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# STATE OF THE WORLD

*Transforming Cultures*

*From Consumerism to Sustainability*

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# STATE OF THE WORLD

## *Transforming Cultures*

*From Consumerism to Sustainability*

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# What Is Higher Education for Now?

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*David W. Orr*

Education does not occur in a vacuum. It begins with different and often unstated “pre-analytic” cultural assumptions about how, why, and what people learn and the kind of aptitudes and skills necessary to support and pass on a particular kind of society—whether theocratic, democratic, industrial, or what is now being called sustainable. The specific goals of education and the art and science of instruction further depend a great deal on whether those being educated are presumed to be empty vessels to be filled with knowledge or to have inborn qualities that can be drawn out and disciplined. In general, pre-collegiate and collegiate education in the United States was modeled on the former belief: that people are born ignorant and so must be improved in order to increase public virtue, support democracy, provide the skills necessary for economic growth, and more recently serve the information economy and the development of high and ever higher technology. That model has become dominant virtually everywhere.

It is now generally accepted, however, that the modern project of economic growth and domination of nature has gone badly awry. The excesses built into the industrial system

threaten the living systems of the planet, moving toward massive biotic impoverishment and potentially catastrophic climate change. It is reasonable to assume that the disordering of ecological systems and Earth’s biogeochemical cycles reflects a prior disorder in thinking about humanity’s role in ecological systems. If so, ecological problems originate in how people think and so are first and foremost problems of education having to do with the substance and process of formal schooling and higher education. That recognition, in turn, requires comprehension of the problem of education, not just problems in education. The ideas on which modern higher education worldwide is founded reflect a world that disappeared long ago.

When Locke and Rousseau developed their influential views on education in the seventeenth and eighteenth centuries, world population was perhaps 800 million. It is now approaching 7 billion. When Thomas Jefferson designed his “academical village,” the fastest mode of transport was a good horse or a frigate in a strong wind. When John Dewey published his treatise on democracy and education in 1916, the first aircraft were bi-wing planes

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capable of speeds of 125 miles per hour.

But rapid technological change is now reshaping the social, cultural, and ecological landscape everywhere. In short order, humans are creating a different planet, arguably a different human nature, and a global culture that is evolving faster than people can comprehend and adapt to. The challenges of conceiving and building a durable civilization, in other words, are sweeping. But the dialogue about sustainability has been almost exclusively focused on how to arrest environmental deterioration—as if the evolution of machines and prosthetic devices is unrelated and unproblematic.

Under these circumstances, it is appropriate to ask, What is education for? What kind of education will enable the rising generation to deal with increasingly complex and portentous global issues? What do they need to know and how should they learn it? And what is the role of professional educators and institutions of higher learning in equipping the young to live full and productive lives relevant to the larger topography of their time? Whatever the specifics, the answer must be the kind of education that enables students to live sustainably, competently, and decently in recognition of their dependence on the web of life. It would be a kind of education that extends their sense of obligation and possibility to a farther time horizon. This will require fundamental changes in the curriculum, changes in the design and construction of schools and campuses, and a more expansive view of the role of educational institutions.

## The Development of Environmental Education

The idea that education ought to be harnessed to advance the related causes of environmental sustainability and justice has gathered considerable momentum in recent years. In the Tbilisi Declaration of 1977, organized by UNESCO and the U.N. Environment Pro-

gramme, representatives from 66 countries called for the inclusion of environmental education in national educational programs. Among their recommendations were 12 guiding principles to make education interdisciplinary and a lifelong process that integrated environmental science and issues across the entire curriculum.<sup>1</sup>

The principles from Tbilisi and similar documents since then have been clearly stated, plausible, and well intentioned, but they have not led to change commensurate with the scale of the problems they addressed. Virtually everything about the modern educational enterprise—from teacher training programs to the stranglehold of disciplines and the procedures for attaining tenure in the modern academy—conspired to undermine changes or render them marginal. The goals did not fit the organizational and professional structures built up over many decades. Plus, the underlying assumptions of education in general included the unstated belief that the environment was both too vast to be significantly affected by human actions and otherwise useful mostly as a resource to be exploited for economic growth.

