An Evaluation of Four Place-Based Education Programs

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ABSTRACT: The Place-Based Education Evaluation Collaborative (PEEC) was formed to invest in the development of place-based education models of professional development and whole school improvement through more rigorous evaluation. An external evaluation team conducted a cross-program study, analyzing the effects of 4 place-based education programs on teachers, students, schools, and communities. This article reports on 2 aspects of the study: (a) a cross-program analysis of the 4 programs' strengths and challenges, and (b) an analysis of trends in teacher practice change across the programs. Data sources included 163 adult interviews (teachers, administrators, program staff, and community members), 85 student interviews, and 41 field observations. Recommendations for program development and emergent themes for further research are reported.

KEY WORDS: collaboration, environmental education, place-based education, professional development, program evaluation, school improvement

Place-based education has emerged from a 30-year foundation of environmental education in the United States and builds on the work of diverse community-based initiatives that include The Foxfire Fund, The Rural School and Community Trust, the Orion Society's Stories in the Land Teaching Fellowships, and the Education for Sustainability movement. It is grounded in the resources, issues, and values of the local community and focuses on using the local community as an integrating context for learning at all levels. By fostering the growth of partnerships between schools and communities, place-based education works simultaneously to boost student achievement and improve a community's environmental quality and social and economic vitality.

The term place-based education is often used interchangeably with a number of similar terms such as community-based learning, service-learning, environment as an integrating concept (EIC), sustainability education, and project-based learning. In each of these terms, there is intended to be, for the

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learner, an explicit connection between the school and the community in which the school resides. A broader hope on the part of the educators is to "tear down" school walls so that the community becomes integral to all facets of student learning—that is, that the school is open and inviting to the community and the community welcomes student learning occurring in many dimensions.

Though research into the effectiveness of place-based education in particular has been slim, some of the most pivotal educational theory, including that of Piaget, is inextricably linked to the underpinnings of place-based education. Piaget stressed the importance of educators' emphasis on students' "intrinsic motivation" toward learning, noting explicitly that "the child must be active to learn" (Wadsworth, 1978, p. 78). This intrinsic motivation comes from within the child and not from teacher-developed activities. Place-based educators posit that by grounding education in the local community, students can see the relevance of what they are learning and therefore become more engaged in the learning process.

Furthermore, existing evaluations of place-based programming show strong promise for improving student learning and community engagement, and closely related research has demonstrated that students who are engaged in real-world learning are more likely to succeed than are those who learn equivalent material from more abstract textbooks. A program evaluation conducted by researchers at the Harvard Graduate School of Education for the Rural Trust (1999a, 1999b), provides case studies of schools and communities throughout rural America that have been transformed by grounding students' education in the local community and intentionally moving away from didactic approaches to standardized schooling. The evaluation concludes that as schools and communities work together to design curricular goals and strategies, students' academic achievement improves, their interest in their community increases, teachers are more satisfied with their profession, and community members are more connected to the schools and to students.

The findings of another study, by researchers at the State Education Environmental and Roundtable, demonstrated several positive effects of locally based curricula in over 40 schools nationwide. The study's findings showed that when the environment is used as an integrating context, student achievement and in-school behaviors improve (Lieberman & Hoody, 1998).

Because a key component of many place-based education endeavors is the opportunity for civic engagement, the findings of a growing body of research into the effectiveness of service learning also contribute to the understanding of how place-based education works. The findings of several studies demonstrate powerful linkages between grounding the learning experience in the local context, enhanced student participation in community matters, and increased student engagement in their academic studies. In particular, service-learning experiences have been shown to promote a "prosocial, active conception of citizenship" in students (Chi, 2000, p. vi) when they (a) are implemented consistently and intensively, (b) include opportunities for analysis of and reflection on the service experience, and (c) provide regular opportunities for teachers and students to engage in dialogue.

In another study that focused on service-learning, researchers found that "rural students develop significantly more favorable relations with adult civic leaders and community organizations when their service-learning experiences pertain to high priority community issues" (Henness, 2001, p. v–vi). Henness emphasizes that when students engage in real projects that are of value to the community, there are positive results—improved perceptions of youth and adults toward each other, closer relationships between schools and government, lowered project costs, and increased community demand for student involvement.

These evaluations and research endeavors notwithstanding, the relative novelty of place-based education programming warrants more rigorous program evaluation to test the linkages in the theories behind this educational modality. A significant first step is to understand whether and how teachers

change their practices and which programmatic factors influence a transition to place-based teaching and learning.

Building a Theory of Change for Place-Based Education

The Place-Based Education Evaluation Collaborative (PEEC) was formed in 2002 to evaluate members' individual programs and lay the groundwork for broader research into the effectiveness of these models in attaining mutual objectives. PEEC programs (and organizations) include the CO-SEED Project (Antioch New England Institute), the Community Mapping Program (CMP; the Orton Family Foundation, Vermont Institute of Natural Science), the Sustainable Schools Project (SSP; Shelburne Farms, Vermont Education for Sustainability Project), and A Forest for Every Classroom Project (FFEC; Shelburne Farms, National Wildlife Federation, the Conservation Study Institute, Marsh-Billings-Rockefeller National Historical Park, Green Mountain National Forest).[1]

As a collaborative, PEEC has three main goals:

1. To serve as a learning organization for program developers and to fuel internal growth and program development for the individual organizations;
2. To develop, identify, and disseminate evaluation techniques, tools, and approaches that can be applied elsewhere; and
3. To contribute to the research base underlying the field of place-based education and school change.

