

INTRODUCTION

WHAT IS SERVICE LEARNING?

Service learning, as defined by the National Service Learning Partnership, “is a teaching method that engages young people in solving problems within their schools and communities as part of their academic studies or other types of intentional learning activities. Service learning helps students master important curriculum content by making meaningful connections between what they are studying and its many applications. Service learning also helps young people develop a range of service skills, from acts of kindness and caring, to community stewardship, to civic action.”

Service learning differs from community service in that a student’s community service project may teach valuable skills, but not necessarily offer any connection to content standards. Examples of service learning:

- Students create a trash reduction campaign after studying the amount of trash that ends up in a local body of water and its impact on humans and the water cycle.
- Students present posters and a presentation to younger students about what they have learned after studying how water runoff from their campus impacts living organisms and the environment.

The Water Quality Service Learning Program uses specific science content standards as the basis for academic learning. It also incorporates key elements of quality service learning, including: integrated learning, community service, collaboration, student voice, civic responsibility, reflection, and evaluation.



KEY ELEMENTS OF QUALITY SERVICE LEARNING

Ideally, when developing a quality service learning project aligned to specific content standards, all of the following key elements should be included:

1. INTEGRATED LEARNING

Service learning projects support the academic curriculum and vice versa.

2. SERVICE TO THE COMMUNITY

Service learning projects bring together students, teachers and community partners to provide meaningful service that meets community needs.

3. COLLABORATION

A quality service learning project incorporates many partners (“stakeholders”) in its design and implementation, including students, parents, community-based organizations, teachers, school administrators, and service recipients. All partners benefit from the project and contribute to its planning and implementation.

4. STUDENT VOICE

Students participate actively in every step of the project, including identifying community needs and issues, choosing and planning the project, reflecting on it at each stage, evaluating it, and, most importantly, celebrating its success to reinforce a “job well done.”

5. CIVIC RESPONSIBILITY

By participating in a service learning project, young people learn that they can have a positive effect on their community and that their voice counts.

6. REFLECTION

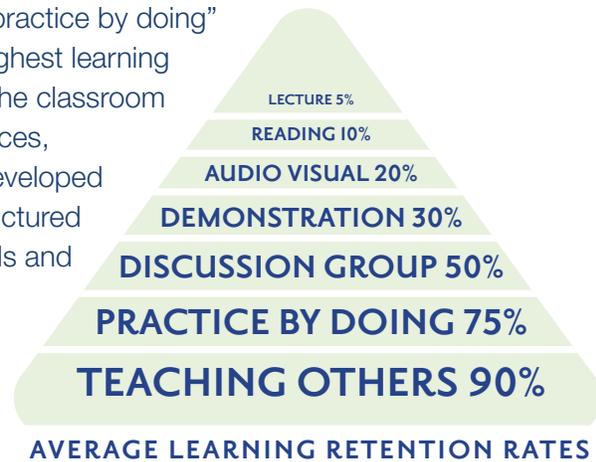
Service learning incorporates important reflection time before, during, and after the project to draw links between the social and personal aspects of the project and the academic curriculum.

7. EVALUATION

Evaluation conducted by all partners, including the students, districts, and communities, measures progress towards the learning and service goals of the project.

WHY IS SERVICE LEARNING MORE EFFECTIVE?

Service learning primarily uses the methods of “practice by doing” and “teaching others,” both of which yield the highest learning retention rates. By integrating what’s learned in the classroom with outside-the-classroom community experiences, students retain more. “The Learning Pyramid” developed by the NTL Institute of Alexandria, Virginia and pictured here, shows various curriculum teaching methods and the learning retention rates resulting from each method.



THE CASE FOR ENVIRONMENTAL EDUCATION

Just as service learning has been proven an effective way for students to learn, develop valuable skills, and retain concepts, utilizing environmental education in the classroom as a “connecting thread” or context for other academic disciplines has also been shown to be educationally beneficial.

In its 2002 publication, *Education & The Environment / Strategic Initiatives for Enhancing Education in California*, the California Department of Education made several important points about the key to excellence in education. “A main element, generally agreed on, is that integrating subjects aids learning. For that reason, integrated education and cross-subject instructional materials have proliferated.”

The report concludes that environmental education can be used effectively to connect many subjects within curriculum. “[It] pulls together the existing curriculum into a sensible and tangible whole. Learning parallels the ‘real world’ by combining academic disciplines (English and language arts, mathematics, science, history and social science, visual and performing arts) in investigating the local environment, defining and assessing issues, and creating and communicating solutions.”

Environmental education also:

- Emphasizes depth of understanding over breadth, as determined by a joint study published in 2000 by two major environmental education organizations.¹ The study showed that students involved in environmental education efforts improve math and reading scores, perform better in science and social studies, are more fully able to transfer their familiar learning into unfamiliar contexts, and learn to “do science,” rather than just “learn about science.”
- Utilizes group work, a skill critical in higher grades and in the workforce. In 1999, the National Business Education Association noted that it seeks “employees who can work in teams, create analytical reports, interpret data, and make decisions,” all skills developed through environmental service learning.

¹ The National Environmental Education & Training Forum and the North American Association for Environmental Education.

