



Earth Force Evaluation

Summary of 2005-2006 Evaluation Results

Background

Earth Force (EF) is a national nonprofit organization that operates programs that combine environmental education, civic education, and service-learning to help young people gain the knowledge, skills, and attitudes needed to become active environmental citizens in their communities. At the core of the Earth Force approach is a six step problem-solving process designed to guide young people through the identification and analysis of local environmental problems, examination of relevant policy and community practice; planning and implementation of an action project designed to change local policy or practice, and assessment of their experience through ongoing reflection.

In 2005-2006, Earth Force operated three programs for in-school youth, the *Earth Force Community Action and Problem-Solving* (CAPS) Program, the original Earth Force service-learning and environmental education model; the *Earth Force GREEN* program, which focuses on watershed issues; and the Earth Force *CHEC* Program (Community History/Environmental Citizenship) which integrates local history and civics education to the regular Earth Force program. Earth Force also provides a separate set of program materials for after-school programs. Earth Force programs target middle school-aged youth, though local offices have developed a substantial number of sites in both elementary schools and high schools.

In 1997, Earth Force began working with the Center for Youth and Communities at Brandeis University to conduct an annual evaluation of the various Earth Force programs. Those evaluation activities include collection of data on program implementation, participant outcomes, and impacts on Earth Force educators through a mix of pre- and post-program participant surveys, educator surveys, and program “cover sheets” that provide basic classroom level activity data. Over the years, survey materials and evaluation strategies have evolved to meet the changing information needs of the program and to better address the program’s intended outcomes.

The purpose of this brief report is to summarize the results from the 2005-2006 school year data collection. The report also provides a comparative view of the participant survey results from the past two years.

2005-2006 Evaluation Data Sources

The 2005-2006 Earth Force findings are based on data from participant surveys and Earth Force educator surveys. Teacher “cover sheets” that are included with the participant surveys provide additional basic data on program implementation.

- **Data on participant outcomes are based on a set of 1685 matched pre- and post-program participant surveys.**¹ The matched pre/post surveys provide data on changes in participant civic and environmental attitudes and skills, as well as participant assessments of their program experience. 840 matched surveys were from students in the Earth Force CHEC program, 694 from Earth Force GREEN participants, and 151 from Earth Force CAPS programs. Students from 70 schools and 89 classrooms were represented in the sample.

¹ 2,800 Earth Force participants completed baseline (pre) surveys and 2400 completed post-program surveys, resulting in 1,685 sets of matched pre- and post-program surveys. The outcome analysis is based on the matched pre/post surveys. 2005-06 was the second year in which the evaluation used individually matched pre/post surveys. Before 2004-05, analysis was based on aggregated surveys matched at the classroom level.

- **106 Earth Force educators also completed year-end surveys**, providing information on program implementation, feedback on the support received from Earth Force, assessments of the program’s impact on participating students, and their assessment of the impact of their involvement in Earth Force on their own teaching.
- **74 Earth Force educators also provided year-end teacher “cover sheets” which provided additional data on program implementation.** That data was linked to the participant survey data in order to examine relationships between program characteristics and student outcomes.

Key 2005–2006 Evaluation Results

The data from the 2005–2006 participant and educator surveys point to positive impacts for the Earth Force program on both program participants and the adults working with them. Earth Force participants showed positive, statistically significant gains on a range of civic and environmental attitudes and skills, including their sense of civic responsibility and civic efficacy.

Participants also reported significant gains on a variety of civic skills, including ability to find information, analyze policy, work in teams, and plan a project. In both cases, results for 2005–2006 were comparable to (or even slightly stronger than) those for the prior year. Earth Force educators also reported gains in participant attitudes and skills, based on their own assessments, and also reported positive impacts on their own teaching and commitment to the use of community and environmental issues in their classes.

Major findings from the 2005–2006 evaluation include the following:²

- **The Earth Force program serves a diverse population of students.** Based on data from the baseline surveys, 52% of Earth Force participants were White; 20% were Hispanic or Latino; and 18% were African-American. Sixty percent were middle school students (grades 6–8); 23% were elementary school students; and 17% were high school students (grades 9–12). There was substantial variation among sites in the school levels targeted by the program. While the program was originally designed for middle school students, in four sites, more than 40% of participants were in 5th grade or below; in two sites, more than half of the participants were high school students.
- **Program implementation varied widely, with differing degrees of adherence to the Earth Force model.** In 2005–2006, slightly more than a third (34%) of the Earth Force classrooms reported completing all six segments in the Earth Force model, and half (51%) reported completing at least five of the six steps. The most frequently completed segments were the first two: the community environmental inventory (completed by 80% of educators) and problem selection (completed by 90%); 74% of the educators reported completing an action project.

Sites reported that the overall duration of the Earth Force projects increased to an average of 23 weeks (up from 20 weeks the prior two years) and 75% of the projects took place over at least a semester (up from 64% in 2004–05). Educators reported devoting an average of 25 classroom hours to the program (similar to the prior year), and asking students to complete an average of 8 hours of out-of-class time.

