Unintentional Consequences of an Unacceptable Evaluation

Acts motivated by positive intentions can result in unintended, negative consequences. Such is the case for the recent evaluation of biology textbooks by Project 2061 of the American Association for the Advancement of Science. Project 2061 evaluated 10 leading biology textbooks and rated all of them unacceptable. In this evaluation, Project 2061 used 19 criteria divided among the following categories: Providing a Sense of Purpose; Taking Account of Student Ideas; Engaging Students in Relevant Phenomena; Developing and Using Scientific Ideas; Promoting Student Thinking about Phenomena, Experiences and Knowledge; and Assessing Progress. In my view, the unintentional negative consequences far outweigh the good intentions of Project 2061. Indeed, it was an unacceptable evaluation.

I believe that the goal of biology teachers is to improve as professionals and help their students achieve higher levels of scientific literacy. Granted, there is variation in the approach and aspirations of biology teachers and the manner and degree to which they help students achieve scientific literacy. This said, their goal remains relatively clear and essentially unchanged. Biology teachers have intentions of improving. I have yet to hear a biology teacher proclaim the intention to do worse on the next lesson, unit or laboratory. All of us understand that the textbook is one valuable, and in many cases central, component of biology education that contributes to achieving biology teachers’ goals. This said, one has to acknowledge that textbooks are not perfect, they should be reviewed, critiqued and improved. I simply must question a judgment that all biology textbooks are woefully inadequate, represent the central barrier to student learning, and are ultimately unacceptable. Yet, this is the judgment of Project 2061. What are the potential or actual consequences of this judgment for those with intentions of improving the biology curriculum and student learning?

Every year thousands of school districts engage in a process of rethinking their goals and redesigning the essential elements of the biology curriculum. This process involves, more times than not, the selection of a new textbook. The adoption of a new textbook may include, among other things, the consideration of national, state and local standards; the particular needs of students in the district or school; and the public support for education. In the end, biology teachers participate in decisions about the best education possible for their students. The choice usually includes a textbook that complements their deliberations and other curriculum decisions. Most who participate in improving the biology curriculum would agree that neither the textbooks nor the process is ideal, but each serves a purpose.

For biology teachers, the intentions are clear, but the options suddenly have been limited. In fact, a major component of the process, the biology textbook, has been eliminated because they are all unacceptable. Further, the Project 2061 evaluation was covered by most major newspapers, so public support also is questionable. We are left, then, with a basic question—what will biology teachers and textbook selection committees do?

Biology teachers can ignore the evaluation and proceed with the adoption of an ostensibly unacceptable textbook. It would seem
the consequence of this course of action would neither be good nor bad. The school program probably would remain about the same, and it may be improved if the district complements the textbook selection with professional development. However, in some cases, public reaction to media reports of the Project 2061 evaluation has made this option difficult, if not impossible.

A second result of the Project 2061 evaluation might be to eliminate textbooks and have a district committee design and develop its own life sciences program. This response holds the potential of producing a biology curriculum that lacks scientific accuracy, educational consistency, and pedagogical quality. This is not, repeat, not a statement about biology teachers. This judgment is based on the time, expertise and budget required for the task of designing and developing instructional materials. My experience in standards setting, curriculum development, and educational reform suggests that these are, at best, difficult, complex and political processes, and that most school districts are not prepared to support the efforts at levels appropriate to the task.

Developing curriculum materials is a task for professionals who have the time and resources required for the task. School districts seldom provide what is needed, so, for example, school administrators ask a committee to work on the curriculum for several weeks in the summer. The group has the challenge of producing a program that other professionals would take two or three years to develop. What happens? School personnel borrow freely from extant programs (i.e. the ones evaluated as unacceptable) and cobble together lessons without the opportunity to field-test the program and review the curriculum for scientific accuracy and pedagogical quality. One has to ask, How would these programs fare in the Project 2061 evaluation? I predict they would be unacceptable.

I hope I do not have to review the option of selecting textbooks that Project 2061 eliminated prior to the review. These, I can only assume, were worse than the unacceptable textbooks. Nor need I elaborate on the fact that eliminating the leading textbooks that include evolution, but were judged as unacceptable, opens the possibility that schools and districts might adopt or develop programs that do not include evolution. In fact, I recently heard of a school district where the superintendent decided to adopt a creationist book because the major texts were unacceptable. This is clearly an unacceptable consequence of the Project 2061 evaluation.

Those in the biology education community face a range of challenges from animal rights groups and creationists to the fundamental challenges of educational reform. Project 2061 could have approached its evaluation with the goal of helping the biology education community face the fundamental challenges and help improve education. At a minimum, they could have clearly and explicitly pointed out some of the virtues of current programs, differentiated among those programs they reviewed, and helped biology teachers select the best program available for their district, school and students. But, they did not. Project 2061 personnel elected to stage a media event.

Upon consideration, the consequence of an unacceptable evaluation of biology textbooks should, in itself, be unacceptable for the biology education community. And at the end of the day, the unintentional consequences do not even support Project 2061's stated goal: improving scientific literacy for all Americans.