High Schools That Work:

An evidence-based design for improving the nation's schools and raising student achievement

SREB

High Schools That Work is the nation's first large-scale effort to engage state, district and school leaders and teachers in partnerships with students, parents and the community to improve the way high school students are prepared for work and further education.

HSTW provides a framework of goals, key practices and key conditions for accelerating learning and setting higher standards. It recommends actions that provide direction to schools as they work to improve academic and career/technical instruction at schools and at work sites. These recommendations meet the criteria for comprehensive school reform.

The *HSTW* effort is based on the belief that, in the right school environment, most students can learn complex academic and technical concepts. The initiative targets high school students who seldom are challenged to meet higher academic standards.[1]

As our nation seeks to maintain its competitiveness in the world economy, *HSTW* offers school systems and schools a unique opportunity to prepare more students to communicate, solve problems, perform tasks and produce products — on the job and in a lifetime of learning. To help schools customize site action plans in order to reach their improvement goals, *HSTW* provides intensive technical assistance, focused staff development, targeted assessment services, and ongoing communication and networking opportunities.

HSTW began with 28 sites in 13 states when it was started in 1987 by the Southern Regional Education Board-State Vocational Education Consortium. Since then it has grown to more than 1,100 sites in 27 states, including Alabama, Arkansas, Delaware, Florida, Georgia, Hawaii, Idaho, Indiana, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Mississippi, Missouri, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Carolina, Tennessee, Texas, Vermont, Virginia and West Virginia.

Major goals

The mission of schools in the *HSTW* network is to prepare high school students for both postsecondary education and a career by having students complete a solid academic core and either an academic, a career/technical or a blended concentration. Higher standards in the workplace and growing numbers of high school graduates seeking postsecondary education are primary factors in the need for most students to complete a challenging program of study.

Southern Regional Education Board

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[1] These students are the 60 to 65 percent of high school youths who plan to work, attend a two-year technical or community college, enroll in a four-year college or university with an open admissions policy, or enter the military after high school graduation.

The major goals of *HSTW* are to:

- raise the mathematics, science, communication, problem-solving and technical achievement of more students to the national average and above;
- blend the essential content of traditional college-preparatory studies — mathematics, science and language arts — with quality career/technical studies by creating conditions that support school leaders, teachers and counselors in carrying out key practices; and
- advance state and local policies and leadership initiatives necessary to sustain a continuous school-improvement effort for both academic and career/technical studies.

Key practices for accelerating student achievement

High expectations — setting higher expectations and getting more students to meet them

Career/technical studies — increasing access to intellectually challenging career/technical studies, with a major emphasis on using high-level mathematics, science, language arts and problem-solving skills in the modern workplace and in preparation for continued learning

Academic studies — increasing access to academic studies that teach the essential concepts from the college-preparatory curriculum by encouraging students to use academic content and skills to address real-world projects and problems

Program of study — having students complete a challenging program of study with an upgraded academic core and a major

Work-based learning — giving students and their parents the choice of a system that integrates school-based and work-based learning that spans high school and postsecondary studies and that is planned by educators, employers and employees

Teachers working together — having an organization, structure and schedule giving academic and career/technical teachers the time to plan and deliver integrated instruction aimed at teaching high-level academic and technical content

Students actively engaged — getting every student involved in rigorous and challenging learning

Guidance — involving each student and his or her parents in a guidance and advisement system that ensures the completion of an accelerated program of study with an in-depth academic or career/technical major

Extra help — providing a structured system of extra help to enable students who may lack adequate preparation to complete an accelerated program of study that includes high-level academic and technical content

About SREB

The Southern Regional Education Board (SREB), the nation's first interstate compact for education, was created in 1948 by Southern governors and legislatures. SREB helps educational and governmental leaders work cooperatively to advance education and, in doing so, improve the region's social and economic life.

SREB assists state leaders by identifying and directing attention to key issues; collecting, compiling and analyzing comparable data; operating projects such as *High Schools That Work*, the *Electronic Campus* and the interstate cooperative program; and initiating studies and discussions that lead to recommendations for state and institutional action.