For the first time in 2005–2006, programs were also asked to report on several specific Earth Force-related activities, including the use of surveys, voting exercises, outside experts, and efforts to influence policy. Almost all of the programs indicated that students met with an outside expert in conjunction with their project (94%) and conducted a voting exercise to select the problem they wanted to address (91%). A substantial majority also used surveys to assess

² Tables with complete 2005–2006 results (“Earth Force Evaluation Data Tables, 2005–2006”) available from Earth Force, Inc.

community issues (74%) and talked about the history of the community as part of their study of local environmental issues (70%). However, only 44% of the educators indicated that they attempted to change a formal school or community policy, suggesting that many Earth Force projects are still more practice than policy-focused.

- **Program participants continue to report a positive program experience.** Seventy-seven percent of Earth Force participants rated their experience as “good” or “excellent,” and 64% wanted to be in Earth Force again. Sixty-two percent of participants felt that their project had made a difference and an equal percentage wanted to continue working on the issue their project addressed. Eighty percent of participants reported that they had gained a better understanding of environmental issues, and over 75% reported that they wanted to learn more about environmental issues as a result of the program. In general, these figures are comparable to those reported for 2004-2005.
- **Program participants showed statistically significant gains in program-related attitudes.** As in 2004-2005, Earth Force participants showed statistically significant gains in 2005-2006 on the two summary measures of participant attitudes used in the participant surveys – *the Earth Force Scale* and the *Civic Efficacy Scale*.³ There was no gain on a scale assessing attitudes on the importance of understanding local environmental history. Overall, participants showed positive, statistically significant gains on 21 of 27 attitudinal items on the survey (Table 1). Gains were also evident across most of the Earth Force local offices, with participants from 7 of the 8 local office programs showing positive, statistically significant gains on the two summary attitudinal measures.
- **Participants continue to report strong, statistically significant gains in self-assessed civic skills.** As in prior years, Earth Force asked participants, at the end of the program, to assess changes in a number of civic skills by indicating their skill level at the beginning of the school year and at the end of the program. Skills included ability to find information, analyze a policy, write letters about a community issue, work on a team, and plan an action project. Students reported gains that were large enough to be statistically significant on all of the skill items on the scale, and, on average, more than two thirds (66%) of students reported gains on each of the skills in the survey (Table 2).
- **A large majority of Earth Force educators reported gains in participants’ environmental and civic knowledge, skills and attitudes.** Over 95% of the educators who completed a survey reported increases in their students’ awareness of environmental issues; ability to plan and carry out a community project; commitment to working on environmental issues; belief they could make a difference in the community; sense of belonging to the community; decision-making skills, and engagement in learning. Most educators (90% or more) also pointed to increases in participants’ leadership skills, decision-making and problem-solving skills; confidence in working with adults; and understanding of the connection between skills learned in school and their use in the “real world.” Across the full set of educator assessments, 48% of the educators surveyed thought the program had a “large impact” on participant skills; 45% indicated a “small to moderate” impact; and only 7% thought it had no impact.
- **Participants in Earth Force programs that provided longer, more fully implemented program experiences showed significantly greater impacts on participant attitudes than programs that provided briefer, less engaging experiences.**
 - Students in Earth Force programs of longer duration (18 weeks or more), provided greater in-class hours (19 hours or more) and completed all six segments in the Earth Force model showed significantly greater gains on attitudinal measures than students in briefer, less intensive, or less fully-implemented Earth Force programs.

³ The *Earth Force* scale includes all of the attitudinal items on the Earth Force survey, including questions addressing civic and environmental responsibility, civic efficacy, and environmental citizenship. The *Civic Efficacy* scale is a 10 item subset of the survey items directly focused on civic efficacy.

- Students in programs that provided opportunities to research and discuss their community issue, and programs that allowed students to hear from outside experts also showed significantly greater gains than students in programs that did not include those key features.

In prior years, students who had an opportunity to research and discuss their problem, and those who were in programs that completed all six segments also showed significantly greater gains, suggesting that completion of the full program and an emphasis on student voice may be significant factors in determining program effectiveness.

- **Earth Force educators continue to report that involvement in the program positively impacted their own teaching and attitudes towards their students.** More than 80% of Earth Force educators reported an increase in their knowledge of environmental issues, their use of community issues and student-led projects in their classrooms, and their satisfaction in teaching as a result of involvement in Earth Force. Seventy percent or more reported an increase in their emphasis on environmental issues in their classrooms, their belief that young people can make a difference in the community, and their own personal commitment to improving the environment. More than 70% also noted increased connections to other educators, increased access to resources and materials for use in teaching, new partnerships with community organizations, and an increased sense of self confidence as an educator. Eighty-nine percent plan to use Earth Force again next year, and 99% percent would recommend the program to other educators.

Summary

Overall, the results from the 2005-2006 evaluation are strongly positive for the Earth Force program and represent the second year in a row of strong, positive outcomes for participating youth. While serving a relatively diverse population of students, the Earth Force programs showed statistically significant increases in a number of measures of participant attitudes and skills, with gains evident across most of the Earth Force sites. Teacher assessments of the program were also positive, both in terms of their assessment of participant impacts and the impact of the program on their own classroom practices.

While the results are positive, the data suggests that completion of the full model, as well as greater youth voice, and possibly increased duration and hours in some sites, could lead to even better results. In that regard, Earth Force may want to continue to look at ways of supporting improved implementation of the program at the classroom level.

For Additional Information

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