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## You Can't Get Much Better Than That

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At Mark Sheridan Elementary School in Chicago, Jennifer Gilbert's fifth-grade students are buzzing. "Hardy!" they murmur as they quickly take their seats. Tall and slim, with a slight stoop, Hardy Schlick stands at the front of the room wearing casual, practical clothes in shades of gray and beige that match the heavy blocks of clay he has brought with him. It's as if years of working with clay has caused him to blend in with it. His close-cropped hair, graying around the edges, completes the effect.

Schlick, a sculptor and teacher from the Hyde Park Art Center, speaks quietly, but the children hang on his words. "OK, what I'm doing is cutting up clay right now," he says. "It's going to take a couple of minutes." He recruits a few eager helpers to pass out newspaper to cover the school desks while he finishes his preparations.

Today's lesson will be one part art workshop, one part science demonstration. The students have been studying force, motion, and states of matter, and today they'll get a chance to put their knowledge to work, using clay and marbles. In the next 90 minutes, each student will build a small clay sculpture that can support at least one glass marble. When the pieces are fired, the marbles will melt—changing states from solid to liquid—at which point gravity will pull the melted glass down across the surfaces the clay presents to it. The aesthetic challenge is to design the

sculpture so that the melted marbled glass forms interesting patterns. The practical restriction is that the sculpture needs to form an effective container for all of the melted glass. If any of it spills, it could ruin the kiln. He checks in with the kids, asking if they have any questions. Just one, “Are you going to limit us to how much clay we can use?”

The kids have prepared designs on paper, and Schlick reminds them that the transition from a two-dimensional drawing to a three-dimensional sculpture will be a challenge. “Sometimes your ideas may change once you start working, and that’s OK,” he tells them as he distributes clay and a few tools—rollers, cloths, picks. “The drawing you made on the page is just something to get you started.” As eager as the kids are, many of them find the project a challenge, and some very ambitious designs—like racing cars and mountainscapes—get scaled back, as the students struggle to work the clay into the shapes they want. In practice, the most popular designs resemble a playground slide, but with some help from Schlick, one girl does manage to pull off an impressive temple-like structure with a hole in the center of the ceiling, which is supported by eight clay columns rather than walls. Another manages a platform shoe. By 1:30 p.m., everyone has finished a sculpture and strategically placed their marbles. Next week they’ll take a field trip to the Hyde Park Art Center to collect their fired pieces.

This elegant, seemingly self-contained lesson has deep roots. Hardy Schlick has been visiting Sheridan Elementary for almost ten years. When these students were in the first and third grades, Schlick led a longer series of workshop lessons with them, which explains why they were able to leap directly into sculpting their pieces with a minimum of coaching. This lesson reflects hours of planning time between Schlick and the Sheridan teachers, time spent carefully searching for ways that children’s explorations of science and art making can enrich, deepen and extend each other.

Educators call the approach of arts and academics being taught together, with each reinforcing the other, “arts integration.” Its advocates insist that it is not a replacement for traditional arts education, not just a way to squeeze the arts into time- and cash-strapped schools. Rather, arts integration presents itself as a strategy for engaging students more fully with the traditional academic curriculum, improving achievement without stinting aesthetics. In this case, students are testing their newly acquired scientific knowledge—about states of matter, gravity, and motion—by putting that knowledge to work in the service of creating sculpture.

The Chicago Arts Partnerships in Education (CAPE) has supported Hardy

Schlick's work at Sheridan for a decade. As the organization's executive director Arnold Aprill puts it, "Having an artist work in a classroom pushes teachers and the artists to tolerate the creative frustration of working together so they can both grow beyond their comfort zones." CAPE has emerged as a leader in arts integration, learning to find "the elegant fit" between the arts and academics, and developing lessons and units across the curriculum in which each set of practices adds to and deepens the other. Some of the resulting collaborations produce synergies so elegant that they seem like a simple application of common sense. The clay and marbles experiment at Sheridan is one example. Another is the case of a theater artist and a high school French teacher whose students perform improvisational comedy in French as part of their final exams.

Other teacher-artist teams come up with projects of dazzling complexity, like the archaeology project that teachers at Walsh Elementary School cooked up with artists from Pros Arts Studio. Sixth-graders studying the American Southwest visited a natural history museum to research art and social structures of the Anasazi Indian tribes. Back at the school, they used their sketches from the museum visit as a basis for dioramas reconstructing the village buildings, and they made pottery in the style of pieces they had seen at the museum. Then they smashed their pots, buried them in a specially created sandpit in a park field house, and commissioned a fourth-grade class to set up an archeological "dig" in the basement. The fourth-graders analyzed their finds and created their own archeological display.

#### **CORPORATE MERGERS AND CURRICULAR ACQUISITIONS**

CAPE owes its existence to corporate mergers and acquisitions, as the group's founding board president, Kassie Davis, tells the story. In 1990, the Minneapolis-based department-store chain Dayton-Hudson bought Chicago retailer Marshall Field's, and Davis found herself pushed out of her job as Vice President for special events and PR at Field's, a function her new employers already had covered at the home office in Minnesota. Davis was offered a job heading public affairs—a bailiwick that included corporate giving—so as one of her new tasks, she started a corporate contributions program, using the new parent company's guidelines. One of Dayton-Hudson's areas of interest was arts education for schoolchildren, and Davis went to work soliciting proposals.

She got 150 responses from arts organizations in Chicago, proving that there was an abundance of arts organizations that wanted to work in the schools. "Even as a novice, it was obvious to me that there was a lack of standards and quality

among the proposals,” Davis recalls. Most were for “exposure” or “enrichment” experiences—in-school performances and field trips to matinee performances or museums—“kind of a one-shot deal,” as Davis notes. “When you did a site visit and you asked the people at the organization, ‘What are the students learning?’ or ‘How do you measure what the students are getting out of this?’ They would say, ‘It’s the smiles on their faces after they leave the building,’ or ‘It’s all the thank-you notes we get.’ Maybe it was my background as a business person—I was used to measuring outcomes—but it seemed to me that there had to be a better way.”

Davis started brainstorming with colleagues at other Chicago-area foundations, and she started looking for guidance. She noticed that two programs Dayton-Hudson funded in other cities “seemed light-years ahead” of the run of proposals, and that New York-based consultant Mitchell Korn was involved in both projects. She wound up commissioning Korn to do an extensive study of arts education in Chicago, including dozens of interviews at local schools and arts organizations over a 9-month period.

Korn found that exposure programs were all that was available in most of the system’s 600 schools. They were generally popular—students and teachers enjoyed them—but they rarely had much relevance to what the students were studying in regular classes, because they were organized around the educational goals of the “providers,” not the schools. Theaters did educational programs on the plays they produced and museums did educational programs on their exhibitions, but these were rarely connected with the curriculum the students were learning in class, and they were not designed to be sequential or comprehensive.

School leaders did not see how they could do more, though. Most art and music teachers had been laid off in the late 1970’s in the wake of a deep financial crisis, so the schools lacked the human resources to teach the arts. And there was little flexibility in school days already over-scheduled with mandates and requirements. The arts didn’t fit. “To me, the key challenge was changing the paradigm from pre-packaged exposure programs to programs designed to meet the needs and interests of the schools, programs that were sensitive to schools’ limits and the pressures they were under,” says Davis. “From a business point of view, I was interested in developing an approach that was driven by the needs of the customers, in this case the schools, not the needs of the producers.”

Korn recommended that arts organizations become long-term partners with schools. They would help address the human resources issue by providing teaching artists to work with classroom teachers on a sustained basis. He recommended that

CAPE act as a matchmaker between schools and arts groups, a source of guidance and training for partnerships, and a clearinghouse for money to pay for the collaborations. What most distinguished CAPE from exposure programs, though, was that artists and teachers would integrate the arts into the regular academic curriculum as a strategy for fitting the arts into the school day. “CAPE broke ground by involving the classroom teacher from the beginning,” says Davis. Teachers couldn’t treat the artists’ time as a break, and artists were called upon to help address the fundamental challenges in a big urban system where most schools are low-income and low-performing. The joint work would ensure real integration with the traditional academic curriculum, both during and after the artist’s time in the classroom. “When the artist left,” notes Davis, “the teacher had knowledge and skills to continue these kinds of lessons with their students.” Ultimately, it was hoped, these partnerships would transform teaching across entire schools, which might lead the way to system-wide reforms. Chicago had begun a large-scale reform effort in 1987 based on the idea of bottom-up innovation from individual schools, and CAPE hoped to help lead the charge.

