



Air Quality and Environmental Education

by Amy K. Frantz

Air quality is improving, but the science textbooks many children use seem to promote the opposite. In *Facts, Not Fear: A Parent's Guide to Teaching Children About the Environment*, authors Michael Sanera and Jane S. Shaw indicate that many school textbooks seem to be stuck in the days when the city of London was shrouded in a fog of pollution, with statements such as:

“Each year the United States dumps about 130 million metric tons of pollutants into the air. That amount is more than half a metric ton for every person in the country,” says the D.C. Heath text *Earth Science: The Challenge of Discovery*. (The text does not mention that there are an estimated one million metric tons of atmosphere for every person on the earth.)¹

Sanera and Shaw also cite as an example of misleading or one-sided information in textbooks the idea that automobiles are the enemy in the war against pollution. Many textbooks discuss pollution caused by automobiles. However, few textbooks mention that “Today’s new cars emit 96 percent fewer hydrocarbon tailpipe emissions (that is, pollutants) than models of the early 1970s.”² Or that most of the pollution emitted by automobiles is caused by a small percentage of the automobiles — “Fewer than ten percent of all cars are responsible for more than 50 percent of total automobile pollution.”³

In *Environment on File* from Facts on File, Inc., a series of tables used in science classrooms, one table presents the world distribution of automobiles, showing that North America has 5.3 percent of the world population and 38 percent of the world’s automobiles, while Asia has 57.8 percent of the world population and only 13 percent of the world’s automobiles.⁴ Another table compares the ratio of bicycles to automobiles. In China, the ratio of bicycles to automobiles is 250 to one, while in the United States the ratio is 0.7 to one.⁵ A later table shows the percentages of air pollutants released by automobiles in North America, Japan, and Western Europe. This series of tables seems to imply that air quality would improve if we all rode bicycles rather than drove our cars. Unfortunately, none of these tables indicates a source or date for the information on the table, although the copyright date on *Environment on File* is 1991.

Automakers today are experimenting with new technology to reduce or eliminate auto emissions. For example, Volvo has created a car with a radiator covered in a special coating intended to convert ozone smog into oxygen at rates that exceed the ozone-forming chemicals emitted by the car. This radiator coating is not yet affordable for the mass market, but if further innovation makes it so, cars would essentially clean up after themselves.⁶ Today’s teachers should also include lessons demonstrating that technological innovation by automakers has reduced air pollution, and will likely continue to do so in the future.

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Another area of environmental education to consider is indoor vs. outdoor air quality. The focus of those working to improve air quality seems to be on outdoor pollution. The six criteria pollutants measured by the EPA affect outdoor air quality. However, the average person spends approximately 93 percent of his time indoors, five percent in transit, and only two percent outdoors.⁷ There are no measurements available of long-term indoor air quality, and I certainly do not want the EPA coming to my house or office to measure the air quality. We spend the majority of our time indoors, yet all the dire news we hear or read about air quality is apparently based on measurements of outdoor air quality.

Air quality has improved in the United States — according to the Environmental Protection Agency's own measurements. But the environmental lessons we are taught in schools and the environmental stories we hear or read in the news seem to paint a dire picture of air quality, which is reflected in the polls that show half of the Americans surveyed believe that air quality is declining, not improving, and a majority of Americans believe that air quality will decline in the future. Based on the information that is often presented in the media and in many classrooms and textbooks, it is no wonder that so many Americans believe that pollution is getting worse, not better.

ENDNOTES:

¹Sanera, Michael and Jane S. Shaw, *Facts, Not Fear: A Parent's Guide to Teaching Children About the Environment*, Washington D.C.: Regnery Publishing, Inc., 1996, p. 142.

²*Ibid*, p. 146.

³*Ibid*.

⁴*Environment on File*, Facts on File, Inc. New York, Oxford, 1991.

⁵*Ibid*.

⁶*Progress vs. Pessimism: Environment Doing Better Than Most Realize*, Viewpoint on Public Issues, Mackinac Center for Public Policy, May 8, 2000, No. 2000-17.

⁷Hayward, Steven, Elizabeth Fowler, and Laura Steadman, *Index of Leading Environmental Indicators, Fifth Edition*, Pacific Research Institute for Public Policy, April 2000, p.24.

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