

Curriculum Units by Fellows of the Yale-New Haven Teachers Institute 1997 Volume VII: Environmental Quality in the 21st Century

Introduction

Introduction

What type of environment are we leaving for our children and their offspring? This was the central question posed to eleven New Haven school teachers taking part in our seminar, *Environmental Quality for the 21st Century*. Although the topic was enormous in scope, it proved engaging, or at least a strong stimulant for vigorous debate. I was fortunate that each teacher brought years of experience to the seminar. We began by examining global environmental conditions; however, we quickly focused our attention on urban environmental health. The participants' predictions ranged between gloomy and dire—but never failed to generate intense discussion and argument over the sources and severity of urban contamination, and how loss of health and life might result.

As the seminar's Convener, I came away with three lasting impressions. First, I was struck by the teachers' skepticism over the capacity of scientists to comprehend the way the natural world works and how it and we respond to stress. Second, I was moved by their common doubt that government has, or could ever have, the capacity to manage society to avoid significant environmental health loss. Third, I was impressed by their dedication and faith in education—faith that by teaching children about the environment and the damage that humans may cause, somehow, this understanding might have political force and produce discernible change.

The poor environmental quality of New Haven was a common and well-familiar topic of discussion for the group. Despite the quaint, coastal, or pastoral image of Connecticut, conditions in the state's schools threaten the health of thousands of school children daily. Contaminated air, water, food, and deteriorating physical plants pose the most significant risks. These risks are higher for children than adults for a variety of reasons. Children's organ systems are immature, growing rapidly, and are therefore more susceptible to toxic reactions following exposure to environmental contaminants. Of at least equal importance is clear evidence that children are exposed at higher levels than adults to many environmental contaminants.

There is a growing body of research demonstrating that the poor are more exposed to pollutants than the affluent—especially in urban areas. New Haven lies within one of the most affluent regions of the world. Yet in Connecticut, the truly affluent normally live in the suburbs, where the air is cleaner, schools produce more college graduates, and crime is lower. Here as in other parts of the world, being richer means being safer. Thus our group of inner city teachers became quite engaged in trying to understand how pollution levels vary among communities, and especially how urban poor may be at special risk. Are blacks more exposed to pollutants than whites? Probably. Are urban residents at greater risk than those living in rural communities? Probably.

The capacity of the wealthy to better understand and manage their exposure to risky technologies or contaminated environments than the poor was a topic of deep interest for the seminar. For example, just testing water for pesticides is extremely expensive. Restoring buildings or installing water filtration is even more costly. Who has the capacity to truly understand their exposure to invisible toxins and to effectively manage their family's exposure?

During the past 50 years, scientists have developed new pollution monitoring and detection technologies that are increasingly sensitive and less expensive. As this trend continues, we will better understand the distribution of pollutants in our environment, and the relations among poverty, contamination, and disease. My prediction is that this will result in declarations that many environments now assumed to be natural are contaminated and that poor children will be found to be at greatest risk.

How might these ideas be used in curricula without instilling a sense of fear, pessimism, or disillusion in students—especially the youngest? Understanding how chemicals—such as DDT, CFCs, and PCBs—affect the environment has taught scientists a great deal about ecology. Yet teaching young children about ecology, pollution, and the threat of health loss always carries the potential to instill fear and to inspire anger. Fear normally has the positive effect of generating caution and in turn, of promoting health and human survival. Yet it is important to avoid instilling unfounded fear in anyone, especially children. And risk-taking by informed and vigilant adults has long been the engine of progress—progress that could result in saving future health and lives.

Yet our seminar agreed that living on the edge is not the right prescription for managing the environments of children and that past practices and policies—of corporations and governments—literally have experimented with their health. For example, nearly 42% of the most commonly prescribed drugs for children have never been tested for their adverse effects on children. Scientists' understanding of the health effects of lead, pesticides, drinking water pollutants, and air contaminants has followed a similar course. The absence of evidence of harm (due to lack of study) has improperly been interpreted as evidence of absence of harm—by the proponents of hazardous technologies. New ethical principles seem warranted to ensure greater caution be used to manage this uncertainty.

Our group confronted another common difficulty in environmental education—the need to avoid sensationalizing risk. While proponents of hazardous technologies are often guilty of trivializing risk, environmentalists may sometimes be blamed rightly for exaggerating hazards. We struggled over how this issue should be addressed in the classroom. When experts disagree—as they normally do in the courtroom, universities, and media venues like *60 Minutes*— what should students or non-experts believe? There seems to be no easy solution here—as uncertain evidence invites varied interpretations. Training students to collect evidence and discern its quality is one component of a solution, but more will always be necessary, especially good judgment. Good judgment is difficult to teach as it often seems to grow from experience, as Ralph Emerson observed. This belief led many in our group to propose "hands-on" or experiential curriculum units, in the hope that direct experience would have a lasting effect—both on knowledge and character.

For me, being a seminar leader with such a thoughtful group of teachers was a wonderful and enlightening experience. I have long believed that knowledge of the environment—and its reaction to human behaviors—may provide insight into human nature, morality, and for me, higher spiritual order. Through my colleagues in this seminar, I have come to understand the importance and potential of curriculum reform. And I hold the firm belief that knowledge could lead to greater respect, vigilance, and precaution in environmental health management. It is curious that these principles seem easier to cultivate—perhaps even more instinctual—among children. Instead of only characterizing problems, we agreed that it is important for teachers to demonstrate solutions—what's worked to avoid pollution, dangerous exposures, and health loss. In other words, we need to lead by example.

Improving environmental quality in the 21st century will demand that we reshape ways that we and our children think about our relations to nature and to each other. It will demand both an enormous investment in science as well as a very fundamental redefinition of our sense of community. What are the right boundaries to circumscribe our community and our responsibility for environmental management? How should we constrain individual liberty to protect environmental health? What is an acceptable level of risk that the most vulnerable—children, elderly, ill, or genetically susceptible—should face? What is the capacity of government to define and answer these questions? The efforts of these teachers demonstrate thoughtful and original models for responding to these questions.

John P. Wargo

Associate Professor of Environmental Risk Analysis and Policy

https://teachersinstitute.yale.edu

©2019 by the Yale-New Haven Teachers Institute, Yale University For terms of use visit <u>https://teachersinstitute.yale.edu/terms</u>