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Introduction to the 10th Anniversary Edition  
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# INTRODUCTION TO THE 10TH ANNIVERSARY EDITION

**F**ORMAL EDUCATION, as Wendell Berry once said of marriage, is a not altogether workable solution, to a not altogether solvable problem. Nonetheless, few subjects arouse more contention and diversity of opinion. Having spent much of his life as a teacher in New York City, John Taylor Gatto has concluded that formal schooling serves mostly to dumb us down. In like manner, the late author and social critic Neil Postman postulated that the highest possible goal of education is not to make students smarter but only to make them less stupid, still a considerable challenge. Creationists, for their part, wish to cast Darwin and his disciples out of the temple. In the wake of September 11, 2001, some are intent upon purifying the curriculum of dissent and critical thought in the name of preserving democracy. The occupant of 1600 Pennsylvania Avenue in 2004 claims to have changed national policy so that no child will be left behind, but in fact has failed to send the bus to pick them up, so to speak. And then there are those whom historian Jacob Burkhardt once called "the terrible simplifiers" scurrying about counting everything about education that can be reduced to numbers, except whether its graduates are able and inclined to separate trivial from important, think clearly, and live as lifelong learners.

This not altogether solvable problem of education is often regarded as solvable if only the right stuff were to be deposited in students' heads, in what educator Paulo Freire once described as the banking model of



education. And for educators who believe themselves to be rather like bankers, the aim is to teach various lists of facts and dates that the young purportedly should know, and then to administer standardized tests to ensure that something stuck, at least until test time. Whether the standards are issued by states or the federal government, the results are not—and could not be—impressive. The reasons have little to do with lack of effort or money, but are inherent in the poverty of the underlying philosophy. Ten years ago I ended *Earth in Mind* by noting that the Latin root for the word *education* means “to educe, to draw forth.” And what is it that is drawn forth by American formal education? In truth, less than one might hope, and often a reflection of what the larger culture has already deposited there.

How, in fact, do we educate the young to think clearly about important things in a culture that spends \$500 billion per year to deceive using the finely honed tools of advertising? How do we prepare them to comprehend systems, patterns, and larger contexts in a society much distracted by entertainment and given to specialization? How do we equip the young to value health in a fast-food culture in which obesity is epidemic? How do we teach the value of law in a society that locks up several million of its citizens? How do we teach the values of peace when our culture glorifies violence and our government spends more than \$400 billion each year on the military—more than the next twenty-one countries combined? How do we teach democracy in a country becoming a plutocracy? How do we teach fairness and the work ethic when economic policies and taxes manifestly favor the wealthy? How do we teach the art of critical thinking to children who on average watch television more than four hours each day? How do we teach them to serve when our society devalues the responsibilities of informed citizenship? How do we teach the young of America to honor the world when the United States is the leading agent of climate change? How do we teach them to love land and community when our society values such things far less than it does individualism and consumption?

It is simply fatuous to believe that we can raise smart children or live intelligently as adults in a society that has become so destructive and self-indulgent. The problem of education, as opposed to the problems in education, can be attributed in large part to the fact that all too often schools, colleges, and universities have been uncritically accepting of, and sometimes beholden to, larger economic and political forces. Not always, not



everywhere, and not anywhere all of the time, but all too often. The result is that, on balance, we are failing in our duties to the young, not least because we are failing to equip them to deal with the consequences of what we are leaving behind.

A decade ago I opened this book with a description of the losses incurred in a typical day on planet Earth. To the extent that we know such things, the numbers are somewhat worse a decade later. On the positive side, population growth is slowing—both because women are choosing to have fewer children and, tragically, because life expectancy has dropped in places like Africa and Russia. But greenhouse gas emissions are still rising, and consequently climate change is the largest issue looming ahead. Species loss shows no signs of slowing. The health of seas and oceans continues to decline. Ecological deterioration is at the root of political turmoil throughout much of the third world. And so it goes. Governments everywhere have been slow to move, and ours, in thrall to extremist market ideology, has been autistic on virtually all issues having to do with the habitability of the planet.

Since the events of September 11, 2001, terrorism has become both a national preoccupation and an excuse driving virtually all other concerns from the public stage, including those affecting our children. What is being lost is the realization that real security, peace, climate stability, fairness, prosperity, and environmental quality are not separable issues. To the contrary, they are different aspects of one issue, the conduct of the public business; and that, in turn, is part of a still larger whole, the global commons, indivisible by nation, tribe, religion, ethnicity, language, culture, or politics.

All of us are joined in one fragile experiment, vulnerable to happenstance, bad judgment, and malice. If we hope to be safe and prosperous while drawing down the habitability of the Earth, we are hoping for what never has been and what never can be. We are all co-members of one enterprise that stretches back through time immemorial, but forward no farther than our ability to learn that we are, as Aldo Leopold once put it, plain members and citizens of the biotic community.

The title of this book suggests both an imperative and a possibility. The imperative is simply that we must pay full and close attention to the ecological conditions and prerequisites by which we live. That we seldom know how human actions affect ecosystems or the biosphere gives us every reason to act with informed precaution. And given the scale and



inertial momentum of the human presence on Earth, it is utter foolishness to assert otherwise.

