



A Brief Overview of The National Science Resources Center

Background and Mission

In a bold move more than two decades ago, the Smithsonian Institution and the National Academies—National Academy of Sciences, National Academy of Engineering, and Institute of Medicine—jointly established the National Science Resources Center (NSRC). The mission of this unique organization is to improve the K–12 learning and teaching of science for all students in the United States and throughout the world. These two widely respected scientific institutions provide the NSRC with a unique platform and resources to catalyze change at all levels of the education system.

Goals

When the NSRC was established two years after release of the report *A Nation at Risk* from the National Commission on Excellence in Education (1983), fewer than one percent of the school districts in the country conducted effective science education programs. Through its outreach efforts over more than two decades, the NSRC has worked with more than 700 school districts, which enroll more than 20% of the U.S. K–12 student population, to initiate and sustain high-quality science education programs. Today, the NSRC is nationally and internationally recognized for the quality and impact of its programs on the improvement of K–12 science education. The NSRC’s long-term goals are to:

- Develop at least 500 informed leaders from education, business, government, and science who will champion science education reform efforts at the national, state, and local levels during the next decade;
- Engage and develop the leadership capacity of 7,000 education and community leaders representing several large urban communities and nine to eleven new states;
- Improve science education programs for more than 50% of the nation’s students by 2012, especially those who are members of underserved groups and those who live in poverty
- Create two to four urban and state models of science education reform by 2010 that can serve as examples to catalyze reform in other states and cities;
- Develop partnerships with at least 20 major corporations and academic institutions that are working to improve science education in states representing 50% of the student population;
- Stimulate research and evaluation that will continuously improve and advance this work; and
- Position the Smithsonian and the National Academies as leaders in the reform of science education.

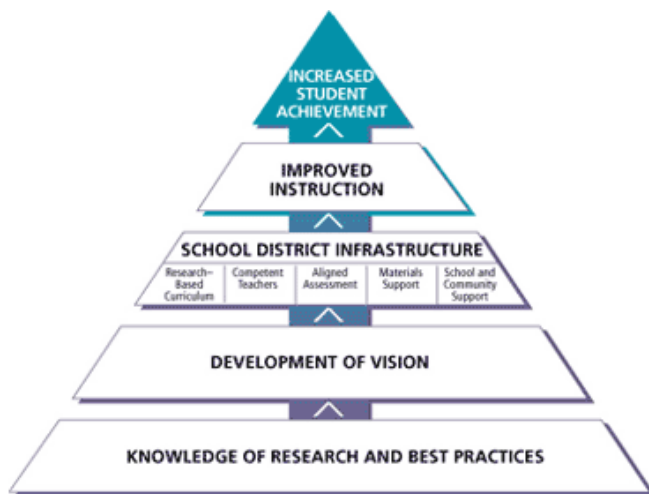
The Challenge Facing the Nation: The Improvement of K–12 Science Education Programs for All Students

“The United States is losing its edge in innovation and is watching the erosion of its capacity to create new scientific and technological breakthroughs. Increased global competition, lackluster performance in mathematics and science education, and a lack of national focus on renewing its science and technology infrastructure have created a new economic and technological vulnerability as serious as any military or terrorist threat.”

—A Commitment to America’s Future: Responding to the Crisis in Mathematics & Science Education, The Business-Higher Education Forum, January 2005

The NSRC Theory of Action

Programs designed to accomplish NSRC goals are grounded in the NSRC Theory of Action. This theory is based on the need for leaders to understand the relevant research and promising practices. Following the development of a shared vision of effective science learning and teaching, participants in NSRC programs learn to implement a systemic approach for improving K–12 science education programs and learn about high-quality products and services they can use to move from the initiation of a program to its sustainability.



The NSRC's Theory of Action advocates that the foundation of all reform is knowledge of research and best practices that should be used to develop a shared vision and an infrastructure for reforming science education programs for all students in districts and states. The design of the theory and the associated work conducted by informed leaders to implement it should reflect research in the following areas:

- Development of science concepts;
- Learning and teaching;
- Assessment of learning;
- Evaluation of programs;
- Systems thinking;
- Accountability structures;
- Introduction of interventions and the process of change;
- Scaling up principles;
- Incentives; and
- Methods for ensuring accountability.

Strategic Approaches

The NSRC works to reach its goals through an integrated approach to science education reform that encompasses three interrelated thrusts.

