EDUCATIONAL PHILOSOPHY

Earth Force believes that engaging students in authentic civic action is the most effective way to give them the knowledge, skills, and predispositions they need to participate in public life. By authentic, we mean two things: students address issues that matter to them, and projects involve genuine efforts to affect the issue through either policy advocacy or community education. Discussing issues, taking and defending positions, and talking about policy change are necessary but not sufficient; students need to try to effect changes in existing policies and community habits.

Using the right sequence of preparation, experience, and reflection, students as young age 10 can take part in Earth Force projects that result in genuine community improvement. In fact, we think it is developmentally appropriate and essential for middle school youth to do important public work in their communities. It is almost never easy for teachers to lead authentic civic action projects, however, which is why we deliver educator training and support that is comprehensive, stimulating, fun, and experiential. To further assist our teachers, we provide materials that break the civic action process into discrete and feasible steps.

While we want to make the process understandable and plausible, academic rigor and intellectual honesty are essential. Students are prompted to examine environmental issues from multiple and diverse perspectives. They examine assertions and the evidence offered in support of various views, and then they discuss how to determine which evidence is most reliable. They also conduct research of the local government agencies, businesses, and nonprofits that are related to their issue. The more students interact in person with officials, the less mystified they are with public issues and the political process.

The Earth Force process borrows from and is characterized by four elements: service learning, environmental education, citizenship education, and innovative teaching. While these elements overlap and should not be considered in isolation, each has characteristics that define it.

Element One: Service Learning

Service learning is a teaching strategy that requires students to do two simple things: meet core course objectives and address real community needs.

According to the Alliance for Service Learning in Education Reform (ASLER, 1995), *service learning is a method by which young people learn and develop through active participation in thoughtfully organized experiences that*

- Meet actual community needs
- Coordinate in collaboration with the school and community
- Integrate into each young person's academic curriculum
- Provide structured time for a young person to think, talk, and write about what he/she did and saw during the actual service activity
- Provide young people with opportunities to use newly acquired academic skills and knowledge in real life situations in their own communities
- Are a practical application of what is taught in the school
- Help to foster the development of a sense of caring for others.

The ASLER group also delineated standards of quality for service learning.

- Effective service-learning efforts strengthen service and academic learning.
- Model service learning provides concrete opportunities for youth to learn new skills, to think critically, and to test new roles in an environment that encourages risk-taking and rewards competence.
- Preparation and reflection are essential elements in service learning.
- Youths' efforts are recognized by those served, including their peers, the school, and the community.
- Youth are involved in the planning.
- The service students perform makes a meaningful contribution to the community.
- Effective service learning integrates systematic formative and summative evaluation.
- Service learning connects the school or sponsoring organization and its community in new and positive ways.
- Service learning is understood and supported as an integral element in the life of a school or sponsoring organization and its community.
- Skilled adult guidance and supervision are essential to the success of service learning.
- Pre-service training, orientation, and staff development that include the philosophy and methodology of service learning best ensure that program quality and continuity are maintained.

In sum, service learning is a teaching strategy that addresses core curriculum objectives while meeting real community needs. Quality service learning projects must feature youth decision making within teacher-defined boundaries, collaboration between schools and communities, and reflection. A project lacking any of these might promote student growth, empathy, or intelligence, but it would not be service learning.

Curriculum Integration and Service Learning

To be service learning, a project must help students meet core course objectives. Students often work on school-sponsored community service projects at lunch, during study halls and club meetings, or after school. While these experiences may help students grow, learn, and build skills, they are not service-learning activities until they ensure that students meet discrete curriculum objectives.

Like any other teaching strategy, service learning should be used only when a teacher finds it appropriate. One of the service-learning teacher's greatest challenges is determining when to use the strategy. Which unit in a course is most conducive to service learning? A number of factors

influence a teacher's response to this question, such as scheduling, the success of the current strategy, and student interest. While service learning is an excellent teaching strategy, it is far from the only one, and it may be less effective than others in some circumstances.

Earth Force projects rely on teachers and students to supply and discover the academic content. However, Earth Force teachers may frequently have to make judgments about the proper balance between student autonomy and curricular integrity. While students should choose the problem to address and the course of action, teachers should limit these choices to problems and actions that directly address curricular objectives. In fairness, students need to know about this restriction at the beginning of the process.

Service learning has four major characteristics that define it as a teaching strategy: youth decision making, school-community partnerships, reflection, and curricular integration. All four of these segments reinforce each other and are essential aspects of any Earth Force project.