To help achieve these goals, the collaborative contracted a program-evaluation team to conduct individual program evaluations with each of the four collaborating programs as well as to analyze program processes and outcomes across programs.

Two of the programs, CO-SEED and the Sustainable Schools Project (SSP), are whole school improvement models, whereas the other two programs, the Community Mapping Program (CMP) and A Forest for Every Classroom (FFEC), are professional development programs that focus on audiences of individual teachers or groups of teachers. The goals of the four programs vary somewhat, but some common themes include enhanced community and school connections, increased understanding of and connection to the local place, increased understanding of ecological concepts, enhanced stewardship behavior, increased academic performance in students, improvement of the local environment, improvement of schoolyard habitat and its use as a teaching space, and increased civic participation.

At the outset of the evaluation process, the evaluators assisted the organizations in creating logic models for their programs, which would state the program's theory of change and more accurately link program intentions with their outcomes.[2] In addition to the individual program logic models, a working theory of change for the broader concept of place-based education began to emerge after the first year of collaboration. This evolving model, depicted in Figure 1, acts as a springboard for understanding the potential of place-based education. This theory holds that when one has developed an attachment to one's place, and one has the skills to proceed, an individual will become a more active participant in his or her community. When this civic engagement increases in a community, social capital—the invisible web of relationship—broadens and deepens. Social capital refers to features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit (Putnam, 2001). The improvement of a community's social capital leads, in the long run, to a healthier community, both natural and social. This construct is an essential part of the theory of change behind each of the PEEC programs' endeavors.

The first step toward understanding the impacts of these programs on students and communities

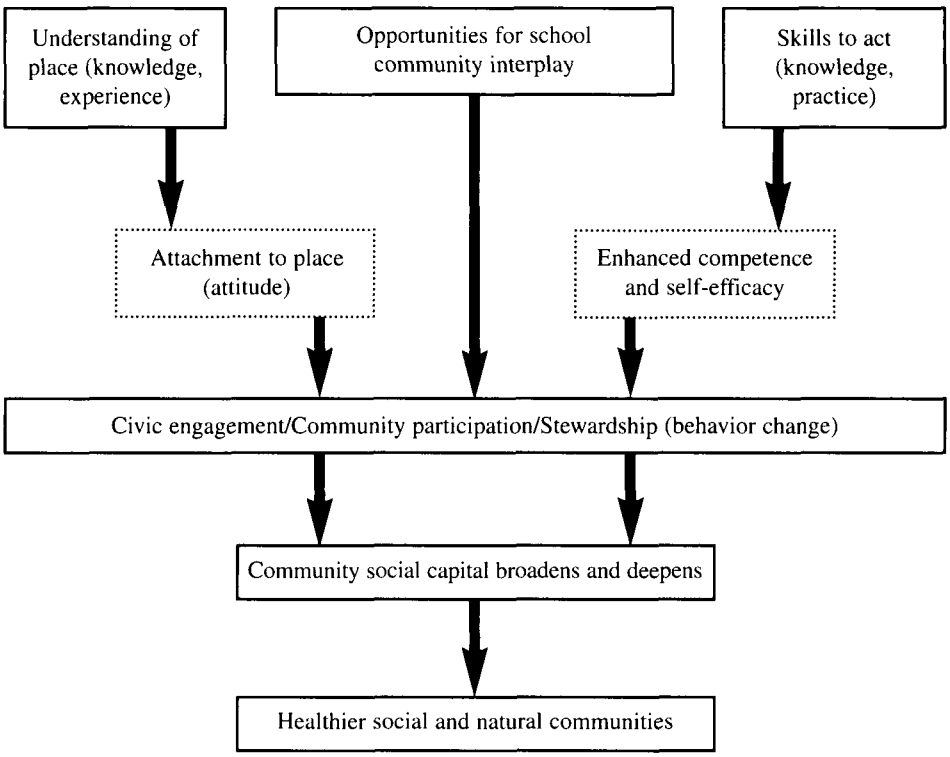

FIGURE 1. Working model: Change theory for place-based education.

within this theory of change is to gauge (a) which aspects of the program models are most consistent and effective, and (b) whether and how teachers change their practices as a result of the programs, because teachers are a primary vehicle through which this type of learning is shared with students. In the present article, I report the methods and findings of these two aspects of this study in addition to two emergent findings related to student outcomes derived from the programs.

Method

Evaluators, including the author and two graduate students, developed evaluation plans for each of the individual PEEC programs based on looking at the goals and expected outcomes outlined by program staff in their logic models and on meeting with program stakeholders. A 1-day design meeting was convened by the collaborative and the evaluators to build consensus on cross-program questions for exploration in the first evaluation cycle. The attendees included program staff, a panel of advisors, evaluators, and graduate students. The attendees devised two common cross-program questions that were to be embedded within each program's evaluation plans:

1. *Evaluating process strengths and challenges*: What are the greatest strengths and challenges of each program model? How can these programs learn and grow from one another?