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Keeping score — using student assessment and program evaluation data to improve continuously the school climate, organization, management, curricula and instruction to advance student learning and to recognize students who meet both curriculum and performance goals

Key conditions for accelerating student achievement

High Schools That Work is based on the belief that everyone in the education hierarchy must work together to align policies, resources, initiatives and accountability efforts to support schools as they adopt comprehensive school-improvement designs. Several conditions are fundamental in using *HSTW* to raise student achievement:

- An organizational structure and process for ensuring continuous involvement by school administrators and teachers in planning strategies to achieve the key practices — Each school needs a clear mission statement to prepare high school students for success in postsecondary education and the workplace.
- Leadership from the district and the school to improve curricula, instruction and student achievement — Each school site should have a leadership team consisting of the principal, the assistant principal and teacher leaders who support, encourage and actively participate with the faculty in implementing the key practices.
- A commitment from the school board to support the school in replacing the general track — Schools should offer a more demanding academic core and either an academic, a career/technical or a blended concentration.
- A system superintendent and school board members who support school administrators and teachers in carrying out the key practices — This commitment includes financial support for instructional materials, time for teachers to meet and plan together, and six to eight days per year of staff development on using the key practices to improve student learning.
- A school superintendent and a school board that will allow the high school to adopt a flexible schedule that enables students to earn more credits — The block schedule that *HSTW* recommends for challenged schools makes it possible for students to earn 32 credits in four years.

Recommended curriculum

High school graduates are ready to move on to further education and the workplace when they take certain courses, meet certain goals and demonstrate that they can do certain things. *HSTW* sites expect students to complete a challenging curriculum that focuses on raising academic and technical achievement and meeting the *HSTW* performance goals in reading, mathematics and science. Students should be able to write well-researched and well-organized documents; make good oral reports;

About SREB

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SREB's concern with the need to better prepare high school students began in the early 1980s with a series of publications dealing with projected supply and demand in a number of professions. In *The Need for Quality,* SREB offered recommendations for educational improvement, including several that addressed career/technical education. SREB's 1988 publication *Goals for Education 2000,* which spurred action in SREB states, included a number of goals related to raising the achievement of high school students.

In 2001-2002, a new SREB Commission on Education Goals developed 12 goals for the 21st century. SREB will report on each state's progress toward these goals: young children's readiness for school; student achievement from the early grades through high school; the quality of education provided by community colleges, four-year colleges and universities; state leadership in ensuring effective leaders and teachers for every school and every student; accountability for schools, colleges and universities; and funding education as a priority in state budgets.

Award of Educational Achievement

All *High Schools That Work* students who meet three performance goals (reading, mathematics and science) and two out of three academic curriculum goals are eligible to receive a *High Schools That Work* Award of Educational Achievement. Students qualify for the award by completing four credits in a broad field of career/technical studies and participating in the *HSTW* Assessment. The three performance goals are:

- Reading proficiency – Students can use explicitly stated information from grade-level texts to make and support interpretations, connect ideas within a text, identify and evaluate relevant information, and make simple inferences. They can describe and evaluate how information is presented.
- Mathematics proficiency – Students can perform basic arithmetic operations, use elementary reasoning techniques to solve straightforward one- or two-step word problems, and perform simple measurement tasks that include metric units. They understand certain properties in geometry, can identify and visualize various geometric figures in two and three dimensions, and can reason spatially using properties of those figures. They can read and interpret graphs, compute with data from tables and graphs, and answer simple conditional probability questions. They understand algebraic processes and can combine like algebraic terms, solve simple linear equations and inequalities, locate points on a coordinate grid, construct simple algebraic statements, and extend numerical patterns.

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work in teams to learn new content and skills; use time, money and other resources wisely; use data and other information; and use computers and other technology to complete assignments.

To complete the recommended curriculum, each student takes:

- at least four English courses with the content and performance standards of college-preparatory English.
- at least three mathematics courses, including two courses with the content and performance standards of college-preparatory Algebra I, geometry, Algebra II and trigonometry.
- at least three science courses, including two courses with the content and performance standards of college-preparatory biology, chemistry and physics or applied physics.
- at least three college-preparatory-level social studies courses.
- at least four courses in a planned career/technical concentration or additional course work in either mathematics and science, the humanities, or a blended concentration. A career/technical concentration consists of at least four credits in a planned sequence of quality career/technical courses in a broad field of study with students meeting standards on an external assessment. A mathematics and science concentration includes four or more credits each in mathematics and science courses with at least one credit at the Advanced Placement level. A humanities concentration includes four credits each in college-preparatory/honors English and social studies with at least one course at the Advanced Placement level, and four more credits drawn from foreign languages, fine arts, journalism, debate or additional advanced-level courses in literature, history, economics, psychology or another humanities area. A blended academic and career/technical concentration includes four college-preparatory English courses, three mathematics courses at the level of Algebra I and higher, three college-preparatory-level lab science courses, and four courses in a planned series of career/technical courses.
- at least two courses in related academic and career/technical fields, including at least one-half credit in a basic computer course covering word processing, database entry, presentation software, and use of the Internet and e-mail. The computer technology course should be taken early in high school so that the student will be able to use technical skills in other classes.