Youth Decision Making in Service Learning

To the extent of their abilities and the teacher's comfort level, students make the crucial decisions that give service learning projects definition. They may decide what "community" means, which problems need their attention, what options to consider, and what action to take. On any of these matters, students may not initially have the skills necessary to make decisions. Likewise, teachers may not feel comfortable with so much student discretion. Students should be told right away if there are items closed to student decision making. The process is designed to meet students where they are and to advance their decision making opportunities as they gain skills.

As students gain decision making autonomy, they become aware of the connections between choice and consequences, power and responsibility, and self and community. With time and practice, students will become more comfortable making important decisions, and the quality of their decisions will rise accordingly. Students then begin to gain the confidence of teachers and other adults. Ultimately, youth decision making is about changing our collective view of students, from problems to resources, from consumers to producers, and from clients to citizens.

School-Community Collaboration in Service Learning

Service-learning projects use community settings as learning laboratories for students. Such laboratories do not spontaneously generate; they are the result of conscious and thorough planning on the part of educators and members of the community. Successful partnerships begin with the discovery of similar interests between schools and community based organizations (CBOs). For example, a school will want project opportunities that engage students in substantive problem solving while supporting the curriculum. CBOs may have hundreds of jobs for teenagers, but only those matching the school's educational interests should be considered for service-learning projects.

The following list outlines ten essential ingredients that promote successful collaborations. These are items that should be discussed, thoroughly defined, and resolved before collaborative partners begin working together.

- A common vision and purpose

- Broad-based representation and inclusion
- Resources needed and available: time, staff, information, skills, and money
- Shared leadership and decision making, using agreed-upon processes
- Mutually determined goals and objectives
- Clearly identified roles and tasks
- Ongoing and effective communication
- Projects and activities with tangible outcomes
- Documentation and evaluation
- Recognition

Reflection in Service Learning

According to John Dewey (c. 1920), reflection is "behavior which involves active, persistent, and careful consideration of any belief or practice in light of the grounds that support it and the further consequences to which it leads." To modern educators, reflection is an essential part of service learning. For Earth Force purposes, reflection means that students think about what they are learning, feeling, and experiencing throughout a project. Some teachers hear "reflection" and assume it means only looking back. Earth Force projects build in opportunities for students to look back, plan ahead, and speculate about different futures based on current action.

Because service learning promotes student achievement in various domains, reflection should occur in three areas:

- Cognitive -- What students learn from an experience: information, data, alternative ways of knowing or perceiving
- Affective -- What students feel as a result of an experience: emotions, attitudes
- Process -- What students learn from going through the process: how to plan, consequences of one decision making scheme vs. another, group dynamics

There are a variety of ways in which students can reflect, such as:

- Writing -- Journals, essays, pamphlets, advertisements, plays, stories, poems, editorials, letters
- Speaking -- Presentations, testimony, radio, discussion, dialogue, debate
- Performing -- Drama, video, painting, drawing, designing collages and scrapbooks

Reflection activities should occur throughout the process: before, as part of, and after projects. The Earth Force process encourages the "what -- so what -- now what" approach to reflection advocated by Dr. Pamela Toole of the National Youth Leadership Council. In step six of the Earth Force framework, for example, students' "now what" questions are informed by their continual reflection upon what they have learned and why their experiences have mattered.

Element Two: Environmental Education

A second element of an Earth Force project is Environmental Education (EE). In an early statement about EE that helped shape the field, William Stapp said EE "is aimed at producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems, aware of how to help solve those problems, and motivated to work toward their

solution." Stapp's definition succinctly captures the goal of the Earth Force process, which aims to give young people an experience in defining and addressing environmental problems.

In 1978 an international conference was held in Tbilisi, the capital of the former Soviet Republic of Georgia, to clarify and publicize the aims of EE. The Tbilisi Declaration lists five main realms of concern for EE:

- Awareness -- to help social groups and individuals acquire an awareness and sensitivity to the environment and its allied problems
- Knowledge -- to help social groups and individuals gain a variety of experiences in, and acquire a basic understanding of, the environment and its associated problems
- Attitudes -- to help social groups and individuals acquire ... feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection
- Skills -- to help social groups and individuals acquire the skills for identifying and solving environmental problems
- Participation -- to provide social groups and individuals with an opportunity to be actively involved at all levels in working toward the resolution of environmental problems

EE's premise is that citizens need to become better informed to increase their effectiveness as stewards of the environment. Surveys indicate a concern about the environment in the US that is widely held and consistent. EE aims to convert that concern into informed action, preferably around structural issues such as sustainable development, human health, and the relationship between economics and the environment. A key aim is for students to get beyond the artificial limits of "either-or" thinking, to avoid, for example, reducing problems to "either" an environmental solution "or" an economic solution.

