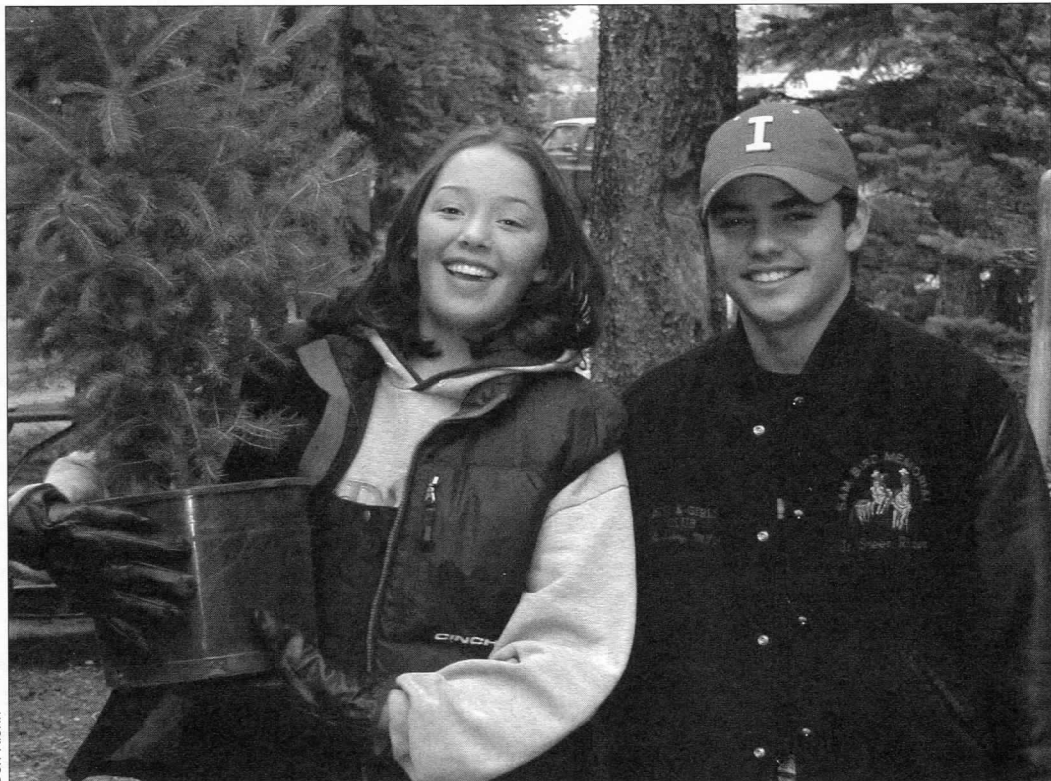


# Environmental Service-learning Projects:

## Developing skills for action



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by Lynn Dominguez and James McDonald

**A**S ENVIRONMENTAL EDUCATORS, we know that knowledge about an environmental issue or problem is not always enough to motivate people to take action. The skills for involvement need to be learned and practiced. One way for students in upper elementary and middle school to develop the skills of active environmental citizenship is through participation in environmental service-learning projects. The Action Team Project described in this article is a service-learning model designed to assist teachers in using service-learning pedagogy to help their students develop skills for taking action on local environmental issues. Using an issue investigation and action curricular strategy, the Action Team Project increases students' in-depth knowledge, personal engagement, and skills, allowing them to make an impact on environmental problems.<sup>1</sup>

The Action Team Project not only fosters environmental citizenship, but also opens the classroom door to connect

students to their local environments. As children increasingly obtain information about the world from electronic media, they spend less time outdoors and lose a vital connection to the natural world around them. They may learn about faraway rainforests and endangered animals but have fewer opportunities to examine the trees in the park down the street and observe the complex society of ants in their schoolyard. Environmental educator David Sobel believes that if children study only global problems, they may begin to disassociate themselves from the natural world because the problems seem overwhelming.<sup>2</sup> The Action Team Project helps students to become aware of and make connections with their local environment and provides opportunities for them to experience success in addressing local environmental issues before being asked to consider global ones.