Students at *HSTW* sites are expected to complete a rigorous academic core taught to college-preparatory standards. In addition, they are expected to "major" in either a broad technical field of study or further academic studies. The purpose of a career/technical concentration in high school is to give students the "technical literacy" to succeed in work and further education. Someone who is technically

literate has a head start on others in a career field. He or she is able to read, understand and communicate; use mathematics to solve problems; understand technical concepts; and use basic technology to complete projects.

The *High Schools That Work* curriculum is based on making greater use of functional, hands-on learning in academic courses. Applied learning methods help students see the usefulness of academic courses to gain a deeper understanding of academic concepts and skills.

In changing the way they prepare students, *HSTW* sites encourage academic and career/technical teachers to work together, business and postsecondary representatives to provide needed input, and parents to become more involved in deciding what courses their children will take in high school.

Administrators need to make sure teachers and counselors have time, materials and staff development to implement a new, accelerated program of academic studies taught so that students can "get it."

A meaningful senior year in high school

For many students, the senior year in high school is a time to celebrate or make the "farewell tour" rather than to prepare for an important transition in life. Many students seem to put more effort into the low-skills part-time jobs that earn them spending money than into their ongoing education.

HSTW leaders, teachers and counselors strive to make the senior year a time to get students ready for the next step. They set a goal that all seniors will take at least three academic courses, including a high-level mathematics or science course in grade 12. They enroll seniors in college-preparatory language arts courses and/or teach the College Board's Pacesetter English to seniors who previously have taken low-level English courses.

Every senior completes a project that includes a research paper, a product or service, and an oral presentation.

The effort to beef up students' senior-year experiences can begin before grade 12. School leaders can work with postsecondary institutions to administer their placement exams and with employers to administer their employment exams to 11th-graders. Leaders can use the results of these exams in working with parents and students to modify the program of study to prepare 12th-graders for postsecondary studies and work.

Schools can increase the quality of career/technical studies by giving juniors and seniors access to planned work-based learning, Web-based technical courses, and studies at area career/technical centers and postsecondary institutions.

Award of Educational Achievement

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- Science proficiency – Students are familiar with fundamental terms and concepts in life science, physical science and earth science and have some elementary factual and conceptual knowledge of those areas. They can read and interpret a graph or a diagram, use a scale to estimate distance on a map, recognize the elements of the scientific method and the appropriate conditions of an experiment, and understand that scientific theory is founded on experimental observations and predictions that can be tested.

The three academic curriculum goals are:

- English – At least four courses with the content and performance standards of college-preparatory English;
- Mathematics – At least three courses, including two courses with the content and performance standards of college-preparatory Algebra I, geometry, Algebra II and trigonometry;
- Science – At least three courses, including two courses with the content and performance standards of college-preparatory biology, chemistry and physics or applied physics.

"The resurgence of public confidence in Taconic High School stems from our implementation of the High Schools That Work *key practices. Our restructuring efforts have been driven by technical support and data from* High Schools That Work*, and our faculty has been energized by participating in* High Schools That Work *national and regional staff development. Any high school would benefit significantly from membership in the* High Schools That Work *network."*

Douglas McNally
Principal
Taconic High School
Pittsfield, Massachusetts

Transition for students in middle grades and high school

HSTW sites are responsible for making transition easier for young people moving from the middle grades to high school and from high school to the "real world." To address transition, high schools work with the middle grades in preparing students to complete a rigorous high school curriculum and with employers and postsecondary institutions in getting students ready for careers and college.

Building a strong bridge from the middle grades to high school is the most urgent issue in raising student achievement and keeping students in school. Students must be ready to meet high standards in grades nine through 12. Unprepared students are likely to drop out and seek less stringent diploma options.

