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The Minnesota Environmental Quality Board (MEQB) sponsored a conference of post-secondary teachers involved in environmental education on October 6-7, 1989, at Grand View Lodge near Nisswa, Minnesota. Seventeen years ago a series of such meetings was held at Camp Courage, sponsored by the Minnesota Association for Conservation Education and the Minnesota Environmental Education Council. Last fall's conference had three major goals:

1. To hear from representative post-secondary teachers from various kinds of institutions and various disciplines about courses and programs at their institutions;
2. To hear from Dr. David Orr, Director of the Meadowcreek Project of Fox, Arkansas, about environmental education in the Soviet Union and future directions that environmental education might take in the U.S.; and
3. To discuss common concerns about goals for environmental education, teacher education and certification, and campus action programs (recycling, energy efficiency, food networks, public outreach, etc.).

About 60 educators attended all or part of the meetings. The educators came from private colleges, community colleges, the state university system, and the University of Minnesota. Judging from reports of programs at various institutions around Minnesota, there is a vigorous attempt to provide many different opportunities for students to study about the environment. An informal tally indicated that education about the environment occurs in history, political science, economics, education, English, sociology, and religion classes as well as in the natural sciences. Course work ranges from introductory to advanced and several colleges offer either minors or concentrations in environmental subjects. If offered, an environmental major is usually part of a double major. Several speakers mentioned projects that involved students and faculty in solving problems in the local community. Currently, no Minnesota college requires environmental education for graduation. However, beginning in spring, 1990, St. Mary's College, Winona, will require an environmental science course in its core curriculum for graduation.

David Orr: Environmental Problems in the Soviet Union

Dr. David Orr is founder and co-director of the Meadowcreek Project in Fox, Arkansas. Meadowcreek is a residential center devoted to environmental issues serving students of all ages from all over the world. A 1500-acre, laboratory-built, sustainable biosphere, Meadowcreek was designed to use natural processes to provide modern living conditions. For example, a constructed marsh takes in black water and releases drinking water for the center.

David Orr is an internationally-known environmental educator. His publications include *The Global Predicament: Ecological Perspectives on World Order* (translated into Spanish and Japanese), *Place, Learning and Limits: Essays on Education,* and *The Transition: Building a Sustainable World*. He recently returned from an extended trip to the USSR where a Meadowcreek-like project is planned.

Orr has been involved in cultural and educational exchanges with Soviet students and scientists who have visited the Meadowcreek Project. He and students from Arkansas, in turn, have visited the Soviet Union. He spoke to the conference about the environmental conditions in the Soviet Union and particularly about the need for environmental education there.

His theme was that a lack of information in the Soviet Union makes it very difficult for ordinary citizens to learn about environmental problems. It is even more difficult to organize any grass-roots opposition to environmental policies because there is no legitimate means of dissent in the USSR. He thinks that the lack of dissent may be due as much to tradition as current politics. In any event, many areas of the Soviet Union, such as Lake Baikal, Chernobyl, and others, are environmental disasters.

Orr also pointed out that the Soviet Union and the United States together account for a very large share of the world's environmental problems. For example, together the two countries emit about 42 percent of the anthropogenic carbon dioxide on the planet. Adequately addressing global warming will require Soviet and U.S. cooperation. He stated that if we can move away from the futile arms race, the environment will reap great benefits.

Dr. Orr urged the attendees to encourage and participate in exchanges with the Soviet Union at their institutions. The Soviets are very eager to set up relationships between our countries. Environmentally concerned educators should actively participate. He stated, "this is a time of real opportunity. If we fail to seize it, I don't think we'll ever arrive at anything like a sustainable environment."

The Liberal Arts, the Campus, And the Biosphere

In his keynote address, David Orr spoke about possible future directions for environmental education. He stressed the need for colleges and universities to be exemplars of environmental stewardship and described several projects which attempt to make colleges more environmentally responsible institutions.

Orr briefly reviewed current educational and environmental thinking. He described and compared the thinking found

in *The Closing of the American Mind* by Allan Bloom, *The End of Nature* by Bill McKibbon, the September, 1989 edition of *Scientific American* and a recent *Harper's* article by Wendell Berry. He noted the basic conflict between the *Scientific American* managerial strategy which would produce skilled planet managers, and Wendell Berry's approach which would turn out skilled workers. He stated that a genuine liberal education will connect the head and the hands.

Orr listed and discussed four tasks for the liberal arts:

1. Develop balanced, whole persons — thinkers who can do; doers who can think;
2. Overcome "the fatal disconnection of subjects" (Whitehead) and integrate into a coherent pattern;
3. Provide a sober view of the world without inducing despair; and
4. Equip a person to live well in a place.

He stated that the campus can be used to foster connectedness, implications, and ecological citizenship and can provide competence to act on the knowledge learned. According to Orr, "every educational institution is a resource-processing system that takes in food, energy, materials, and water and discards wastes. The study of these resource flows is an extraordinary educational opportunity which:

- transcends disciplinary boundaries;
- connects the foreground of experience with the background of larger issues and more distant places; and
- joins empirical research on existing behavior and its consequences with the study of other and more desirable possibilities."

Dr. Orr and the Meadowcreek Project have initiated, funded, and conducted studies of the food systems of Hendrix and Oberlin colleges. A similar, but larger, study of all resource flows is starting in Northfield, Minnesota, at the Carleton and St. Olaf college campuses. The Northfield study is designed to catalyze two immediate changes:

1. Develop campus policies for food, energy, architectural design, landscaping, water, materials, and organic and solid wastes to gradually change the institutional budget spending; and
2. Reinvigorate the liberal arts curriculum around the issues of the biosphere.