Similarly, EE urges people to make judgments about environmental policy based on factual scientific evidence rather than opinions or emotions. A key feature of EE is its promotion of the scientific method. EE students actively develop their discovery, observation, and inquiry skills through a process of stating and testing hypotheses. They gain knowledge of ecological and human systems through research in both the social and natural sciences. EE parallels the most effective education reform initiatives in place in many American schools, such as interdisciplinary instruction and active learning.

A particular strength of EE is its unabashed focus on promoting such predispositions as personal responsibility, commitment, stewardship, and future orientation. In addition, EE promotes a mindset that accepts ambiguity and conflicting viewpoints. Students are encouraged to consult multiple sources of information from diverse perspectives when researching issues about the environment. To act, students ultimately need to make judgments about issues and the credibility of evidence. When students combine such open-mindedness with rigorous scientific thinking, their chances of succeeding in the civic arena are enhanced.

Element Three: Citizenship Education

American public schools were created largely to promote Citizenship Education (CE). While CE in the nineteenth century focused on assimilating immigrants, today CE promotes the knowledge, skills, and attitudes students need to be effective public actors. CE helps young people understand how public policy affects them and how they can affect public policy. The scope of CE includes private policies and community practices that affect the quality of public life.

Students need to know how the democratic process works, and CE helps them learn about democracy by observing, discussing, and "doing" democracy. In their 1978 Basic Citizenship Competencies Project, Richard Remy of Ohio State University and Mary Jane Turner of the Social Science Education Consortium delineated seven essential citizenship skills:

- Acquiring and using information -- Gather, organize, and evaluate information from numerous and often conflicting sources
- Assessing involvement -- Think about the consequences of personal and group behavior in the public sphere
- Making decisions -- Analyze values, goals, and consequences for various alternatives
- Making judgments -- Develop, apply, and assess criteria underlying personal and group judgments
- Communicating -- Develop, present, and support views on public issues
- Cooperating -- Interact with others using democratic principles
- Promoting interests -- Identify and work to advance personal and group aims

Earth Force projects give students extensive practice in all of these skill areas. Earth Force students gather community information, distinguish important facts from trivia, generate lists of problems, decide which problems to address, make judgments about which solutions to try, and promote their solutions. Every segment of the Earth Force framework calls for communication and relies on cooperation.

Acquisition of knowledge is an equally important part of the Earth Force process. Students involved in Earth Force projects will discover who makes the policies and practices affecting their problem, how policies and practices are developed, and how to assess the costs and benefits of policies and practices. Earth Force students experience the content covered in the typical civics text book, such as federalism, separation of powers, interest groups, and public opinion.

CE also promotes certain dispositions. Efficacy, or the belief in one's own ability to act in the public arena, is a key area of development for CE and for Earth Force. CE and Earth Force also promote fair-mindedness, or a willingness to examine diverse sources and views before making judgments.

In addition, the democratic process requires of its players an ability to lose for the moment without resorting to violence, threats, coercion, or other undemocratic tactics. In fact, Earth Force assumes that not all students will achieve their policy aims on the first try. Students must be taught to view such setbacks as learning opportunities, a difficult goal in an increasingly "win-at-all-costs" culture. Earth Force teachers will help students understand that "winning" is going through the process, gaining the skills and knowledge to effect change, and preparing to take on other environmental or civic problems in the future.

Element Four: Innovative Teaching

Earth Force projects lend themselves to innovative teaching (IT) strategies such as applied learning, performance assessment, participatory learning, and cross-curricular instruction. Projects also encourage teachers to gear instruction to the diverse learning styles and backgrounds of their students. The most successful service-learning projects tend to involve most, if not all, IT strategies.

Participatory Learning

Participatory learning places students at the center of the learning process. The theory is supported by research into which types of instruction have the longest term impact on students. As students actively use, discuss, and teach the content of their courses to others, they recall more of that content with more depth. From the initial community search to the ultimate action project, each part of the Earth Force framework prompts students to participate in their own learning.

Participatory learning redefines classroom roles, from teacher as expert, passing along received knowledge, to teacher as facilitator, helping students discover the knowledge they need to solve a genuine problem. Student roles change from passive knowledge receptacles to active questioners, researchers, and users of knowledge. By taking ownership of their learning, participatory students begin to view school as a partnership that involves them rather than something that happens to them.

Applied Learning

Though curiosity defines much of human nature, motivating students to want to learn is one of teaching's greatest challenges. It is not unheard of for students to ask "why do we have to know this?" When students know they have to use knowledge in a real world setting, however, their natural curiosity and desire to learn reemerge.