SREB recommends a "gearing-up" program for seventh- and eighth-graders who need accelerated instruction in language arts, reading and mathematics. A four- to six-week summer program to help entering ninth-graders who lack reading, writing and mathematics skills is also recommended. Ninth-graders who are not ready for college-preparatory courses in English and Algebra I should have "double doses" of these subjects during the school year. A two-semester program will help students strengthen their academic skills.

A design that works in raising student achievement

High Schools That Work is not an education reform plan that "goes through the motions" of school reform. Solid research shows that when schools implement the *HSTW* design, they have success in raising student achievement.

Three external studies by national organizations have shown the importance of *HSTW* in helping schools improve curriculum, instruction and student performance:

The American Institutes for Research selected *HSTW* in 1999 as the nation's only initiative to reform high schools that shows "strong evidence" of raising student performance. The recognition was based on a study conducted by AIR and commissioned by five national groups: the American Association of School Administrators, the American Federation of Teachers, the National Association of Elementary School Principals, the National Association of Secondary School Principals and the National Education Association.

The Research Triangle Institute — in a study prepared for the U.S. Department of Education — found that *HSTW* sites in a two-year period were able to increase the percentages of students who met the *HSTW* achievement goals and completed the challenging *HSTW*-recommended program of study.

MPR Associates Inc. found gains in student achievement linked to *HSTW* key practices, particularly an upgraded academic core, integrated academic and career/technical studies, and guidance/advisement about educational and career plans.

These reports are available on the SREB Web site at www.sreb.org. Click on the *High Schools That Work* tab and then click "External Research Reports." Case studies of sites that have implemented the *HSTW* framework of goals and key practices also can be found on the SREB Web site. Click on the *High Schools That Work* tab and then click "Publications and Materials" and scroll to the section headed "Case Studies."

As participating schools make progress in implementing the components of the comprehensive *HSTW* design, they experience:

- increases in the numbers of students taking higher-level courses, such as Algebra I and II, geometry, pre-calculus, college-preparatory biology, chemistry, and physics or applied physics, and completing a planned career concentration;
- an increase in the proportion of students who meet *HSTW* performance goals in reading, mathematics and science;
- students in career/technical concentrations who outscore similar students nationally on achievement tests;
- growing confidence by teachers that new instructional methods can enable many more students to succeed in challenging courses;
- rising SAT and ACT scores as more students take these exams;
- improved attendance, graduation rates and postsecondary enrollment;
- decreased dropout rates and discipline referrals; and
- the possibility of receiving state and/or national recognition for their improvement efforts.

How progress is measured and reported

HSTW staff members collect and use data from several sources to develop reports that chart schools' progress. *HSTW* consultants share these reports with school leaders to help them develop and revise school improvement plans. The reports show leaders how recommended improvement strategies are linked to student achievement.

The most important tool that *HSTW* uses to measure schools' and students' improvement is the *HSTW* Assessment — referenced to the National Assessment of Educational Progress (NAEP). The *HSTW* Assessment measures seniors' achievement in reading, mathematics and science. It shows schools how they are faring on performance indicators and helps them identify areas in which more improvement is needed.

The *HSTW* Assessment includes a survey of students' high school experiences that addresses what and how they have been taught, what has been expected of them, and how much effort they and the school have exerted. The results of this survey

"West Virginia's educational reform efforts have been greatly influenced by our active participation in the SREB High Schools That Work *initiative. The concepts of raising expectations, giving all students access to high-level academic studies and providing extra help and time are reflected in state legislation and policies being implemented in all high schools in West Virginia."*

Sen. Lloyd G. Jackson II
Senate Education Chairman
West Virginia Legislature

show school leaders and teachers the connection between student performance and the quality of classroom experiences.

A transcript study relates students' courses to achievement in reading, mathematics and science.

HSTW collects useful information from school personnel. Administrators, teachers and counselors at each *HSTW* site participate in a survey that reveals how much time teachers spend working and planning together and what they think of the school climate and the quality of instruction. This survey results in a report that school leaders can use in prioritizing the professional development needs of their staff and in identifying classroom practices that do not improve student achievement.

HSTW monitors what happens after students graduate and provides high schools with this information. A year after high school, graduates report on how well their high school experiences prepared them for the workplace or further education. This firsthand information gives the school powerful feedback on how it can improve.

