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Science and Science Education Are In

Science and science education are again in the political limelight. Viewed as the precursor of technology, science, particularly physical science, has become the means to secure the free world from exploitation through military intimidation, to ensure U.S. economic superiority in an increasingly competitive world of technology, and to alleviate unemployment.

Much of the political rhetoric indicates that favorite status for physical and biological R & D and favorite status for mathematics, science, and engineering education may be in part the windfall of a search for a quick fix for complex issues. Be that as it may, mathematics, science, and engineering have essential contributions to make, and the interest in science and science education is there. This interest gives the scientific community an exceptional opportunity to develop a realistic environment for science, engineering, technology, and education—an environment that is stable and minimally responsive to the changing winds of political fortune.

The legacy of scientific investigation is knowledge: knowledge that extends our awareness, understanding, and appreciation of the universe, the planets, our immediate environment, ourselves, and our relations with others; knowledge that extends our capability to develop and deliver goods and services and to develop and modify social, economic, and political systems.

Without denying in any way the tremendous benefits derived by society from the products of technology, as a nation we must be ever mindful of the negative impacts of technology on society, diligent in our endeavors to minimize these burdens, and forthright in our endeavors to attain a balance in the distribution of the benefits and the burdens of technology. Knowledge and understanding of both the benefits and the burdens inherent in technology are essential to the attainment of a realistic environment for science and technology.

Without denying in any way the essential role of the scientific and technological community, a subset of the public, in the extension of scientific knowledge, the development of technology, the assessment of the impact of technology on society, and the communication of these developments to the public, as a nation we must be ever mindful that value decisions related to the quality of life, and hence the quality of the environment, are the prerogative of the total public and are often made by surrogates for the public. Meaningful educational experiences in the sciences and the humanities in schools and colleges, both for those who become scientists and engineers and for those who do not, are essential for responsible participation in value decisions concerning science and technology.

Appropriate educational opportunities in mathematics, science, and engineering can be attained and long sustained only in an environment that also provides appropriate educational opportunities in the languages and the humanities, and vice versa. Favorite status for mathematics, science, and engineering education will disrupt the institutions we seek to strengthen.

Without denying in any way the need for industry and the mission agencies to carry on scientific investigations to acquire knowledge essential for ongoing developments of specific goods and services, as a nation we must be ever mindful that many of the most significant breakthroughs in technology have been based upon knowledge derived from investigations that were not, and probably could not have been, identified initially as areas for targeted research. The continuous augmentation of shared scientific knowledge is an essential investment in research potential and sustained technological growth.

We have a choice to make: either exploit the current interest in science and science education to obtain short-term gains for a subset of society, or utilize the current interest to foster a realistic environment for science, engineering, technology, and education and, in so doing, foster their sustained growth and thus enhance their contribution to society.—ANNA J. HARRISON, *Mount Holyoke College, South Hadley, Massachusetts 01075*