2. *Measuring teacher practice change*: How does participation in one of these place-based education programs change teachers' teaching practices?

The mixed-method design of this evaluation was primarily qualitative and relied heavily on semi-structured interviews and focus groups with teachers, students, administrators, community partners, parents, and program staff members. Evaluators developed an interview guide for each stakeholder group. The guide was specific enough to adequately encompass the evaluation questions but flexible enough to meet the stakeholders' level of involvement with the program. Interviews are particularly useful in program evaluation because they are engaging interactions that help us understand both the process and the outcomes of a program, including what participants know and like about the program, how they have been affected by the program, and what they think should be different.

The evaluation team conducted interviews with teachers and community partners on site at the schools or at their workplaces. Interviews were either taped and transcribed or transcribed during the interview. After the fieldwork was completed, the descriptive observation data and transcribed interviews were coded to illuminate key emergent issues and to answer the evaluation questions (Miles & Huberman, 1994). These data were triangulated through observations of trainings, classroom teaching, fieldwork, and document review.

This evaluation design was utilization-focused (Patton, 1997). Staff from each organization reviewed the evaluation questions and strategies and offered input into instrument development, and evaluators asked teachers and administrators to provide insight into how to measure change in their particular schools. Internal process watchers (such as a teacher or an administrator) were established within the school improvement programs' sites, and program staff regularly completed observation records after their involvement with active projects. Figure 2 summarizes the types of data collected in this evaluation.

After the fieldwork had been completed, the evaluators coded the transcribed interviews, monthly reflections forms, descriptive observation data, and other documents to illuminate key emergent issues, and then analyzed the data qualitatively by using inductive methods (Mills, 2000). We used pattern-matching to better understand trends in the data and to address the evaluation questions (Miles & Huberman, 1994), and the most prevalent themes were then synthesized to answer the evaluation questions. The evaluators were also open to emergent or unintended findings that demonstrated the programs' impacts on participants. Several of these findings are discussed below.

Findings and Discussion

A strong motivation for the collaborating organizations to work together was the opportunity to benefit from the shared learning that takes place when organizations look beyond their own practices. As such, evaluators investigated the functioning of the program models with particular attention to implementation fidelity, barriers for various stakeholders, and attention to long-term sustainability. In addition to the following discussion, the Appendix[3] shows a summary of the strengths and challenges of each of the evaluated programs.

Greatest Strengths Across the PEEC Programs

Data from all four evaluations revealed four areas as consistent process strengths across the four programs that were evaluated. First, the use of community partners provides teachers and students with diverse viewpoints, access to resources, facilities, and financial support as well as a broader base of skills and knowledge. Working with community partners also increases the likelihood that stu-

Type of data collected	Sustainable schools	Forest for every classroom	Community mapping	CO-SEED	PEEC total
Interviews or focus groups with teachers, school staff, and administrators	22	18	23	44	107
Interviews, focus groups with community members, partners, parents, and program staff	6	10	17	23	56
Total number of adults interviewed	28	28	40	67	163
Interviews, focus groups, or conversations with students	Informal	Informal	68	17	+/- 100
Institute or year-end evaluation	16	>30	47	n/a	approximately 100
Observations by evaluators of classes, institutes, meetings, events	11	6	18	6	41

Note. Other documents reviewed include: Project fliers, brochures, logic models, curriculum rubrics, teacher-developed curricula, assessment and evaluation tools used by teachers, student work samples, program staff observation notes, photos, curriculum planning tools, school-wide in-service agenda, in-service day evaluation worksheets, NHEIAP writing scores, school district annual report, town annual report, zoo attendance data, kindergarten registration data, attendance data, school newspapers, project-based unit summary, MCAS writing scores, grant proposals, participant correspondence, and interpretive trail guides.

FIGURE 2. Summary of evaluation data collected and analyzed for PEEC programs 2002–03. PEEC = Place-Based Education Evaluation Collaboration; NHEIAP = New Hampshire Educational Improvement and Assessment Program; MCAS = Massachusetts Comprehensive Assessment System.

dents will work on projects that are of real value to the community and that they will develop real-world skills.

A second strength noted consistently across programs by the interviewees, including teachers, school staff, administrators, town managers, and students, was the high quality program staff. Staff from the four programs demonstrated strong skills in process facilitation, teaching, child development, curriculum planning and meeting management, as well as more tangible skills such as mapping with geographic positioning systems, gardening, naturalist skills, computer use, and forestry practices. The staff members' ability to provide participants in the programs with introductions and connections to previously unknown community partners and places was explicitly and frequently mentioned as a strength. Further, staff provided participants with access to and knowledge of an array of printed resources that assisted teachers and schools in implementing place-based learning opportunities.