A study of issues related to the natural environment provides rich and varied learning experiences that can be easily correlated to science curriculum standards, as well as to environmental education guidelines such as those estab-

lished by the North American Association for Environmental Education.<sup>3</sup> By combining the methods of service learning with those of environmental education, the Action Team Project provides a means for meeting all the global goals of environmental education. These global goals, as established in 1978 at the UNESCO conference in Tbilisi, USSR, include increasing awareness and knowledge, building skills for taking action, allowing opportunities for participation in resolving environmental problems, and affecting attitudes, resulting in increased stewardship of the environment.<sup>4</sup> Most environmental education programs and school curricula are designed to meet the goal of increasing awareness and knowledge, but building skills for action and providing opportunities for meaningful participation are more difficult. Unless the latter goals are met, however, it is nearly impossible for students to develop an attitude of stewardship. The Action Team Project helps children develop and practice stewardship of their local environments through an extended, community-based project.

## What is service learning?

Service learning is a teaching and learning method that connects meaningful community service with academic learning, personal growth, and civic responsibility.<sup>5</sup> In an era in which education is often criticized for not being relevant to students' lives and in which students are often isolated from what is happening in the local community, service learning connects young people to their community and places them in challenging situations where they deal with real problems or needs. Service learning gives students a feeling of satisfaction because through it they become aware that they can make a positive impact in their world.

Successful service-learning experiences combine several essential elements. These include youth voice, community needs, reflection, and evaluation.

**Youth voice:** The most successful service-learning projects are those initiated by students. These projects may grow from environmental or community concerns that students bring into the classroom, they may develop from class discussions, or they may be outgrowths of other assignments. Students must be involved in the development of their service-learning activities and should assess their own capability of carrying them out. This self-assessment is an excellent way for students to reflect on their own learning strengths and areas on which they need to work.

**Community needs:** Service-learning activities should respond to real needs in the community. There is truth in the saying "Think globally, act locally," particularly in the case of student-driven projects. By responding to the needs of

their community, students take an active part in making it a better place to live and gain real-world experiences that help to reinforce classroom learning.

**Reflection:** Reflection is critical to the success of any service-learning experience. Students need to know why they are involved and to understand the feelings and reactions they are having. Reflection also entails standing back from an experience to discover the connections between one's actions and their effects.<sup>6</sup> Journal writing and class and small-group discussions immediately after service activities help to facilitate this process.

**Evaluation:** Evaluation allows teachers to determine whether their students' service-learning activities were successful. Components of the project that teachers should evaluate include student learning, planning procedures, problem-solving skills, and whether original goals and outcomes were met or need to be modified.

The following are some simple examples of service-learning projects that highlight these elements:

- A third grade class was learning about wood ducks. During a field trip, the students became concerned about the lack of good nesting

habitat for these birds in a local wetland. Working with Ducks Unlimited, they researched the habitat needs of wood ducks, learned about alternatives to natural nest sites, and constructed five nesting boxes which they then installed at the wetland site.

- A fifth grade class was studying the water cycle and constructed pop-bottle terrariums as working models. The students used the models to teach residents of a local nursing home and their grandchildren about the water cycle. The students donated the terrariums to the seniors and were pen pals with them through the rest of the year.

- After a discussion about recycling, seventh grade students conducted a community survey, which revealed that local businesses and residents wanted to recycle and needed more information about opportunities to do so. The students started a successful recycling program in the school and persuaded the local village council to release a proclamation stating the council's support for recycling and encouraging village residents to take their recyclable materials to the county facility.

## The role of the teacher

Successful service learning relies on a student-centered framework for learning that has been integrated into a teacher-designed curriculum.<sup>7</sup> The role of the teacher in service learning is to act as a facilitator of the project, set



*Some lucky wood duck is about to find a new home, thanks to this student service-learning project.*

the learning objectives, establish opportunities for students to reflect, and assess the final products of the project. The teacher must first decide how service learning fits into his or her curriculum. The Action Team Project is designed to be highly integrative, so that through it students demonstrate competence in language arts, science, social studies, and oral presentation.