After a national search for an executive director, they chose Aprill, a talented director in the city’s vibrant theater scene who had also worked for years as a teaching artist in area schools. By late 1992, Davis and a half-dozen other local funders had come up with the money for a six-year demonstration project and solicited proposals from teams of schools and arts organizations. Nearly a third of Chicago’s public schools and nearly a hundred arts organizations submitted dozens of funding proposals for partnerships. The 14 that made the cut included schools from across the city and some of the city’s top theaters, arts studios, and universities. Those partnerships spent the 1993-94 school year planning and developing their programs, which were rolled out in full the following year.

The founders’ initial hope—that after six years of privately funded work, the Chicago Board of Education would adopt CAPE’s program as its own, and expand it to serve more schools in need of innovative and effective improvement strategies—didn’t come to pass. Those six years saw three superintendents and dramatic shifts in school policy, making it difficult to form lasting alliances with decision-makers. “You could try to achieve buy-in from whomever was there,” says Davis, “and then six months later they’d be gone and you’d have to start over.” Individual schools committed substantial amounts of funds under their discretionary control, but CAPE remains largely privately funded today.

Though CAPE was not adopted by the Board of Education, it has had broad

influence. Some arts organizations, like Free Street Programs, have adapted CAPE's approach in other schools. When the Board launched a program allowing some neighborhood elementary schools to become quasi-magnet schools—to select a thematic identity and orientation for their improvement efforts—more than fifty of the district's 500 elementary schools chose the arts as their focus. In 2003, the Board gave planning grants to 25 more schools that wanted to use arts integration as a strategy for academic improvement, and selected CAPE to provide professional development to teachers in all those schools. Reading in Motion, which uses a tightly focused approach that links skills in the performing arts to literacy skills in primary grades in dozens of schools. Columbia College Chicago, Chicago's largest arts college, is implementing sophisticated arts integration strategies to improve literacy at eight of the city's poorest performing elementary schools through its Arts Integration Mentorship Project (Project AIM). The Chicago Teachers Center of Northeastern Illinois University has been independently supporting the development of long-term arts integrated partnerships in schools across the city.

After a decade, arts integration has become a strategy for school improvement in close to a quarter of the elementary schools in the nation's third largest school district. These developments are the outcome of a steady string of successes and recognition for the work of CAPE and others. Some of these successes were artistic, in that students created works of genuine value. "I believe that a lot of our arts integrated work is just as challenging, brilliant, and formally beautiful as the hottest artists at the Museum of Contemporary Art right now," says CAPE's program director Scott Sikkema. The organization has backed up that belief by organizing public exhibitions and performances of student work—poetry and prose, visual art, music, theater, and video. CAPE schools and arts partners have displayed student work in major galleries and museums, including the MCA.

Some of CAPE's successes are the kinds that are measured by tests taken with a number-two pencil—the kind education policymakers take seriously. When UCLA professor James Catterall studied changes in academic achievement during CAPE's first six years, he found that CAPE schools tended to improve significantly faster than non-CAPE schools that served demographically comparable student populations (Catterall & Waldorf, 1999). Between 1993 and 1998, in one dramatic example, the number of sixth graders at CAPE schools with reading scores in the average-to-above-average range had grown six percentage points more than at comparable schools. CAPE schools had grown almost twice as quickly on this measure.

### THE ARTS ADVANTAGE FOR DISADVANTAGED LEARNERS

One of the schools that shows the arts advantage most dramatically is Telpochcalli, a small public elementary school started in the early 1990s by a group of idealistic teachers. Telpochcalli serves a neighborhood called Little Village, which has one of the city's highest concentrations of Mexican-Americans. You can count the non-Latino kids at Telpochcalli on the fingers of one hand, and all but a few of the school's students qualify for free or reduced-price lunch programs, the standard index of poverty in schools. A large majority of Telpochcalli's students are still learning English.

Many schools serving low-income children choose a curriculum that emphasizes test-preparation and "basic skills," and see the arts as an unfortunate casualty of "realistic" necessities. Telpochcalli takes an opposite tack, building a curriculum around Mexican arts and culture, with art, music, and dance specialists on staff. In addition to a long-running CAPE partnership with the Mexican Fine Arts Center Museum, Telpochcalli seeks out other grants to support its arts curriculum, and the school invests much of its own discretionary budget in the arts. Teachers at Telpochcalli integrate the arts into academic classes, but students also study art on its own. For example, students analyze *corridos*—story-songs that have served for more than a century as what one writer calls Mexico's national "musical newspaper"—both as poetry and as part of the school's social studies curriculum. Telpochcalli's students can also learn to play *corridos*, since the school provides training on instruments used in traditional Mexican music—violin, mandolin, guitar, marimba, and bass—and provides the instruments as well. "Sure, it is worth studying art, music, and dance because it's good for lots of things academically," says the school's principal, Tamara Witzl, "but isn't it good to have kids who can visualize, and look at the world through the eyes of a visual artist? We do enough that it does both things. Kids do integrate the arts into reading and writing, but they also see themselves as musicians and artists."

The school's test scores show that the teachers' gamble has paid off. The percentage of Telpochacalli students scoring at or above national averages on standardized reading comprehension tests more than tripled between 1997 and 2002. Skeptics might point out that, due to the school's modest starting point, that percentage was still only 35 percent in 2002, but a closer look paints a more impressive picture. National figures show that students who are not modestly skilled readers by the end of third grade can generally be expected to fall farther behind and are unlikely to graduate from high school. Just 18 percent of the

school's third graders are proficient. But at Telpochcalli reading skills improve very substantially by the eighth grade. Fifty-five percent of the school's eighth graders score at or above that benchmark. The longer kids stayed at Telpochcalli, the better they did on the tests. Meanwhile, at a demographically similar school two blocks away, just 26 percent of eighth graders were proficient in reading, one percent less than the school's third grade.

Telpochcalli graduate Raphael Estrella is happy to spend an hour talking about his experiences at the school and the opportunities it gave him to explore art, music and dance. "I love art," he says. "Dance was a way to meditate, to be part of something, to be in a group." Music was his ticket into one of the city's top high schools. Even though his grades, he says, were "kind of low," he was able to audition for a place in Lincoln Park High School's music program because the school orchestra had an opening for a bass player. Lincoln Park initially slotted Estrella into remedial classes, but he found that his academic preparation at Telpochcalli allowed him to quickly master the high school curriculum and move up to higher-level classes. As a senior, his schedule is filled with challenging Advanced Placement courses, and next year he plans to attend Minnesota's highly regarded Carleton College.

Estrella says that the deep immersion in art and music he got at Telpochcalli gave him important tools for tackling academic challenges. "Music helps me think," he says. "When I'm playing music, I forget everything else, and that gives me a chance to relax and think about what I'm going to do later. I probably think more clearly after playing than before." Music also has taught him an attention to detail that he uses in other settings. "For music, you look at the little details that are really critical," he says. "You have to look at your positioning and every note that you play—or else you could mess everybody up. In math, a little detail might make the whole equation, and I'm wide open. I see little details that other people won't pay attention to." Similarly, he credits his art teacher's insistence on creating detailed visual works with his understanding of the importance of using detail to make his written work vivid.

CAPE director Arnold Aprill argues that this kind of perceptual shift—the way people's thinking changes when the arts become a serious pursuit, rather than a momentary diversion—is an important reason that arts belong in the schools. "People will often say, 'It's about creativity,' or 'It's about critical thinking,'" he says. "It's useful to look in some detail at what that means. The things that artists do all the time are things that kids need to be able to do—forming alternative solutions

to a problem, working with other people, being persistent, adjusting something after you've made a choice, taking responsibility for decisions, looking at options.”