It is hoped that this focus will become a permanent part of the curriculum through research projects, campus policies, academic courses, lecture series, and the establishment of interdisciplinary programs in conservation biology and environmental studies. The humanities, social sciences, and sciences all have important contributions.

Other institutions in the U.S. are beginning similar projects. A side benefit, beyond student education, has been increased support of the local economy and related positive public relations for institutions already committed to these programs.

Discussions of Common Concerns and Meeting Wrap-up

Small-group discussion focused on three areas:

1. Goals for education about the environment in post-secondary institutions;
2. The need for pre-service and in-service education of primary and secondary teachers; and
3. The need to organize post-secondary teachers.

There was considerable discussion about possible goal statements for environmental education in post-secondary institutions. Considering the diversity of institutional goals and student bodies at the various institutions, it is not an easy task to obtain agreement on a single, appropriate goal. There were no dissenting opinions on the following statement:

> "All post-secondary students should be exposed to interdisciplinary discussion of environmental problems."

The details of what constitutes "exposure" or "discussion" were left purposefully vague in order to provide freedom of action within the framework. It was generally agreed that much more needs to be done to assure that all post-secondary students in Minnesota receive adequate education about the environment. No college in Minnesota requires education about the environment for graduation.

An important point in the discussions was that science and education about the environment are closely and indelibly linked, but that science alone is not sufficient to convey knowledge about problems and potential solutions. All of the conferees agreed that scientists and non-scientists must work more closely together to find the dimensions of what might be good, solid education about the environment.

The need to mandate an environmental education component in pre-service teacher-training was strongly recommended by conferees. A few volunteered to develop proposed criteria for what is needed in teacher education. All agreed that environmental education should be interdisciplinary.

Finally, most conferees agreed that what is needed is a sense of stewardship and a sense of wisdom about the environment. This implies that there are no quick and simple answers, and that broad-based and integrative study is more likely to provide the needed education than a single elective or required course.

Other points that were raised during discussions but not resolved because of lack of time, were:

a) How can we fill the need for education about the environment for both veteran and new teachers?
b) How can we teach about the environment across the curriculum in both secondary and post-secondary schools?
c) How can we upgrade high school and pre-high school science courses?, and
d) How can we make individual campuses exemplars of environmental stewardship?

During the wrap-up session there was considerable discussion of the need to have continuing communication among post-secondary teachers. Attendees were very interested in creating an organization to address issues of post-secondary education about the environment. A number of people volunteered to form a steering committee to help establish an organization and a request was made that the MEQB help to create such an organization. The group also asked the MEQB to consider sponsoring a newsletter dealing with environmental issues that would reach all post-secondary educators.

Finally, the group recommended that the State extend compulsory environmental education to include grades 7-12. Several people volunteered to help draft legislation to deal with that issue.

Resources

The following list of books and articles was compiled by Caryl Buchwald for the use of attendees at the Post-Secondary Environmental Educators Conference.

American Association for the Advancement of Science (AAAS). 1989 *Science for All Americans: A Project 2061 Report on Literacy Goals in Science, Mathematics and Tech-*

nology. AAAS Books, Department 2061, P.O. Box 573, Waldorf, MD 20604

American Association for the Advancement of Science (AAAS). 1990 *Report of the Study Group of the Project on Liberal Education and the Sciences* (in press). AAAS Books, Department 2061, P.O. Box 573, Waldorf, MD 20604

Bybee, R.W. 1984. *Science and Technology Education in the Middle School Years: Constructing a New Vision*. Washington, DC: National Science Teachers Association.

Bybee, R.W. and others. 1989. *Science and Technology Education for the Elementary Years: Frameworks for Curriculum and Instruction*. The National Center for Improving Science Education, 290 South Main St., Andover, MA 08110.

Carnegie Council on Adolescent Development. 1989. *Turning Points: Preparing American Youth for the 21st Century*. Carnegie Council on Adolescent Development, 11 DuPont Circle NW, Washington, DC 20036.

Loucks-Horsley, Suzan and others. 1989. *Developing and Supporting Teachers for Elementary School Science Education*. The National Center for Improving Science Education, 290 South Main St., Andover, MA 01810.

Massey, W.E. 1989. Science Education in the United States: What the scientific community can do. *Science*, 245:915-921.

Mullis, V.S. and Jenkins, L.B. 1988. *The Science Report Card: Elements of Risk and Recovery, Trends and Achievement Based on the 1986 National Assessment*. Princeton, NJ: Educational Testing Service.

Raizen, Senta, and others. 1989. *Assessment in Elementary School Science Education*. The National Center for Improving Science Education, 290 South Main St., Andover, MA 01810.

Sigma Xi. 1989. *A Report of the National Advisory Group of Sigma Xi, The Scientific Research Society: An Exploration of the Nature and Quality of Undergraduate Education in Science, Mathematics, and Engineering*. Sigma Xi, The Scientific Research Society, 345 Whitney Ave., New Haven, CT 06511.

The American Geological Institute. 1988. *Conference on Earth Science Education for the 21st Century, April 19-23, Alexandria, VA: Executive Summary*. American Geological Institute, 4220 King Street, Alexandria, VA 22302-1507

The Network, Inc. 1989. *Getting Started in Science: A Blueprint for Elementary School Science Education*. The National Center for Improving Science Education, 290 South Main St., Andover, MA 01810.