Throughout the service-learning project, the teacher acts as a facilitator by encouraging discussion and guiding the students to complete their projects successfully.<sup>8</sup> The teacher may act as a sounding board, urge students to explore additional avenues for taking action on their chosen issue, and assist in planning alternative solutions if students' first actions are unsuccessful. Because each issue that a class or group of students selects is unique, the action plan they develop will be specific to that particular issue. This requires the teacher to develop a framework from which to guide students but also to recognize the need for flexibility.

The teacher's role continues when the students take their project out into the community. While students can and should make initial contacts with agencies where the project will take place, the teacher can follow up with those contact people to monitor students' progress. This kind of follow-up can identify students' successes and provide early indications of where students could use additional support.

Providing avenues for student reflection is another critical role of the teacher. Reflections may take the form of ongoing journal entries, papers in which students respond to guided questions, or even art works such as drawings, paintings, sculptures, or models. All of these methods will allow teachers to gain a better understanding of their students' learning. Teachers must also decide whether to assess the products of their students' reflection. Some teachers decide that their students' reflective journals and art works should be creative outlets only, while others assign grades to them.

Finally, teachers must evaluate, on the basis of the learning outcomes they identified, their students' products from the project. Written project reports, reflective journals, and students' class presentations to peers on their activities are all products that the teacher can evaluate in order to monitor student progress.

## Action Team Project sequence

Taking action on an environmental issue as a service-learning project involves gaining knowledge, making informed decisions, and developing and using skills to solve a problem. Students gain knowledge about a particular issue

through research, investigation, and evaluation of information. They then identify ways to take action on the issue, develop an action plan, and implement the plan. It is important to remember that an Action Team Project is student driven and the teacher acts as a facilitator. Allowing students to select the issue with which they will become involved increases their feelings of ownership and personal investment.

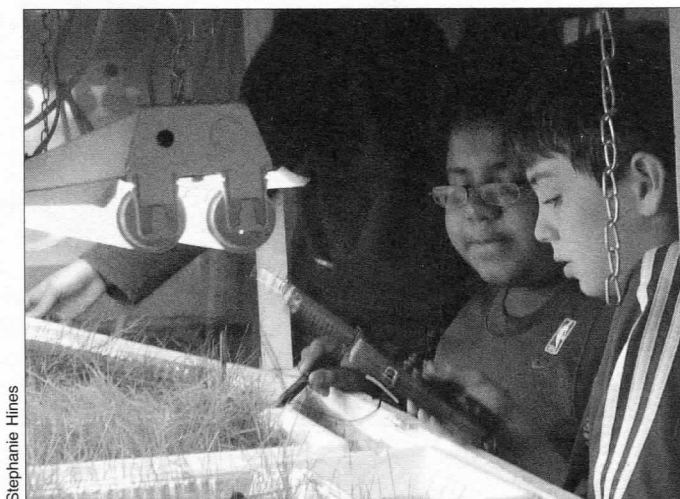
## Identifying an issue

Students first identify an environmental issue they are concerned about. Having students work on a current events assignment is one way to stimulate ideas. Searches through local papers, a walk around the local area, watching the local news, and Internet searches are all good places for students to start. Sometimes a national environmental issue may appear on a website as an action alert (a call to members of an organization to take action on a particular issue). For example, an action alert may inform students of legislative efforts to weaken regulations that protect waterways. In this case, the teacher may want to encourage students to discuss how local waterways could be affected if the pollution standards were lowered. This could lead to action by the class to adopt and clean up a local river as a class project.

Students should each identify two or three environmental issues to discuss in class, and then brainstorm a combined class list. The class can then decide on which issue they will take action. In elementary grades, having students choose only one local issue that they can work on as a class makes the teacher's facilitation of the project more manageable. Middle school teachers may consider having students work in two or three smaller groups, each taking action on a different issue.