Still, against considerable resistance, significant progress has been made in the past three decades. But the purposes of environmental education remain deeply controversial, reflecting much of the ambiguity inherent in attempts to define sustainability and chart a plausible course to a more durable, decent, and just future. Many unresolved questions remain on overall purposes and specific issues (see Box 9), but there is no legitimate question that the human presence in nature is increasingly precarious and that the biosphere is uncomfortably close to the threshold of irreversible changes in Earth systems. Even so, there will be no early consensus on the meaning of loaded and complicated words like “sustainability” or agreement about what schools, colleges, and universities should do

### Box 9. Unresolved Questions in Environmental Education

- Is it necessary to “love” nature or do people just have to have a basic ecological competency in order to live in harmony with it?
- Will the end of the era of cheap fossil fuels significantly threaten the systems that provide food, energy, and materials and so require skills necessary to a greater degree of local self-reliance? If so, how should practical skills be included in the modern curriculum?
- To what extent does an adequate response to environmental deterioration require a cultural “paradigm shift”? Or can humans be “rich, numerous, and in control of the forces of nature,” as Herman Kahn once put it, and also be sustainable? If so, the curriculum would be mostly more of the same with greater emphasis on science and technology.
- To what extent is nature still “natural” and not an artifact of human manipulation? Is there something inherently wrong with “plastic trees,” which is to say an increasingly contrived nature, and if so, exactly what? What is natural and what is not? And what difference, if any, does that difference make?
- What is the purpose of environmental education of any sort when nature is being radically altered by the twin forces of rapid climate change and the loss of biological and landscape diversity?
- Is there any place left for role models like Aldo Leopold, Wangari Maathai, and Rachel Carson? Or might natural capitalists, carbon traders, and entrepreneurs making the big deals and the big money suffice to create a sustainable future? If so, environmental education ought to emphasize the management of carbon.

Source: See endnote 2.

about it, however it is defined.<sup>2</sup>

A wide diversity of environmental education programs are found in U.S. colleges and universities, with some stressing environmental science and others the social sciences and humanities. (See Box 10.) Many institutions now offer a major in environmental studies; others, only a minor. Some, like College of the Atlantic and Arizona State University, are integrating environmental issues and systems thinking throughout the entire institution. Institutions such as Carnegie-Mellon University have developed imaginative cross-disciplinary programs in engineering and architecture. Almost everywhere, institutions are engaging environmental issues on two levels: curriculum and campus design and operations.<sup>3</sup>

### Curriculum and Education

In the United States, the belief that the environment ought to be given special priority in the curriculum of higher education came of age

in the 1960s and 1970s with the creation of environmental studies programs at Williams College, Middlebury, and Brown University. In the late 1980s Tufts University created the first university-wide program encouraging faculty to include environmental issues in courses across the curriculum.

In October 1990, Tufts University president Jean Mayer convened a meeting of 22 university presidents and chancellors at Talloires, France, that culminated in the Talloires Declaration. The document included 10 goals, including leadership to increase awareness of environmental challenges, fostering environmental literacy throughout the campus, and changing operations to reduce environmental impacts. By 2008, some 360 presidents in 40 countries had signed the Declaration.<sup>4</sup>

Even with such promising beginnings, few observers could have imagined the growth of environmental education on college and university campuses worldwide in the following decades. Today environmental studies pro-

### Box 10. Maximizing the Value of Professional Schools

To spread cultures of sustainability, the transformation of higher education cannot stop at the undergraduate level but will need to permeate professional schools as well. The good news is that this is starting to happen. More law schools are offering environmental law programs, agricultural schools are teaching sustainable agricultural techniques, and medical schools are greening their labs—all indicators that sustainability is being incorporated into a vast array of professional programs. Business schools may be the ones that are most actively adopting ideas of sustainability.

Many business schools have started to rethink what makes a good business manager. A few have devoted themselves fully to “sustainable management,” such as the Presidio School of Management and Bainbridge Graduate Institute. Many others have started to incorporate sustainability into their curricula more broadly. A bi-annual survey by the Aspen Institute tracks over a hundred business schools around the world to measure their commitment to environmental education and research. In 2007 the survey found that 63 percent of business schools required students to take a course on business and society, up from 34 percent in 2001. And since 2005, elective courses on social and environmental issues have increased by 20 percent.

