ABSTRACT

In the early 1980's a number of reports on the status of science and mathematics education were published, making evident declining science and mathematics achievement, dropping enrollment, and a shortage of qualified teachers. In April 1983 the National Commission on Excellence in Education presented its report to President Reagan. The report, entitled "A Nation at Risk: The imperative for Educational Reform," compared the quality of teaching and learning in schools and colleges in the United States with those of other advanced nations. The report became the focus of nationwide media attention. This sparked renewed federal involvement in science and mathematics education, school/industry coalitions were set up, and a call for help was issued to all interested parties. Concerned with the scientific literacy of their employees and their future employees, business and industry offered assistance in a number of ways. This guide is designed to complement other bibliographies on the topic and is not meant as a comprehensive bibliography on the topic. Categories include: (1) "Introductions to the Topic"; (2) "Subject Headings"; (3) "Basic Texts"; (4) "Related and Specialized Texts"; (5) "Bibliographies"; (6) "Selected Conference Proceedings"; (7) "Statistical Information"; (8) "Selected Statistical Sources"; (9) "Government Publications and Reports"; (10) "Selected Government Publications and Reports"; (11) "Abstracting and Indexing Services"; (12) "Journals"; (13) "Representative Articles"; (14) "Selected Materials"; and (15) "Sources of Additional Information." (CW)
THE CRISIS IN SCIENCE EDUCATION
Compiled by Michelle Cadoree

SCOPE:
In the early 1980's a number of reports on the status of science and mathematics education were published, making evident declining science and mathematics achievement, dropping enrollment, and a shortage of qualified teachers. In April 1983 the National Commission on Excellence in Education presented its report to President Reagan. The report, entitled A Nation at Risk: the Imperative for Educational Reform, compared the quality of teaching and learning in America's schools and colleges with those of other advanced nations. A Nation at Risk became the focus of nationwide media attention. This sparked renewed federal involvement in science and mathematics education, school/industry coalitions were set up, and a call for help was issued to all interested parties. Concerned with the scientific literacy of their employees and their future employees, business and industry offered assistance in a number of ways--providing money, training, equipment, competitions, and other cooperative efforts.

This present guide complements LC Science Tracer Bullet 75-5, Science Education in America, which provides a historical overview. Not meant to be a comprehensive bibliography, this is designed--as the name of the series implies--to put the reader "on target."

INTRODUCTIONS TO THE TOPIC


* Available in reference collection, Science Reading Room.

"OTA-SET-377."

Examines the forces associated with elementary and secondary education that shape the talent pool, traces pathways to undergraduate and graduate education in science and engineering, and presents a discussion of policy areas for possible congressional action, developed under two strategies, labeled 'retention' and 'recruitment.'

SUBJECT HEADINGS used by the Library of Congress, under which books on science education can be located in the Library's card, book, and online catalogs, include the following:

- SCIENCE AND STATE--UNITED STATES (Highly relevant)
- SCIENCE--STUDY AND TEACHING (ELEMENTARY)--UNITED STATES (Highly relevant)
- SCIENCE--STUDY AND TEACHING (HIGHER)--UNITED STATES (Highly relevant)
- SCIENCE--STUDY AND TEACHING (SECONDARY)--UNITED STATES (Highly relevant)
- See also specific disciplines, e.g., ENGINEERING, MATHEMATICS, TECHNOLOGY followed by the subdivisions --STUDY AND TEACHING--UNITED STATES
- SCIENCE--STUDY AND TEACHING (Relevant)
- SCIENCE--STUDY AND TEACHING--LAW AND LEGISLATION--UNITED STATES (Relevant)
- SCIENCE--STUDY AND TEACHING--UNITED STATES (Relevant)
- SCIENTISTS--EDUCATION--UNITED STATES (Relevant)
- TECHNOLOGY AND STATE--UNITED STATES (Relevant)
- EDUCATION AND STATE--UNITED STATES (Related)
- SCIENTISTS--SUPPLY AND DEMAND--GOVERNMENT POLICY--UNITED STATES (Related)
- TECHNICAL EDUCATION--UNITED STATES (Related)
- EDUCATION--UNITED STATES--EVALUATION (More general)

BASIC TEXTS


Bibliography: p. 102-103.


Project 2061. Phase I of the AAAS initiative on scientific literacy, Project 2061 established a base for reform by spelling out the knowledge, skills, and attitudes that all students should acquire as a consequence of their total school experience from kindergarten through high school. The following six reports, listed in order of AAAS publication number, are the product of Phase I of Project 2061.


Clark, Mary E. Biological and health sciences: report of the Project 2061 Phase I Biological and Health Sciences Panel. Washington, American Association for the Advancement of Science, 1989. 33 p. (AAAS publication, 89-02S) Q181.A1A68, no. 89-02S


SSRR = Social Science Reading Room


Includes bibliographical references.


Includes bibliographies.

RELATED AND SPECIALIZED TEXTS


Includes bibliographical references.


A compilation of newspaper editorials that follow the debate over the crisis in education.