Third, the sustained intervention provided by these programs' summer institutes increases the likelihood that program effects will be sustained beyond the initial involvement of the sponsoring organ-

ization. Two of the participating programs have staff embedded in the community school to specifically assist educators with all place-based and project-based endeavors, from curriculum mapping to liaising with community groups. Another program meets with individuals and teams of teachers four times a year for several days at a time, and offers continuous follow-up support. The fourth program offers intensive training, which is followed by ongoing, embedded professional development and assistance with instruction, materials, and data processing. In all cases, the participants were hopeful, if not confident, that the changes they had seen resulting from the program intervention would have staying power, particularly when they compared those experiences with their past experiences involving only brief professional development interactions with limited follow-up support or attention to long-term change.

Finally, the programs' summer institutes, as part of an ongoing, sustained relationship, were highly valued as important pieces in generating teacher confidence and buy-in to the program. When these institutes included concrete, realistic examples of place-based education in action, they were inspiring and confidence-boosting for new participants. When the institutes included explicit practice and participation experiences for teachers in conducting a particular type of project—for instance, a service-learning activity—they were more likely to gain the confidence to translate that to students. Furthermore, teacher confidence in curriculum planning was increased when the institutes included tangible skills for developing standards-based units. Other institute strengths that were cited included the creation of networks among teachers and exposure to resources, which included other people, places, and printed matter.

The Challenges Across the Programs

The process challenges that emerged can be divided into two general categories: (a) Those that are external to the control of the program, and (b) those that are internal to program design and implementation. Both are relevant to program functioning.

The most consistent external constraint cited by the school-based participants (primarily educators) was that of a lack of time to devote to curricular change in the midst of multiple curricular pressures. Although all the programs touted their offerings as not adding another layer to the curriculum, but rather integrating into it, there is always a learning curve associated with anything new. Furthermore, the participants noted that there was inevitably more time associated with making contacts in the community, arranging for buses and permission slips, and preparing students with adequate skills ranging from appropriate behavior around elderly people to proper use of technological instruments. As one participant noted, "It takes more time to craft a solid, useful project than to crack open a textbook and pull out its corresponding worksheet."

Such an external challenge is relevant to a discussion of program processes because it needs to be accounted for in program design and implementation. The four programs deal with this challenge in different ways, the most common of which is to offer the support of program staff, interns, and community volunteers. These people offer a range of helping modalities, such as (a) an extra set of hands and eyes during a stream exploration to promote safety, (b) team teachers to provide coaching and mentoring, (c) aides to laminate materials for a teacher to free the teacher to contact community resources, and (d) colleagues to inspire new methods of curriculum development.

In a broader sense, a whole school improvement model, as opposed to a teacher-by-teacher professional development model, could tackle the problem of time constraints from the outset. First, by garnering administrative buy-in to the program, the school improvement model increases the likelihood that teachers will be supported by their administrators in taking time to do something new. Second, the school improvement models plant staff or interns directly in the school on a part-time

basis; these people take on both support and capacity-building roles to help teachers manage the transition from an old way of teaching to a newer one.

An internal challenge that became apparent during the evaluation process was the level of attention to helping teachers acquire curriculum planning skills. The types and amount of guidance varied considerably from program to program and within a multisite program such as CO-SEED. In three of the four programs, the teachers expressed the need for more clear guidelines on how to develop curricula that actually integrated place-specific features into existing curricula.

An important question emerges from this discussion of strengths and challenges: Can a single program realistically be expected to "do it all"? The whole school improvement models tend to tackle sustainability and stability issues better by gaining buy-in from multiple stakeholders from the beginning and thereby providing teachers with a broader, longer-term base of support. At the same time, the professional development models seem to be more effective at providing specific, tangible skills to a core group of participants who are often predisposed to the underlying concept. Thus, it may be more realistic to imagine that the ideal place-based education intervention for schools and communities is an aggregate of the two types of models represented in PEEC and modeled in Figure 3.

Changes in Teacher Practice

Because teachers were a primary agent of change in all four programs' theory and practice, the evaluators sought to understand the ways in which teachers changed their teaching approaches—whether it was in content areas, philosophies, or strategies—as a result of the programs. An analysis of the interview and observation data showed that, across the four programs, there were six consistent impacts on teacher practice:

- use of local places and resources,
- interdisciplinary teaching,
- collaboration with other teachers,
- teacher leadership and personal growth,
- stronger curriculum planning skills, and
- greater use of service-learning in the curriculum.

Students, teachers, and staff all reported increases in the use of local places and resources. Resources included diverse venues such as using the nearby national park as part of a math study and conducting a unit on bread that involved local bakeries, soup kitchens, and local access TV. The teachers called upon guests such as the students' parents, a local maple sugar maker, the county forester, an insect expert, and local business people to enrich their classroom and field activities. The teachers also reported that they were teaching with more depth. One third-grade teacher said, "A big shift for me since FFEC is a shift to being more in-depth by having the local context as a focus. I was spread too thin, and this works much better for kids learning and for me, too."