Business students are taking on social and environmental issues outside of the classroom as well. In 2009, more than half of the graduating class at the Harvard Business School took the equivalent of a doctor’s Hippocratic Oath. Students vowed to act with the

“utmost integrity,” not to make choices that “advance my own narrow ambitions but harm the enterprise and the societies it serves,” and to “strive to create sustainable economic, social, and environmental prosperity worldwide.” Within a few months, the oath’s organizers at Harvard received inquiries from 25 schools from around the world, and students from some 115 countries had taken the oath.

But this is just the newest twist on a trend that is nearly a decade old. One group, Net Impact, has been organizing business students “to create positive social and environmental change through business” since 2002. It has more than 200 chapters on six continents and 15,000 members who are business (as well as other) students, business professionals, and academics. And Net Impact has been working toward its goal in several innovative ways. Along with standard efforts to teach members how to green their campuses, the organization provides members with tools and guidance on how to encourage school faculty to add sustainability and social responsibility courses to their schools’ curricula. Net Impact also helps members use their business training to make community organizations more effective—a valuable benefit, as these groups tend to lack business-trained staff members.

Between student-led and institutional efforts, business schools may help develop a whole new meaning of the role of business, as well as a new generation of sustainable business managers.

—Erik Assadourian

Source: See endnote 3.

grams exist in one form or another on perhaps half of U.S. campuses and are increasingly prominent in universities worldwide. Chalmers University (in Gothenburg, Sweden) has created a partnership with the Mass-

achusetts Institute of Technology, the Swiss Federal Institute of Technology, and the University of Tokyo that annually brings hundreds of scientists together to discuss environmental issues. Individual campuses

such as the Technical University of Catalonia (Spain), TERI University (India), and Kyoto University have developed imaginative and diverse environmental curriculum. UNESCO sponsors chairs in sustainable development at 45 universities in 27 countries as well as conferences on “Higher Education for Sustainability.” The success of the *International Journal of Sustainability in Higher Education* reflects a growing maturity and self-reflection in the field.<sup>5</sup>

But one study shows that there is no “common path” toward change. Rather, education for sustainability is flourishing because of many factors, including committed faculty, imaginative leadership, student activism, response to specific opportunities, and larger societal changes.<sup>6</sup>

Despite great progress in environmental education, there is good evidence that it is clearly an inadequate counterweight to the conventional curriculum and an inadequate response to the mounting environmental crisis. The National Wildlife Federation, for example, concluded in its *Campus Environment Report: 2008* that between 2001 and 2008 “the amount of sustainability-related education [in the U.S.] did not increase and may even have declined.” That conclusion is supported by global poll data that consistently show a majority of the public—including college graduates—to be uninformed, sometimes misinformed, and otherwise confused about the fundamentals of ecology and science in general.<sup>7</sup>

## Campus Design and Operations

Alongside efforts to increase ecological awareness and literacy are others aimed to change the “design” of campuses by improving energy efficiency, lowering carbon emissions, reducing waste, recycling, and building the high-performance buildings that have become mainstream virtually everywhere. The begin-

nings of such efforts are found in April Smith’s Masters thesis at UCLA in 1988, “In Our Backyard,” and the Meadowcreek Project’s early study of campus food systems at Hendrix, Carleton, and St. Olaf colleges in 1988–89.<sup>8</sup>

By the mid-1990s the first studies of campus ecology had grown into larger studies of campus resource flows of food, energy, materials, water, and waste in which the campus became a laboratory for education and also the foundation for better campus management. The National Wildlife Federation’s campus ecology program, ably led by Julian Keniry, brought increased awareness of environmental issues to campuses and developed materials useful for improving efficiency and integrating campus management with curriculum. Walter Simpson created and directed the first successful university-wide energy efficiency program at the State University of New York–Buffalo. Others, like Will Toor at the University of Colorado, created effective campus-wide recycling and low-impact transportation programs. The emergence of organizations such as the North American Association for Environmental Education and the American Association for Sustainability in Higher Education (AASHE) amplified and coordinated otherwise disparate campus ecology efforts.<sup>9</sup>