In 2001, a highly respected research group based at the University of Chicago published a paper (Newmann, Bryk, & Nagaoka) that indirectly backs up Aprill's point. The Consortium on Chicago School Research found that when students are engaged in “authentic intellectual work,” they not only are more engaged with their schoolwork, they tend to gain more ground on standardized tests than do students who receive the kind of rote, skills-based instruction that is intended specifically to prepare them for such tests. The Consortium defines authentic intellectual work as activity that demands disciplined inquiry into a subject, requires students to digest knowledge thoroughly enough to apply it by themselves to new situations, and sets real-world standards for students' work products.

“The arts meet those criteria for authentic work in spades, and become an exemplar for the rest of the curriculum,” Aprill notes with pride. “Making art requires students to develop deep understanding in order to represent their ideas to others through the art. Since real audiences will see the work, not just teachers, students are prompted to internalize high standards. And the work itself is an original application. You can't just copy the turkey, because that ain't art. It's just copying the turkey.”

A recent study of CAPE documented how arts-based work changes student attitudes toward schoolwork and showed what a profound difference intellectual and aesthetic challenge can make. It didn't surprise researchers Karen DeMoss and Terry Morris (2002) when they found that students at CAPE schools reported enjoying learning more, paying closer attention, and remembering more when their teachers used an arts integrated curriculum.

A more revealing finding sneaks in toward the end of their report. Students described both traditional, lecture-worksheet-textbook instruction and arts integrated instruction as “hard,” but they used the word to mean two very different things. “At no time during the general learning and non-arts interviews did students discuss what makes learning hard with anything other than a kind of resignation. Math is hard, tests are hard, remembering stuff is really hard,” DeMoss and Morris (2002, p. 19) write. But when students described arts integrated work as hard, “the term ‘hard’ seemed to imply a challenge rather than a barrier.” To illustrate their point, DeMoss and Morris quote an eighth grade student's description of one arts project: “The hard part was making it into a play,” the student reports. “I thought that was hard because researching it took a lot of time and work. It was

hard to get the group to agree sometimes. We dealt with it by breaking into partners and that seemed to help us come together. We had to negotiate” (p. 19). Students went from thinking of themselves as hapless incompetents, beset by obstacles beyond their capacities, to seeing themselves as capable problem-solvers, with significant accomplishments under their belts. In other words, they found authentic intellectual work—disciplined inquiry, original application and real-world standards—to be a positive challenge.

Aprill says that teachers make the same shift, upgrading their estimates of what their students can do. “There’s a very consistent positive impact on teaching that happens from this approach,” he says. “The teacher always says, ‘I couldn’t believe that so-and-so was capable of such-and-such.’ That’s totally dependable. In every program, in every city I’ve ever been in, that always happens.”

Aprill’s observation—that integrated arts is a recipe for changing teacher perceptions about what their students can do—has profound implications. Decades of research on effective schools has shown that one of the most important differences between schools that work and schools that don’t is teachers’ beliefs in their students’ ability to learn. Similarly, studies of effective versus ineffective teachers show a belief in student capacities as a key difference. Such conclusions seem obvious, and the underlying finding—that large numbers of teachers don’t believe their students are capable of much—is depressing to contemplate. But study after study has documented that many teachers don’t believe in their students’ abilities. A typical response in the last decade has been for administrators to require teachers to sign loyalty-oath type “vision statements” declaring their belief that “all children can learn.” Giving teachers a chance to work collaboratively with artists would be a refreshing alternative to such tactics.

#### **ALEXANDER’S BLUES: HOW ARTS INTEGRATION MAKES BAD DAYS GOOD**

At 11:30 a.m. on a Tuesday, near the end of the school year, a dozen or so adults stand in the hallway at Agassiz Elementary on Chicago’s North Side, waiting outside the room that doubles as the gym and auditorium. We can hear a chorus of children accompanied by a blues guitar.

When we get in, a movie screen hides much of the stage. A wide aisle separates the two banks of folding chairs that make up the audience, and at the back of the aisle, three boys, about age 11, sit behind a folding table tending a laptop and a video projector. Next to them, one of their schoolmates operates a video camera.

Jim Kirk takes the stage. A thin man with light brown hair falling away from

his forehead, Kirk has a smile that's both conspiratorial and innocent. "We've spent the year studying the blues," he says by way of introduction. "It's kind of our take on the school-wide theme of migration." The performance we're about to see is based on work in social studies, language arts, and filmmaking. "Thank you so much for coming," says Kirk. "And now I'm gonna tell the class, places everyone."

The kids move into place, and one of the boys, an African-American kid maybe 10 years old, walks into a spotlight in front of the stage, wearing a straw hat and a yellow shirt. Accompanied by teacher Steve Lutz on guitar, (the familiar syncopated blues rhythm: ONE, and-*two*, and-*three* and-*four-and-a*) he introduces the four-bar theme that will be the show's chorus:

"It was a

TERRIBLE, (*and-three, and four-and-a*)

HORRIBLE (*and-three, and four-and-a*)

NO-GOOD,VERY BAD

DAYYYYYY..." (*and-two, and-three, and foouurr....*)

And dances off cool as you like, while the last chord fades.

The play is an adaptation of Judith Viorst's classic children's book, *Alexander and the Terrible, Horrible, No Good, Very Bad Day*, in which the hero, a disgruntled everytyke, endures a day of disappointing food, irritating siblings, and classmates who don't let him in on their games. In a series of episodes, we see Alexander miss out on the prize in the cereal box, get crammed in the middle seat on the school bus (where he becomes sick to his stomach), and get yelled at for things that aren't his fault. From off-stage, a teacher reads the narration over the P.A., while, on the left side of the stage, the young actor playing Alexander—enthusiastic but, ever in character, unsmiling—acts out his day, with other actors coming and going as needed to torture him, armed with giant prop cereal boxes, bag lunches, and homework that is better-prepared than our hapless hero's dog-eared offering. Alexander has the blues, and each vignette is punctuated by the bluesy theme, with Alexander conducting from the stage a female chorus of five. Jim Kirk and Steve Lutz accompany the chorus on piano and guitar. The action is interrupted several times by the projection of 90-second video biographies of gospel and blues legends like Mahalia Jackson, Muddy Waters and Howlin' Wolf. Costumed students play the musical heroes, silently strumming prop guitars and clapping to inaudible beats, while the soundtrack features first-person voice-over narration read by students. ("I sang at the March on Washington," relates Mahalia Jackson, while a student playing Martin Luther King orates silently.)

When Alexander's miserable day comes to an end, as the last blues chorus fades and the kids take their bows, the crowd—maybe 40 adults and a half-dozen children—goes wild. It's worth examining why.

"Alexander's Blues" isn't exactly ready for Broadway, but it is entertaining. It has clearly been carefully planned and exuberantly executed, presented with love and care. It's a multi-media extravaganza—complete with choral accompaniment, props, and video interludes. It's a group effort. Everyone has a distinct part to play in telling the story. The level of complexity and involvement make "Alexander's Blues" a far cry from standard school-assembly fare, which tilts heavily toward hastily rehearsed choral singing, or group dance numbers with minimal choreography. Even at Agassiz, where the arts are integrated into the curriculum and the halls are full of student art, "Alexander's Blues" is a standout performance.

But there is more to this performance than it just being a better-than-average show with normally indulgent and enthusiastic parents. There is the intense progress that had to be made to stage this performance at all. The cast of Alexander's story was played by the students of Room 202, one of the school's two classes for autistic children.

Today's performance is a warm-up for a performance tomorrow before a downtown lunchtime crowd, and a show on Thursday for the toughest crowd, an all-school assembly at Agassiz. Last year, Jim Kirk's students won a school-wide award for best assembly, and they're hoping for a repeat.

Agassiz principal Bernadette Butler takes the microphone for a moment to offer tribute. "Every year these students have done this, I've cried," she says. "The second year, I was speechless. This year, I don't know what to do."

