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BUSINESS CORRESPONDENCE: Area Code 202. Membership and Subscriptions: 467-4417.

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A Call for Educational Reform

"If an unfriendly foreign power had attempted to impose on America the mediocre educational performance that exists today, we might well have viewed it as an act of war. As it stands, we have allowed this to happen to ourselves. We have even squandered the gains in student achievement made in the wake of the Sputnik challenge. Moreover, we have dismantled essential support systems which helped to make those gains possible. We have, in effect, been committing an act of unthinking, unilateral educational disarmament."

This warning sets the tone for the clarion call for educational reform made by the National Commission on Excellence in Education. Our report*, handed to President Reagan on 26 April, has attracted national attention, and there are indications that it will spark widespread remedial action.

There has been an alarming deterioration of our precollege educational system during the past 15 to 20 years. This adversely affects the capacity of individuals to adapt to the changing demands of our complex age and the ability of our nation to compete in today's world of high technology. The deficiency in the quality and quantity of teaching of science and mathematics—subjects that are emphasized in a number of countries that are our competitors—is undoubtedly a factor in our country's economic decline. Lack of scientific literacy threatens the efficient, or even adequate, functioning of our democracy in this scientific age.

More than 20 million American adults cannot read, write, or comprehend the English language. Two-thirds of our high schools now require only one year of science and one year of mathematics for graduation. Low salaries for science and mathematics teachers have driven large numbers of them to better-paid positions in industry and have discouraged college students from entering the teaching profession. There is a critical shortage of mathematics and science teachers in some 40 states, and half of those newly employed are not qualified to teach these subjects.

The Commission's report includes some 40 implementing recommendations in five major categories. Following are some of the more radical, but also some of the more important, of these. Requirements for high school graduation should include four years of English, three years of mathematics, three years of science, three years of social studies, and one-half year of computer science. Salaries for the teaching profession need to be increased and should be professionally competitive, market-sensitive (this means differential pay), and based on performance (not merely years of service). Salary, promotion, tenure, and retention decisions should be tied to an effective evaluation system that includes peer review so that superior teachers can be rewarded, average ones encouraged, and poor ones improved or terminated. Recent graduates with mathematics and science degrees, graduate students, and industrial and retired scientists should, with appropriate preparation, be allowed to teach immediately in these fields. The capabilities of science centers should be used for educating and retraining teachers. University scientists, scholars, and members of professional societies, in collaboration with master teachers, should participate in the development of more effective curricula, as they did with success in the post-Sputnik period. The federal government should provide national leadership in the field of education and assume primary responsibility for the support of curriculum improvement; for research on teaching, learning, and management of schools; and for teacher training in areas of critical shortage or key national needs. It should also provide financial assistance for college students, research, and graduate training.

The Commission calls on all Americans to insist on excellence in education and to assist in bringing about the educational reforms proposed in its report.—GLENN T. SEABORG, *Lawrence Berkeley Laboratory, University of California, Berkeley 94720, and member of the National Commission on Excellence in Education*

*National Commission on Excellence in Education, "A Nation at Risk: The Imperative for Educational Reform" (U.S. Department of Education, Washington, D.C., April 1983).