

ADP State Action Plan – Minnesota

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Challenges and Opportunities

As Thomas Friedman (author of *The World is Flat*), Microsoft founder Bill Gates, Governor Tim Pawlenty and many others have observed, nations such as China and India have recognized that educational excellence is the key to future economic prosperity and have organized accordingly. The United States now stands at a critical juncture in preparing for future global economic changes. In Minnesota, we have the opportunity to take bold action to improve education – our most important economic and quality-of-life resource. Minnesota has joined with 21 other states in the American Diploma Project (ADP), an effort to raise expectations and achievement in our high schools so that all students graduate with the knowledge and skills they need to be successful in college and work.

Minnesotans have long been proud of their state’s history of strong support for education, and the high quality of its public education system. According to the Minnesota data profile compiled by Achieve, Inc., Minnesota is among the nation’s leaders in the percentage of ninth graders graduating on time (84 percent in the 2002 graduating class) and has shown the strongest improvement in educational attainment from 1990 to 2000, increasing the percentage of high school graduates achieving bachelor’s degrees from 25.8 percent to 34.5 percent.

But other data tell a different story, one that suggests looming problems requiring immediate attention. In one of the key areas widely seen as vital to future economic viability —mathematics — Minnesota is clearly lagging behind both the nation and the world. The percentage of Minnesota 8th graders enrolling in Algebra I — considered a “gateway” course to future success in math — was 27 percent in 2003, lagging the national average of 31 percent and well behind the 43 percent median rate of the best performing states. The proportion of high school students enrolling in high-level math courses beyond Algebra II — another key indicator of future success in math—was similarly disappointing, with only 38 percent taking an advanced course in math. According to *Getting Prepared: A 2002 report on recent high school graduates who took developmental/remedial courses* produced by the University of Minnesota and the Minnesota State Colleges and Universities, of those students who reach postsecondary education at Minnesota’s public colleges and universities, nearly one-third (31 percent) of incoming first-year students require remedial courses before being able to undertake college-level work. The majority of these courses are in mathematics.

Governor Pawlenty has made it a priority to develop Minnesota’s bio-technology capacity and economic competitiveness by expanding students' ability to access future work opportunities in science, technology, engineering and mathematics. The Governor and the Minnesota Department of Education (MDE) will work with leaders from K-12 and postsecondary education, business and other organizations to reach the following goals:

Redesign High School Education

Unlike many nations, our students have limited opportunities in the traditional high school to study technology and engineering design or to use state-of-the-art technology innovations and digital learning. MDE will provide technical assistance to math and science teachers across the state with program-focused technical assistance. Model high school programs will share their improvement strategies with schools across the state to seed similar initiatives in the state’s high schools.

Additionally, new drop-out prevention programs will be initiated with the federal grant and the results shared so that more high schools will initiate these structural changes.

Expand Rigorous Course Opportunities for All Students

Advanced Placement (AP) and International Baccalaureate (IB) programming should be available to a wider range of students at all levels of education – not just a select few students in high school. According to the College Board, only 8 percent of Minnesota students participate in AP – lower than the national average of 15 percent.

In an effort to provide better access to AP and IB courses, the Governor will offer a plan to provide financial incentives for school districts to offer AP and IB programming to a broader range of students at all levels of education – elementary, middle, and high school.

Expand Student Rigorous Course Taking and Earning of College Credit While in High School

The Governor's Get Ready, Get Credit initiative is designed to increase participation in more rigorous courses (Advanced Placement and International Baccalaureate) and to expand students' ability to earn college credits by taking College Level Examination Program (CLEP) exams in 34 subject areas at state expense, and to ensure college credit through articulation agreements with the state's public colleges and universities. Funding is provided to allow districts to purchase early college readiness assessments for students in grade 8 (the ACT Explore test) and grade 10 (the ACT Plan test), which align with the ACT exam taken by 66 percent of Minnesota high school students. These readiness exams are the cornerstone of an early effort to identify students in need of support at key transition points in math and science courses.

Provide Incentives to Offer Algebra I in the 8th Grade and Require Algebra II for Graduation

It is extremely important students take more rigorous math courses at an earlier age. In an effort to accomplish this goal, there will be a plan to provide financial incentives to school districts to offer Algebra I in the 8th grade and a state requirement that high school students complete Algebra II as part of their requirement for graduation.

