



NATIONAL EDUCATION GOALS PANEL

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NATIONAL EDUCATION GOALS PANEL RELEASES CASE STUDY ON HIGH SCIENCE ACHIEVEMENT

Case Study Finds Existence of de facto Statewide Science Curriculum Crucial to Science Success

CHICAGO, IL – (October 2, 2000) – Having clear consistent standards and systemic alignment are key ingredients in achieving high performance in science, according to a case study released today by the National Education Goals Panel. The study, titled *Minnesota & TIMSS, Exploring High Achievement in Eight Grade Science* is an in-depth examination of why eight grade science students in Minnesota were second only to Singapore in the Third International Mathematics and Science Study (TIMSS).

The authors of *Minnesota & TIMSS* identified several characteristics of science education that are unique to Minnesota that explain the state's world-class performance in 8th grade science. These characteristics are:

- *High Expectations for all students:* In Minnesota, all 7th and 8th grade students are expected to take the same rigorous science courses.
- *Focus and Coherence in Curriculum:* Unlike other American junior high science programs, Minnesota classes cover far fewer topics while devoting more time to developing them in-depth.
- *Alignment Fostered by the Existence of de facto Science Standards:* Because all Minnesota science teachers were expected to teach the same content, over time a consensus emerged among classroom teachers, teacher educators and state officials as to what constituted good science instruction.
- *Continuity:* Minnesota's statewide science program has its origins in the 1960's and teachers, administrators and state leaders have had ample time to develop a consensus, align professional development and perfect instruction.
- *Capacity within the Teaching Profession:* The statewide science program that has emerged was developed and has evolved from within the teaching profession.

“Not only is focus present in Minnesota, but there is coherence about the science curriculum concentrating on a small number of topics all within a given area that gelled together within the broader sense of the discipline,” said Dr. William Schmidt, one of the authors of the case study. “Minnesota shows the nation a way to achieve what we want for all of our children and it shows us that we can achieve our goals if we have the will.”

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The performance of Minnesota students on TIMSS, although slightly higher, was similar to that of the U.S. as a whole. However, a significant difference existed in eighth-grade scores. In mathematics, Minnesota eighth-graders were slightly above the international average but not in the top tier of nations. In science, Minnesota eighth-graders were second only to Singapore, one of the top performing nations on TIMSS. The Goals Panel commissioned a study to see if it could identify policies that could have contributed to the higher performance in science than in mathematics.

Dr. William Schmidt, the executive director of the U.S. National Research Center at Michigan State University undertook in-depth analyses of the Minnesota and other TIMSS data. Senta Raizen of the National Center for Improving Science Education commented on the lessons learned from Minnesota's performance. Dr. Frances Lawrenz, a professor in the Departments of Education Psychology and Curriculum, and Wallace Professor of Teaching and Learning at the University of Minnesota in Minneapolis performed an extensive examination of the policies and leaders in mathematics and science education in Minnesota. In addition, once the case study was completed, Bill Linder-Scholer, the executive director of SciMath MN provided comments on the benefits and lessons learned from Minnesota's participation in TIMSS.

"This Minnesota study shows that high expectations for all students coupled with a focused, coherent curriculum and alignment with the system can produce world class performance for students," said Governor Tommy Thompson (R-WI), chair of the Goals Panel. "These are the goals of standards-based reform, and I think this study says that we are on the right course."

"We are proud of the accomplishments of our students in Minnesota. We have learned from TIMSS that we are moving in the right direction by implementing high standards statewide in math and science," said Governor Jesse Ventura (I-MN). "If students in Minnesota can perform so well with hard work, dedication and good standards, students everywhere should perform just as well."

The Goals Panel released *Minnesota & TIMSS* during a field hearing at Chicago's Jones Academic Magnet High School. In addition to releasing the case study, the field hearing examined the use of educational data and reporting as tools for helping all students achieve high standards. Members of the Panel discussed a variety of issues with the presenters, including:

- Using TIMSS as an international benchmark to inspire higher math and science achievement in the Chicago area from Dr. Paul Kimmelman and Dr. David Kroeze of the First in the World Consortium;
- Using opinion sampling and focus groups to secure parental input shaping the Milwaukee Neighborhood Schools Initiative from John Gardner, a member of the Milwaukee Board of School Directors; and,
- How Chicago Public Schools are using assessment information to enact systemic reforms from Philip J. Hansen, the Chief Accountability Officer for the Chicago Public Schools.

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Earlier in the day, Governor Tommy Thompson (R-WI), chair of the Goals Panel and State Representatives Mary Lou Cowlshaw (R-IL) and Spencer Coggs (D-WI) met with students of Jones Academic Magnet High School. The Panel members participated in a round table discussion with the students and Dr. Glenn "Max" McGee, Illinois State Superintendent. The group shared their views on the current state of mathematics and science education.

The Goals Panel 2000 Agenda

Today's field hearing and case study release is part of a yearlong initiative entitled "High Achieving Schools: The Promise, The Practice, The Results" that focuses on standards-based reform. The initiative began in April with a national teleconference on Baldrige criteria and the application of other business practices in education. The first regional field hearing was held in May in Los Angeles. A second was held on June 1 in Burlington, Vermont and a third was held in Atlanta, Georgia September 19. The final component of the 2000 Agenda will be a national teleconference on December 6 that will engage the nation by clarifying what has been learned and will empower educators to build consensus around promising practices.

About the National Education Goals Panel

Created in July 1990, the National Education Goals Panel is a bipartisan body of federal and state officials made up of eight governors, four members of Congress, four state legislators and two members appointed by the president. To learn more about the Goals Panel, please visit www.negp.gov. The eight National Education Goals call for greater levels of: student achievement and citizenship; high school completion; teacher education and professional development; parental participation in the schools; literacy and lifelong learning; and safe, disciplined, and alcohol-and-drug-free schools. The Goals also call for all children to be ready to learn by the time they start school and for U.S. students to be first in the world in mathematics and science achievement.

To download a copy of Minnesota & TIMSS: Exploring High Achievement in Eighth Grade Science visit www.negp.gov. Also available at that web site are video recordings of the Chicago field hearing (airing within one-week after the field hearing) and previous field hearings held in Los Angeles, California, Burlington, Vermont and Atlanta, Georgia.

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