decided to start this work in one city, and they picked Providence.

It was a very important priority of mine, because I recognized that there was a lot of work being done *in* school. We had a very ambitious plan to raise student achievement, and we had

David N. Cicilline is mayor of Providence, Rhode Island.

focused a lot of energy on what needed to happen in school in terms of reform and improvement and accelerating student progress. But what I think we had ignored for many, many years in this city and, actually, in many cities around the country, was this other resource of *out-of-school* time – because a child who goes to school every single day, who has perfect attendance, still spends most of his time out of school, and to not make maximum use of that resource was a big mistake.

And there was very little quality programming, particularly for middle school youth, available in the city at that time.

So I saw this as an opportunity to create a sense of community responsibility for the healthy development of our kids, a way to extend learning opportunities, a way to improve the safety of young people in the city, and a way to support the rapid acceleration of student achievement by leveraging out-of-school time to support the work that was being done in school. So that's what brought my attention to the issue.

Extending Collective Responsibility – Not Just the School Day

There's a lot of interest now in extending the school day, particularly for low-performing students. Is after school a way to extend the school day by other means?

I've avoided using the term "extending the school day" because I think it's more than that. I think there is no question we have to develop ways to extend instruction time and time on task, in the classroom, with a teacher. There is no question about that.

But we also have to extend the day for which the community is responsible for the healthy development of our kids, from earlier in the morning before they begin school to five or six o'clock at night when they go home for dinner. And that is in additional academic programs, it's in additional recreational activities, and it's in different high-quality out-of-school-time programs.

I think this is a very powerful way to begin to change the culture in which we think about our responsibility to kids. Right now, in American public education, the way we think about our responsibility as educators or as school systems is from eight in the morning to two or three in the afternoon, whatever the school day is. But I really believe that it is about extending the day or the time period for which we are collectively responsible for kids, and out-of-school time is one important piece.

The particular value in Providence has been that we have been successful in bringing substantial resources to this work – obviously, from the Wallace Foundation, from Bank of America, from many partners – so that it is not

A child who goes to school every single day, who has perfect attendance, still spends most of his time out of school, and to not make maximum use of that resource was a big mistake.

relying on the school district and the traditional sources of educational funding to support this additional time for kids.

But I think it is about changing the whole way we think about our community and our city and our local government and about state and federal government's responsibility for the healthy development of our kids. And it is certainly a way to begin to change attitudes about out-of-school time. Unfortunately, people still think of after-school programs as a nice luxury – it would be great to have if you could do it, but it's not a core responsibility of a community or of a city government – but I think it is.

How would you characterize the state of after school in Providence now, and how does that compare with where you'd like it to be?

We have a system in place that's fully operational as it relates to middle schools. We have five "after zones" that are up and running, that are ensuring that children have access to very high-quality after-school programs, free of charge, in every single area of the city. We've divided the city into five after zones, which are really campuses, and we've connected a middle school and a public library and a rec center and several other facilities so that kids in that neighborhood belong to a whole network of activities. And there's a transportation system designed to accommodate their ability to move from the library to the rec center to their school or whatever.

So, if you go to an after zone on any given day, there's dance and music and poetry and boxing and a home-work club and everything else in between. It's really exciting to see the kids involved in so many different kinds of activities and to see what a difference it's making in their lives. We have more than a thousand kids participating. So we're in the early stages of a full program.

It's my hope that it will eventually reach as many middle school kids as are interested in participating, and then we'll begin to look at how we create the same kind of opportunities for our high school students and our elementary school students.

Partnerships: Sustaining a Model After-School System

We have a really strong system, with very good quality standards and with lots of partners – hundreds of partners – that are doing the work. So I think it's among the best in the nation. The challenge we face, of course, is how we sustain it. Because, having built this great model that's being recognized around the country as a really excellent model, we have to now develop, and we have begun to develop, a system to sustain it over the long term.

What sort of partnerships do you need to realize this vision?

In the city of Providence, where the mayor has the ability to appoint the superintendent and the police chief and the director of recreation, we began the development of this model with a certain amount of advantage that many communities that don't have that strong-mayor form of government don't have. So the steering committee for PASA [the Providence After School Alliance] has on it the superintendent

of schools, the director of the department of recreation, the police chief, and other important leaders in the city, so that everyone is a partner in terms of the organization of city government, and everyone understands the connection between reducing crime and healthy recreational activities and school and PASA.

But in addition to that, we have outside partners – important funders that I mentioned just a moment ago, which continue to be very important – but all of the providers, all of the organizations that run high-quality after-school programs. PASA doesn't actually run an after-school program itself; we are the umbrella organization that brings together providers and ensures that they have the capacity and adhere to good quality standards, and we do the tracking so that we have good data and research about where kids are going.

But we have wonderful local partners who provide after-school programming here – the Boys & Girls Clubs, the YMCA, the Providence Public Library, City Arts, City Year, New Urban Arts, karate organizations, football, Little Leagues. We have lots of great local partners.



It's really about the entire community coming together in a collaborative way to promote the healthy development of our kids.

We also now are developing national partnerships. The United States Tennis Association just formed a partnership with PASA. They'll be providing coaches and equipment and sets of programs in each of the after zones, which are the campuses where all of this is occurring, to introduce kids in urban areas to tennis. So we are always looking for new partners.

We have great partnerships with our universities – with Brown, with Johnson & Wales, with Rhode Island School of Design, with Providence College – that are really actively supporting the work of their after zones in a variety of ways. We'll be expanding that to our hospitals, to other non-profits, to the business community.

The partnership possibilities in this PASA model are limitless. It's really about the entire community coming together – to work together in a collaborative way to promote the healthy development of our kids.

The Goal:
Healthy Development along with Academic Achievement

If you're successful, what kinds of outcomes do you expect to see for youth?

I think there are two categories. One is, of course, some measurable improvement in attendance, graduation rates, and student achievement. There are lots of opportunities to align some part

of the after-school programming to the academic needs of students, so we'll be looking at outcomes that demonstrate improvements in those areas.

But equally important, and one area that's not always underscored, is to also ignite the passion and interest of young people in civics and art and music and dance and good, healthy physical exercise – all of the things that contribute to the healthy development of young people into productive, contributing, engaged citizens of our democracy.

It's very important, I believe, when you talk about extending or changing the way we think about our responsibility to young people in our city, that it not be viewed too narrowly. There's such an emphasis on scores and academic achievement, which is incredibly important as our kids compete in the global economy, and we want them to be competitive and be prepared to enter the workforce or go to college. There's no question that's very, very important. But equally important is that we're raising young people to be good citizens and artists and to appreciate art and to be good musicians and to appreciate the beauty of music and to be physically healthy and appreciate the value of good exercise.

So, after-school programs or out-of-school time are particularly important, I think, in this post-No Child Left Behind era, when so many districts have been required to squeeze out of

their school day – in the light of declining resources and increasing accountability and standards in academics – to shift their focus so much on the core academics and raising achievement there that some of the other art and music and recreation is being squeezed out of the day for kids. I think the role of out-of-school time is not to replace – because that should continue to be the responsibility in the public schools – but to supplement those areas so that they can continue to be important and even become more important in the education of our kids.

So, I think it's very important that the outcomes focus on both of those sets of priorities.



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Annenberg Institute for School Reform
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