Require Digital Learning Standards for Students and Teachers

In an effort to ensure students and teachers are competent in basic technology skills, the Governor will propose digital learning standards at the middle and high school levels and, additionally, digital learning standards for teachers to increase the use of content in the classroom to improve students' high school math and science performance.

Enhance Teacher Quality and Improve Teaching and Learning in Math and Science and Other Teacher Shortage Areas

To increase retention and early-career development of beginning teachers, Minnesota will expand its pilot teacher induction and mentoring program for teachers in high shortage subject areas, including math, science, special education, and world languages. In order to deliver rigorous programming in math and science, it is necessary for school districts to recruit and retain math and science teachers. According to Teacher Retirement Association (TRA) data, approximately 44% of new teachers in Minnesota leave the profession within their first five years of teaching.

Improve Achievement for all Students

A new Education Council will monitor student performance and establish annual and long-term improvement goals. Proposed support for innovative pilot programs to transform the teaching of high

school math and science is intended to raise overall student achievement levels and narrow the achievement gap that currently exists between white students and students of color. By encouraging standards-based instruction, research-based best practices, and aggressive measurement of progress with rigorous academic standards, MDE specialists will assist schools in aligning local curriculum, instruction and classroom-based assessments to state standards.

Strategies to Reach the Goals of Minnesota's ADP Plan

1. Policy Agenda for System Reform and Improvement in Student Achievement

A. The Governor will appoint an Education Council to establish and monitor 10-year performance improvement goals. The Education Council will bring together educators, policymakers and business leaders to develop common goals, performance benchmarks and recommended education policies for the state's entire education system. The Council will enable coordination that is not currently possible due to the highly fragmented nature of the state's multiple governance systems. The Education Council will provide the Governor with stronger authority to address Minnesota's education governance and accountability. The charge for the Education Council will be to: (1) establish annual and ten-year quantifiable goals and benchmarks for P-16 levels of education that will measure high school and postsecondary achievement and accountability; (2) monitor and report on the objectives of this proposed project that include: rigorous course-taking and expanded education options for students and families; improved achievement for all students; enhanced teacher quality and improved teaching and learning in math and science; and a coordinated P-16 governance system; (3) promote K-14 as the minimum level of educational attainment, and (4) advise the Governor and the Legislature on education policies to produce and sustain education improvements in Minnesota.

B. State testing programs will be redesigned to support the Governor's proposed Get Ready, Get Credit (GRGC) initiative to promote early and ongoing assessment of students' college readiness, increase student enrollment in rigorous courses, promote early career planning, increase opportunities to earn college credit while in high school and establish additional articulation agreements with higher education to award credit to students who successfully demonstrate mastery of knowledge and skills. Funding to replace the state Basic Skills Test with the higher level Minnesota Comprehensive Assessment II tests and to initiate the Grade 8 Explore test and Grade 10 Plan test (ACT EPAS assessment system) is included in legislative appropriations for the biennium.

2. Agenda to Improve P-16 System Accountability and Performance

A. The Minnesota P-16 Partnership will establish working groups in five key areas related to student transitions from high school to college. Each group will utilize existing research (if available) or commission appropriate new research necessary to design and recommend effective, systemic improvements in its area of responsibility. These working groups are:

1. P-16 Student Identification System Group. This group will develop a new P-16 student identification system that builds upon the established state K-12 student

identification system. Included in the new system will be the University of Minnesota, the Minnesota State System of Colleges and Universities (MNSCU), Minnesota's private colleges and universities (non-profit and for-profit), and the Minnesota Department of Education.

2. College Readiness Knowledge and Skills Group. This group will identify the college readiness knowledge and skills required for postsecondary entrance and will develop a document that aligns Minnesota state graduation requirements (i.e., course credit requirements), especially in math and science, with postsecondary readiness expectations.

3. Aligned Math Assessment and Postsecondary Readiness Group. This group will review the state math assessment system and its alignment with postsecondary entrance requirements, recommend viability of using a cut-off score to demonstrate proficiency and indicate college readiness, and share the results of the alignment study with math teachers for course and instruction improvements, including professional development.

4. High School Remediation Study Group. This group will identify factors influencing Minnesota's current remediation rate of 31 percent in public postsecondary institutions and recommend actions to develop earlier interventions to improve students' math skills while in high school, or to develop new models for effective transition programs prior to students' entering postsecondary education.