The title signals, too, the possibility that in the long gestation of humankind we acquired an affinity for life, earth, forests, water, soils, and place—what E. O. Wilson calls *biophilia*. That is more than an interesting and defensible hypothesis. It is the best hope for our future that I know. For real hope, as distinguished from wishful thinking, we ought not look first to our technological cleverness or abstractions about progress of one kind or another, but rather to the extent and depth of our affections, which set boundaries on what we do and direct our intelligence to better or worse possibilities. The possibility of affection for our children, place, posterity, and life is in all of us. It is part of our evolutionary heritage. It is embedded in our best religious teachings. And it is now a matter of simple self-interest that we come to realize the full extent of the obligations that arise from an alert, thorough, and farsighted affection.

Against considerable odds, the outlines of a global ecological enlightenment have begun to emerge. Environmental education is becoming well established in nonprofit organizations, schools, colleges, and universities around the world. The global transition to wind and solar energy systems has begun in earnest. Sustainable agriculture and forestry are gaining ground. The art and science of green building is flourishing. The most exciting career opportunities that I know add the word *environmental* to fields such as design, planning, medicine, business, law, journalism, education, agriculture, and so forth. Small nongovernmental organizations such as the Rocky Mountain Institute, the Center for Ecoliteracy, Schumacher College, Ecotrust, and Ocean Arks now work worldwide. The Internet is opening new possibilities for citizens of the world to hold governments accountable. Still, I think H. G. Wells had it right when he said that we are in a race between education and catastrophe. That race will be decided in the classrooms around the world—and in all of the places that foster intelligence, thought, and good heart.



# INTRODUCTION

**F**ROM newspapers, journal articles, and books, the following random facts crossed my desk within the past month:

- Male sperm counts worldwide have fallen by 50% since 1938, and no one knows exactly why.
- Human breast milk often contains more toxins than are permissible in milk sold by dairies.
- At death, human bodies often contain enough toxins and heavy metals to be classified as hazardous waste.
- Similarly toxic are the bodies of whales and dolphins washed up on the banks of the St. Lawrence River and the Atlantic shore.
- There has been a marked decline in fungi worldwide, and no one knows why.
- There has been a similar decline in populations of amphibians worldwide, even where the pH of rainfall is normal.
- Roughly 80% of European forests have been damaged by acid rain.
- U.S. industry releases some 11.4 billion tons of hazardous wastes to the environment each year.
- Ultraviolet radiation reaching the ground in Toronto is now increasing at 5% per year.

These facts only appear to be random. In truth, they are not random at all but part of a larger pattern that includes shopping malls and deforestation, glitzy suburbs and ozone holes, crowded freeways and climate change, overstocked supermarkets and soil erosion, a gross national product in excess of \$5 trillion and superfund sites, and technological wonders and insensate violence. In reality there is no such thing as a "side



effect" or an "externality." These things are threads of a whole cloth. The fact that we see them as disconnected events or fail to see them at all is, I believe, evidence of a considerable failure that we have yet to acknowledge as an educational failure. It is a failure to educate people to think broadly, to perceive systems and patterns, and to live as whole persons.

Much of the current debate about educational standards and reforms, however, is driven by the belief that we must prepare the young only to compete effectively in the global economy. That done, all will be well, or so it is assumed. But there are better reasons to reform education, which have to do with the rapid decline in the habitability of the earth. The kind of discipline-centric education that enabled us to industrialize the earth will not necessarily help us heal the damage caused by industrialization. Yale University historian Paul Kennedy (1993), after surveying the century ahead, reached broadly similar conclusions, calling for "nothing less than the re-education of humankind" (p. 331).

Yet we continue to educate the young for the most part as if there were no planetary emergency. It is widely assumed that environmental problems will be solved by technology of one sort or another. Better technology can certainly help, but the crisis is not first and foremost one of technology. Rather, it is a crisis within the minds that develop and use technology. The disordering of ecological systems and of the great biogeochemical cycles of the earth reflects a prior disorder in the thought, perception, imagination, intellectual priorities, and loyalties inherent in the industrial mind. Ultimately, then, the ecological crisis concerns how we think and the institutions that purport to shape and refine the capacity to think.

The essays in this book were written for different purposes and different audiences between 1990 and 1993. They are joined by the belief that the environmental crisis originates with the inability to think about ecological patterns, systems of causation, and the long-term effects of human actions. Eventually these are manifested as soil erosion, species extinction, deforestation, ugliness, pollution, social decay, injustice, and economic inefficiencies. In contrast, what can be called *ecological design intelligence* is the capacity to understand the ecological context in which humans live, to recognize limits, and to get the scale of things right. It is the ability to calibrate human purposes and natural constraints and do so with grace and economy. Ecological design intelligence is not just about things like technologies; it also has to do with the shape and dimension of our ideas and philosophies relative to the earth. At its heart ecological



design intelligence is motivated by an ethical view of the world and our obligations to it. On occasion it requires the good sense and moral energy to say no to things otherwise possible and, for some, profitable. The surest signs of ecological design intelligence are collective achievements: healthy, durable, resilient, just, and prosperous communities.

I believe that educators must become students of the ecologically proficient mind and of the things that must be done to foster such minds. In time this will mean nothing less than the redesign of education itself.

## SOURCES

Kennedy, P. 1993. *Preparing for the Twenty-First Century*. New York: Random House.