A second area of teacher practice change was an increase in interdisciplinary teaching. Some of these interdisciplinary connections were not obvious to the teachers at first, but they quickly became apparent. One teacher's description of her own process of learning how to teach with an integrating concept echoed the experiences of others as they became more comfortable with a sustainability theme:

> It was overwhelming at first to think about having another theme to add to Math Land and Literacy. But then I realized that the sustainability theme gives us more direction to stay focused

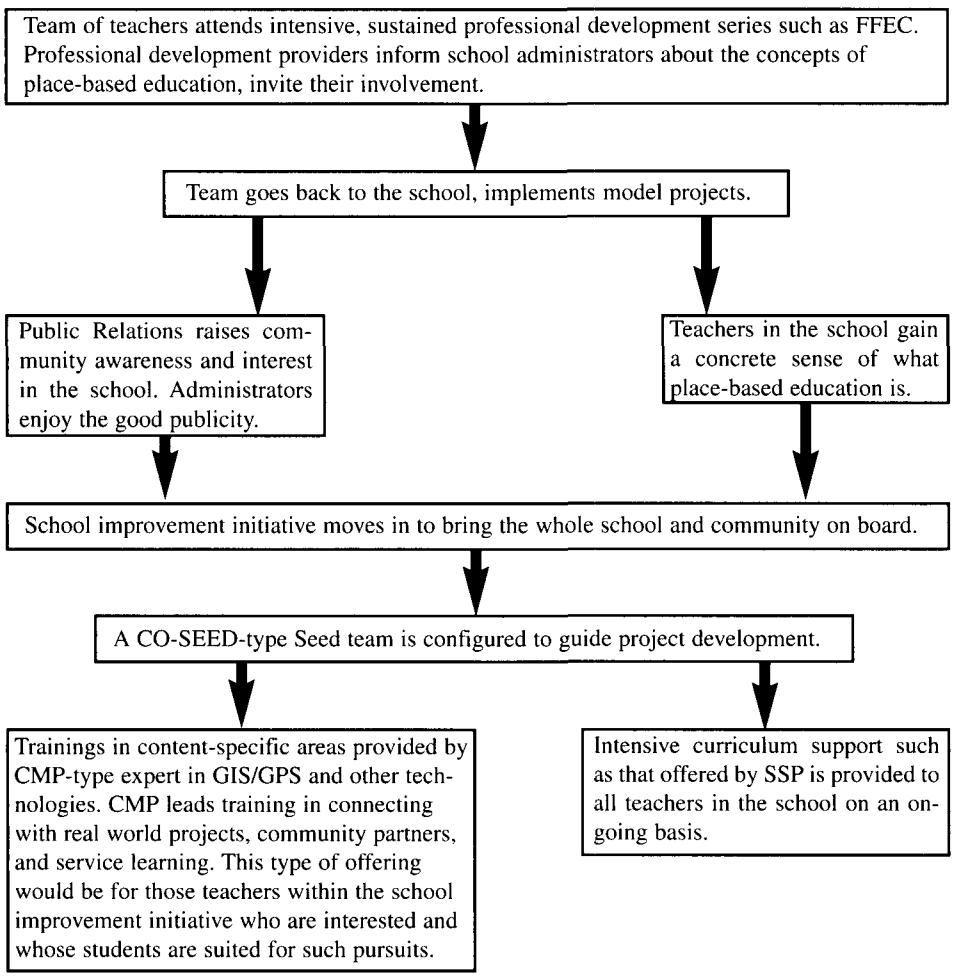

FIGURE 3. Combining PEEC-type efforts to effect school or community change. PEEC = Place-Based Education Evaluation Collaboration; FFEC = A Forest for Every Classroom; CMP = Community Mapping Program; GIS/GPS = Geographic Information System/Global Positioning System; SSP = Sustainable Schools Project.

> on our units. If we do writing, then we did it around sustainability. I don't pull it in with math, but when you're doing social studies. . .it's always in there, pieces pulled into the discussion.

For others, however, place-based education is a vehicle that helps them move beyond more structured disciplinary planning and teaching. A middle-school English teacher commented:

> Now we read passages from Annie Dillard [a nature writer] or Paul Rezendes [an animal tracker] and we'll plan to do half the passage in science class and the other half in English and then the kids discuss the connections. Kids say, 'I can't tell if we're doing science or English!' But isn't that life?

Many teachers commented on how the programs helped them see more clearly the presence of math and science lessons, for instance, in everyday life.

Across the programs, teachers more consistently sought collaboration with other teachers after participating in one of the four programs. In the case of the professional development models, teachers have the opportunity to collaborate with a network of teachers from different schools as they exchange ideas and draw on one another's areas of expertise. In the case of the school improvement models, teacher collaboration within the schools rose—both within and at times across grade levels. For example, two elementary school teachers reported a significant shift in their practice: "We used to be very separate between the classes. Teaming is a nice aspect because it gives kids more of a sense of community. . . . We can do it better working together."

In some cases, program participation afforded teachers an opportunity to assume leadership roles within their schools and to grow personally. An example of a middle-school teacher's growth as a citizen is evident in this report:

> My whole person was strengthened from this program. It enabled me to go speak out at a public town meeting about the outdoors. . . . It ended up being a big debate, but it was good for getting people to think about that issue. I felt like I know more about fragmentation, and felt more confident in what I was doing.