In the late 1990s, two factors significantly focused attention on what Keniry had called the campus ecology movement and the design of the campus. The first was the rapid growth of the green building movement in the United States, the United Kingdom, Europe, and Asia. The result has been an effort to reduce the environmental impacts of new construction on college and university campuses. Dramatic improvements in energy and materials technology and the practice of the integrated design necessary to build low-impact, high-performance buildings created large opportunities to incorporate environmental goals into campus

buildings while lowering costs for operations and maintenance. The first substantially green building on a U.S. college campus was the Adam Joseph Lewis Center at Oberlin College, constructed in the late 1990s, which is still the only entirely solar-powered, zero-discharge building on a U.S. college campus. Other and larger, more complex buildings, including science facilities, followed on hundreds of other campuses, so that green building criteria have become standard for new academic construction worldwide.<sup>10</sup>

The second driver in the green campus movement has been increasing concern about rapid climate change. The four assessment reports of the Intergovernmental Panel on Climate Change (in 1991, 1995, 2001, and 2007) and a large and growing body of scientific evidence has established beyond legitimate dispute that climate is changing and that humans are the culprits. It is now clear that the speed, scale, and duration of climatic change are at or beyond the worst-case scenarios of even a few years ago.<sup>11</sup>

The first call for carbon-neutral campuses appeared in the *Chronicle of Higher Education* in 2000. But the effort to organize both professional organizations and academic leadership began in earnest with the efforts of 12 college and university presidents, in collaboration with Second Nature, AASHE, and ecoAmerica, to get other presidents and professional academic societies to publicly commit to move their institutions toward carbon neutrality. More than 600 college and university presidents to date have signed the pledge. The results could be both the reduction of a significant fraction of U.S. carbon emissions and a sterling example of leadership for other sectors. Architect Edward Mazria calculates, however, that the addition of only four new medium-sized coal plants anywhere in the world would eliminate the gains even if all U.S. institutions of higher education were to eliminate their carbon dioxide emissions entirely.<sup>12</sup>

## Future Initiatives

Despite considerable progress since the Tbilisi Conference in 1977, there is a great deal more to be done to create the permanent institutional and cultural wherewithal to educate people around the world about systems and ecology and equip them with the capacity to think across the lines of professional and disciplinary specializations. But promising efforts are under way. (See Box 11.)<sup>13</sup>

Beyond institutions of higher education, many diverse organizations—from Schumacher College in Devon in the United Kingdom to the Center for Eco-Literacy in Berkeley, California—offer teacher training, expertise in curricular reform, and forums for rethinking core assumptions underlying education and the broader culture. Formerly U.S.-centric organizations like the Bioneers are becoming important nodes in the global conversation about the intersection of ecology, education, and justice. The authors and organizers of the Earth Charter are similarly creating a transnational dialogue about education rooted in international law, philosophy, and ecology.

There are signs of a larger shift in the role of institutions of higher education in the transition to sustainable economies as well. The Universitat Autònoma de Barcelona has developed collaboration with the Barcelona City Council to enhance the sustainability of public events. On a larger scale, Judith Rodin, as president of the University of Pennsylvania from 1994 to 2004, led an imaginative and sweeping transformation of West Philadelphia using institutional investment to leverage several billions of dollars of outside funds. The efforts reversed urban decline in dozens of blocks surrounding the university and offer a brilliant example of not only urban renewal but leadership in higher education. Joined to the campus ecology movement, colleges and universities everywhere might become catalysts for prosperous post-fossil-fuel

### Box 11. A New Focus for Scientists: How Cultures Change

It seems clear that unequivocal knowledge of civilization's biophysical peril alone is insufficient to spark the changes required to avoid its collapse. We also need a greater understanding of how cultures change, which underlines the desperate need for global society to focus its attention on the need for a cultural revolution. Providing that focus is the goal of a Millennium Assessment of Human Behavior (MAHB) that is in the early stages of development.

In light of the success of the Intergovernmental Panel on Climate Change, a small group of natural and social scientists and humanists is working on starting the MAHB. It is currently being organized by the Global Sustainability Alliance, with member groups in the United States, Norway, Sweden, Ghana, and China. It will ideally be launched with a global conference involving scholars, politicians, and a broad spectrum of stakeholders. This would be followed by workshops, regional conferences, worldwide policy debates, and research activities.

