



Getting Students to Meet High Standards Calls for Innovative Strategies and Extra Help

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FEBRUARY 2009

Higher standards, motivation and extra help go hand-in-hand in preparing students for success in the middle grades, high school, further education and careers. These conditions are particularly important in helping at-risk students see the necessity for hard work and higher achievement. Schools and districts have devised a number of ways to provide extra help and extra time in meeting the educational needs of students and encouraging them to learn.

Ten Conditions for Getting Students to Work Harder

The Southern Regional Education Board (SREB) examined data and experiences from schools in its *High Schools That Work (HSTW)* and *Making Middle Grades Work (MMGW)* school improvement initiatives to identify 10 conditions that make the difference in getting students, including minority and low-income students, to work harder to succeed.

Condition 1. Students are enrolled in mainstream courses.

Students make a greater effort to succeed when they are enrolled in mainstream courses with other students. Dramatic increases in student achievement took place at **Centreville Middle School** in Centreville, Maryland, after all students were enrolled in challenging academic courses. The school ensured heterogeneous assignment of students in courses taught to grade-level standards, used a student demographic software program to assign students randomly to classes and offered professional development on differentiated instruction. From 2004 to 2006, students' scores rose in reading, mathematics and science; the percentage of students meeting performance goals increased in all three core subjects; and the percentage of students scoring at or above proficient on the state assessment rose in reading and mathematics.

Condition 2. Teachers align assignments, student work and assessment practices to grade-level standards.

The *HSTW* Assessment showed that significantly greater percentages of students experienced high expectations at the most-improved *HSTW* sites than at the least-improved sites from 2004 to 2006. Students at the most-improved schools said teachers clearly stated the amount and quality of work needed to make a particular grade and were available to help them with their studies. Students spent one or more hours on homework daily, revised work based on specific instructions and often worked hard to meet standards on assignments.

The 2004 and 2006 Middle Grades Assessments showed similar results, with more students from the 15 most-improved *MMGW* sites than from the 15 least-improved sites saying their teachers set high standards, indicated the amount and quality of work needed to earn an A or a B, encouraged them to do well in school and were willing to help them meet expectations. Students said they revised their work based on teacher feedback, worked hard to meet high standards and rarely failed to turn in assignments.

Condition 3. Quality career/technical (CT) programs provide purpose to high school studies and value to academic achievement.

Significantly higher percentages of students experienced quality CT instruction at the most-improved *HSTW* sites than at the least-improved sites between 2004 and 2006. Students said they used computers to complete assignments in CT courses at least monthly, had challenging assignments in CT courses at least once a month, and completed a project that required research and a written plan.

Significantly more students at the most-improved *HSTW* sites than at the least-improved sites had quality work-based learning experiences from 2004 to 2006. Students said their employers encouraged them to develop good work habits and to develop good customer-relations skills at least monthly.

Condition 4. Students can receive timely assistance from teachers who believe they can meet expectations.

All students, including black students, saw gains in the amount of quality extra help they received at the most-improved *HSTW* sites between 2004 and 2006. The percentages of middle grades students who experienced indicators of high expectations grew considerably more at the most-improved *MMGW* sites than at the least-improved sites.

Students said they received intensive extra help and were able to obtain help from teachers when needed. Teachers were available before, during or after school to help students with their studies. Students said teachers would not let them get by without doing the work.

Condition 5. Students' academic courses and other school experiences contain authentic learning that fosters higher achievement and greater motivation.

The 2006 *HSTW* Assessment showed a correlation between increases in mean test scores in reading, mathematics and science and increases in the level of emphasis schools placed on authentic learning. Authentic learning makes learning real for students by relating academic content to their lives and by engaging them actively in learning concepts and demonstrating mastery.

Condition 6. Teachers work together to integrate academic and CT studies.

The percentages of CT students meeting *HSTW* college- and career-readiness goals are greater when schools place intensive emphasis on integrating academics into CT studies.

Condition 7. Academic content is embedded into CT instruction.

An intensive emphasis on reading, writing and mathematics in CT courses resulted in gains in achievement on the *HSTW* Assessment totaling 12 percentage points for agriculture students; 20 points for business students; 24 points for science, technology, engineering and mathematics (STEM) students; 20 points for health sciences students; 14 points for hospitality students; and 15 points for manufacturing/ transportation students.

Condition 8. Students are engaged in reading and writing for learning to improve their achievement, help them become independent learners and build their capacity to make greater efforts to succeed.

The percentages of middle grades students experiencing an intensive emphasis on reading and writing for learning were much higher at the most-improved *MMGW* sites than at the least-improved sites between 2004 and 2006. This was true for black students and white students.

Significantly higher percentages of students at the most-improved *HSTW* sites than at the least-improved sites experienced reading and writing across the curriculum. The experiences included using word processing software to complete assignments, revising work to improve quality, writing in-depth explanations of class projects, discussing what they have read with other students, and reading and demonstrating understanding of books assigned to be read outside of class.

Students' reading proficiency was higher when they had intensive literacy experiences. The highest reading proficiency occurred when students were assigned word problems in mathematics monthly, completed short writing assignments for which they received a grade in English at least monthly and completed a CT project that required research and a written plan.

Condition 9. Inquiry-based science is used to improve students' science achievement and motivation in their science courses.

Students engaged in relevant science instruction achieved at a higher level at the most-improved *HSTW* sites than at the least-improved sites between 2004 and 2006. More students at the most-improved sites completed three college-preparatory science courses, including science in the senior year. They used science equipment to do science activities at least weekly and had teachers who showed them how to use science to solve real-life problems. They worked with other students to complete challenging science assignments and prepared written reports of lab results.