Another elementary school teacher spoke about learning to make more sustainable consumer choices: "Just planning this unit has empowered me about the politics of food. I went into [the local natural foods store] and I'm buying all my produce there now. . . . This is a very specific, concrete way to use your money and make a difference."

Other teachers referred to the growth of their leadership capacity in the school: Some became trainers for other teachers; others were known as a lending library for place-based resources; still others talked of assisting fellow teachers with curriculum planning. In some cases, the leadership role was assumed voluntarily by willing and able teachers; whereas in other cases, programs incorporated mechanisms such as inviting teachers back to train new participants in summer institutes or training teachers to be grade-level facilitators into the program to promote teacher leadership.

Finally, participants from all programs also reported having stronger curriculum planning skills and an increase in their use of service-learning projects as part of the curriculum.

Emergent Findings

Two salient themes emerged consistently enough to warrant discussion, even though they were not specifically investigated as part of the evaluation design: (a) the importance of community-based learning for special needs students, and (b) the impact of place-based education on student motivation toward learning and engagement in school. (Both of these themes are slated to be explored in more depth in subsequent evaluation cycles.)

Educating Students With Special Needs

Throughout the evaluation process, the respondents noted that special education students performed better during the place-based learning activities. Preliminary (and unsolicited) reports of benefits included students working more independently than they did in seated or lecture-based formats, engaging more enthusiastically with adult community mentors, and gaining the respect of their "nonspecial education" peers as they thrived in the general school setting.

Several examples illustrate the potential of this line of inquiry. During one observation of a FFEC class that was working at the Marsh-Billings-Rockefeller National Historical Park, a child with an attention disorder remained so fully engaged in the classwork that his aide had almost no role to play during the lesson. The aide said that she had noticed the positive impact of place-based education on that particular child: When he is working outdoors and engaged in hands-on tasks and collaborating with adult role models, he is able to work more independently.

Teachers at numerous CO-SEED sites reported that students with special needs, for whom reading and writing tasks are not perceived as directly relevant, benefit even more visibly than do others. One fifth-grade classroom aide who works with a boy with attention-deficit hyperactivity disorder (ADHD) reported that "he is not well integrated with the class, but he thrives when they go outdoors to learn. He can do the math piece when it's applied, but not as part of the regular class learning." She further noted that the boy is more likely to thrive academically when he is connected with adult mentors such as the janitor, with whom he "regularly learns about mechanical things and measurement."

The Community Mapping Program students compared their CMP-related lessons with their other classes, most of which are not conducted outside the traditional classroom. A middle-school student, who has difficulty learning from books, said:

> It makes more sense to go out. You learn more from people telling you than from books. For some reason, I don't really like to read and I don't remember too much, but if someone talks to me, I can remember that. I like doing more interactive stuff.

Several SSP teachers were explicit about the positive impact that hands-on and sustainability-related work has on students with special needs, such as immigrants learning English, those with social and emotional challenges, or those with developmental delays. One English-as-a-second-language (ESL) teacher reported that, "[One of my ESL students] has only limited English, so it's a struggle for her in the classroom. But when she goes to a recycling center it's so sensory that she can really thrive and understand what's going on." During their schoolwide sustainability exposition day, teachers noted that students who have difficulty focusing in the classroom became more essential members of the learning environment as they assumed leadership roles demonstrating what they had learned to parents, other students, teachers, and community members.

Student Engagement in Learning

In addition to enhancing community-school relationships and students' attitudes toward their schoolwork and their communities, each of the PEEC programs also aimed to improve academic achievement. The second emergent finding was that place-based education affects student motivation for and engagement in learning.

Several CMP teachers said that students paid more attention to their studies and tried harder because they knew the community was involved and cared. Similarly, an overwhelming majority of CMP students who were interviewed reported that they learn better when their school work has a purpose. One middle-school student, who was part of a classroom creating a series of maps for the town-planning commission, said he was better able to retain what he had learned:

> When you get to create your own map, it's a lot more interesting than just creating something from a book. A book is kind of interesting, and you are learning, but when you are doing it, you learn more and you can remember it.

Some of the clearest examples of changes in student behavior, attitude, and engagement in CO-SEED student, occurred during out-of-class-time programs such as a Junior Naturalist Club, which was regularly attended by about 50 students. The CO-SEED respondents also noted many examples of increased student engagement in learning during school time and of students confidently taking on more responsibility and demonstrating higher levels of maturity.

Similarly, FFEC students and teachers reported an improved level of academic engagement when students were working outdoors. A third-grader noted that she had not spent much time at all outdoors, either at home or at school. She volunteered, "Now I do it all the time at home, too. I like to learn outside better. It's more comfortable."

Many SSP teachers reported a greater enthusiasm for learning in students during sustainability projects. A teacher connected with the SSP reported that sustainability-related curriculum has ". . . generated life from some kids that we've never seen. . . . I see teams of kids doing stuff independently that they've never done."