Schools in the *HSTW* network receive additional feedback through technical assistance visits by outside teams. Each visit results in a no-nonsense report of actions the school can take to advance student learning.

"The Utility Business Education Coalition aligned with High Schools That Work *because of the initiative's results-oriented leadership and well-documented ability to raise students' academic and technical achievement. We share a common commitment to higher expectations and rigorous academic and technical standards that are essential to our nation's economic and social vitality. Business and industry have a critical role to play in ensuring that all high school graduates are prepared to compete successfully in the global marketplace."*

Robert B. Catell
Chairman and CEO
KeySpan Inc.
Chairman (1999-2000)
Utility Business Education Coalition (UBEC)

HSTW's research partners

Educational Testing Service designs the *HSTW* achievement tests in reading, mathematics and science; prepares and distributes test materials to local sites; and prepares and disseminates the results to each state and site.

MPR Associates Inc. works with SREB to design and distribute a survey of academic and career/technical teachers at *HSTW* sites and to develop reports based on the findings. MPR also produces reports based on follow-up studies of youths one year after graduation from *HSTW* sites.

The Research Triangle Institute produces research reports on curriculum and instructional practices that are linked to advances in achievement at most-improved *HSTW* sites.

How will you benefit from being a *HSTW* site?

Everyone wins through *HSTW.*

Benefits to students — *High Schools That Work* improves students' thinking and academic and career/technical knowledge and skills. It shows students the connection between high school and the future and encourages them to prepare for their next goal, which often combines work and further study.

Benefits to teachers — Teachers gain confidence in their ability to help all students complete challenging studies. They work together to create a more rigorous curriculum and to plan professional development activities aimed at raising student achievement.

Benefits to principals — School administrators strengthen their leadership skills as they deal with scheduling, staffing and curriculum-design issues that result from offering a high-quality curriculum to all students. They become more adept at using the incremental planning process — planning, doing, reviewing, making new plans and revising old ones — to improve student learning.

Benefits to schools — Schools receive data about students' strengths and weaknesses in reading, mathematics, science and career/technical studies. Teachers, administrators and community members base action plans on this information. The result is improved communication among faculty and staff, students, parents, employers, and colleges and universities.

Benefits to educational reform — States adopt new long-term strategies for working with local school systems to improve high schools. School leaders and teachers discover that they can raise the achievement of all students, including those who have been underserved.

Benefits to the community and the nation — A challenging program of study raises students' communication, mathematics, science and technical skills; increases their earning potential; and raises the bar of achievement for everyone.

What do states agree to do?

States participating in *High Schools That Work* agree to:

- Name a representative to serve on the *HSTW* board and identify one or more coordinators to work with *HSTW* sites in the state.
- Allocate discretionary funds to help sites implement their school improvement plans.
- Conduct technical assistance visits to one-third of the sites annually to help new sites develop and implement action plans for raising student achievement and to recommend ways for existing sites to advance student learning.
- Link staff development to sites' school improvement plans and create opportunities for teachers and administrators to participate in state-sponsored institutes and SREB workshops and conferences.
- Support sites in participating in the *HSTW* Assessment and help sites use data to improve their action plans.
- Foster networking of sites through meetings, visits and electronic communication.
- Convene the sites regularly to share resources and solve common problems.

"Maryland schools are benefiting from involvement in High Schools That Work. *All of our* High Schools That Work *sites have increased student achievement in at least one area — reading, mathematics and science — and half of them have increased achievement in two or more of these areas. Our sites are reorganizing schedules, revising courses, upgrading requirements, expanding instructional strategies, and providing extra help and time for students to reach new performance levels."*

Nancy S. Grasmick
State School Superintendent
Maryland State Department
of Education

"Atlanta high school students are benefitting from the district's membership in the High Schools That Work *urban initiative.* High Schools That Work *advocates a rigorous academic curriculum that challenges students to meet high standards in school and to prepare for productive lives in the future. We welcome the technical assistance and staff development that* High Schools That Work *provides and the assessment information that helps us chart our progress in raising student achievement."*

Beverly L. Hall
Superintendent
Atlanta Public Schools

What do participating sites agree to do?