All groups of middle grades students, including black students and students from low socio-economic backgrounds, experienced a much more intensive emphasis on engaging science experiences at the most-improved *MMGW* sites than at the least-improved sites between 2004 and 2006. Larger percentages of students at the most-improved schools said they prepared lab reports monthly; used equipment to do activities in science class at least once a month; and used laptop computers to keep records, logs and comments. They had to write long answers on science tests monthly. Their teachers knew the subject, made it interesting and encouraged students to learn from each other. Students developed and analyzed tables, charts and/or graphs and often used the Internet to find information for completing assignments.

Condition 10. Students have a goal beyond high school and a program of study to achieve that goal.

Significantly higher percentages of students at the most-improved *HSTW* sites experienced quality guidance and advisement than at the least-improved sites between 2004 and 2006. They talked with their parents or other adults about high school programs of study and met with a teacher or a counselor about plans for further education and careers. They spoke with or visited someone in their chosen career fields and received information and assistance in selecting and applying to colleges.

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How Great Teachers Get Extraordinary Effort From Ordinary Students

Three master teachers — two in mathematics and one in science — share techniques to motivate and involve all students in learning at a higher level. They have clear expectations and high standards and make their classrooms interesting and engaging.

Helping Students Catch Up in Mathematics

Heather Brackins-Jenkins teaches a catch-up mathematics course to ninth-graders at **Parkview Arts/Science Magnet High School** in Little Rock, Arkansas. The course helps students meet mathematics standards and pass the Algebra I end-of-course exam. It is taught 90 minutes per day for 18 weeks.

“It is extremely important for students to remove self-imposed limitations and to know that they can be successful in mathematics, regardless of what they have done in the past.”

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Teachers and administrators work together to identify students needing to enroll concurrently in Algebra I and in the catch-up course to be successful in the freshman year. “These students enter high school believing they cannot learn algebra,” Brackins-Jenkins said. “It is extremely important for students to remove self-imposed limitations and to know that they can be successful in mathematics, regardless of what they have done in the past.”

The catch-up course, a product of *HSTW*’s work to improve the ninth-grade experience, aligns state standards to classroom instruction and assessment. It uses integrated learning activities, team building, literacy strategies and technology to raise mathematics achievement.

Brackins-Jenkins begins each unit with an “essential question” that students will be able to answer by the end of the unit. Students discuss the question, draw conclusions and make inferences. After the unit is completed, they answer the question. For example, the question might be, “Can I afford this vehicle?” As they move through the unit, they discover whether to choose a top-of-the-line sport utility vehicle or a more economical model.

Students engage in a great deal of project-based learning, including year-long, classroom-wide projects incorporating mathematics concepts learned the previous year as well as in ninth grade. One project involves using equations and other mathematics concepts to determine the cost of operating a commercial facility over a 10-year period. Students decide on the number of rooms, activities and employees. Each class presents its completed project to the other classes at the end of the year.

“I have had students who said they couldn’t do math get so interested and engaged in a project that they decided they wanted to be math teachers,” Brackins-Jenkins said.

Students keep journals incorporating mathematics vocabulary. They also choose their assessments after each chapter. The assessment can be a multiple-choice test, a portfolio based on the chapter or a project associated with the chapter.

Evidence shows that the catch-up course is working. In 2006-2007 and 2007-2008, 70 percent of students enrolled in the catch-up course passed the Algebra I end-of-course exam. The gap in achievement between black and white students is 2 percent in the catch-up class, compared with 4 percent in Algebra I classes.

Dramatic Changes Bring Increases in Mathematics Scores

When **William George** arrived at **South Robeson High School** in Rowland, North Carolina, as a football coach and algebra teacher in March 2007, he knew he had to take action to help his students succeed. He joined other staff members in making changes that resulted in a dramatic increase in end-of-course test scores — from 25 percent passing in the first semester to 62 percent passing in the second semester of 2006-2007. During the 2007-2008 school year, students in George’s Algebra I classes continued to improve, with 88 percent passing the end-of-course exam.

“We had great leadership from the administration and good staff members who collaborated and were not afraid to change the way things were done,” George said. “Our principal, **DeRay Cole**, supported me and helped me get students involved in tutoring other students in the classroom. He has no problem with changing things as long as it is in the best interest of the students. The other teachers and I put our egos away and worked together to accomplish the goal of improving student learning.”

George began to transform his teaching and the results he was getting by observing an “exceptional” teacher who modeled classroom management, powerful instructional techniques and test-taking strategies. Here are some methods George is using to raise student achievement:

- Observe successful teachers and borrow teaching techniques that work for them.
- Re-evaluate yourself at the end of each semester. Identify strengths to perpetuate and weaknesses to avoid in the future.
- Listen to your students. They will tell you what they know, what they need to learn and how they learn best.
- Build relationships with your students. As you get to know them, you will discover how to motivate them to achieve at a higher level. They will enjoy coming to class and will be more engaged in learning.
- Teach the standard course of study in a shorter time and use the remainder of the semester to review. Repetition is important in learning. By reviewing the materials, students learn to make fewer careless mistakes on tests.
- Give a quiz after each section. George quizzes students almost every day.
- Teach students to use the calculator. Students love it and are good at it, and the end-of-course test is designed for its use.
- Use student tutors in your class. “Eight out of nine students who had almost no chance of passing the end-of-course test were successful because of their tutors,” George said. Student tutors can improve their own achievement through the effort they put into helping their fellow students.
- Never use bookwork or worksheets during class time.
- Suggest that students answer the 20 easiest questions on the test first and then return to the harder ones. Getting the easy questions out of the way gives students a sense of accomplishment and confidence that they can do well on the test.

