Twenty Years Later: Reviving the Reforms of the '60s

School science should return to the visionary programs of the 1960s, which developed logical thinking and problem solving.

Will someone please tell me what's happened? Twenty years ago I left the classroom to become an administrator. I lost touch with my scholarly field of interest, secondary curriculum in the fields of mathematics and science. Now I have returned home, and I am dismayed by what I see.

I remember the early '60s. Spurred by Sputnik and other Soviet advances in engineering, editorial writers and legislators complained that the schools hadn't done their job. So American educators began to reexamine what they did in schools to try to restore our country to its position of scientific and technological supremacy. Money was hardly a problem back then, and both the U.S. Office of Education and the National Science Foundation supported the development of several emerging secondary school programs.

Researchers and professors worked together diligently to reorganize and update curriculum content, incorporating new concepts into the science and math curriculums for both high schools and colleges. Some writers even revised programs for elementary and junior high schools. A methodology grounded in problem solving was devised, one that challenged students and tried to get them to think.

It was hard to keep up with the ferment. Remember the alphabet soup of new programs? Remember PSSC, BSCS, CHEM-S, SMSG?[1] Curriculum workers across the country were developing statements of objectives, preparing materials, and constructing evaluation devices; and workshops were under way in almost every state to educate teachers in the content and methods required in the new courses. We thought we had crossed the threshold into a new era.

Back to the Classroom

This past January I returned to the college classroom to help prepare science teachers. I also resumed supervising student teachers in the field. To my astonishment I have found virtually no evidence that this great and glorious restructuring of the curriculum ever took place. The texts that scientists, professors, and teachers worked so long and so hard to produce are no longer even adopted for use. In their place I have found practices and structures that were popular 40 years ago. The emphasis is on fact acquisition through lecture and "cookbook" lab activities.

I ask my students to organize what they are to teach into units: meaningful composites of concepts with internal coherence and relevance, emphasizing comprehension of basic principles and overarching ideas. They stare at me blankly. When they teach, their lessons seem joined together like links in a chain, with little correlation or integration. Fortunately, I find that teachers are still deeply interested in their students and will go to great lengths to help them. They enthusiastically believe in the importance of what they are doing. Thank goodness *that* hasn't changed!

How We Went Wrong

From what I have seen, I believe the problem lies in how we are organizing what we teach and in the means we are using to communicate it. Biology today embraces far more than a taxonomic overview of the kingdoms of living creatures; and physics, more than mechanics, heat, light, sound, electricity, and magnetism. The goal of science teaching for an educated people is not to inculcate facts, but to develop the ability to think rationally, to grapple with and solve problems.

Some of my colleagues shrug their shoulders and cynically ask what I expected to happen. After President Johnson's Great Society, they say, federal support for the new science programs began to disappear from the budget; the number of teachers educated in the new orientation was insufficient to ensure the curriculum's continuation and development; the inertia of tradition gradually crushed the innovators; and the brilliant developers moved on, leaving few trained leaders in their place.

Are my colleagues right? Were the reforms of the '60s simply another curricular fad, like the Eight Year Study and other failed efforts? Are we doomed forever to do nothing more than tinker with content and method? And, finally, what are the implications for the recent AAAS Project 2061[2]—is it, too, doomed before it gets under way?

Where will we be 20 years from now?□

1. Physical Sciences Study Committee; Biological Sciences Curriculum Study; Chemical Education Materials Study; School Mathematics Study Group.

2. Project 2061 was launched in July 1985 by the American Association for the Advancement of Science with funding from the Carnegie Corporation of New York and the Andrew W. Mellon Foundation.

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