Elementary and Secondary Education for Science and Engineering

December 1988

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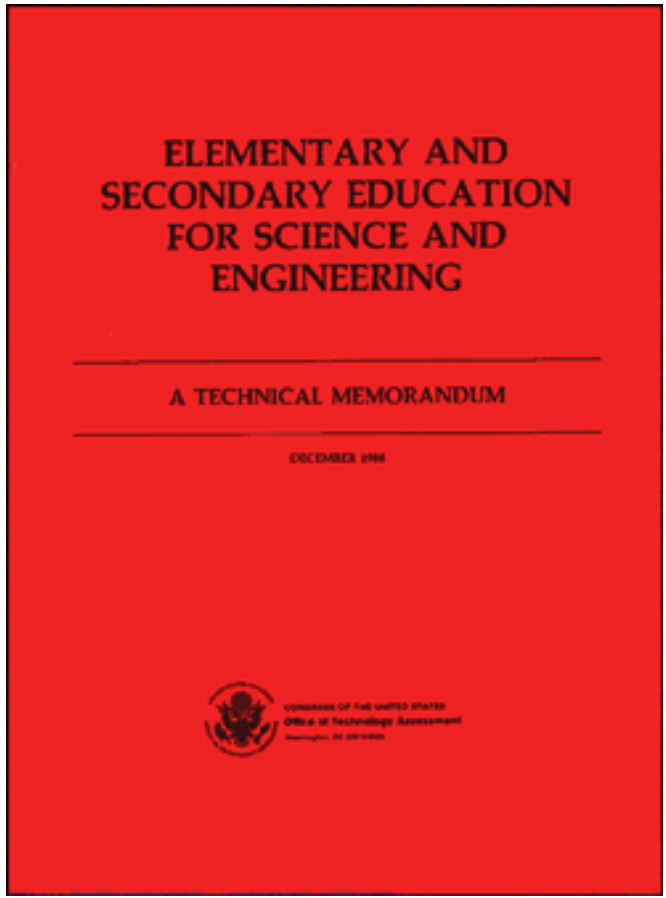

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Foreword

Choice, chance, opportunity, and environment are all factors that determine whether or not a child will grow up to be a scientist or engineer. Though comprising only 4 percent of our work force, scientists and engineers are critical to our Nation's continued strength and vitality. As a Nation, we are concerned about maintaining an adequate supply of people with the ability to enter these fields, and the desire to do so.

In response to a request from the House Committee on Science and Technology, this technical memorandum analyzes recruitment into and retention in the science and engineering pipeline. Elementary ***and Secondary Education for Science and Engineering*** supplements and extends OTA's June 1988 report, ***Educating Scientists and Engineers: Grade School to Grad School.***

Students make many choices over a long period, and choose a career through a complicated process. This process includes formal instruction in mathematics and science, and the opportunity for informal education in museums, science centers, and recreational programs. The influence of family, teachers, peers, and the electronic media can make an enormous difference. This memorandum analyzes these influences. Because education is "all one system, " policymakers interested in nurturing scientists and engineers must address the educational environment as a totality; changing only one part of the system will not yield the desired result.

The Federal Government plays a key role in sustaining educational excellence in elementary and secondary education, providing effective research, and encouragin$_{g}$ change. This memorandum identifies pressure points in the system and strengthens the analytical basis for policy.

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NOTE: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the advisory panel members. The panel does not, however, necessarily approve, disapprove, or endorse this technical memorandum. OTA assumes full responsibility for the technical report and the accuracy of its contents.

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