“Eight out of nine students who had almost no chance of passing the end-of-course test were successful because of their tutors.”

— William George
*Algebra Teacher
South Robeson High School*

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Motivate Students by Making Science Real

Science teacher **Barbara Jordan** of **White Knoll High School** in Lexington, South Carolina, has found that showing respect for her students increases learning and reduces discipline problems. She teaches biology/anatomy and physical science to students in grades nine through 12.

Structure and repetition are Jordan’s key words. Students in her classrooms know what to expect every day, either by looking at the board or by checking online. The class begins with an attention grabber in the form of an open-ended question interpreting a graph or a chart. She incorporates video clips, WebQuest resources, field trips, inquiry-based labs, lectures and reading into the lessons. She also does pre- and post-evaluations of students. When students fail tests, they report before or after school for extra help.

Jordan often assigns questions that relate science to current events for students to address in their journals. “Asking students to write on a meaningful topic every day makes learning real and shows them why they are being asked to learn science,” Jordan said. Students practice answering standardized questions in their journals daily in preparation for the end-of-course test. The journals are similar to interactive notebooks.

A “medical career of the month” theme motivates students to learn science content and to think about how it will be needed in the future. Students enjoy guest speakers from the medical field and visits to science-based exhibits in the community. The school offers clusters of study such as medicine and engineering that depend heavily on science and allow students to specialize in an area of study in high school.

The district provides a pacing guide with state and national standards that Jordan follows each day. The guide provides continuity and ensures that every student receives the same information. Jordan also gives lots of quizzes as well as unit tests to prepare students for the end-of-course test. A “random sorter” program that chooses students to answer concept review questions makes it possible for Jordan to engage every student in the learning process. Students also teach other students in group study sessions.

Physical science is the only science course that has an end-of-course exam. Sixteen of 21 students in Jordan’s 2007-2008 class passed the test after failing it previously.



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Strengthening Career/Technical Studies to Stop School's Downward Spiral

With six principals in five years, enrollment on a rapid decline, and failure to make Adequate Yearly Progress (AYP) from 2004 to 2007, **Sam Houston High School** in San Antonio, Texas, needed lots of assistance. For the school to survive, it had to offer courses and extra help to attract more students — especially those who would accept the challenge to achieve at a higher level.

The school's student population is 57 percent black and 39 percent Hispanic. More than 90 percent of the 789 students are economically disadvantaged. More than 22 percent have been identified as special education students.

When **Melonie Iglehart-Hammons** became principal in fall 2005, her first priority was to raise expectations. She urged the district to adopt a policy requiring students to complete all course work and pass the Texas Assessment of Knowledge and Skills (TAKS) to take part in the graduation ceremony. Previously, students were allowed to “walk” and receive a certificate of completion even if they had not met the requirements to graduate. The graduation rate for the class of 2007 at Sam Houston was 60.3, an increase from 56.8 for the class of 2006.

Higher Scores

The TAKS scores rose in all categories for students in grades nine through 11 between 2004-2005 and 2006-2007, but the school still failed to make AYP in 2005-2006. The school reached stage four of accountability and was required to choose an option for school restructuring. The school selected option five — reconstituting the school into small autonomous learning communities — and devised a plan for school reform.

In its restructuring plan, the school sought to create a model 21st-century high school. It developed new career/technical (CT) pathways, providing opportunities for students to earn college credits, and it offered programs tailored for English-language learners and special education students.

“The plan was a collaborative effort involving school leaders and teachers, district administrators, the school improvement restructuring committee, parents and students,” Iglehart-Hammons said. It also involved St. Philip's College, Alamo Work Source, the San Antonio Manufacturing Association, Project Lead The Way[®], the University of Texas at San Antonio and the Texas High School Project/*HSTW*.

Career Pathways

The result was the MET plan — Manufacturing, Engineering and Technology/Media Pathways. These fields, along with construction, cosmetology and culinary arts, are the avenues that students can follow in their small learning communities. Students are exposed to business plans, summer internships, industry certifications and opportunities to earn dual credit and tech-prep credit.

A rigorous academic foundation underlies the manufacturing, engineering and technology pathways. Students in grade 10 take English II or pre-AP English II, geometry or pre-AP geometry, chemistry or pre-AP chemistry, and world history. Juniors take English III or AP English III, Algebra II or pre-AP Algebra II, physics or AP Physics, and U.S. history. Seniors take English IV or AP English IV; pre-calculus or

AP Calculus; AP Biology, AP Chemistry or environmental science; and economics/government.

The small learning communities are designed to match students' needs and interests to establish strong relationships and build school pride. The establishment of the MET plan gives Sam Houston the ability to offer programs unavailable anywhere else in the city. Students can earn college credits and industry credentials in specified areas. Thus, students are able to receive a college-preparatory education while acquiring knowledge and skills leading to gainful employment after graduation. The instructional capacity of teachers is strengthened through collaboration with college programs and ongoing professional development.

Announcing the Changes

The San Antonio Independent School District conducted a press conference at the school in conjunction with the Alamo Community College District, business partners, the San Antonio Manufacturing Association and city government officials to promote the new CT programs to potential students and their families. It also recruited students at the feeder middle grades schools through parent nights, brochures and on-campus visits urging them to choose Sam Houston High School.

