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The green movement offers opportunities for schools to improve the environment and the well-being of our youth.

Becoming Green

If you want to get a handle on larger societal forces that will shape U.S. education over the next decade, look no further than the environment. We have the potential for the health of our youth to be more compromised than ever before from climate change and pollution. These could jeopardize all kids' ability to learn.

Many students already live in environments compromised by climate change and pollution. The Intergovernmental Panel on Climate Change has concluded that: "Human beings are exposed to climate change through changing weather patterns (more intense and frequent extreme events) and indirectly through changes in water, air, food quality and quantity, ecosystems, agriculture, and economy. At this early stage, the effects are small but are projected to progressively increase in all countries and regions" (Parry, Canziani, and Palutikof 2007). One doesn't have to look far to see some of the consequences. Extreme weather disproportionately affects vulnerable populations, such as the very young and the old.

Pollution and climate change are expected to contribute to air-quality problems. As a result, we can anticipate that chronic illnesses, including respiratory disorders, may be exacerbated and increased. For instance, the Centers for Disease Control and Prevention estimates that asthma "steals the breath" of about 10% of children nationwide. In my hometown of Denver, it is estimated that asthma affects nearly 19% of students as a result of the "brown cloud" that hovers over a city trapped by the Rocky Mountains (Human 2007).

Air quality is compromised by toxic emissions from nearby industries in rural and urban areas. In Addyston, Ohio, the Meredith Hitchens Elementary school was closed after the Ohio EPA found that the chance of getting cancer in that school was 50 times higher than what is deemed acceptable, the result of high levels of carcinogens from a plastics company.

Recent research and certainly the documen-

tary, *Inconvenient Truth*, have made Americans more aware of the dangers of environmental degradation. A movement to ensure that we have a sustainable environment is slowly moving through education. The future requires that our schools become active in sustaining our environment and the well-being of our youth. One recommendation is that we begin thinking of schools as part of an ecosystem.

Acting Like an Ecosystem

In an ecosystem, organisms are interdependent within a shared environment so that all survive and thrive. In fact, schools should be considered the nexus of this ecosystem for health, environment, community, and learning. For instance, schools can provide environmental education through the curriculum or place-based and project-based learning that uses the environment as an "outdoor learning laboratory." BioKIDS (Kids Inquiry of Diverse Species), a curriculum and professional development program, seeks to build students' skill in complex scientific reasoning by conducting projects involving the environment and the exploration of biodiversity. At the 22 Detroit elementary schools participating in the program, science scores on the state exam improved, and students learned about the environment. In Belfast, Maine, students from Troy Howard Middle School manage their own garden company, doing everything from developing the compost to preparing the beds, cultivating, harvesting, and selling. The garden project — which includes a greenhouse, small orchards, and watershed trails — teaches students agriculture, economics, math, science, art, writing skills, computer lessons, and citizenship. In Hawaii, college students who live in Wai'anae can receive a two-year scholarship, a monthly stipend, and an internship at MA'O organic farm while earning an associate's degree from Leeward Community College (www.mao.organicfarms.org/index.php/site/education_college). The interns are provided many services and support to ensure their success in work and college but also to develop grounded, respect-

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ful, vibrant individuals who have a strong understanding of the health, environment, and food security issues in their local Hawaiian community. All of these experiences provide students with opportunities to solve real community or environmental problems and instill green values as a form of citizenship development. This is being championed by the Center for EcoLiteracy, which is dedicated to education for sustainable living by helping teachers and students understand how nature sustains life while also preparing students for future careers and being citizens with an ecological understanding and ability to use their knowledge.

Communities and school districts can also insist on developing “green schools” — school buildings or facilities that create a healthy environment, are conducive to learning, and save energy, resources, and money. In many ways, this movement began with Leadership in Energy and Environmental Design (LEED), a rating system devised by the United States Green Building Council (USGBC) to evaluate the environmental performance of a building and encourage market transformation toward sustainable design. The system is credit-based, allowing projects to earn points for environmentally friendly actions during construction and use of a building. LEED was launched in an effort to develop a “consensus-based, market-driven rating system to accelerate the development and implementation of green building practices.” It is rare not to hear about a school under renovation or doing new construction not proudly citing their “LEED Certification Level” as either silver, gold, or platinum. To further this movement, this fall, USGBC and 11 education and environmental groups kicked off the Coalition for Green Schools with a discussion about the multiple ways to “green” America’s schools. This is the first-ever alliance between the nation’s leading education and environmental organizations. They will advocate for healthy, safe, sustainable K-12 learning environments where students excel academically.

Legislating Green Actions

States are starting to mandate that all schools be designed ‘green.’ California and Washington have both enacted legislation that requires state-funded school construction projects to address how such projects will improve student achievement and occupant comfort, reduce long-term costs, and preserve environmental resources. The U.S. House of Representatives

passed the 21st-Century Green High-Performing Public School Facilities Act, a \$6.4 billion multiyear school construction bill for green schools.

The concern for “improved health and well-being” is the greatest driver for school decision makers in building green. But multiple studies have also demonstrated that green schools typically cost less to build, and the return on investment is almost immediate with regard to costs and operations. In fact, according to *McGraw-Hill Construction Education Green Building SmartMarket Report I* (2007), the education sector is the fastest growing market for green building. Think of the value added by going green: Schools save money, students and staff members have fewer absences and are more satisfied with their working and learning environment, students learn environmental stewardship, and schools become better appreciated as assets to their communities.

“Green schools” can also be part of the curriculum. The Chicago Public Schools Education to Careers Program and the Chicago Architecture Foundation are empowering students with architectural literacy through lessons from green schools. Currently in pilot, *The Architecture Handbook2* (TAH2) focuses on teaching sustainable architectural principles through an environment intimately familiar to high school students — the school building. Curriculum content is evenly balanced between in-depth green school case studies and guidance on how to assess and improve existing school buildings. Kentucky Green & Healthy Schools (KGHS) provides teachers with resources to use their existing school building as a teaching tool. This web-based program allows students and staff to make their schools greener as they play an active role in the management of school buildings and grounds.

Clearly, local, state, and national leaders recognize that schools can become centers for these connected issues, creating safer environments for children and fostering environmental stewards. Maybe using the ecological field as a lens can help us begin to redress the years of neglect of our urban communities, our environment, and our school facilities. Maybe there can be some kind of Cash for Clunkers Program. Could there be a “trade-in” program and cash refund for all those schools built near toxic hazards (like power grids), that are dilapidated with appalling and inadequate facilities, or that are contributing to our environmental degradation?

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