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- Cultivates critical-thinking and problem-solving skills as students measure what they learn in the classroom against real-world situations, a continuous feedback loop that promotes flexibility, teamwork and leadership.
- Nurtures community involvement and active citizenship – the backbone of our democratic government. The Western Governors’ Association has declared, “Beginning with the nation’s youth, people need to understand their relationship with the environment. They need to understand the importance of sustaining and enhancing their surroundings for themselves and future generations. If we are able to achieve a healthy environment, it will be because citizens understand that a healthy environment is critical to the social and economic health of the nation.” Environmental service learning projects strengthen students’ relationship to community, and make them want to be active participants in creating meaningful change.

A March 2000 study² funded by the California Department of Education paired eight conventionally structured California schools with eight demographically similar schools that had reorganized their curriculum to use the environment as an integrating context for learning. These latter schools used proven educational practices, but emphasized the local community and natural surroundings as the primary venue for learning. Students in the schools using the environment-based model earned higher scores on standardized tests than their counterparts in more traditional settings.

EDUCATION AND THE ENVIRONMENT INITIATIVE

In October 2003, the Governor signed into law the Education and the Environment Initiative (Pavley, Chapter 665, Statutes of 2003). This landmark law, now referred to as the Education and the Environment Initiative (EEI), provides a comprehensive framework for bringing environment-based education to students across California. The major components of this “unified education strategy” include:

- development of California’s first ever environmental principles and concepts;
- design, development and dissemination of a standards-based model curriculum to teach the environmental principles and concepts to students in kindergarten through 12th grade;
- incorporation of the environmental principles and concepts into the State Board of Education’s criteria for adopting science, mathematics, English/language arts, and history/social sciences textbooks; and,
- reorientation of the state’s existing environmental education programs to support learning of the environmental principles and concepts.

The California Environmental Protection Agency and the California Integrated Waste Management Board are actively engaged in the implementation of the EEI (the Water Boards have ensured that this service learning program closely follows this initiative). This important work is occurring in close collaboration with California’s State Board of Education, Department of Education, Office of the Secretary for Education, and the Resources Agency. The government agencies that are collaborating in the EEI have been joined by a broad-based group of partners from business and industry, educational institutions, nongovernmental organizations, and professional organizations to ensure its successful implementation.

² Lieberman, G., & Hoody, L. (2000). *California Student Assessment Project: The Effects of Environment-based Education on Student Achievement*. San Diego California: State Education & Environment Roundtable.

The environmental principles examine the interactions and interdependence of human societies and natural systems. The nature of these interactions is summarized in the environmental principles and concepts that are presented below.

Principle I

The continuation and health of individual human lives and of human communities and societies depend on the health of the natural systems that provide essential goods and ecosystem services.

As a basis for understanding this principle:

- **Concept a.** Students need to know that the goods produced by natural systems are essential to human life and to the functioning of our economies and cultures.
- **Concept b.** Students need to know that the ecosystem services provided by natural systems are essential to human life and to the functioning of our economies and cultures.
- **Concept c.** Students need to know that the quality, quantity, and reliability of the goods and ecosystem services provided by natural systems are directly affected by the health of those systems.

Principle II

The long-term functioning and health of terrestrial, freshwater, coastal, and marine ecosystems are influenced by their relationships with human societies. As a basis for understanding this principle:

- **Concept a.** Students need to know that direct and indirect changes to natural systems due to the growth of human populations and their consumption rates influence the geographic extent, composition, biological diversity, and viability of natural systems.
- **Concept b.** Students need to know that methods used to extract, harvest, transport, and consume natural resources influence the geographic extent, composition, biological diversity, and viability of natural systems.
- **Concept c.** Students need to know that the expansion and operation of human communities influences the geographic extent, composition, biological diversity, and viability of natural systems.

- **Concept d.** Students need to know that the legal, economic, and political systems that govern the use and management of natural systems directly influence the geographic extent, composition, biological diversity, and viability of natural systems.

Principle III

Natural systems proceed through cycles that humans depend upon, benefit from, and can alter.

As a basis for understanding this principle:

- **Concept a.** Students need to know that natural systems proceed through cycles and processes that are required for their functioning.
- **Concept b.** Students need to know that human practices depend upon and benefit from the cycles and processes that operate within natural systems.
- **Concept c.** Students need to know that human practices can alter the cycles and processes that operate within natural systems.

Principle IV

The exchange of matter between natural systems and human societies affects the long-term functioning of both. As a basis for understanding this principle:

- **Concept a.** Students need to know that the effects of human activities on natural systems are directly related to the quantities of resources consumed and to the quantity and characteristics of the resulting byproducts.
- **Concept b.** Students need to know that the byproducts of human activity are not readily prevented from entering natural systems and may be beneficial, neutral, or detrimental in their effect.
- **Concept c.** Students need to know that the capacity of natural systems to adjust to human-caused alterations depends on the nature of the system as well as the scope, scale, and duration of the activity and the nature of its byproducts.

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Principle V

Decisions affecting resources and natural systems are based on a wide range of considerations and decision-making processes. As a basis for understanding this principle:

- **Concept a.** Students need to know the spectrum of what is considered in making decisions about resources and natural systems and how those factors influence decisions.
- **Concept b.** Students need to know the process of making decisions about resources and natural systems, and how the assessment of social, economic, political, and environmental factors has changed over time.

THE TIME TO ACT IS NOW

It is against the backdrop of these environmental principles and concepts and service learning studies that the California Water Boards have decided to bring integrated environmental learning into classrooms in California. We believe that this will not only result in higher student achievement, but also result in cleaner, healthier California waterways in the future. The time to act is now.