New CT labs include a Project Lead The Way[®] lab and manufacturing and media labs with new computers, software, lathes, computer-controlled mills and modules. Plans are being made for students to receive college credit for engineering courses and certification in manufacturing and Microsoft Office.

Conversations are ongoing on forming partnerships with feeder middle grades schools to incorporate Project Lead The Way[®] into the curriculum so that students can move seamlessly into the engineering pathway at Sam Houston High School. The middle grades program allows younger students to acquire skills needed for success in high school mathematics, science courses and engineering programs.

While putting the CT pathways in place, the school also focused on curing its mathematics and English/language arts problems. “We decided to build capacity by double blocking specific at-risk students into math and English,” Iglehart-Hammons said. “Having an eight-period day allows us to build time into the schedule for students to be pulled out for extra help during the school day.”

Sam Houston’s TAKS scores showed gains for 11th-graders between 2004-2005 and 2006-2007: 18 percentage points in mathematics, 13 points in science, 10 points in social studies and 7 points in English.

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Minority School Adds Program to Improve Reading



“The program was available only four and a half months during the first year, but students showed an average increase of two and a half years in reading comprehension.”

— Paul Jamerson
Facilitator
Essential Learning Systems

Fontana High School in Fontana, California, enrolls 4,070 students, with approximately 86 percent Hispanic, 8 percent non-Hispanic white and 3 percent Asian, Pacific Islander or Filipino. One-third of the students are English-language learners and 11 percent are categorized as special education students.

In 2000 the school had one of the lowest rankings in the state, according to the California Academic Performance Index, a state-mandated gauge that measures overall achievement. Clearly, something was needed to help students read better in order to master the content in all of their classes.

A program that helped the school increase achievement among English-language learners and special education students is Essential Learning Systems (ELS), an electronic learning program from the Creative Education Institute in Waco, Texas. The program called for establishing an ELS lab in the school where students can engage in a variety of techniques to improve their reading skills.

“The program was available only four and a half months during the first year, but students showed an average increase of two and a half years in reading comprehension,” said **Paul Jamerson**, facilitator of the ELS lab from 2000 to 2008. The ELS program includes the Slossen Diagnostic Screening Test for Reading for pre- and post-tests to determine the degree of student gains in reading.

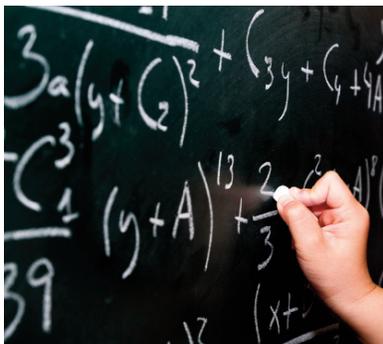
ELS is an elective class with participation based on students’ reading comprehension scores on California’s standardized tests. Students who rank below the 19th percentile are candidates for the program. School administrators notify parents and schedule a meeting to review the benefits of the program for students. Students take the ELS class in addition to regular classroom instruction in English-language learning or special education.

The ELS approach uses seven key elements to customize learning for students:

- Sensory integration training — provides a series of exercises to stimulate the visual, auditory and motor-kinesthetic pathways in the brain.
- Interactive learning — occurs in a five-step process that includes external stimulation, mental processing, response, immediate feedback and reinforcement. The computer flashes or speaks a word that the students process in their minds and then speak, select, write or type the word. The program provides feedback and encourages students to keep working.
- Systematic phonics instruction — includes the majority of sight-sound combinations necessary for spoken and written English.
- Language enrichment — focuses on definitions and usage of words and increases writing skills.
- Individualized learning — focuses on the individual needs of each student. The lab facilitator builds a lesson plan based on students’ strengths and weaknesses.
- Mastery — emphasizes memory and recall, word meanings and long-term recall.
- Supplemental instruction — involves students in extra reading outside the lab period.

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Teams Compete in 'Great Race' to Solve Mathematics Problems



"Numeracy is the ability to solve problems when confronted with a combination of symbols comprising both mathematical figures and alphabetical characters, preferably presented in real-life situations. We expect the student to recognize the need for action, to encompass all data necessary for a successful solution and then to act accordingly."

— Garry Boone

Five years ago, English instructor **Garry Boone**, chairman of the literacy and numeracy committee at **Laurel Oaks Career Development Campus** in Wilmington, Ohio, was asked to create a fun and challenging event to help students across the curriculum gain a better understanding of numeracy and how it impacts their everyday lives. The result was The Great Numeracy Race, an annual event where teams of students compete to solve real-world problems.

Laurel Oaks is part of **Great Oaks Institute of Technology and Career Development**, the largest career/technical education district in the nation. Limited to grades 11 and 12, the school enrolls more than 500 students. There are nearly 3,000 students in the district, which comprises four separate campuses.

The school has been engaged in a campaign to improve students' problem-solving, analytical-thinking and reasoning skills through an emphasis on numeracy across the curriculum. Every year, students participate in special events designed to make the study of mathematics more interesting. For example, Pi Day on March 14 is dedicated to exploring this important mathematical constant.

In The Great Numeracy Race, every student is assigned to a team. Teams rotate to various stations set up in the school, spending 10 minutes at each station and two minutes to travel from one spot to another. Each station has the equipment and supplies that students will need to solve the problem.

Teachers serving as stationmasters rate each team on whether it solves the problem and whether it arrives at the station on time. Stationmasters watch for the use of problem-solving and analytical skills. Even if a team fails to find a solution to the problem, it can earn points for making an effort.