Kirk, Lutz, and Dave Rench are the school's teachers for kids with autism, and they had co-conspirators. One is Jacqueline Russell, executive director of the Lookingglass Theater Company, one of the city's leading ensembles. A few seasons ago, Lookingglass sent its adaptation of Ovid's *Metamorphoses* to Broadway, where it captured a Tony Award. A few weeks after "Alexander's Blues" finishes its run at Agassiz, Lookingglass will open a new theater in Chicago's historic Water Tower, with a show directed by the ensemble's most famous member, David Schwimmer, best known for playing Ross on the TV show "Friends." CAPE supports the partnership between Lookingglass and Agassiz, and the video interludes that were part of "Alexander's Blues" are the product, in part, of CAPE's video production and editing workshops, which Kirk and co-teacher Dave Rench attended.

Russell—who worked with Kirk, Rench and their students to develop the

show's concept, characters, script and props—has worked with Kirk's students for years. She says it is the highlight of her week. The project, she notes, addresses “the signature traits of autism.” Focus, attention, and emotional expression are the most basic requirements of putting on a performance, and they are the things that autistic children find most difficult. Russell has seen victories that an outsider might have thought were small, or sudden, but were neither. One standard exercise has the group sitting in a circle, passing a classroom object from person to person—a pencil, for example. Each person, on accepting the object, is supposed to use it in a way that shows what he or she imagines it suggests. A gun (“Bang! Bang!”), a telephone (“Hello?”), a hammer (“Wham! Wham!”). In Room 202, that can be a challenging game. But the occasional breakthroughs inspire a giddy rush. “After a couple of years with this kid, Ramon, who never did anything but scream and cry, one day he picks it up and goes, ‘Yee-haw!’—gesturing as if twirling a cowboy's lasso. Jim and I were like laughing...and crying.”

All of the students have a role in “Alexander's Blues,” although not everybody can be a star. For some, just placing a prop onto the right spot on the stage at the right moment is a triumph. “Eli did a very good phone,” says Steve Lutz, remarking on one student's performance as a prop. “And for Eli to hold it together as long as he did, starting with the run-through, that's huge!”

Kirk thinks back to when he first met Isaac, the animated, overjoyed, and very connected actor who played Alexander today. “Isaac has been my student for five years,” he says, “and when I first met him, he was real shy and had a hard time trying anything new, like zipping up his coat, say.” He notes that for a kid like Isaac performing “plays to his strength of being able to memorize a script. Dave and I prepared that script, but he knows it better than either of us. If someone misses a bit, he'll cue them. A few of the kids have that strength, and this is an excellent way to use it.”

One of Kirk's favorite things about the production is that it provides a powerful experience for his entire class. “When they go to bed tonight, every one of them is going to feel like they accomplished something,” he says. “It's very unusual to reach *all* the kids like that. Except with this.”

Another part of what makes Jim Kirk's eyes light up about “Alexander's Blues” is what's called “reverse-inclusion.” The support roles—the chorus, the videographer, and a crew of assistant stage managers—were played by members of Debbie Brown's 5th-grade class, none of whom are autistic. In a role-reversal, the autistic kids were in the spotlight, utterly defying expectations, while the main-

stream kids were behind the scenes. The first person whose perceptions were changed and challenged was, it turns out, Kirk himself. “Jacqui had a lot to do with planting that seed. All the games—here we’re handing around a duck and pretending the duck is in different modes—here, it’s scary duck, and this is the baby duck. We had one where it was a stinky duck. But what was happening was, Jacqui was able to come in and get these kids to use a whole part of their mind that I was rarely able to tap into, and that was the imagination. These guys are so grounded in the literal and the functional. I am too. I have to be. My whole outlook is, where are these guys gonna be when they grow up? I’m constantly on ‘em. ‘Tie your shoes.’ Because I know, you’re gonna have to tie your own shoes. And then here’s Jacqui, handing around the duck. It was a real eye-opener for me. And OK, all right, let’s do a play. Maybe we can.”

“The play has been a vehicle to change perceptions,” he says. “We took the art and the creativity, and the energy that happens in here, and we used that to help these guys be cool in the whole school. Before last year, nobody viewed kids like Isaac or Jeremiah as what they are, which is excellent performers. I can’t tell you how many other teachers came up and said, ‘I didn’t know they could do that.’”

The play has also been a vehicle for learning and integrating significant academic content in several subjects with the arts. The study of the Great Black Migration “has been our social studies curriculum,” says Kirk. “We’ve been through all the different states where Mahalia [Jackson] was born and raised. The science, the technology of moviemaking, language arts...Wow, it’s super cool to see these kids taking a text and making it their own. Those are storyboards over there, that’s how the kids thought we should make the Mahalia Jackson movie. We’d spent the previous week studying close-ups and long-shots and stuff like that.”

“We’d been studying all year long about the different blues singers,” says Rench. “And I asked the kids, ‘What do you think we should include in our movie?’ And we pulled the facts together. And Jim and I said, ‘OK, so first she’s gonna be talking to the camera, what kind of shot should that be?’ They said, ‘Medium shot.’ ‘And then we have to show her moving—what’ll we use?’ And the kids said, ‘How about a map?’”

The most important part of the project was getting the students to confront their fears and overcome their weaknesses. Autistic children, Jim Kirk tells me, tend to view the world as threatening and unpredictable. Kirk sees his job as preparing students for the messy world in which they’ll have to live. Performing does that by forcing them to connect with others and to adapt to changing circumstances. It

also provides an activity that pulls together a disparate and disconnected group around one curricular focus. “Autism is a sensory processing disorder,” he says. “What that means is, for some reason the part of the brain, the cells responsible for the relatedness of our senses, doesn’t quite happen. It must be so anxiety provoking, and that’s what leads to withdrawal.”

This kind of story, of holistic change for students and the adults who work with them, is dear to Arnold Aprill’s heart. “For me, the purpose of art is to change consciousness,” he says. That belief was the reason he took on the job of running CAPE more than ten years ago. CAPE has shifted its focus in recent years, from trying to get its program adopted by the city, to in-depth documentation of the work produced and the lessons learned by the students, teachers, and artists in its partnerships. Engaging the help of prominent researchers, the group aims to help practitioners use portfolios to capture the scope, substance, and nuance of learning that comes out of successful partnerships.

In creating artful documentation, teachers and teaching artists gain new insights and raise new questions about the creative and learning processes. It is, itself, a form of disciplined inquiry that makes arts integrated teaching authentic intellectual work for adults.

### THE ARTS AND ACADEMIC ACHIEVEMENT

As CAPE focuses on deepening its work with the 25 or so schools in its network, and helping another 75 schools get started with arts integration, the question remains: What if a big-city school district did buy into a program like CAPE? Can efforts like this be scaled up? What might the quantitative results show? One place to look for answers is Minneapolis, where a similar effort has been running for several years, reaching about a third of the city’s public schools.

In the early 1990s, media magnate Walter Annenberg, the creator of *TV Guide* and other national publications, pledged \$50 million of his fortune to a series of challenge grants intended to spur school reform efforts across the country. Most of the money was spoken for in the first few years, but in 1997, the Annenberg Foundation had some money left over for “smaller” grants, and in the summer of that year, one went to the Minneapolis Public Schools—\$3.2 million for a 4-year effort called Arts for Academic Achievement (AAA). To get the grant, the district would have to pledge an identical amount of its own money and raise another \$3.2 million from other private sources. The district agreed to the terms and hired Judy Hornbacher, a veteran administrator and teacher (and a former professional actress),

to run the new program. Hornbacher immediately started meeting with the district's program design team, began doing outreach to schools and arts organizations that might participate, and started raising private matching funds. By fall of 1998, the program was in full swing, with the district distributing grants to 29 schools, adding more over time.

Since one of the project's goals was building teacher leadership, teachers and artists were responsible for developing their own proposals. At AAA schools, groups of teachers got together, found an artist to work with as a partner, and designed a program that involved using the arts to teach the regular curriculum. With their principal's approval, they submitted their application to the district themselves. Hornbacher describes the application as, "You collaborate on your goals for students, both academic and aesthetic goals, and identify the data you've used to set your goals. Not just because it's cool to do—it may be really cool to do, but why are they doing it? What are the educational objectives?"