## Researching the issue

After identifying an environmental issue, students gather the information they need to decide what their position on it will be. Some issues, particularly at the elementary school level, may not be controversial. For instance, second grade students may be concerned about loss of habitat for butterflies, and their project could lead to planting and maintaining a small butterfly garden. Many environmental issues, however, are complex and/or can be examined from varying viewpoints (e.g., global warming, air pollution, logging of old-growth forests, oil drilling). If students discover that their selected issue is controversial, the teacher should encourage them to look at all sides, including potential effects on the environment, the economy, and society. Working through the process of making an informed decision — one based on fact rather than emotion — and then



*Students measuring the runoff of fertilizers from vegetation as part of a project to investigate water and soil pollution in their urban community.*

acting on that decision makes the Action Team Project a powerful learning experience.

When students are struggling with a controversial environmental issue they may need help in differentiating their emotional response from the facts. Asking students how they feel about the issue will help them identify and validate those emotions. Teachers can then point out that many people who become involved in an issue are motivated by strong feelings about the environment. However, making an informed decision also requires research to uncover the facts of an issue. The following questions can be helpful in leading a team or class discussion:

- Based on your research, what are the facts of the issue (pros and cons)?
- What is your position on this issue?
- Who is affected by the issue (people, wildlife, businesses)?
- Who has the power to make changes?
- What could we do to make a difference? (Generate a list of actions.)

Once students have decided on an issue, usually they will need to narrow the focus of their project, depending on the time frame. They can do this by developing an Action Team Plan.

### Developing the Action Team Plan

The Action Team Plan should be viewed as a step-by-step "recipe" for accomplishing the team's goals. The components of the plan include a purpose statement — a broad statement that explains what the team wants to do for the project; goals — specific ways in which the team will fulfill their purpose; and actions — specific things the team will do to accomplish their goals (see "Sample Action Team Plan" sidebar) and a timeline for doing them. Actions may take many different forms, and the issue itself drives the students' choice of actions. In addition, teachers should encourage their students to explore resources that are available within the community.

### Partnering with the community

An important component of service learning is community involvement. Often, people from local agencies or busi-

nesses can help students identify important issues, can contribute to background research, and may even provide resources and contacts. Students should be encouraged to contact local agencies for information, to invite representatives from such agencies to make presentations in the classroom, or to set up field trips to investigate problems first hand. Keep in mind that local environmental issues concern the entire community. Any actions taken to resolve a prob-

lem may have both positive and negative consequences. Well-balanced environmental education activities are unbiased and allow students to investigate all sides of an issue.

### Project ideas

The following are some ideas for service-learning projects that integrate several subjects while maintaining a science and/or environment focus. This brief list may trigger other ideas for you and your students.

*Science/Social Studies:* Third grade students studying the three Rs (recycle, reduce, and reuse) made posters for their classroom to help them remember the concepts and visited the local grocery store to learn about reducing waste by selecting products that have little packaging. While there, one student asked why shoppers had the choice of either plastic or paper bags for their groceries. This led to a discussion about renewable resources (trees for paper products) and non-renewable resources (petroleum for plastic prod-

ucts). The students decided to encourage shoppers to select paper bags by illustrating 50 of the bags with the three Rs, as they had done in their classroom posters. The bags were so popular that the grocery store owner asked the students to supply more of them, and eventually all third grade classes in the school participated in the project. Each of the last three years, the students have selected a different environmental topic to illustrate on their "Environmental Education Bags."

*Science/Government:* Eighth grade students were studying current events by reading the local newspaper and watching the news on television. The students became concerned about the importation of hazardous trash from another community into their local dump. They researched the issue

## Sample Action Team Plan

### Purpose Statement

The purpose of our project is to let people know how important it is to keep Smith River clean and to get rid of the litter in the river.

### Goals

Our goals are to:

1. Inform people in the community about why they should keep the river clean and how they can help to do this.
2. Inform other students at the school about what they can do to help keep the river clean.
3. Help clean up Smith River.

### Actions

We will:

1. Write a letter to the newspaper to increase public awareness about Smith River (goal 1).
2. Create a brochure for local businesses to hand out about keeping the river clean (goal 1).
3. Invite a guest speaker from the Smith River Conservation Area to talk to the school community about keeping the river clean (goal 2).
4. Plan, organize, and participate in a community cleanup day on Smith River (goal 3)



Stewart Wilson

*Grade 3 students asking city council for permission to post "Keep Clean" yellow fish signs in the community.*

and took action by petitioning local political officials to pass a law to stop the practice, speaking at the city council meetings during public comment periods and suggesting alternatives, writing letters to the editor of the local paper about their concerns, and talking about the issue on a local public radio show. The story was picked up by a statewide paper and television news station reporting on local environmental concerns. The students were successful in opening a dialogue between the two communities, which led to stricter local regulations about dumping.