Here are three examples of problems that student teams are expected to solve:

- In a construction-related problem, teams are asked to find the length and total rise of a rafter when a building has a 16-foot span, a one-foot overhang, and a roof with a 5/12 pitch.
- Teams find a way to lift a 1,200-pound Jeep to change a tire when they have no car jack. They are given a six-foot unbreakable bar, an unbreakable fulcrum, a calculator and the ability to apply 110 pounds of force.
- Using yardsticks, calculators and a standard-size pizza box, teams calculate the number of pizza boxes it would take to fill a classroom.

At the end of the day, the team with the most points is declared the winner. Team members are honored at a special luncheon served by Honors students. The winners also receive Wal-Mart gift certificates.

Based on the 2004 and 2008 *HSTW* Assessment results, students on the Laurel Oaks campus have benefited from the school's emphasis on numeracy across the curriculum. The percentage of seniors saying the school placed a moderate or an intensive emphasis on numeracy across the curriculum increased from 68 percent in 2004 to 91 percent four years later. In 2008, students who said the emphasis on numeracy was intensive or moderate had mean mathematics scores of 249 and 243 respectively, approaching the college- and career-readiness goal of 257.

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Strategies for Teaching Black Students

Gwendolyn Bryant, a school improvement coach for **Akron Public Schools** in Akron, Ohio, has done research and made numerous presentations on how to connect with black students in the classroom. She believes “culturally responsive teaching” begins by recognizing and showing equal respect for the backgrounds of all students. She also believes teachers can use the cultural knowledge, prior experiences, frames of reference and performance styles of ethnically diverse students to make learning more relevant and effective.

“Teachers can engage black students by supporting a sense of mutual responsibility for their own learning and by encouraging them to use their knowledge to benefit the community and society in general,” Bryant said. “The curriculum should provide opportunities for public performance and for artistic expression in music, dance, drama and visual arts.”

According to Bryant, black students learn best when the classroom is relatively structured and the teacher is in close proximity to class members. Teachers should be seen as encouraging, yet authoritative, figures. They should be consistent and firm in disciplining students and should use praise and criticism frequently to respond to students’ efforts to learn. Small-group work is recommended, followed by a gradual introduction of independent work.

“Teachers must convey both verbally and nonverbally that they believe all students can learn,” Bryant said.

Bryant recommends the following strategies for teaching black students from the book, *Through Ebony Eyes*, by Gail Thompson:

- Let students know you care.
- Set high expectations for learning and behavior.
- Remind students of the “big picture” of life beyond school; help them see why it is important to learn in the classroom.
- Get to know students on a personal level.
- Make the classroom experience relevant to the real world with examples and hands-on projects.
- Use storytelling to capture students’ interest in the content.
- Showcase student talent.
- Provide multiple ways for students to succeed academically.
- Use questions to spark discussion about the lessons.
- Emphasize reading and writing, including vocabulary.
- Assign regular, worthwhile homework.
- Assess students’ knowledge and skills to plan instruction.

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Career Center Upgrades Academics, Provides Extra Help to Raise Scores

Pioneer Career and Technology Center (PCTC) in Shelby, Ohio, was recognized in 2007 as one of 20 *HSTW* Pacesetter Schools for 2007-2010. The designation is based on a number of criteria, including meeting Adequate Yearly Progress (AYP) or having a graduation rate of at least 85 percent.

This full-time technology center has worked hard in using the *HSTW* school improvement framework to change curriculum and instruction. PCTC leaders call the transformation “a completely new book — not just a shiny new cover.”

PCTC serves 1,100 students from 14 sending schools; the students are enrolled in any of 37 programs. The center has been open since 1968.

Increasingly, the school has recognized the changing nature of education and the workplace. Students today need advanced academic, technical and personal skills to enter postsecondary education and compete for jobs in the global economy. PCTC decided to embrace the *HSTW* Key Practices in an effort to keep pace with increased academic requirements and competition from other schools.

The two things that leaders say have impacted student achievement at PCTC the most are changing from applied academics to courses based on academic standards and establishing the success center extra-help program.

“We moved from offering applied academics in which all students in a career/technical program took the same mathematics, science and English courses directly related to the program to offering courses based on standards,” Superintendent **Glenna Cannon** said. This has enabled students to:

- take courses that match Ohio’s academic standards.
- enroll in courses that have rigor as well as relevance to their lives and future careers.
- study more advanced academics.
- participate in more postsecondary option/dual enrollment courses.
- take academic courses aligned with courses at their sending high schools.

“These changes have made it possible for us to better meet the needs of individual students, raise expectations for all students and upgrade the program of study,” Cannon said. “We also added reading and writing across the curriculum, silent sustained reading and senior projects to further emphasize the importance of academic studies in career choices.”

The center’s image has benefited greatly from requiring more rigorous academic courses. “Business and industry partners, postsecondary schools and partner schools have found new respect for the center now that we can demonstrate that our students are better prepared for further education and a career,” Cannon said.

When the center increased academic rigor, it established a success center to provide extra help to ensure students do not fall through the cracks. The success center is open before and after school and throughout the school day. Academic teachers in all subject areas are on hand to tutor students anytime — during lunch and lab periods and at other times. Extra help is also available to help students pass the Ohio Graduation Test and score higher on the ACT or the SAT.

Students' scores on the *HSTW* Assessment are evidence that the changes have made a difference in student achievement. Between 2000 and 2006, students' average scores rose from 271 to 289 in reading, from 297 to 308 in mathematics and from 286 to 302 in science.