- First is building leadership capacity for science education reform in school districts, states, regions, nationally, and internationally.
- Second is improving the quality of science instruction by developing a suite of professional development opportunities for teachers of science.
- Third is the dissemination of research-based science instructional materials that foster students' active involvement in science learning.

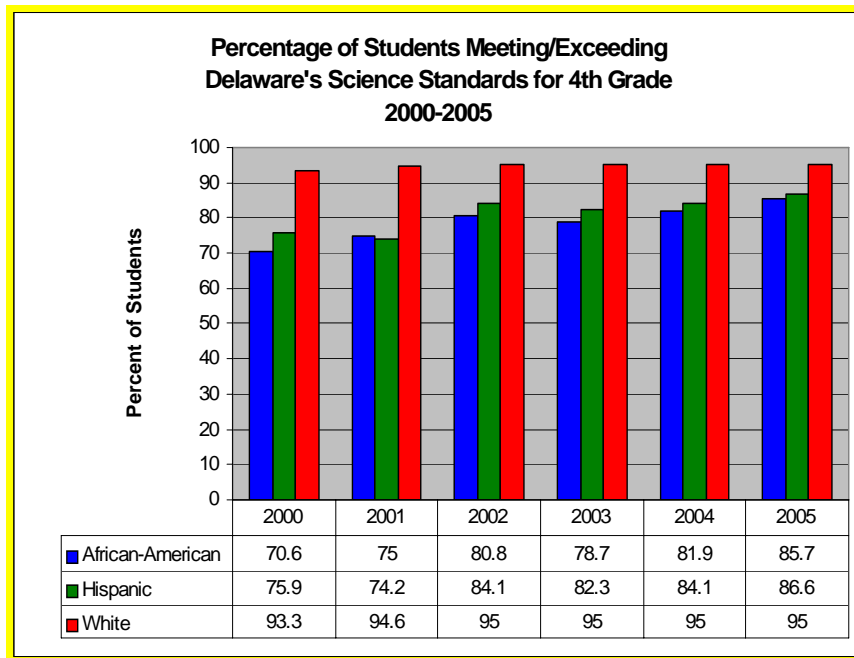
Evidence of Impact

Delaware is an example of the NSRC's impact on science education reform. Its size is comparable to one of the nation's larger school districts. The statewide student body is economically and ethnically diverse: 44% are members of minority groups and 34% live in poverty. In 1996, Delaware began a statewide science education reform program that included a partnership with the NSRC. The reform work began in elementary sciences and has gradually moved to the middle and high school levels during the past decade.

Between 1997 and 2001, every school district in Delaware attended an NSRC Science Education Strategic Planning Institute, resulting in the development of five-year strategic plans for reforming districts' K–8 science education programs. These plans were based on the NSRC Science Education Reform Model. Using this model, the state developed a comprehensive technical assistance infrastructure to support the districts' implementation of research-based instructional programs. This infrastructure included sustained professional development programs for teachers and state tests that aligned with state standards and research-based instructional materials.

Results of state tests during the past six years provide evidence that Delaware is closing the achievement gap, beginning in grade four. At grade four the percentage of students meeting the statewide science standards increased from 80% in 2000 to 90% in 2005 for all ethnic groups. African-American and Hispanic students'

performance increased from 73% in 2000 to 87% in 2005, a gain of 15%. Additional data for grades six and eight can be found on the Delaware State Education Web site illustrating the continued progress Delaware is making in closing the gap for its students.



Financial Support for Core Operations and Program Activities

With an annual budget of approximately five million dollars, the financial operations of the NSRC represent those of a typical nonprofit organization. The Smithsonian and the National Academies provide partial support for its core operations. The remaining support for its operations and all of its program activities is obtained from gifts and grants received from government agencies and private foundations and corporations; registration fees for events that the NSRC organizes; and the sale of publications.

To both sustain and scale its work, the NSRC is implementing plans to become a financially self-sustaining organization. These plans include the acquisition of sustained resources from national and/or state sources coupled with the establishment of an NSRC endowment.

NSRC Commitment and Capacity

Through its parent institutions, the NSRC brings expertise, resources, prestige, and credibility to the reform of science education. The NSRC staff and the NSRC National Advisory Board, together with the NSRC's parent institutions, are committed to building upon accomplishments as well as ensuring that goals for the future are achieved to the highest quality standards.