**Science/Art:** A first grade class combined a science lesson (growing marigolds) and art (decorating pots) to produce unique gifts for senior citizens in a long-term care facility adjacent to the school. The children went to the facility, visited with the residents, and presented the potted plants to them. This project led to the first and second grade classes' helping seniors plant and care for three raised-bed flower gardens at the facility.

**Science/Reading:** As part of a science project to learn about wildlife, third grade students made and illustrated "ABC" Big Animal Books about local animals. One student mentioned that the books were fun to read and suggested sharing them with younger students. The third grade students were individually matched with students in a second grade class and used their animal books to help the second grade students master words and learn about animals. This service-learning project is a good example of one that connects students within the school community. Such in-school projects can serve as alternatives to out-of-school service learning if budget restrictions or lack of time make bigger projects impossible.

**Science/Math:** A class of fifth grade students learning about grids in math applied their new knowledge by mapping the local park. While there, they noticed some trees that appeared to be dead or dying and they decided they should let someone know about them. They divided the park using a grid system, conducted a tree survey, and reported to the local parks department how many of each species of tree were in the park and which trees were dying. The parks and recreation director asked the students to present their findings at the parks commission meeting. The students gave their report and recommended that the dead trees be left as homes for wildlife but that more trees be planted for shade and for food for wildlife. The students then helped organize a community tree-planting day at the park.

## Action Team products

Service-learning projects can integrate many different subjects and be an important part of meeting science education standards. As part of their project, students may present oral and written progress reports; an oral poster presentation; a final, written report; or even a video of their project. An individual reflection paper at the end of the project, in which students respond to guiding questions, is a critical component of service learning. The opportunities for reflection allow students to write in subject areas other than language arts, presentations let them develop speaking

skills, and conducting research connects students with history and assists them in internalizing the scientific process.

Working in teams, investigating problems, problem solving, and meeting goals are all skills that citizens use to contribute to and engage with their communities. Citizenship behavior comes from a combination of knowledge, informed decision making, and skills for involvement. The Action Team Project helps students develop those skills in hands-on, interactive ways.

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### Notes

<sup>1</sup> H.R. Hungerford and T.L. Volk, "Changing Learner Behavior Through Environmental Education," *Journal of Environmental Education*, 21:3, 1990, pp. 8-21.

<sup>2</sup> David Sobel, "Beyond Ecophobia: Reclaiming the Heart in Nature Education," *Clearing*, 91, 1995, pp.16-20.

<sup>3</sup> North American Association for Environmental Education, *Excellence in Environmental Education: Guidelines for Learning (K-12)*, NAAEE, 2000.

<sup>4</sup> United Nations Educational, Scientific and Cultural Organization conferences, Tbilisi, USSR, 1978.

<sup>5</sup> J. Nathan, and J. Kielsmeier, "The Sleeping Giant of School Reform," *Phi Delta Kappan*, 72, 1991, pp. 739-42.

<sup>6</sup> Harry C. Silcox, *A How-to Guide to Reflection: Adding Cognitive Learning to Community Service Programs*, Institute for Global Education and Service Learning, 1993.

<sup>7</sup> Nathan and Kielsmeier, 1991.

<sup>8</sup> E. Zlotkowski, "Pedagogy and Engagement," in *Colleges and Universities as Citizens*, Roger Bringle, ed., Allyn & Bacon, 1999, pp. 96-120.

### Resources

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### Organizations

National Service-Learning Partnership, <[www.service-learningpartnership.org](http://www.service-learningpartnership.org)>.

National Commission on Service-Learning, <<http://servicelearningcommission.org/slcommission>>.

National Youth Leadership Council, <[www.nylc.org/index.cfm](http://www.nylc.org/index.cfm)>.