Pioneer scored well in comparison to similar sites in Ohio and high-performing *HSTW* sites nationwide in 2006. The scores included 289 for Pioneer, 279 for all sites and 292 for high-scoring sites in reading; 308 for Pioneer, 301 for all sites and 312 for high-scoring sites in mathematics; and 302 for Pioneer, 293 for all sites and 310 for high-scoring sites in science.

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Using Mathematics and English to Out-Think and Out-Play Others

English instructor **Kirsten Aubouchon** and mathematics instructor **DonnaLee Tignor** of **Montachusett Regional Vocational Technical School District** in Fitchburg, Massachusetts, draw on television reality shows to make learning English/language arts and mathematics more relevant and engaging for students.

“Students enjoy learning when they can out-think, out-wit and out-play other students with what they know.”

— **DonnaLee Tignor**
Mathematics Instructor
Montachusett Regional Vocational
Technical School District

Since 2004 the district has operated a summer learning academy funded by a grant from the Massachusetts Department of Elementary and Secondary Education. The summer program takes its theme from television shows such as “The Amazing Race” or “Survivor” that feature contestants performing difficult tasks as they compete for prizes.

The summer academy is a student-centered, activity-based program designed to teach at-risk students. Using curricula aligned to Massachusetts curriculum frameworks, instructors creatively help students address their mathematics and English skill deficiencies. When it is time to put the knowledge to work in competitions, students are paired in “tribes.”

Instead of a few students being “voted off the show,” all students receive recognition for their efforts. Incentive prizes are given to individual students for perfect attendance; to the most-improved students in mathematics, English and overall; and to first-, second- and third-place tribes.

The district uses freshman placement tests and eighth-grade Massachusetts Comprehensive Assessment System (MCAS) scores to select students for the summer academy. About 80 students in grades nine through 12 are eligible to attend each year.

Students practice what they learn by participating in activities such as “Bubble Mania,” in which students chew bubblegum and measure the size of the bubbles. They calculate the mean, median and mode bubble measurement for the class; create a dot plot of the results for the entire class; and use the dot plot to calculate the percentages of bubbles greater than two, three, four or six inches. Finally, they use the class mean bubble size to calculate the volume of air inside a typical bubble.

Pre-tests and post-tests show clearly that students make large gains in meeting English/language arts and mathematics standards as a result of the two-week academy. The improvement amounted to 28 percentage points in 2006 and 36 percentage points in 2007 in English/language arts and to 16 percentage points in 2006 and 17 percentage points in 2007 in mathematics. Students receive written evaluations charting their progress in the program and making recommendations for the future.

“Monty Tech receives students from 18 sending communities, so it is important for us to show that we are taking care of students' academic needs,” said Tignor, who directs the summer program. “Students enjoy learning when they can out-think, out-wit and out-play other students with what they know.”

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Biology Students Are ‘Reloaded’ for Mastery Learning

Faced by high failure rates in freshman biology, administrators and teachers at **Whitmer High School (WHS)** in Toledo, Ohio, resolved that failure is not an option for their students. Instead, they developed, implemented and monitored a “reload” approach to mastery learning.

Whitmer is an urban school enrolling more than 2,000 students; it is 83 percent white, 8 percent black, 5 percent Hispanic, 3 percent multi-racial and 1 percent Asian. One-fourth of students are considered economically disadvantaged.

Although the school had mapped the science curriculum and offered pacing guides, common exit exams, varied instructional practices and extra help, 48 percent of students in eighth-grade science were unable to pass the course. Eighteen percent made grades of D. This means 66 percent of students failed to meet science standards, many students did not take upper-level science classes, and many students were unable to take physical science before attempting the Ohio Graduation Test.

Traditional instruction holds time constant and allows mastery to vary with grades of A, B, C, D and F. If students fail to learn the content, skills and processes being taught, they either repeat the entire course or are promoted to the next level. Some students decide to drop out. In contrast, mastery learning holds successful learning constant and allows the time to vary.

Whitmer developed a focus team to find a solution to the biology failure problem. Instead of lowering standards or watering down the curriculum, the team decided to scaffold and differentiate the work, regroup students based on their educational needs, and use block scheduling and flexible groupings to structure the process.

After defining mastery as 80 percent, the team developed common tests for assessing students every two weeks. Students were given two chances to pass the test. The second test was different. Students could review the material for a day between tests to learn from their mistakes.

Students failing to score 80 percent or more on both tests were “reloaded” every four weeks. After passing each section at 80 percent, students went to another teacher to continue the course. Students who did not pass went to another teacher to “reload” until they mastered what they needed to learn.

“The success of mastery learning depends on a team effort with administrators, teachers, parents and most of all, students,” said **Brenda Fischer**, assistant curriculum director for **Washington Local Schools**. She emphasizes that schools need to “adapt” rather than “adopt” the process to meet the needs of their students.

School leaders and teachers learned the following lessons from introducing mastery learning in biology:

- Develop a way to collect data. Use folders that follow the students when they are regrouped. Include attendance, homework and item-analysis test data. WHS test data was collected electronically.
- Keep a computer folder of instructional practices so teachers will know what has been successful with students in the past. The folder should include guides, notes and activities to allow teachers to differentiate instruction.
- Differentiated instruction allows students to be placed with inclusion specialists assigned to follow students based on individual education plans and students’ educational needs.

Reloading has been very beneficial to WHS students. The failure rate dropped to 7 percent — and those students received an R for reload rather than an F for failure. These students will be reloaded into biology in the second semester of 2008-2009 to finish the one or two sections they need to complete at the 80 percent mastery level. Because of the 80 percent requirement, grades of D have been effectively eliminated.

“Attitudes toward biology really changed when students discovered that success was the only option,” Fischer said.