The AAA budgeted a healthy amount for evaluation, and researchers from the University of Minnesota helped AAA select criteria for which proposals they would fund. "We would make sure there was a rubric that was clear and measurable," says Debra Ingram, one of the researchers who led the evaluation effort.

Thanks to that careful planning, the final summary report Ingram and colleague Karen Seashore (2003) published was able to show some very clear results. It also helped that Minnesota collects lots of data on students and keeps it, as Seashore says, "so clean you can eat off it." Ingram and Seashore were able to look at students' "gain scores"—the degree individual student test scores changed from one year to the next—a more meaningful and fine-grained measure than the usual comparisons between, say, two different second grades over two years. The researchers conducted surveys to supplement the state's data, using the results to zero in on the program's effects. For students in AAA schools, the evaluators looked at not only whether teachers used arts integration, but also how much they used those techniques.

The results were striking. Arts integration boosted student achievement, and the more it was used, the more difference it made. For third-grade girls living in poverty, for instance, having a teacher who used the arts "very little" as opposed to "not at all" meant a gain of more than a month's extra progress in a year. A teacher who used the arts "a lot" added three more months of progress. The most encouraging finding was that AAA often produced even better results for poor kids than for others. "In some cases," Ingram and Seashore write, "the relationship between

arts integration and student achievement was more powerful for disadvantaged learners, the group of students that teachers must reach to close the achievement gap” (2003, p. 3—4).

There were limits to what they could measure, of course. At the outset of AAA, the design team had decided not to add to the considerable battery of tests that Minneapolis students take already. Only students in grades three through five took tests that produced clean enough data to suggest conclusive results, but the trends were impressive.

AAA was also intended to improve teaching, and the researchers report a strong showing there as well. “This is one of the most powerful professional development experiences that we have seen for large numbers of teachers,” says Seashore. Teachers had to work in groups with arts partners, and they had to learn new skills and take on new roles. “They became designers of the program, they became collaborators, and they took responsibility for school-wide improvement,” says Seashore. And of course, teachers also consistently upgraded their estimates of what their students were capable of. Or, as Ingram and Seashore’s study has it, “Arts integration allowed teachers to see strengths in students they had not expected” (2003, p. 7).

Ingram says that programs as effective as AAA don’t come around very often, and Seashore concurs. “Increased student achievement, teachers thinking so carefully about their work, teachers developing as leaders,” says Seashore, “You just can’t get much better than that.”

The program’s success has won it a firm place in the district, even though the Annenberg funds ran out over two years ago. In January 2002, Superintendent Carol Johnson turned down a \$30,000 raise, citing the district’s tight finances, and asked that the money go instead to AAA. Hornbacher was floored. “What can you say?” she marvels. “Wow.” The district cut its budget by \$85 million over the past three years, eliminating 550 teacher positions in 2002–2003 alone. But it has maintained funding for AAA at \$500,000, and it has raised another \$350,000 privately.

Although the evaluations of student achievement focus mostly on elementary schools, AAA has taken hold in many of the city’s high schools, and Judy Hornbacher arranged for a tour of Southwest High School where an English teacher named Chris Fisher would be my guide. Pretty much every kid at Southwest seems to know Fisher, who started teaching at the school twenty years ago, after promising his wife that he would give up show business to make an honest living. When they make the movie about Southwest High School, Fisher is the

guy Robin Williams will play, popping up everywhere, coffee cup in one hand, cell phone sometimes in the other, his improbably big and pointy eyebrows poking out from his long face, which tends to be set in a deadpan.

Southwest sits in one of the city's wealthiest areas, serving a mix of the upper-crust kids from the neighborhood and at-risk students who come from all over town. In the mid-1990s, Fisher and some colleagues started putting together an "arts-infused curriculum," primarily intended as a way to prevent those at-risk kids from dropping out. Over time, funding from AAA helped the program cohere, but it retains an impromptu, ad-hoc character. The main competition to the arts track at Southwest is a program called International Baccalaureate (IB), which prepares students for a series of rigorous examinations. There are currently about 400 IB programs in the United States, all monitored and certified by a governing body in Sweden. Based on a curriculum developed for the children of diplomats, IB programs are widely considered an academic gold standard for high schools. Some kids come to Southwest specifically for the IB program, a by-application-only affair. Most of the rest wind up in the arts track, either because they've sought it out, or by default.

The morning's classes provide clues to what Fisher and his colleagues are trying to do. Social studies teacher Carolyn Hooper and art teacher Cecily Spano team-teach a 10th-grade class. Today their students are de-briefing performances they gave last week before the whole school, based on ideas they had studied in Hooper's class. The multimedia performances included dance, puppetry, singing, painting, movement, and spoken-word elements. It's hard to judge what the content was like from the discussion, but it's clear that the experience was important to the students. "I seriously thought it wasn't gonna turn out good," says a girl named Kyra. "I almost threw up, too." But all came out fine, she says, "since nobody wanted to look stupid in front of a whole bunch of people."

Providing an authentic audience—people in front of whom students do not want to look stupid—is a key difference the arts make, says social-studies teacher Kristen Borges, who has helped lead arts related work at Southwest for more than a half-dozen years. An arts integrated curriculum gives students "an audience for their work beyond just, 'The teacher's going to read my paper,'" Borges says. "Having poetry readings, having their poetry published...it's more a validation of their work than just a grade." Even in projects where aesthetic concerns don't seem quite as front-and-center, the principle of raising the stakes by providing an audience has a powerful effect. This month, Borges's ninth-grade social studies students

are preparing to enact a mock Supreme Court case, assuming the roles of justices and attorneys. They're arguing and deciding for themselves a case the Court decided in 2000, about whether students could legally lead a prayer service before a football game. "They're looking at some really tough documents," she says, "stuff that would bore them to tears if I just asked them to read it." But the end result is a performance. Students realize it requires a deep understanding of the material to project the confidence that a successful performer needs.

#### LEARNING THROUGH THE ARTS OUTSIDE THE CLASSROOM

If performances in front of authentic audiences are important to the dynamic of learning in schools, they are the center of some after-school programs in the arts. In the spirit of full disclosure, this is the time to note that I have a personal stake in the work that gets done outside of school. Close friends of mine run an organization in Chicago where local teenagers create exceptional original theater out of real-life stories from their working-class, multi-cultural community, Chicago's Albany Park neighborhood. I sit on the board of the Albany Park Theater Project (AFTP), and I'm one of the cheerleaders-in-chief.

I'm not a lonely voice. Since the organization's founding in 1997, AFTP has grown into one of the city's finest theater companies, and the many dozens of people I've brought to AFTP's performances over the years have become part of a legion of fans. The company's work is regularly featured in local media, and AFTP shows have more than once been named "Critic's Choice" by the *Chicago Reader*, a weekly newspaper that takes its arts coverage seriously. When the company added two extra nights to the run of its most recent show, *Aquí Estoy*, tickets sold out in less than ten hours. Days later, the *New York Times* ran a laudatory article (Wilgoren, 2003) about the show and the company, published on the day of *Aquí Estoy's* final performance.

AFTP's young performers are notable for their courage. They extend full commitment to the characters they play, even those who are repulsive or pathetic: a husband who brutally beats his wife; a date who nearly becomes a rapist; an alcoholic father who molests his daughters; brothers lost to gang life, drugs and despair; sisters who submit to abuse from their husbands; new parents who suffer from schizophrenia. They draw on a variety of styles. Recent pieces have featured a post-modern Greek chorus, a four-piece rock band, a puppet made from three pieces of crumpled newspaper, and a world-class human beatbox. Dance and original music have been staples of the company's work for several years, and over time,

they have become smoothly integrated, so that movement, music and storytelling are often woven together in a single story.

The teen members of APTP's company take full ownership of their performances because they are responsible for developing them. Many of the stories the group chooses to dramatize come from the company members' own lives and family histories, but it is a rule that no company member may play the part of him- or herself on stage. The idea is that the company takes collective responsibility for doing justice to the story, no matter whose it is. Company members gather oral histories, often meeting with sources as a group that includes the adult directors, but sometimes conducting interviews on their own. The interviews are transcribed, and the transcripts become the basis for a long workshop process, in which company members try out different approaches to each story, evaluating and refining as they go. The workshop sessions are videotaped, and the final scripts are based directly on the workshop material. Company members write or co-write the music and songs, and they take a hand in directing and choreographing many of the finished performances. At the end of each performance, the actors engage the audience in a question-and-answer session, explaining the company's purposes and processes.