Schools and school systems participating in *HSTW* agree to:

- Have site leaders — superintendent, school board members, principal and a core group of teachers — examine the goals and key practices and decide that *High Schools That Work* is viable for the school and the community. They commit to at least a five-year effort to implement the key practices and to eliminate the general track.
- Appoint someone to coordinate *HSTW* action planning, staff development and technical assistance; coordinate data collection; monitor progress; foster communication; and integrate the *HSTW* goals and key practices with other school improvement efforts.
- Support academic and career/technical teachers with staff development, materials and time to work together to implement the key practices.
- Organize a school improvement committee composed of key academic and career/technical teachers and administrators, guidance counselors, and representatives of business, industry and postsecondary education. Subcommittees address curriculum, guidance, evaluation and staff development.
- Prepare an action plan for implementing the key practices and a site-specific staff development plan to help teachers carry out the action steps.
- Participate in the *HSTW* Assessment to obtain baseline data and to measure progress in raising student achievement.
- Use *HSTW* indicators of progress in working toward a goal of having 85 percent of career-oriented students meet the *HSTW* achievement goals in reading, mathematics and science.
- Become an active member of a state and multi-state network for sharing information and ideas.
- Give students access to modern career/technical courses, either at the high school, at an area career/technical center, at a college or university, or in a work setting that is connected to school-based academic and technical studies. Site leaders will work closely with employers and two-year postsecondary institutions.
- Designate staff members to "coach" all teachers in getting students to use reading, writing and mathematics across the curriculum to improve achievement in all content areas.

What assistance does *HSTW* provide?

HSTW provides state, school system and school site partners with leadership, guidance, information and assistance. Services include:

- A framework of proven strategies and a recommended curriculum for helping students learn higher-level academic and technical content.
- Assistance in developing a site action plan and conducting site-specific staff development.
- Technical assistance in curriculum design, team-building and evaluation.
- Information-sharing from school to school and state to state.
- Publications that describe school efforts and successful practices.
- An evaluation process that measures progress in improving student achievement.
- Meetings, workshops and conferences to help sites find solutions to common problems. The *HSTW* Staff Development Conference each July is a showcase for new and successful ideas and approaches from national speakers and effective school and teacher leaders. National workshops throughout the year focus on professional development topics such as preparing teacher-advisers, using data to implement the *HSTW* design, improving career/technical instruction, and helping students make the transition from the middle grades to high school and from high school to postsecondary education and a career.
- Contracted site-specific services, such as planning, staff development and technical assistance visits.

Future plans for *High Schools That Work*

SREB is stepping up its major emphasis on helping states, districts and schools raise the achievement of career/technical students in preparation for careers and further education. Activities include:

- Promoting reading and writing for learning — *HSTW* has developed a Web-based course to help teams of teachers and administrators learn through the Internet the successful techniques that have been offered in workshops in the past. The course provides academic and career/technical teachers with high-impact, low-cost strategies for helping students read and write to learn in all classrooms.
- Raising students' mathematics achievement — *HSTW* works with the Center for Organizational Research and Development (CORD) to prepare teams of teachers to integrate mathematics into career/technical fields of study. The training upgrades career/technical teachers' mathematics skills, helps these teachers plan ways to incorporate mathematics into their instruction, and builds the capacity of mathematics teachers to coach career/technical teachers in how to integrate mathematics into their courses.

High Schools That Work *provides schools with benchmarks reports every two years that indicate how they are doing in eight broad areas of school improvement. The reports allow school leaders to gauge the progress they are making in implementing the* HSTW *design and to make plans for raising student achievement in the future.*

- Advancing technical literacy — Career/technical students must be able to read, understand and communicate; use mathematics reasoning and understanding; use technical concepts; and apply basic technology in postsecondary study or a chosen career field. *HSTW* will debut a national workshop in 2003 focusing on improving students' technical literacy. This training will assist teams of career/technical teachers, administrators and language arts teachers in developing literacy strategies to help students pass written and performance exams and in creating assignments that advance student achievement.
- Improving the knowledge and effectiveness of career/technical teachers — These teachers need to know their own subjects, how to get students to learn rigorous academic and technical content, and how to measure students' technical literacy as well as specific skills. Career/technical teachers should be properly trained, supported with ongoing professional development and assisted in becoming certified by The National Board for Professional Teaching Standards.
- Measuring what students learn in career/technical courses — *HSTW* believes that all students who complete a concentration in a career/technical field should be required to take a certification exam in that field of study. If no exam is available, teachers can give a three-part end-of-course exam consisting of a comprehensive "technical literacy" test, an open-ended project and an oral presentation on the project. All of these activities are designed to show that students know and can use high-level skills in mathematics, science and communication in solving real-world problems found in the workplace.
- Preparing school leaders — Effective school leaders are the essential ingredient in changing school and classroom practices and improving student performance. SREB has launched an initiative to prepare teams of school-building personnel — principals, aspiring principals and teacher leaders — who will use data to make wise decisions about curriculum and instruction. SREB is working with states to build leadership capacity through state leadership academies and higher education institutions.
- Contracting for services — Many districts and schools outside the *HSTW* network seek services from SREB in improving student performance. SREB will continue to contract with these entities to provide site-specific services, such as technical assistance and professional development, in implementing the *HSTW* framework of goals and key practices.