“Attitudes toward biology really changed when students discovered that success was the only option.”

— Brenda Fischer
*Assistant Curriculum Director
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Teachers Collaborate to Help Students Meet Standards

After looking at a rather startling piece of data, teachers at **Bel Air High School** in suburban El Paso, Texas, made a commitment to get more students to meet state standards. While 92 percent of students were passing English and mathematics in grade 10, only 69 percent were passing the Texas Assessment of Knowledge and Skills (TAKS) at that grade level.

Looking closer, the school found that passing rates in a particular course largely varied by teacher. This disconnect made it clear that more teacher collaboration was needed to prepare students to meet state standards.

The school chose the *Standards in Practice* standards-based professional development model as a structure for working together on assignments and assessments. Time was made available in the workday for teachers to meet and use the method.

“We decided to use teacher collaboration as the cornerstone for strengthening teachers’ professional relationships and mounting a schoolwide effort to increase rigor,” said **Enrique (Henry) Perez**, academy coordinator.

“Although student work is evaluated, the purpose of *Standards in Practice* is to evaluate the quality of teacher assignments and instruction.”

The professional development emphasized that effective teachers give assignments to help students learn the content, not just to give them a grade. The result at Bel Air High School has been a different mind-set that has made the difference in getting students to exert more effort to learn.

Perez acknowledged that the path was not always easy. “Some teachers were reluctant at first to use their collaboration time for standards-based professional development,” he said. However, the strategy worked and teacher assignments have become more standards-based as a way to raise student achievement. Perez recommends embedding teacher collaboration into the planning and evaluation stages of instruction and using the method primarily with common assessments.

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Technology School Uses Curriculum Tracker to Measure Progress

Middle Bucks Institute of Technology (MBIT) in Jamison, Pennsylvania, is using technology to track student mastery across the curriculum. The new database captures what students accomplish in their courses and provides reports that can be customized to the needs of colleges and employers. It also points out revisions needed in the curriculum to ensure students are learning appropriate tasks for a particular career/technical (CT) field.

The institute upgraded from a traditional record-keeping approach to a more flexible electronic approach to keep up with students’ progress in each of the 22 competency-based program areas at the school. The software allows MBIT to look at achievement by each student and by each learning objective. Reporting can occur at any time as a student moves through the curriculum, not just at the end of a program. The reports are responsive to state requirements to integrate academic standards with CT content.

The tracking system is based on two years of work by MBIT instructors to standardize the curriculum and the reports. Instructors participated in professional development to align program components with industry requirements and to standardize basic, proficient and advanced grades.

MBIT’s professional development committee conducted an evaluation to identify shortcomings in the previous curriculum and mastery reporting system. Committee members reviewed state requirements for performance and assessment and surveyed teachers about student mastery reporting software. They also studied Pennsylvania Department of Education program approval guidelines and Pennsylvania System of School Assessment (PSSA) standards for reading, mathematics and science.

In revising the curriculum, the school updated the program scope and made sure the curriculum aligned with classification of instruction program (CIP) codes and with national and industry standards. A curriculum map was created for each level of the program. The maps are linked to PSSA reading and mathematics standards and can be used to identify gaps and repetition in the curriculum.

The next step for MBIT will be to add a public portal allowing students to access video lessons, learning guides, worksheets, relevant Web links and corresponding academic anchors. The anchors are a subset of Pennsylvania’s academic standards criteria and are used to define content and skills assessed by PSSA.

“As a result of the tracking system, it is easier to make curriculum revisions,” said **Nancy Goth**, computer and Internet technology instructor at MBIT. “The flexibility of the database allows us to respond quickly and effectively to both curricular changes and reporting requirements.”

MBIT has received high commendation from the Pennsylvania Department of Education for its new system.

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Career-Based Intervention Boosts Freshman Success

Firestone High School (FHS) in Akron, Ohio, has been recognized frequently as an outstanding urban high school. For the past four years, it has made *Newsweek* magazine’s list of the top 1,200 high schools in America. It is an *HSTW* Pacesetter School for 2007-2010 and received an *HSTW* Gold Achievement Award in 2008 for the percentage of students earning the *HSTW* Award of Educational Achievement. Members of the 2008 graduating class received \$8 million in college scholarships.

There are a number of reasons for Firestone’s success, but none is more powerful than the school’s devotion to deep implementation of the *HSTW* 10 Key Practices. The school has set a goal to have 85 percent of its 1,400 students complete the *HSTW*-recommended curriculum, which includes college-preparatory academic courses and an academic, CT or blended concentration.

To accomplish this goal, the school provides its diverse group of students with many academic and CT opportunities. Students are encouraged to participate in the International Baccalaureate program, the visual and performing arts program and a wide range of Advanced Placement courses. Many students are enrolled in career education programs where they develop academic, technical and leadership skills through cooperative business education, the Project Lead The Way® engineering curriculum, information technology and marketing education.

Firestone High School recognizes the importance of providing extra help at the same time it is raising expectations and academic and CT requirements. Students have access to before- and after-school tutoring, peer tutoring and an online credit recovery program. In addition, the school has initiated a lunchtime intervention program called Career-Based Intervention (CBI), which targets students at risk of failure in the ninth grade.

Firestone identifies rising freshmen that failed three of four core classes during the previous year and assigns them to the daily 20-minute CBI period to learn study and testing skills. Students are not placed in CBI for discipline or attendance reasons; they are enrolled for the specific purpose of acquiring the knowledge and skills for academic success.