After one performance, someone in the audience asked how a haunting lament about company member Michael Nguyen and his mother came to be written. It is a model of how the company works. "We had twenty minutes to create 'a piece about my mother,' and I wrote a song," Michael told the audience. "It was short—a lot shorter than what you heard today—and when the company heard it, they were like, 'Oh, my God, there's a story there.' So, we all decided that we should get in the circle and tell the story, and I did that. And when we got into the rehearsal process, Marisa [Ramirez, another company member] and Colby [Beserra, one of the adult directors] and myself put the song together. We crafted it into what it is today." Michael wrote a snippet of a song, the company sniffed out a story worth telling, and with the help of the adult directors, they fleshed out the story and turned it into a powerful performance.

There are no auditions. Any teenager in the community who stops by is pretty much immediately part of the family, which is how APTP company members frequently refer to each other. The company is an ongoing ensemble, with most members maintaining their affiliation until they go away to college. One result of the no-audition, instant-family policy is that APTP's members reflect the neighborhood's mix of Latino, Asian, Eastern European, Middle Eastern, and other cultures. APTP pieces have found their beginnings in countries from around the

world, including Mexico, Cuba, Colombia, Nicaragua, Vietnam, Bosnia, Bulgaria, Poland, and Palestine.

*Aquí Estoy* explored immigration stories, an appropriate theme in a neighborhood where more than half of the population is foreign-born. Company members researched archival material to reconstruct the story of a new landowner, recently arrived from Germany, surveying his farm in 1853. They interviewed current and former neighborhood residents to gather stories about Albany Park in the 1930s and Sarajevo in the 1990s. High school seniors Elizabeth Cobacho and Marta Popadiak went out to a street corner a few blocks from the theater to interview the *jornaleros*, day laborers who gather to wait for contractors to come by. The result became “Amor de Lejos,” a moving, entertaining ensemble piece that formed, what the *New York Times* called “the spine of *Aquí Estoy*” (Wilgoren, 2003, p. A10). When the audience enters, one of the *jornalero* characters, dressed in shabby clothes, seems to be sleeping on the stage. In between other stories, his companions gather, wake him, console each other with world-weary ribbing and tender advice, and stand aside to watch from the wings, waiting for work as the show unfolds. Over the course of the show, the performers playing the *jornaleros* use movement, dance, and song to show us their world, with the characters interrupting their labors to tell us their stories and troubles. The man whose story became the central narrative of “Amor de Lejos,” Eliceo Zamora Caballero, attended many of the performances, and when he did, the company invited him to stand for a bow during the post-show Q and A.

The most courageous performance of the evening is the show-closer, “Nine Digits,” based on the experiences of an APTP company member who is an undocumented immigrant, his name hidden by the pseudonym “Julio Alvarez.” Unable to get a driver’s license, receive financial aid for college, or take the internship he desperately craves with a nationally-known dance company, Julio lives with the fear that he’ll be deported and sent back to Colombia, where young men his age are taken straight into army service, fodder for the country’s ongoing civil wars. Eventually he confides in a fellow company member and the company’s directors. “And now,” Julio says, looking right at the audience, “I’ve told a roomful of people!” The piece climaxes with a confrontation between Julio and his foil, “J. Wilbur Worker,” a living symbol, in whiteface, of the Social Security Administration, which dispenses the nine-digit number Julio needs. The clash between the two men takes the form of a highly charged tango, with the white-suited Worker teasing Julio with his seductions: “Say you want it,” he says, caressing Julio’s face, their lips almost

touching. "Tell me you want the nine digits!"

APTP company members also became standouts for what they do outside the ensemble. Just 42 percent of the freshman who entered the neighborhood high school in the fall of 1997 had graduated five years later (Consortium on Chicago Public School Research, 2003). Most students at the school consider passing grades to be a lofty goal, and many APTP company members held the same view when they joined the company. But the high standards and expectations that are the norm for the company's work infect other dimensions of their lives, thanks, in part, to encouragement and coaching from the company's directors. Only a handful of the dozens of teenagers who have performed with APTP have failed to finish high school.

Even more striking, of 33 kids who have graduated high school while part of APTP in the last three years, 30 have gone to college, and two of the others have plans to start within the year. Now an increasing number are being recruited to top-ranked liberal arts schools—including Carleton, Pomona, Connecticut College, and Beloit—on healthy scholarships, thanks to intensive support from APTP's directors, Laura Wiley and David Feiner.

Like the company's artistic work, the college counseling efforts developed gradually over time. Laura and David worked hard to help an early APTP alum get into the University of Illinois' flagship campus at Urbana, figuring the state school would be a stretch, but a bargain. Experience proved the school to be no bargain. A giant, impersonal campus where many of the large lecture classes are "weed out courses," designed to flunk large numbers of kids, the U of I was a disaster. Subsequent research uncovered a happy reality that small, highly regarded liberal arts colleges would be a better match. Many of these intimate, nurturing schools were looking for smart, interesting, diverse, and engaged urban kids and have been willing to lend a helping hand with financial aid. APTP alums have received over \$1 million in financial aid over the last several years, a sum that is several times greater than the company's annual budget.

APTP's official mission statement makes no mention of academics, college, or even "youth development." Yet those are key outcomes of the program, ones in which the directors take justifiable pride. "In six years, we have never explicitly designed a workshop around the educational benefit that will be derived from it," says David Feiner. "You don't come in and say, 'This is the week we're doing theater stuff to help you learn to read.' [But] we're proud that company members become more serious about their dreams for themselves, especially their educations

and what they want to do with their lives.”

In fact, the company’s explicit mission to produce the best possible theater and its implicit mission to produce the strongest possible people are simply two sides of a coin. Producing great theater requires the participation of fully actualized people—people who understand trust and accountability, people who are ready to learn whatever it takes to make a performance work, people who know themselves and have a vision for their lives. APTP members become fully actualized by rising to the occasion of doing the company’s artistic work, not because the company fills some internal lack in them. Their intelligence, drive, resilience, and compassion are innate. APTP simply creates a context in which those qualities are given a forum and a reason for emerging.

In 1999, MacArthur Fellow Shirley Brice Heath published a 10-year study (Heath with Roach), of 124 after-school programs for teenagers. Although APTP was just starting out as Heath was concluding her study, her summary results sound like a description of the company. “Through their involvement in effective youth-based arts organizations,” Heath wrote, “young people cultivate talents and dispositions they bring into their voluntary association with such high-demand, high-risk places. Once there, the intensity of these groups builds and sustains a host of skills and capacities rooted in their personal recognition of themselves as competent, creative and productive individuals” (p. 29).

Heath (1999) found that arts-based organizations were exceptionally good—even better than excellent sports or community service programs—at what she called the “new three R’s.” They offer young people diverse “roles,” establish clear “rules” and norms, and provide meaningful “risks” or challenges to young people. They gave young people opportunities to express their own ideas, take planning and leadership roles, consider multiple perspectives and solutions to complex problems, and reflect on the results of their efforts. A linguistic anthropologist, Heath was particularly interested in the ways “at-risk” youth developed and used language. In arts organizations, she found a “dramatic increase in syntactic complexity, hypothetical reasoning, and questioning approaches taken up by young people within four-to-six weeks of their entry into the arts organization”(p. 27). Participants became much more likely to ask “What if?” and describe possible answers, to use verbs like “consider” or “understand” that deal with cognition itself, and to use what she calls *modal verbs* like “might” and “could,” which imply a consideration of multiple possible outcomes. “These linguistic skills enable planning, demonstrate young people’s ability to show they are thinking, and also help them have the language to

work together with firm resolution and a respectful manner” (p. 27). APTP company members have many times confirmed Heath’s observations.

