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Building a Three-Legged Stool of Academic Achievement, Social Capital, and Environmental Quality

The Place-based Education Evaluation Collaborative has many partners in their efforts: the CO-SEED program of Antioch New England Graduate School in Keene, NH, the Sustainable Schools and the Forest for Every Classroom programs at Shelburne Farms near Burlington, Vermont, the Community Mapping project of the Orton Family Foundation and the Vermont Institute of Natural Science in Woodstock, Vermont, and the Wellborn Ecology Fund in Hanover, New Hampshire. The Collaborative and its partners' aspirations are broader than just looking at academic achievement. While we all started out thinking that our focus was on school improvement and academic achievement, we have come to realize that our focus is equally on creating vital communities and preserving the quality of the environment. We are now aware that there is a dynamic tension between these three elements—that together they form a three-legged stool that will not stand if any one of the legs is missing. Try to improve a school without actively engaging the community, and your efforts won't garner the budget support and human capital necessary for success. Emphasize community development without the involvement of the school and you won't have the youthful energy that makes projects work. Build thriving local economies with little concern for the environment and you'll find that businesses will have trouble attracting workers because people aren't willing to raise children amidst deteriorated air and water.

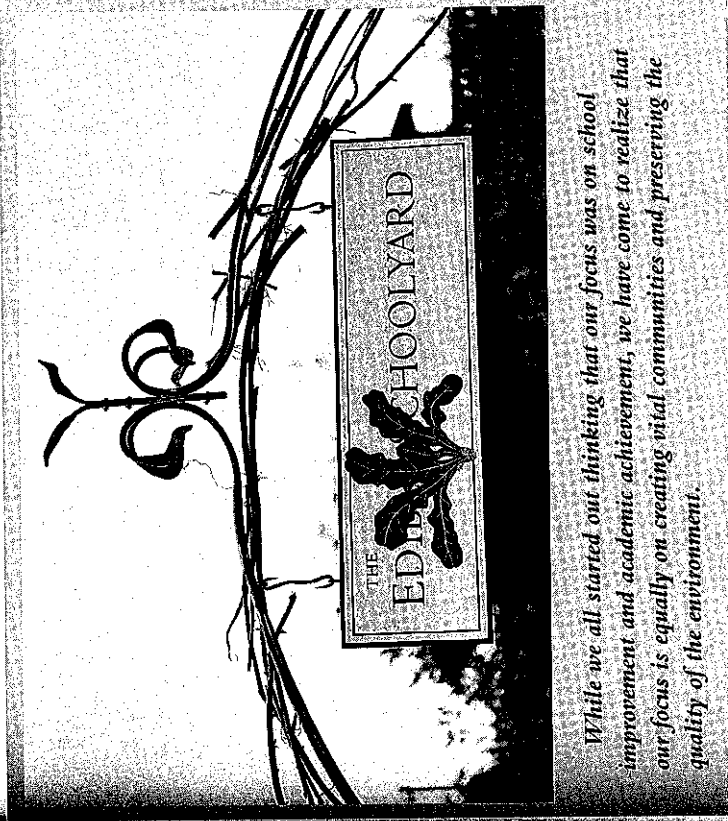
Past Rural School and Community Trust director Paul Nachtigal clarified the necessity of this kind of systems thinking.

When schools focus only on how education benefits the individual, they become the enemy of the community. They educate young people to leave and so fulfill the prophecy that these places are doomed to poverty, decline and despair. Instead, we intend to rally communities to reinvent their schools as engines of renewal for the public good. (Cushman, 1997)

Place-Based Education: Connecting Classrooms & Communities

Creating Social Capital

Social capital is Harvard sociologist Robert Putnam's term for the willingness and capacity of individuals to work for the collective good of a community. When lots of people are willing and able to



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run for town office or serve on civic committees, that's an indicator of high social capital. Or when it's easy to find moms and dads who want to coach the soccer teams in the town recreational league or lots of people show up for the annual roadside trash removal—yup, high social capital. Increased social capital leads to a greater sense of personal well-being amongst citizens, which ultimately translates into economic well-being for their communities.

For instance, in 1997, students in Cedar Bluff, Alabama, launched a computer assembly and software development business that takes orders from the public and serves a network of rural schools. It

went on to win a grant to connect the entire county's school system. While the students get technological and business experience, the community gets better computer services and significant cost savings. In addition, students recognize that perhaps they don't have to migrate to Birmingham or Huntsville to find challenging jobs. The wealth of the students' intelligence stays in the community.