Committee on Science and Mathematics Education. Recommendations for improving the
good quality of science and mathematics education in North Carolina's public schools.
Raleigh, N.C., Committee on Science and Mathematics Education of the North Carolina
Board of Science and Technology and the State Dept. of Public Instruction, 1982.
70 p.
Includes bibliographical references.

Lee, Valerie E., and Carolee Stewart. National assessment of educational progress
proficiency in mathematics and science, 1985-86: Catholic and public schools compared:
66 p.
Includes bibliographical references.

Libraries and the learning society: papers in response to A Nation At Risk. Richard M.

United States. Dept. of Education. The nation responds: recent efforts to improve

BIBLIOGRAPHIES

Gratch, Bonnie G. Five years after A Nation at Risk: an annotated bibliography. RSR:

(Oryx science bibliographies, 6)

SELECTED CONFERENCE PROCEEDINGS

High-school biology: today and tomorrow. Committee on High-School Biology Education,
Board on Biology, Commission on Life Sciences, National Research Council. Walter


schools: making it happen: conference proceedings of a National Forum on
Entrance Examination Board, 1985. 95 p.
Natural partners: how science centers and community groups can team up to increase science literacy. Washington, Association of Science-Technology Centers, 1987. 23 p.
Q105.U5N38 1987

Proceedings of a workshop held in September 1986; sponsored by ASTC and the American Association for the Advancement of Science, Office of Opportunities.
Bibliography: p. 18.

Q183.3.A1R34 1982

Q181.S82 1987

Papers from the Bangalore Conference on Science and Technology Education and Future Human Needs, organized by the Committee on the Teaching of Science of the International Council of Scientific Unions.
Includes bibliographies.

Includes bibliographies.

STATISTICAL INFORMATION can be located in the following indexes:

See: Higher Education
Scientific Education
Vocational Education and Training

See: Scientific Education
Technical Education
Vocational Education and Training

MicRR = Microform Reading Room
MRR = Main Reading Room
N&CPR = Newspaper and Current Periodicals Reading Room
SELECTED STATISTICAL SOURCES

Continues Science Indicators (1972-1986) Q172.5.S34S34*

Science and technology data book. Washington, National Science Foundation, Division of Science Resources Studies, 1983-  
Pamphlet box* Distributed annually by NTIS in its PB series, e.g., 1989 edition, PB89-231765**

GOVERNMENT PUBLICATIONS AND REPORTS can be located in the following indexes:

See: Engineering  
Federal Aid to Education  
Mathematics  
Scientific Education

Government Reports Announcements & Index (1946- ) Z7916.G78*  
See: Engineering Education  
Mathematics Education  
Science Education

See: Education--Science  
Engineering--Study and Teaching--United States  
Mathematics--Study and Teaching--United States  
Science--Study and Teaching--United States  
Science--Study and Teaching (Higher)--United States  
Science--Study and Teaching (Secondary)--United States  
Science and State--United States  
Science Teachers--United States--Supply and Demand

Resources in Education (RIE) (1966- ) Z5813.R4 SSRR
See: Science Education  
Science Teachers  
Scientific Literacy

** Available in the microform collection, Science Reading Room
SELECTED GOVERNMENT PUBLICATIONS AND REPORTS


ABSTRACTING AND INDEXING SERVICES that index literature relating to science education are listed below. Some suggested terms are given as aids in searching.

Applied Science & Technology Index (1913-) Z7913.I7* and CD-ROM*
See: Education--United States
      Elementary Education
      Engineering Education
      Education and Industry

Current Index to Journals in Education (1969-) Z5813.C8 SSRR
See: Science Education
      Science Instruction
      Science Instructors
      Scientific Literacy

Note: Consult reference librarian for location of abstracting and indexing services in the Science Reading Room.
JOURNALS that often contain articles relevant to science education in the United States include:

- Journal of College Science Teaching Q183.U6168
- Phi Delta Kappan L121.P4
- School Science and Mathematics Q1.S28
- Science Q1.S35
- Science Education Q1.S385
- Science Teacher Q181.S35

REPRESENTATIVE ARTICLES


Facts about America’s standing in science education.


Urrows, Henry, and Elizabeth Urrows. In a bad way ... the condition of high school mathematics and physics. *College board review*, no. 140, summer 1986: 16-19, 30-36.


**SELECTED MATERIALS** available in the Science Reading Room pamphlet box collection include:


SOURCES OF ADDITIONAL INFORMATION

American Association for the Advancement of Science
Directorate for Education and Human Resources Programs
1333 H Street, NW
Washington, D.C. 20005
Telephone: (202) 326-6620
(Publishes Sourcebook for Science, Mathematics & Technology Education (formerly AAAS Science Education Directory) and Science Education News)

ERIC Clearinghouse for Science, Mathematics, and Environmental Education
Ohio State University
1200 Chambers Road
Columbus, Ohio 43212
Telephone: (614) 292-6717

National Science Foundation,
Directorate for Science Education
1800 G St, NW
Washington, D.C. 20550
Telephone: (202) 357-7557

National Science Teachers Association (NSTA)
1742 Connecticut Avenue, NW
Washington, D.C. 20009
Telephone: (202) 328-5800
(Publishes NSTA Yearbook and NSTA Handbook)