



Helping Ourselves

It's often frustrating to be a teacher. Despite our best efforts, we can often only watch as students avoid chances to learn, as regents and school boards set obstacles to doing our jobs, and as parents do little or nothing to extend learning beyond our classrooms. Moreover, our effectiveness is regularly questioned by studies showing that our students cannot compete with their peers from most other countries.

Many teachers respond with complacency, claiming that there is no problem at all—that our schools were good enough when they were children and therefore are good enough now. Others claim that scores on international tests are biased or not comparable (Would they say the same thing if our students ranked number one?). We educate everyone, these people say, while other countries educate only their elite. Most of these excuses are groundless (e.g. Japan retains more students in high school than we do). Nevertheless, many people continue to blame others for our problems.

While some of our finger pointing may be justified, it usually serves little purpose. We should concentrate on solving the problem rather than repeatedly placing blame and avoiding accountability. Several people have proposed innovative solutions to improving science education (e.g. emphasis on hands-on discovery, etc.). I add the following suggestions:

We must make our case to the public. Funding for education and science requires public support. In the past, the near-automatic increases in money for education lulled many teachers into thinking these funds were an entitlement. We're now

learning otherwise. For a variety of reasons (e.g. students' poor scores on standardized tests, teachers' avoidance of accountability), taxpayers are now vetoing tax increases aimed at improving education. We must convince the public to invest in education by promoting our strengths, minimizing our weaknesses and stressing the importance of education for the vitality of the community, state and country. We must convince the public that the primary function of our schools is education, not day-care.

We must hold ourselves accountable. Although we do many things well, we also do many things poorly. We must face up to our problems. We cannot continue to whine about why we're failing or why our students are learning so little about science. We cannot afford to hide behind union contracts that often use "experience" (i.e. longevity) as a means of protecting incompetent teachers at the expense of energetic, effective ones (some of the most "experienced" teachers I know are also the worst teachers that I know). If we want the public to provide more money for education, we must be willing to police ourselves and make difficult decisions. Equal treatment for all regardless of performance (e.g. across-the-board raises) guarantees only mediocrity.

We must stress the benefits of learning. We must stress to students that education is the key to a successful and rewarding career. As biologists, we enjoy a special advantage: A survey published in the February

1992 issue of *Money* magazine showed that people view "biologist" as the *best* job in the country.

We must personalize our teaching. Just as nothing teaches science better than hands-on discovery, nothing reaches our students better than our enthusiasm. Although we'll not have class sizes of five students, we can take a personal interest in our students. This kind of personal interest—often from only one teacher—is why many of us are science teachers. Each of us could stimulate some students to become scientists.

We must make our courses relevant and interesting. Not everyone finds science interesting or has high expectations; many students are in school only because they have to be and plan to leave as soon as possible. Motivating these students is our biggest challenge. We'll begin to do this by making our classes worth attending. We must ask ourselves, "How can I make getting into science more interesting than getting out of it?"

We'll greatly help our students by convincing the public that an investment in education is an investment in the future, and that education is a solution to problems such as the trade deficit and health care. If we fail at this, our educational system will become irrelevant and stop working. When that happens, the rest of society will stop working, too.

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