In Guilford, Vermont, the middle school students write and publish the community newspaper—not the traditional school newspaper, but the actual town publication, with accident reports, selectmen's meeting results, notices of community events, and features on town residents. Seventh and eighth graders serve as reporters, copy editors, advertising salespeople, and designers. Working on the paper helps students meet Vermont State Curriculum Standards and provides the town with a valuable communication resource. Community members frequently comment on how much more connected they feel to their neighbors and town affairs as a result of the student-produced publication.

Julie Bartsch's recent book, *Community Lessons: Integrating Service Learning into K-12 Curriculum*, is a brilliant compendium of many of these kinds of projects in Massachusetts. In each case she articulates both the academic gains for the students and the societal gains for the community. In one of my favorite examples, she describes the need that stimulated a project in the mill city of North Adams.

In order to remain fiscally solvent, the North Adams Regional Hospital made necessary but drastic changes in the way it conducted business. In the process, the pediatric wing closed and many children had to use the emergency room as their primary care facility. Children expressed fear and discomfort about their experiences at the hospital.

Recognizing that the children's anxiety constituted a community need, one kindergarten teacher, Roberta Sullivan, worked with her students to change the climate of the emergency room.

After touring the facility with their teacher, these children created artwork to decorate the walls and purchased toys for the waiting room area. More importantly, the class wrote a book to be read by the parent and child while sitting in the waiting room. Interviewing hospital personnel, from the CEO to members of the housekeeping staff, the children not only collected

pertinent information to include in their book, but also made discoveries of their own regarding medical careers, safety precautions and germs.

This was valuable learning for the children, but an immeasurable benefit to the community as well. Bartsch's description of the "social gains" for this project illustrates the broader impact.

As a result of the kindergartners' taking the time to collaborate on ways to improve the new pediatric emergency room setting, many ill children now have positive experiences at the hospital. The staff at the hospital wrote the children a note after the redecorated emergency room had been in use for some time. The note explained that the hospital routinely had to use a restraining board with uncooperative children. The note went on to say that since the students had done their work in the hospital, this board had not been needed. The doctors and nurses credited the students with this success. (Bartsch, 2001)

This example also reminds me of a conversation I had with a well-known teacher educator many years ago. "I can tell I'm in the presence of a good teacher," she said, "when I walk into the classroom and see something I've never seen before." In this case, Roberta Sullivan turned a need into an opportunity and created a one-of-a-kind curriculum project with integrated academic and community benefits.

Our hope is that these kinds of projects will inspire local citizens to take a more active role in the schools and community and that students come to think of community service the way they think about going to the movies—it's a normal thing you do every week or so. Though social capital research is in its infancy, there's lots of qualitative evidence that indicates we're heading in the right direction. For instance, in East Feliciana Parish, after a science improvement project increased student test scores, parent participation in school-sponsored activities went on the upswing, as did more widespread community involvement (Null, 2002). On a recent Martin Luther King Day, 60 volunteers, including parents, teachers, office staff, a custodian, a school board member, and the superintendent, constructed nature trails at all three district elementary schools.

One of the goals for place-based educators over the next five years is to start to quantify the impact of place-based education on social capital and community vitality, as measured by sustainable economic

development. We think we'll find something analogous to the relationship between consumer confidence and the health of the economy. As the quality of schooling improves, the willingness to contribute to the community and the resulting satisfaction with the communal quality of life will increase as well.

Preserving Environmental Quality

Educators are hoping to begin quantifying the impacts of place-based education on environmental quality: 15,429 tons of paper and cans recycled, 60,000 acres of rainforest protected, 3,415 natural areas made accessible to the public, 527 cases of water pollution detected and remediated. Regrettably, these are all fabricated numbers. But wouldn't it be impressive if we were able to collect this kind of data? We could then figure out the cost per unit of preservation—the cost to protect an acre of rainforest, or the cost per ton of paper recycled. The economists would have a field day!

Some schools are beginning to collect this data and use it to lobby for constructive change in their schools and community. This year the students in the Advanced Placement environmental science class at Peoples Academy (the public high school) in Morrisville, Vermont, conducted research locally on air quality, the impact of phosphates on algae growth in lakes, different techniques for managing purple loosestrife, and waste reduction in the school. The waste-reduction project is a masterpiece of data collection and analysis that resulted in specific cost-saving recommendations for the school. (Peoples Academy students, 2001) First, the students quantified the amount of solid waste generated in the cafeteria—14,866 pounds per year. Next, they determined what percentage of that could be recycled or composted—80 percent. Then they calculated the cost of new equipment and changed procedures in the school (for instance, if styrofoam trays and plates were abandoned and dishwashers had to be used to wash trays and plates, there would be an increased cost for labor, soap, and hot water). When all was said and done, their report contended that the school could save \$5,736 a year by implementing a comprehensive program to reduce solid waste. Great math and science went into this project, and resulted in a significant potential savings for the community.