Benchmarks help schools measure progress in getting career-oriented students to meet the *High Schools That Work* academic achievement goals

Closing the achievement gap is about closing the design gap. Schools that become part of the *High Schools That Work* network are expected to show progress in changing school and classroom practices in ways that raise student achievement. In doing so, these schools focus on practices that have proven effective in advancing student achievement.

High Schools That Work provides schools with benchmarks reports every two years that indicate how they are doing in eight broad areas of school improvement. The reports allow school leaders to gauge the progress they are making in implementing the *HSTW* design and to make plans for raising student achievement in the future.

SREB and the states expect *HSTW* sites to show consistent progress until the *HSTW* design is fully implemented and at least 85 percent of career-oriented students are meeting the *HSTW* performance goals in reading, mathematics and science. The goals are set at a level that reflects the readiness of students to perform successfully in postsecondary education and/or a career.

To get 85 percent of career-oriented students to meet the performance goal in reading, schools enroll all students in high-level English courses and provide the types of experiences that enrich students' learning. Students' chances of meeting the *HSTW* reading goal are 88 out of 100 if they take four years of college-preparatory/honors English, complete assignments in career/technical classes that require them to read and interpret technical information, complete short writing assignments at least weekly, read and demonstrate understanding of a number of books each year, read two or more hours a week outside of class, and use word processing frequently to complete homework assignments.

In mathematics, 83 percent of career-oriented students will meet the mathematics achievement goal if they take college-preparatory-level courses — including Algebra I, geometry or Algebra II — and take a career/technical course in which they use mathematics daily or weekly to complete assignments.

Eighty percent of career-oriented students will meet the science achievement goal if they do these things: complete three years of lab science, including at least two college-preparatory-level courses, and complete a concentration in a career/technical area based heavily on science. Such courses include agriculture, communication, electronics, community protection and drafting/design.

The benchmarks reports are based on the six key conditions and the 10 key practices of *HSTW* and are grouped into broad themes to help school leaders and teachers organize efforts to improve student achievement. Schools use data from the *HSTW* Assessment, a survey of students' high school experiences, a transcript study of students' high school courses, a follow-up study of graduates' successes and failures, and a survey of teachers' experiences and the types of professional development that will help them improve instruction.

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"North Carolina is proud to have been a partner with SREB in High Schools That Work *since the beginning. SREB has earned its reputation for providing a clear vision, serving as a credible source of information and staying with an issue over time."*

June Atkinson
Director of Instructional Services
North Carolina Department
of Public Instruction

HSTW helps schools raise student achievement

The percentage of career-oriented students who completed all components of the challenging *High Schools That Work* curriculum of English, mathematics and science courses almost doubled between 1996 and 2000. Eighteen percent of students completed the curriculum in 1996; 34 percent did so in 2000.

Substantial increases took place in the four-year span in students completing each component of the curriculum: The percentage of students rose from 64 percent in 1996 to 85 percent in 2000 in mathematics; from 39 percent in 1996 to 62 percent in 2000 in science; and from 33 percent in 1996 to 45 percent four years later in English.

There was a corresponding increase in the percentages of students meeting the *HSTW* performance goals in reading, mathematics and science. These goals have been set high enough for students to pass employers' exams for better jobs and to improve students' chances of pursuing further study without having to take remedial courses.

At high schools that assessed career-oriented students in 1996 and again in 2000, the percentage of students meeting the performance goals grew from two-fifths of all students to between one-half and three-fifths of all students.

