



Student Achievement and the EEI

The Curriculum for California's Education and the Environment Initiative (EEI) is designed to:

- help students achieve mastery of the State's academic content standards.
- integrate with adopted instructional materials.

The plan for the EEI curriculum was developed in cooperation with the State Department of Education, State Board of Education/Curriculum Commission, Governor's Secretary of Education, and the California Environmental Protection Agency, Integrated Waste Management Board and Resources Agency.

The EEI Curriculum is being designed to complement State-adopted instructional materials. After field and pilot-testing and revisions, it will be reviewed by the Curriculum Commission before being submitted to the State Board of Education for final approval.

Since the EEI Curriculum is not yet complete nor has it been assessed, it is not possible to present evidence regarding its effects on student achievement. However, there is a growing body of evidence from national studies indicating achievement increases when students learn academic content standards through environment-based instructional strategies. The National Environmental Education & Training Foundation's report "Environmental Literacy in America—2005" summarized many of these studies as follows:

- 95% of adults and 96% of parents support the practice of teaching school children about the environment (NEETF).
- State Education and Environment Roundtable (SEER) research since 1997 has shown that environment-based education improves academic performance and learning across the board, regardless of socioeconomic or cultural factors (Lieberman and Hoody, 2002)
- A study conducted for the California Department of Education (California Student Assessment Project SEER, 2000) paired schools with and without environment-based instructional programs. This study found that in reading and language arts, EIC students performed better than the "paired" students in 69 of 91 (76%) assessments that yielded numerical measurements. Third and fourth grade students in the environment-based instructional programs performed from 4%-9% better on reading tests.
- Impacts on science learning- students found science more relevant and appealing. Thousands of students were studied from 1997-2002 and 100% of them showed improvement when EE was used in teaching science. In Iowa, 50% of the students in the environment program scored one grade higher, with 28% scoring three grades higher (Lieberman and Hoody, 2002).
- In Minnesota, students scored 24.2 on the ACT compared to a state average of 22.5 and a national average of 21.1 at the School for Environmental Studies (NEETF & NAAEE, 2002).
- In Texas, students used a prairie restoration project as a way to integrate learning, strengthened science learning, and improved student performance. 85% of these students passed all sections of the Texas Assessment of Academic Skills (TAAS), well above the state average (NEETF, 2002a).
- Using SEER's EIC Model (Environment as an Integrating Context), one school's EIC students had composite scores in the state-wide assessments that were 27% higher than other comparable schools in the same county (Lieberman and Hoody, 2002).
- Randomly selected ninth graders in an EIC program in Washington averaged an overall 3.2 GPA compared to a 2.6 average GPA for other 9th graders in the school. Tenth grade EIC

students in the same school averaged a 3.0 compared to a 2.8 for the other students (Lieberman and Hoody, 2002).

- A study of 77 pairs of schools in the State of Washington found positive improvements in school scores in math, reading, writing, and listening for schools with formal EE programs in place compared to schools without such programs (Bartosh, 2003). This study found that even schools with as few as 20% of their teachers using EE materials and programs did better than schools with no EE programs.
- At Minnesota's "Zoo School", students drew connections between disciplines by pursuing a curriculum unified by an environmental theme. Zoo students scored higher on the ACT for college admissions than their peers in the district, state, and the nation (NEETF, 2002a).
- Impacts on language arts and reading—93% of educators observing students in environment-based programs report that the children read and write better as a result of the exposure. 94% said the children in these programs communicate with one another much better (Lieberman and Hoody, 2002).

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