Major roles of the MAHB will include generating public discussion on the causes of self-

destructive behavior such as climate change and biodiversity loss, debating its ethical dimensions, and investigating how cultural evolution can be steered toward creating a sustainable world society. That is the direction almost all human beings presumably desire—a chance for their children and grandchildren to lead lives as rewarding as or better than their own.

The organizers' basic goal is to find ways to reframe people's definitions of and solutions to sustainability problems and to promote a global discussion about what human goals should be. The MAHB will invite people from literature and the arts to develop narratives and visual materials as signposts to guide civilization toward sustainability. People need visions of futures that do not include perpetual growth of consumption or human numbers, the idea that having gadgets is the ultimate goal of human life, or the notion that gross domestic product is the best measure of human well-being.

One of the MAHB's early tasks will be to secure governmental buy-in and enlist the support of key decisionmakers in industry, academia, the media, religious communities,

regional economies while equipping students with the analytical skills, knowledge, and inspiration to design and build a decent, fair, and sustainable world.<sup>14</sup>

The government of Bhutan offers perhaps the most far-reaching example of national leadership in education. Having replaced the yardstick of "gross national product" with one that measures "gross national happiness" (GNH) in 1972, the government is now sponsoring an effort to educate its citizenry for happiness, sustainability, justice, and peace. Led by Prime Minister Lyonchen Jigmi, the first goal is to integrate GNH principles such as the interdependence of humans and nature

into the curriculum at all levels. The second goal involves creating a model of GNH in central Bhutan where civil servants and teachers alike can "take long and short courses that renew their commitment to environmental protection, sustainable economic development, and responsible and accountable leadership." The goal is to create a self-perpetuating system that joins individual psychology with larger ecological and cultural systems.<sup>15</sup>

Institutions of higher education—indeed, all schools—must aim to create an ecologically literate and ecologically competent citizenry, one that knows how Earth works as a physical system and why that knowledge is vitally

Box 11. *continued*

foundations, and so on. It must mobilize appropriate stakeholders to participate in the discussion and help accelerate needed changes in cultural practices and institutional structures. Indeed, the task of assembling such support is at the core of the overall challenge and will determine whether the infant MAHB (see [mahb.stanford.edu](http://mahb.stanford.edu)) survives to tackle its global task.

The MAHB envisions establishing an “observatory” on humankind’s collective behavior. It would gather evidence on dimensions of cultural change from existing documents and databases as well as from a variety of global stakeholders. The observatory would explore the role of values in well-being to determine what institutional and cultural barriers stand between declared values and actual practices. It would examine the factors that drive human happiness and fulfillment across cultures and their implications for ecological sustainability. It will use modern communications systems to assess how diverse societies measure success and happiness, to depict the links between global environmental risks and lifestyle choices, to explore cultural

differences in attitudes toward the environment and sustainability, and to embed the human narrative in a deeper understanding of humankind’s relationship to nature. The behavioral observatory would include an interactive portal sharing up-to-date information about particular environmental problems, human factors relating to these problems, and frameworks to deal with them.

Once established, the MAHB could be a powerful new tool to mobilize people who have devoted their careers to studying behavioral change to help solve the largest threat humanity has ever faced: unsustainable practices undermining the very systems people depend on. Natural scientists have already shown the way toward a sustainable future by elucidating the problems and outlining many solutions. Now it is time to figure out how to frame these in ways that will motivate people to respond—a job well-suited to the MAHB, whose public outreach and debate functions could play a major role in generating the changes needed.

—Paul R. Ehrlich and Anne H. Ehrlich

Source: See endnote 13.

important to them personally and to the larger human prospect. There are many challenges to actually making this a reality, not the least of which is the very real possibility of growing despair and nihilism among young people in the face of what will likely be a time of increasingly dire news and seemingly unsolvable social and economic problems.

The scientific evidence suggests that the years ahead will test coming generations in extraordinary ways. Educators are obliged to tell the truth about such things but then to

convert the anxiety that often accompanies increased awareness of danger to positive energy that can generate constructive changes. Environmental education must be an exercise in applied hope that equips young people with the skills, aptitudes, analytic wherewithal, creativity, and stamina to dream, act, and lead heroically. To be effective on a significant scale, however, the creative energies of the rising generation must be joined with strong and bold institutional leadership to catalyze a future better than the one in prospect.

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### Adapting Institutions for Life in a Full World

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