(continued on page 15)

Benchmarks (continued from page 13)

The following section contains the eight broad areas and some examples of evidence-based indicators that schools can use in raising student achievement. For a complete list of indicators, request the SREB publication *Establishing Benchmarks for New and Maturing* High Schools That Work *Sites.* This publication is available also on the SREB Web site at www.sreb.org. Click on *High Schools That Work* and then on Assessment and Using Data.

- Set a clear mission and a vision for success.
  Example: Teachers strongly agree that the goals and priorities of the school are clear.
- Raise expectations and provide extra help.
  Examples: Students report that teachers often clearly indicate the amount and quality of work necessary to earn an "A" or a "B."
  Students report that teachers often set high expectations and are willing to help them meet them.
- Provide rigorous and challenging academic and career/technical content.
  Examples: Students complete three mathematics credits (four at urban and Comprehensive School Reform sites) with at least two credits equal to Algebra I, geometry and Algebra II. Mathematics is recommended in the senior year.
  Students report having to meet standards on a written exam to pass a career/technical course.
- Engage students in completing challenging content.
  Example: Students report having to read 10 or more books (or their equivalent) each year for English classes.
- Integrate academic and career/technical content.
  Example: Teachers strongly agree that they meet monthly or more often as part of a team of academic and career/technical teachers to plan joint instructional activities.
- Provide guidance and support to all students.
  Example: Students report having received most help in planning a high school program of study before grade nine.
- Improve transition from the middle grades to high school and from high school to work and further study.
  Examples: Teachers report that the school is effectively using a schedule that allows double periods in reading and mathematics for students who need extra help.
  Teachers report that a caring adult is assigned to mentor each entering ninth-grader.
- Demonstrate strong leadership and focus on continual improvement.
  Example: Teachers report that the principal uses data at least annually to evaluate school academic and technical programs.
- Support the staff with professional development.
  Example: Teachers reported receiving at least 40 hours of staff development in the past three years on using reading and writing for learning in the content areas and across the curriculum.

SREB has combined groups of related indicators into a set of indices to help schools gain a quick view of the school's emphasis on factors that influence the way students perform on the *HSTW* assessment of reading, mathematics and science. It is not enough for school leaders and teachers to examine isolated indicators and to choose a few to address each year. For example, improving literacy across the curriculum involves more than getting students to read more books in all classes.

Schools where students achieve at a higher level in reading are the ones that have placed an intensive emphasis on literacy. These schools provide a large number of experiences associated with higher reading achievement and hold students accountable for completing challenging reading assignments. Such experiences include:

- often using word processing software to complete assignments;
- often revising essays or other written work to improve quality;
- sometimes/often writing in-depth explanations;
- completing short writing assignments (one to three pages) at least monthly;
- sometimes/often discussing with other students what has been read in English class;
- reading a book outside of class and demonstrating understanding at least monthly;
- spending two or more hours reading outside of class each week; and
- reading technical books or manuals to complete career/technical assignments at least monthly.

Students who reported having from none to two of these experiences were considered to have "little" experience; those who had three to five of the experiences were at the "moderate" level; those who had six to eight of the experiences were at the "intensive" level. It is not surprising that students who had more literacy experiences in school scored higher in reading than students who had fewer experiences.

Impact of Literacy Experiences on Reading Scores in the 2000 *High Schools That Work* Assessment

Literacy experience	Average score
Little (0-2)	263
Moderate (3-5)	275
Intensive (6-8)	286
HSTW Reading Goal	279
Basic level	262
Proficient level	288
Advanced level	317

HSTW helps schools raise student achievement

(continued from page 14)

HSTW compared the achievement of students at 52 high-performing high schools in the *HSTW* network with 38 *HSTW* schools that had similar demographics but lower performance. The difference was that the high-performing schools had more fully implemented the *HSTW* framework of goals and key practices. These schools had higher expectations, coupled with opportunities for students to learn a more demanding academic curriculum.

The comparison showed that 64 percent of students at high-performing schools completed the *HSTW*-recommended English curriculum, compared with 35 percent at the lower-performing schools. Seventy-seven percent of students at the high-performing schools completed the science curriculum, compared with 44 percent at the other schools. Ninety-seven percent at high-performing schools completed the mathematics curriculum, compared with 73 percent at the other schools.

Clearly, the *HSTW* design works when it is implemented effectively.

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For more information

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