Conclusions

In some respects, PEEC is both a microcosm of the larger place-based education initiative and a mirror of the individual place-based projects it promotes. An examination of the PEEC programs together builds the credibility of each of the programs and offers broader-based knowledge to the field. The first year of collaborative evaluation of PEEC's programs generated several conclusions:

- The four programs are clearly strong vehicles for enhancing education. In particular, all four programs demonstrate commendable success at promoting teacher practice change.
- With some variability, teacher practice is affected in consistent ways by the place-based education programs.
- By highlighting outcomes consistent in all four programs, we begin to suggest the power of place-based education as a broader educational approach.
- By highlighting process strengths, challenges, and opportunities, the four programs have the opportunity to learn both from their own efforts and from those of other programs. Quite consistently, recommendations specific to one or two programs have powerful implications for all four.
- There are ample opportunities for growth and refinement within the program models, with some challenges being internal and others external to the programs.
- Program offerings might be enhanced by merging the key strengths offered by both the professional development and school improvement models.

This year's research revealed that there are multiple fruitful roads to follow in continued examination of the processes that contribute to successful programs and the outcomes being sought.

Recommendations to the Four Programs

Programmatic Recommendations

We presented five significant categories of recommendations to the staff in the four programs. In addition to their being of use to the programs evaluated in this study, the recommendations could also be used as a list of factors to consider in developing other new and existing place-based education programs.

1. Effective start-up approaches
   - Ensure that terminology is clearly defined,

- Clearly define the program's goals and theory of change,
- Provide educators or sites with a checklist of the skills, resources, and so on, that are available and from whom (menu of options, resource list, etc.),
- Document success early on, and
- Communicate about and engage participants in defining the role of program evaluation upfront and provide incentives for ongoing participant contribution to the process.

2. Create teacher, administrator, and community buy-in
   - Offer high-quality, "high-touch" (e.g., respect, communication, comfort, support, rapport) professional development opportunities,
   - Provide tangible resources such as money, publications, examples of curricula, and project models that teachers can begin using immediately,
   - Provide training in tangible skills,
   - Offer skill-building in curriculum development,
   - Involve alumni or emeritus participants, and
   - Provide help "on the ground."

3. Partnerships and collaboration
   - Encourage (or require) teachers to participate in teams,
   - Provide help in locating community partners,
   - Develop recognition of community partners, volunteers, and parents, and
   - Help build capacity of community partners.

4. Communication: The key to lasting partnerships
   - Facilitate networking between schools, teachers, volunteers, administrators, and program staff, and
   - Link past and present sites, and past and present program participants.

5. Other recommendations
   - Involve teachers, administrators, and community members in program evaluation from the start,
   - Lead teachers in learning new assessment techniques for community-based, place-based, service-learning curriculum, and
   - Plan for diffusion of program concepts beyond directly targeted audience.

Research and Evaluation Recommendations

Armed with a clearer understanding of how the models themselves function, a better understanding of cross-program outcomes for teachers, an initial exploration of emergent themes, and a toolbox of evolving, program-specific evaluation instruments and protocols, PEEC intends to continue its evaluation work over the next few years. The evaluators offered several suggestions for how PEEC could continue its collaborative evaluation activities:

- Invest in a qualitative study of the impact of place-based education on students with special needs (across these four program models).
- Design a study to investigate whether place-based education can and does reduce special education costs.

- Develop an annotated bibliography of relevant research.
- Refine individual and cross-program logic models based on evaluation learnings.
- Build understanding and evidence of place-based education's intrinsic workings through continued qualitative inquiry across the four programs.
- Identify quantitative measures—including exploration of existing indicators—for all four programs.

Furthermore, the process reported in this article was only one component of the total evaluation endeavor for the year. In addition to the data reported above, the evaluators administered written surveys to 671 students and 162 adults in an effort to understand program processes, teacher practice change, school change, and levels of student civic engagement. An analysis of these surveys is part of a broader effort to measure the longer-term, deeper impact of the programs. We evaluators considered the first year of evaluation of PEEC as a pilot year for testing and refining instruments and protocols.

NOTES

1. In addition, the Upper Valley Community Foundation provides funding and support for several of these programs through its Wellborn Ecology Fund, as well as financial, administrative, and staff support for collaborative evaluation and research efforts.

2. The programs' logic models and individual program evaluation reports can be found on the Web at http://www.schoolsgogreen.org/PEEC/.

3. The programs being evaluated are dedicated to formative evaluation and making consistent use of the affirming and disconfirming information that emerges from evaluation. They have indicated to the evaluators that they believe in transparency about their strengths and challenges so that both they and others in the field may learn from their endeavors.

REFERENCES

Chi, B. (2000). *Service-learning as "citizenship" education: The promise and the puzzle.* Corporation for National Service. Retrieved September 3, 2004, from http://www.nationalservice.org/research/fellows_reports/2000/chi.pdf

Harvard Graduate School of Education for the Rural Trust. (1999a). *Living and learning in rural schools and communities: A report to the Annenburg Rural Challenge.* Cambridge, MA: Harvard Graduate School of Education.