A key idea in Heath’s (1999) description of effective arts organizations is “risk,” and the way that these organizations use it to young people’s advantage. “While public rhetoric laments the fate of ‘at-risk youth,’ our research reveals how youth depend on certain kinds of risk for development,” she writes (p. 27). Organizations like APTP give kids an opportunity to grow by facing the risk of performing for authentic audiences—and knowing that the organization’s viability depends on their ability to communicate effectively with those audiences.

One organization that exposes young people to a different sort of productive risk, literally giving them a financial stake in the success of their work, is Boston’s Artists for Humanity. Founded in 1991 by visual artist Susan Rodgerson, Artists for Humanity now employs several dozen young people as painters, muralists, photographers, junior architects, graphic designers, silkscreen artists, web developers, and fashion designers. Participants who successfully complete a 72-hour apprenticeship earn an hourly wage and receive commissions when their work is sold. “We’re not a school, we’re a business,” says Rodgerson. “These kids are very aware that if we don’t produce good work, we don’t have a project,” Rodgerson says. And that awareness, that sense of ownership and risk, makes the work more satisfying. “Kids want the respect of adulthood,” she says. “School doesn’t give them that sense. I think bagging groceries can do it, but think about being an owner in a business like Artists for Humanity. I couldn’t do this at a school—we couldn’t do what we do.”

Heath (1999) studied dozens of youth arts organizations in urban and rural locations across the country. Few of them are well known, but APTP and Artists for Humanity are not rarities. There are organizations like them in most cities, wherever artists marry their talents to a broader social agenda. They operate quietly and independently for the most part, often without solid financial support, but driven by deeply committed adult leaders and youth prepared to take all the roles and risks necessary to make the art excellent and the organization persist.

### **SEVEN IS HIGHER THAN THREE: THE POWER OF PARALLEL PROCESSES**

Heath’s (1999) exhaustive research begins to uncover what it is that makes the arts such a powerful force for development in young people. Ingram and Seashore have some other ideas. After school, on the day of my first visit to Southwest High School, Chris Fisher and I went to a Minneapolis Board of Education meeting, where the University of Minnesota researchers presented their final report on AAA,

practically garnering an ovation from the board. A board member, after gushing about the program, asked the question: “Why did the arts make such a difference?”

“We’ve talked a lot about it,” said Seashore. “Partly, it may be that the arts use different intelligences, or that they are easier to integrate than other kinds of work.” In the end, she said, the arts seem to have reinvigorated teachers. “We saw teachers who giggled and laughed as they learned to do this. They knew they weren’t supposed to be experts, so it was very easy for them to say, OK, what *can* I learn? It’s not like professional development for reading, where teachers think, I’m supposed to know how to teach reading already. There’s no implicit message here that there’s something wrong with them.”

In a later conversation, Ingram mentions several other provocative hypotheses: the arts are inherently interdisciplinary; they offer immediate connections to real world, hands-on problem solving; they force teachers to pay attention to individual students and their ideas. She admits it may also be that teacher-driven initiatives like AAA simply draw some of the most energetic, motivated teachers. The number of possible explanations indicates the poverty of evidence for any one of them. For all its rigor, Ingram and Seashore’s research only points to the fact that, as a group, teachers using an arts integrated approach in Minneapolis got better student results than other teachers working with similar students. It doesn’t say much about how those results are achieved, perhaps because of the scale of the study—thousands of students, scores of teachers, dozens of schools, many different art forms, and so many varied approaches to arts integration itself. What’s more, Ingram and Seashore are education researchers. They brought no personal inclination to the arts into the study, and while that is part of what makes their findings so credible, it also leaves a gap. They focused on academic outcomes, not on understanding how the content of learning in the arts might be cognitively related to learning in other subjects.

Enter the Conservatory Lab Charter School in Boston, a small elementary school started by the Research Center of the New England Conservatory of Music. The Lab Charter School is dedicated to exploring how a single art form can be most thoroughly and productively integrated with other disciplines, especially the basics of literacy and numeracy. And enter founding co-director, Larry Scripp, a musician, teacher, and researcher with longstanding ties to both the Conservatory and Harvard University’s Project Zero, where he worked with the likes of Howard Gardner, who developed the theory of multiple intelligences, and David Perkins, who has done breakthrough work on how knowledge and understanding “trans-

fers” from one domain to others. Scripp describes the Lab Charter School as “theoretically based,” and although his official title is research director, he can also be described as the school’s theoretician-in-chief.

Among the first things a visitor to the Lab Charter School notices after walking through the door are the big plastic tubs in the hallway near the entrance, filled with violin cases. Starting in first grade, every student at the school is issued a violin. Every week for the rest of their tenure, students get a half-hour semi-private lesson as well as a half-hour group lesson with nine other children. In addition to the two full-time violin teachers, the school employs two full-time music teachers, and each class gets an hour with one of them every day, learning recorder as early as kindergarten. The violins and recorders are only the most visible symbols of the way the Lab Charter School applies the theoretical model called Learning Through Music, which is summed up in a mantra that Scripp repeats several times as he talks about the school. “Music is employed as a medium and a model for learning.”

Examples of music as a medium for learning abound and are easy to spot. Kindergartners learn the names of dinosaurs by making up quick songs about them to the tune of “Mary Had a Little Lamb,”—as in “Brontosaurus has a long, long, neck, a long, long neck, a long, long neck...” Fifth-graders write and perform an opera to sum up what they’ve learned about historical characters they’ve studied in social studies. Music as a model for learning involves a little more theory, which comes in two parts, the *Five Processes* and *Shared Fundamental Concepts*.

The Five Processes—*Listening, Questioning, Creation, Performing and Reflecting*—describe ways students engage with curricular material, whether the material in question is a piece of music, a short story, or a math problem, and Scripp defines each word expansively and evocatively. When applied consistently, these processes are internalized as learning strategies that become the basis for meaningful assessments.

*Listening*, he says, “is the power to discern, the power to discriminate, the power to notice, the power to observe.” A description in a recent journal article (Scripp, 2003) adds two other provocative definitions—to focus and to remember.

*Questioning*, for Scripp, “means investigation. And it means holding significant questions over time, questions you return to. What is narrative? What is proportion? What is harmony?” It also encompasses a great deal of the analytic realm, Scripp says, including “discovery, hypothesis-testing, scientific method.”

*Creation* encompasses “invention, transformation, choices, composing, improvising,” Scripp says, pointing out that creation can take many forms when defined

this way. Everyday speech, for instance, is a form of improvisation, an example that brings creativity into the realm of the commonplace.

*Performance* “means demonstration,” says Scripp. “It doesn’t just mean getting on stage. It means being ready to show what you know.” Performance offers a very concrete example of music serving as a model for other forms of learning, since the experience of rehearsing a performance on the violin, as Scripp says, “becomes a model for demonstrating what you know: practicing, and honing, and rehearsing. There’s a loud tradition in academics that you’re not supposed to rehearse things: Question? Get it right. New question? Get it right. But in music, it’s very much the opposite. Rehearse, rehearse, rehearse. It’s so deep, it’s worth rehearsing.”

*Reflection* includes “making connections, self-assessment, goal-setting” in Scripp’s schema. The process of revision, too, falls under reflection. A video on the school’s web site shows Scripp talking with a group of students who have just finished an exercise where they used sounds to portray various animals, “OK, why did you do that?” he asks them. “What was the purpose?” Theoretically, every lesson, in every subject, should engage students in each of the Five Processes.

If the Five Processes describe the school’s approach to how to teach, then the idea of Shared Fundamental Concepts describes the school’s approach to content. The premise is that music, language, and math are all systems of symbolic representation. By drawing students’ attention to the underlying structures that they share, Scripp hopes the school will make the study of these systems mutually reinforcing, so students develop a deep and rich understanding of each system and the connections among them. For example, the idea of beginning, middle and end applies equally well to a story or a song. Some other examples require more intellectual stretch, with a correspondingly richer payoff. “A musical staff is a matrix that is as mathematical as a graph,” Scripp points out. “Time is the X axis and pitch is the Y axis.” Musical time, too, quickly translates into mathematical propositions or “if-then” statements. For example, the value of a ‘whole note’ depends on the designated duration of the ‘quarter note’. So Scripp asks, “If a quarter note is assigned one, two, or four beats, then the duration of the whole note is...?” Among music, math, and reading, “Which is more synthetic of the other two?” Scripp asks rhetorically. “Music is more like math than language is, and music is more like language than math is.”