5. College Access Program Study Group. This group will review current college access programs, especially those that support minority and low-income students, and recommend new or expanded initiatives to improve high school advising programs, transition support and other efforts that will increase successful entry into postsecondary education.

B. Convene a Governor's Roundtable on science, technology, engineering and math for business, education, and civic leaders to assess statewide needs for knowledge and skills in math and science, to be followed by a Minnesota Summit on Science, Technology, Engineering and Math for high school students to promote increased study of science, technology, engineering, and math disciplines and raise awareness of STEM-related careers.

3. State Education Agency Support to Reform the Teaching of Science, Technology, Engineering, and Math

A. Increase the number of high schools that implement new courses in math and science disciplines and increase the number of students enrolling in and completing high school math and science courses and postsecondary training or degrees by: developing strategies to encourage implementation of voluntary K-12 Technology, Engineering, and Design (TED) programs with school-designed curricula; increasing the number and visibility of career and technical education pathways leading to industry certification; and increasing the number of schools offering math and science remediation at key transition points (grades 8-9, and grade 12 to postsecondary education or training).

B. Provide ongoing training and support to teachers in the science, technology, engineering and math disciplines so that they align instruction and classroom assessments to state standards, and improve instruction through adoption of best practices.

1. Collaborate with the Math and Science Quality Teaching Networks to increase the number of teachers instructing with digital content in math and science, communicate to high schools the system requirements for high school classroom delivery of digital content and promote technology innovations in digital learning.

2. Support 2,000 math and science teachers' participation in the Surveys of Enacted Curriculum (SEC) for math and science, enabling high school teachers to compare results across states, evaluate online the alignment between classroom instruction and state academic standards, plan and implement improvements.

3. Expand the Lighthouse High Schools program model to include a focus on math and science. For new schools, adopt the Lighthouse model of action research for high school improvement, and develop and document ideas for a state clearinghouse for promising programs and curriculum implementation.

4. Partner with high schools and funding organizations to administer the High School Survey of Student Engagement (HSSSE) yielding a reliable source of student feedback to inform the high school improvement planning process.

C. Improve the training of incumbent principals to increase high schools' capacity to implement systemic improvement and to develop teacher quality initiatives required to improve student learning.

D. Implement Workforce Development Council priorities to strengthen the academic rigor of career and technical education (CTE) in high schools and industry certification programs. Contract with a university researcher to survey career and technical teachers on math concepts in CTE courses, and develop and distribute instructional materials to increase mathematics and science content in career and technical education courses.

E. Increase the rigor of high school graduation testing requirements by developing and deploying a new, online computerized state science assessment by 2008. Minnesota's proposed assessments in science are well ahead of anything currently available or in the immediate testing pipeline. MDE has planned a computer-delivered assessment that uses media files, such as video clips of investigations and phenomena, to provide the context for the items on the test. In addition to multiple choice and typical constructed response items, the most common type of item will be "figural response." In these items, students will respond by manipulating graphics, selecting points on images or constructing graphs. MDE will recruit 75 science teachers to participate in two test item review processes to ensure a highly valid science assessment containing innovative item types that support science-learning strategies (June 06 and June 07)

F. Work to increase the number and improve retention of qualified teachers in shortage areas (particularly math and science).

1. Seek changes from the Legislature to pursue policies that will require Minnesota teacher preparation institutions to regularly align preparation programs and exit requirements with current Minnesota academic standards and graduation requirements; report on the performance of Minnesota teacher preparation programs in preparing teachers in key shortage areas; and report on license waivers by geographic region to highlight shortages.

4. Work with the Minnesota Legislature and education committees to enact any necessary changes to laws and rules as it pertains to the ADP Plan.

5. Communications Plan to Build Public Awareness and Support

A. The project team will work with the Governor and the Minnesota P-16 Education Partnership members to conduct a statewide communications campaign targeted to high school students and their parents to promote K-14 education as the minimum level of education expected for all students, the importance of high school achievement, the value of rigorous courses including math and science and the need for early career and postsecondary planning. This campaign will draw on the resources of the Minnesota P-16 Education Partnership to communicate tips for successful transition to postsecondary education and work.

All partners will help promote public awareness and use of the (1) SchoolMatters.com web-based tools to understand and monitor school performance, (2) MDE report card measures for schools, (3) measures of improvement in the higher education accountability system, when developed, and (4) an annual report from the Governor on the state's 10-year goals for improvement in student achievement.