Drop by drop, teachers and students are making a substantial con-

tribution to environmental monitoring, species protection, land preservation, and air quality improvement in place-based education projects. The following is a kind of master list that suggests some of the domains in which gains are being made, with an illustrative example of each:

Water quality monitoring. Students at Taylor County High School in Perry, Florida, are responsible for monitoring the Econfina River and have now been contracted by Buckeye Cellulose to help in the restoration of San Pedro Bay.

School recycling. Students at the Wheelock Elementary School in Keene, New Hampshire, recently began composting post-consumer food waste from the school lunch program. The composted waste will be used in the school gardens and distributed free of charge to gardeners in the neighborhood adjacent to the school.

Schoolyard naturalization. The Evergreen Foundation of Toronto and Vancouver has helped more than one thousand Canadian schools transform their schoolyards into green spaces filled with native flora. (Here's a study unto itself: How much biodiversity has been reintroduced into different regions as a function of naturalized schoolyards?)

Habitat restoration. The STRAW Program (Students and Teachers Restoring a Watershed) works with more than 50 schools in the San Francisco Bay area on restoring riparian habitat, clearing debris from streams, and researching native species.

Natural areas interpretation. The third graders in Wendy Oellers's class at the Gilford Elementary School in Gilford, New Hampshire, have recently completed a nature trail map and guide for the conservation land adjacent to the school. This guide complements a beautifully crafted display board of the trail created by an Eagle Scout student from the high school.

Aquaponics and waste management. High school students in Dumas, Texas, combined fish farming and hydroponics

(growing plants without soil) in a project to recycle biological wastes from a pig farm.

Toxins reduction. Students in Floral Park, New York, researched and analyzed different solvents based on cost, environmental impact, and cleaning effectiveness, in order to make recommendations for reducing toxins in the classrooms.

Energy conservation. The Green Schools program of the Alliance to Save Energy works with schools across the country to monitor and analyze energy- consumption patterns and then propose a plan for energy reduction. Some of the money saved is used to create other conservation initiatives.

Green buildings. Students at the Yampa Mountain High School in Glenwood Springs, Colorado, designed and built a solar-powered, energy-efficient science lab using strawbale building techniques.

Invasive species control. The Illinois-Indiana Sea Grant program trains 4-H leaders and teachers to engage their students in controlling the spread of purple loosestrife, an invasive wetlands plant.

And this just scratches the surface. Schools can be the epicenter for environmental change in their communities, motivating civic officials to take action. It's hard, after all, to say no to your own children. And there's no dearth of problems to take on. Just the other day with students from the Beebe School in Malden, Massachusetts, the teachers were wondering about getting middle school students involved in Canada goose waste-abatement techniques at Fellsmere Pond. (That's a polite way of saying, how do we deal with the water pollution caused by so much goose poop?) Please contact us if you have any ideas!

Sowing Seeds

So maybe you've heard enough to know that place-based education is your cup of tea and you're convinced it really does make a difference for children, communities, and the environment. The problem is, you're thinking, it sounds great in all those other places, but it'll never work in my neighborhood. The streets are too dangerous, the principal's about to retire and doesn't want to start anything new, the teachers are stressed out by the state testing requirements. Not to worry. It's your turn to become one of those oozing drops of water. Read on and I'll show you the crannies you can slip into to start your work.

The CO-SEED Project (Community-based School Environmental Education) is a regional place-based education initiative I've been involved in for the last six years. Since CO-SEED is in my neighborhood, I'm going to use it as my touchstone for the narrative that follows, to provide illustrations, structural examples, and a departure point from which to go out and explore other initiatives. What will emerge is set of guidelines and strategies that will help you get things percolating in your community.

CO-SEED first sprouted in 1997 at the Great Brook Middle School in Antrim, New Hampshire, and has since spread to seven school districts covering more than a dozen communities in Vermont, New Hampshire, and Massachusetts. The project staff also administers the Green Schools grant programs which provides support for school/community environmentalism in classrooms, schools, and urban and rural neighborhoods throughout the country. Keep in mind that my goal is not to advocate for one particular model, but rather to provide the ethnographic particularities that illustrate how the process has worked in a variety of places.

Many of these large bioregional projects are supported with foundation funds and federal grants. It costs money to create demonstration projects, conduct evaluations, and document and publicize the results. On the other hand, there are innumerable examples of small, emergent place-based projects that cost little or nothing and are helping to change schools. Through our Green Schools grant program, we've provided more than two hundred small grants (of about \$2,000 each) to help schools naturalize schoolyards, stock streams with trout, study squirrels, and create environmental art. It doesn't