The Lab Charter School is a “learning through music” school, but other art forms employ variants of the Five Processes, which Scripp thinks of as a design standard that can be used in any school, with any art form to promote student engage-

ment in learning. “You have a strategy and a design standard,” he says, “and you choose an art form that’s appropriate.”

All art forms share fundamental concepts with other thinking and symbol systems. In visual art, for example, framing and perspective are used to pay and call attention to salient details, an approach well understood by the students at Agassiz School who chose to use a medium shot when they introduced their blues artists on video. Perspective and framing are close analogues to voice and point of view in writing or history. A student might consider how the system of slavery differs from the point of view of the slave, the slave trader, the slaveholder, or the abolitionist.

As important as the shared concepts are, Scripp insists that music also be taught discretely, not only in integrated contexts or as a tool for making reading and math instruction more effective. “The premise of the school is that music is the equal of the other two things,” he says. “Some people ask, ‘Well, they don’t really have to be good at music do they? Isn’t the point of the school that they’re good academically?’ And I say, ‘The way that students learn musical concepts is through the development of musical skills. Reading musical notation. Playing an instrument. Singing. They demonstrate their understanding of musical concepts by performing these skills, just as they would demonstrate their understanding of math concepts by solving mathematical problems. Of course, they have to be good at music!’”

That’s the theory. Here is how it works in practice in a first grade classroom: Having listened to a short melody, students are given the notes on the staff to read. They count up the number of times each note occurred, using hash marks in sets of five to make their tallies on a separate sheet. Adding up the number of hash marks for each note, they take another sheet out and make a bar graph of the results, showing how many times each pitch showed up in the melody. Students listen to music and note which instruments they heard, tally their totals and make a bar graph to show which played the most and least. Listening again, students draw faces in response to musical pieces to indicate if they are “happy,” “sad,” or “angry.” They sort musical instruments according to size, the material they are made from, and how they are played (blown, struck, shaken, plucked, or bowed). Students write a simple melody and play it for the class on the xylophone. The class listens and tries to repeat the rhythmic pattern of the piece verbally.

A second-grade teacher and a music teacher team-teach a lesson about birds, with students learning to play the songs of the phoebe and the red-winged black-

bird on the recorder. The phoebe's song requires them to play a new and challenging note, the high E. "There's always a tension in this school about how much integration is good," says Scripp. "When do you over-integrate? Is it possible to over-integrate?" His first response to that last question tends to be "probably not," but he has occasionally been convinced otherwise.

Frequently, those tensions require compromise and creative solutions. Should the school take time away from music instruction to give extra tutoring in reading to kids who struggle with basic literacy? So far, the answer has been no, based on a gamble that music skills will provide a solid foundation for language skills. Scripp thinks his research is starting to show that this gamble is paying off. Learning to clap out rhythms, for example, gives teachers a tool to use in teaching kids to break words into syllables. For students still learning English, a solid ability to match pitch gives teachers a way to train their ears to a new language. Compromise works both ways, with music teachers pushing for less integration sometimes. "The violin teacher would prefer that students start on the upper strings—easier to play," Scripp says, "but harder to sing." Those higher notes, out of the kids' vocal registers, offer fewer bridges both to spoken language and to musical literacy. Singing the tune lets students learn the notation by singing out the names of notes as they play them, or the intervals between each pitch in a series, or the number of beats given to each pitch. Scripp's preferred compromise is to have the students play a tune on the high strings, then sing it in a lower key. The violin teacher would prefer to spend the entire lesson on, well, violin.

The payoff for those negotiations is that kids learn more deeply, as well as more broadly, in the arts and across the curriculum. "Number awareness taught with music can combine five or six aspects of mathematical awareness all at once," Scripp (2003, p. 137) writes in a recent journal article. At a parent conference, for example, "the teacher can say... 'Well, your child is doing wonderfully. She really understands that seven is larger than three. This is an understanding that is essential for a first grader.' However, at our lab school...the child understands through...notation of musical melodies that seven is also higher than three [on the scale]. It also lasts longer than three. It's also true that a note on the seventh beat comes in later than a note on the third beat. Through music, numbers mean all these things at once."

Test scores have risen significantly at the Lab Charter School. Scripp says that grade level performance on the Stanford Tests of Math and Reading improved an average of 10 percentile points in reading and nearly 20 points in math by the third

year. And substantially more third graders at the school were highly proficient in reading than the district average, 79% to 38%. Scripp reports that analysis by NEC colleague Martin Gardiner shows that the correlation between musical skills and test scores increases over time as the test scores rise.

These tests scores, like those in CAPE schools and AAA schools, are very exciting. But, Scripp and the other arts integrators are after something far more profound. They are trying to learn how a school can leverage learning by making an art form an integrated element of the school's pedagogical approach and its core curriculum. Scripp's fine-grained research is returning findings that he thinks justify the school's experiments, and showing how they can do it better.

One finding is that musical ability alone—the capacity to match pitch, or sing back a melody in tune—doesn't correlate with math and reading achievement. But the ability to use musical notation does match up with math and reading. “We haven't yet found a kid who can read music well, but can't read well or do some math problems,” says Scripp. In more recent testing, the converse has also been shown to be true, suggesting that the connection works in both directions. “In the third year, no one who was doing well in academics was doing poorly in music.”

Another recent finding is that notating pitch correlates more closely with higher math scores, and notating rhythms correlates more closely with higher reading scores. Scripp isn't sure yet what this means. It could be a sign of separate forms of intelligence at work, or it could be a result of the way the school matches up concepts in practice, with kids clapping out rhythms to help them break words into syllables, a skill measured in the reading tests. Either way, Scripp thinks that results like these justify the school's approach. They show that Learning Through Music is an effective teaching strategy, and they open new questions for further research.

Scripp is looking beyond the Lab Charter School as he plans that research. “There's so much to be done, it's going to be hard to do it all in one place,” he says. Since early 2002, he has teamed up with Aprill and other practitioners across the country to create a national consortium for exploring the role of music in education. The arrangement, he thinks, promises to bring together the best of all worlds. Thanks to the work of CAPE and other organizations, Chicago has a large number of schools with plenty of experience in arts integration, making it a great place to test out some Learning Through Music practices on a larger scale. In Boston, where the policy climate isn't receptive and there is no equivalent to CAPE, “we'd have to wait till the weather system changes,” to expand in this way, Scripp says. “But with the consortium, we can do it right now.”

While Scripp criss-crossed the country developing and testing further applications for his Five Processes and Shared Fundamental Concepts, his former colleagues at Project Zero, the Harvard research center that explores questions of learning and cognition, were struggling with a more theoretical issue—one that speaks to the question of why programs like CAPE, AAA, APTP and Learning Through Music might be so successful. They had labored for many months over a monograph about what they call “the aesthetic dimension of learning,” and by late spring of 2003, they had written two versions, only to throw them out and begin again. Project Zero’s director, Steve Seidel, said at that time, “I feel it’s been the hardest piece, in my 15 years here, that we’ve ever struggled with.”

On at least one thing, the researchers agreed. “We’re quite convinced that the aesthetic dimension of learning is extremely powerful,” said Seidel. “Far more powerful than, in this culture, we tend to acknowledge.” But they couldn’t agree just how important. Among the Project Zero researchers, “Some people feel that the aesthetic dimension is really the engine of learning. It sort of pulls the rest of the train along,” Seidel said. “Others feel that it’s—I’ll sort of leave the train metaphor—it’s an element that, like chemical elements, has to be there to get the proper fizz, but it’s not the only driver. That it’s not the only essential element, it’s just one of the elements.”

At this writing, the monograph still had not been released, and the question of the importance of the aesthetic dimension was awaiting resolution. But either way, Project Zero’s work suggests that the role of the arts in learning has so far been badly underestimated. We are accustomed to asking, “Do the arts add something to learning?” The real question might be, “Could there be anything that adds more?”

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