Applied learning helps students evolve from required recipients of pre-defined content to discoverers of what they "have to know." Applied learning helps students become self-directed learners, possessing the curiosity and motivation that characterize lifelong learners. Early on, students may apply pre-defined content to real world problems. Then as they build research and analytical skills, students increasingly make the determination about what they "have to know." They examine course content, question it, develop hypotheses about it, test these hypotheses, and adapt the course content. In short, by actively using course material, students learn to appreciate its relevance.

The setting in which students apply new knowledge is equally crucial. Though a simulation activity can help students put information to use, applied learning must occur in the real world. For example, a history teacher might have students analyze Dorothea Lange's Depression-era photographs of people in California's migrant worker camps. If students role-played museum curators who had to decide how to display the photos, they would be sharpening their thinking skills. They would not be engaged in applied learning, however, until they used their skills in real life, serving as docents at an actual museum, for example, or displaying their own photos of community conditions to the public.

Throughout the Earth Force process, students see why they "have to know this." They have to know information because they need to know it, and what they need to know will depend on the nature of their problem, project, and community. Different projects will prompt students to conduct research in different knowledge areas. Some students may need to know the definition and causes of acid rain. Others may need to know the impact of cars and factories on air quality. Others may need to know what the community thinks of the tradeoff between economic growth and species preservation. Equally important, when students acquire and apply knowledge, the application takes the form of a concrete product.

Performance Assessment

Teachers frequently find it more difficult to grade concrete products than to rely on traditional testing strategies, such as multiple choice questions. What is an excellent community survey, a very good persuasive letter, an acceptable public speech, or an exemplary drama performance? Many teachers use performance assessment to judge the quality of student work as they carry out such tasks.

Performance assessment has been a recommended part of almost every type of education reform strategy. Colleges, businesses, and educators have been struggling with the issue of testing and assessment for decades. Many have realized there is a mismatch between standardized testing and IT. They argue that what is tested is often not important, and what is important is not always tested. Businesses in particular want high school graduates who can do two basic things: produce and learn. Schools that use applied learning to help students produce have found a need to change the way they assess student work.

The structure of the Earth Force program helps teachers use performance assessment. Sample instruments for using performance assessment are built into many of the lessons in the teacher manual. Students will produce such items as persuasive letters, surveys, brochures, lesson plans, and research reports. Samples of these items are often collected in student project portfolios. Many teachers negotiate with students to determine how portfolios should be organized so that students can be judged on their best efforts. In addition, teachers and students need to develop or agree on the criteria or rubrics that will be used to judge the quality of products. In that way students know at the outset what constitutes an "excellent" oral presentation or an "acceptable" brochure.

Performance assessment experts provide three key pieces of advice around building rubrics. First, they suggest using four levels of performance. Second, they recommend equal "distance" between levels. Finally, they encourage teachers to invite students to help define detailed expectations at the different levels. The last piece of advice, with its emphasis on placing students at the center of instruction, supports participatory learning.

Traditional testing may continue to be appropriate for assessing how well students have mastered content. Performance assessment experts do not insist that theirs is the only way to test. They do, however, strongly suggest that educators think about why and how they test. Most important, these experts insist that teaching strategies match assessment strategies. Performance-based learning activities like those in Earth Force call for performance assessment strategies.

Cross-Curricular Instruction

Cross-curricular instruction is based in part on a simple reality: life does not occur in distinct boxes labeled math, science, language arts, and social studies. Team teaching is one way to demonstrate how disciplines relate to the real world. Earth Force projects are designed to facilitate such instruction.

Earth Force students are civic actors (social studies) addressing environmental problems (science) by promoting changes in policies and practices (language arts). They will certainly budget resources and may tabulate survey results (math) or create maps (geography). While it is not required that Earth Force teachers cross disciplines, those who fail to do so will be missing an opportunity to match school to real life.

Learning Styles

Earth Force teachers have numerous opportunities to match their teaching to the specific learning styles of their students. Much of the literature on learning styles originated with Howard Gardner and his theory of multiple intelligences. Gardner identifies at least eight intelligences students possess to varying degrees. He argues that teachers should consider these intelligences when creating their lessons.

Earth Force projects rely on the diverse strengths students bring to them. Verbally-inclined students may write the persuasive letters or survey questions. Those deft in math may calculate project budgets or measure contaminants in water. Those with kinesthetic strengths may perform educational skits or plays for community audiences. Those with ability in relationship building may take group leadership roles.

While teachers should allow students to demonstrate and use their strengths, activities should also challenge students to build competence in their weaker areas. Teachers have to judge when students are ready to be challenged outside their areas of strength. Students are usually willing to accept such challenges after demonstrating competence and building confidence. To help students make the transition from their strong to their weaker areas, Earth Force projects provide a variety of tasks in each segment of the framework.

To recap, Earth Force is an innovative approach to teaching that engages students in environmental education, citizenship education, and service learning.