Harvard Graduate School of Education for the Rural Trust. (1999b). *Living and learning in rural schools and communities: Lessons from the field.* Cambridge, MA: Harvard Graduate School of Education.

Henness, S. (2001). *K–12 service-learning: A strategy for rural community renewal and revitalization.* Corporation for National Service. Retrieved September 17, 2004, from http://www.nationalservice.org/jobs/fellowships/PDFs/hennessbiblio.pdf

Lieberman, J., & Hoody, L. (1998). *Closing the achievement gap: Using the environment as an integrating context for learning.* San Diego, CA: State Education and Environmental Roundtable.

Miles, M. B., & Huberman, A. M. (1994). *An expanded sourcebook: Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage.

Mills, G. E. (2000). *Action research: A guide for the teacher researcher.* Upper Saddle River, NJ: Prentice-Hall.

Patton, M. Q. (1997). *Utilization-focused evaluation.* Thousand Oaks, CA: Sage.

Putnam, R. (2001). *Bowling alone: The collapse and revival of American community.* New York: Touchstone Books.

Wadsworth, B. J. (1978). *Piaget for the classroom teacher.* New York: Longman.

APPENDIX
Greatest Strengths and Challenges Across Four Programs

The CO-SEED Project

Strengths	Challenges
• SEED Team allows for in-depth relationships to develop between community and school. • Higher education partner provides credibility, expertise, access to interns at sites. • Early attention to community involvement encourages long-term community-school connections with long-term community change more likely. • Three-year (minimum) commitment to a site. • Visible examples of success at each site promote buy-in, inspiration. • Strong support from outside the school building in most sites (towns, ELCs, etc.). • School improvement model increases likelihood of school administration's support for teacher practice changes.	• Environmental Learning Center (ELC) representatives bring different skills to each site; training is inconsistent. • Could focus more on public relations and program/project recognition. • Emphasis on curriculum planning skills inconsistent; professional development focuses more on exposing teachers to resources, content, place-based education strategies. • ELC capacity-building not consistently emphasized. • Lack of time, curricular pressure: CO-SEED sometimes seen as "add-on layer." • In some sites, only limited portion of whole school is involved with CO-SEED. • Greater attention to follow-up support with "emeritus" sites may be warranted for greater long-term sustainability.

The Sustainable Schools Project

Strengths	Challenges
• Great effort and success at involving the whole school. • Continual presence of predictable, experienced personnel as school-organization liaison. • Emphasis on curriculum building as a basic step toward long-term change in teacher practice and school-wide curricular integration. • Good balance of building capacity and providing support, process facilitation. • Rapport and trust established—consistency, flexibility, knowledge, skills, responsiveness, sensitivity. • Provision of resources and contacts. • Role-modeling teaching practices and providing one-on-one coaching.	• Community advisory board could be more integral to program or site development. • Limited age-appropriate resources for younger grades (e.g., sustainability literature for K–2). • Communication challenges: intergrade, some community partners, parents could be better apprised of program. • Teachers not required to document emerging curriculum. • Relationships with university students could be strengthened through clearer terms and guidelines. • Time limitations: summer training too short, program start-up too quick. • Lack of time, curricular pressure: SSP sometimes seen as "add-on layer."

(appendix continues)

APPENDIX (continued)
Greatest Strengths and Challenges Across Four Programs

A Forest for Every Classroom Program

Strengths	Challenges
• Nurturing environment and respect for participants engenders their commitment and dedication. • Diverse sponsoring partners provide balanced viewpoints, extended access to resources. • Year-long contact with partners and among teachers creates relationship, and community. • Unique link between schools, nonprofits and public sector or public lands. • A well-crafted, skillfully-executed program. • Role-modeling sound teaching practices throughout institutes.	• Because of location, primary community partners not easily accessible to all teachers; leads to under-utilized follow-up visits and prohibits access to national public lands for some teachers. • Service learning component, with tangible skill-building, less emphasized. • Some teacher participants isolated in schools without administrative or partner-teacher support. • Lack of time, curricular pressure: FFEC sometimes seen as "add-on layer." • Need more help on "the how"—implementing into existing structure. • Greater clarity of partner roles.

The Community Mapping Program

Strengths	Challenges
• Links with an individual community partner increases likelihood that tangible, useful projects emerge. • Tangible skills and resources provided to educators encourage true service learning projects to develop with students. • Staff offers flexibility and extensive on-going field/classroom tech. support. • Strong summer institutes in which completing a service learning project is actually modeled. • Explicit emphasis on partnerships with community organizations. • Growing efforts at networking between current and past community mapping program (CMP) teachers at institutes and roundtables. • Financial assistance provided to participants.	• Limited administrative buy-in and single-teacher participation creates unstable base of operation, limited internal support for teachers, less spread of effect. • More institute time needed to develop project and learn GIS; acquisition of technological skills can be daunting for teachers. • Program expectations could be articulated more clearly to participants. • Teachers are interested in being provided with more project examples and sample activities. • Relationships between teachers and community partners and between students and community partners could be stronger. • Some teacher participants isolated in schools without administrative or partner-teacher support. • Lack of time, curricular pressure: CMP sometimes seen as "add-on layer."

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