“Teachers take a personal interest in every student enrolled in CBI,” said **Christopher Pashke**, *HSTW* site coordinator at Firestone High School. “Concerned teachers request CBI as their duty assignment for the school year. They willingly give extra time and energy to help individual students learn how to study, take tests and overcome academic deficiencies.”

CBI promises to become another success story for Firestone High School. During the first year of the program, 30 incoming freshmen were identified as being at risk of failing mathematics and 30 of failing English. All of these students passed and were promoted to the 10th grade.

“Teachers take a personal interest in every student enrolled in CBI. They willingly give extra time and energy to help individual students learn how to study, take tests and overcome academic deficiencies.”

— Christopher Pashke
HSTW Site Coordinator

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Technology Center Uses Extra Help to Raise Achievement

The enrollment at **R. D. Anderson Applied Technology Center** (RDA) in Moore, South Carolina, has more than tripled in the past three years. The center serves nearly 1,600 students from three high schools in three school districts. Eighteen percent are classified as special-needs students.

To assist special-needs students, English as a second language students and others needing extra help and time to meet standards, Director **Sherri Yarborough** appointed two academic assistance instructors to serve the program areas offered in the 2007-2008 school year.

One academic assistance instructor focused on students in agriculture/horticulture, auto collision repair, carpentry, engineering, graphics and design, welding, and fire/EMS and police procedures. The other was responsible for providing extra help to students in automotive technology, business and management, cosmetology, culinary arts, health science, and machine tool technology.

“Using the title Academic Assistance Instructor rather than Special Education Teacher removes any stigma associated with being special-needs students,” Yarborough said. “It also encourages all students to seek extra help.”

One-on-One Tutoring

Academic assistance instructors provide one-on-one tutoring for academic courses offered at the home high schools as well as for CT courses offered at the center. They also serve as advocates for all students. One advocate role is to assist with a fast pass system for students who need to “cool off.” The advocates also contact home high schools about student issues and provide input during the development of individual education plans. Academic assistance instructors work closely with classroom teachers to promote student success.

The two academic assistance instructors introduce themselves to the students during an opening assembly at the beginning of each semester and visit classrooms to make sure students know them and are comfortable using their services. Students are referred to extra help by teachers or may fill out a form to request such help.

Technology is a fundamental part of the academic assistance program. Using Quia software (www.quia.com), teachers and the academic assistance instructors create activities, quizzes and student surveys. They can also view students’ test results by question or by student to determine where extra help and reteaching are needed.

Students enjoy using the software because it provides a variety of learning activities and instant feedback of results. They can practice as much as they want anytime they want. Using the software makes them feel computer savvy.

Cooking by Computer

Examples of computerized activities in the culinary arts program are ordered lists in which students correctly place the 12 steps for making yeast dough and flashcards by which students learn trade terms such as “fermentation.”

Instructors benefit because the software provides instant results from quizzes, identifies students’ weak areas and makes retesting easy. They say the software enables students to practice until they master the content and to take more responsibility for their learning.

Another way RDA uses technology to enhance learning is through the use of software to burn CDs to enable students to listen to a test that is read aloud on the CD. The academic assistance instructors record the exams and then provide students with the CD and a player to take the test.

“For some students, the natural voice is more helpful than the robotic voices of other software,” said **Fran Kalk**, an academic assistance instructor who was named RDA Teacher of the Year for 2007-2008. Kalk has found that students appreciate the familiar format of a CD. It helps them focus and gives them a sense of control over their progress. Also, a CD is a less obvious way to receive extra help.

The academic assistance program is making a difference in student achievement at RDA. Final grade averages in the culinary arts program rose from 79.4 before intervention (2006-2007) to 82.4 after intervention (2007-2008). Students in the CPR and first aid course had an average test grade of 86.2 without extra help in 2006-2007. The average score climbed to 97.9 when students had access to extra help in 2007-2008.

In another success story, second-year cosmetology students in 2007-2008 were preparing for their state board examination, which was to be administered in a new computerized format. Kalk worked with RDA cosmetology instructors to develop a series of state board practice tests that students could take by computer at the school to become more comfortable with the new testing format. As a result, all of the RDA students who took the exam passed.

RDA plans to continue and enhance this extra-help program so that all students can succeed in CT classrooms.

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Students Thrive in Alternative School With High Standards

Many of the at-risk students who attend **CHOICE Alternative High School** in rural Shelton, Washington, have had a history of course failure, high absenteeism and disciplinary actions. Many have faced personal challenges in the form of drugs, alcohol, pregnancy, violence and other issues that devalue education in their lives.

CHOICE is an acronym for Challenging High School Opportunities in Continuing Education. The school, which is fully accredited with the Northwest Association of Schools and Colleges, opened in 1984 to give students in the Shelton school district another option for education. CHOICE enrolls students in grades nine through 12.

The high school population of 250 students is 72.4 percent white and 21.2 Native American/Alaska Native. The balance is Asian and Hispanic. While 55 percent of students are self-reported as economically disadvantaged, school leaders estimate the total is closer to 95 percent.

Faculty Plan

When the faculty unanimously agreed to use the *HSTW* design to guide improvement efforts, some teachers wondered if students could meet the high standards and master the upgraded courses. Nevertheless, the entire faculty began to develop a plan for implementing the *HSTW* Goals and Key Practices. Teachers brainstormed actions and gained district support. The district gave teachers release time to attend numerous state and *HSTW* professional development events and to immerse themselves in improving school and classroom practices.

CHOICE leaders and teachers began by raising graduation requirements. They increased the number of credits in all core academic areas and required one career/technical (CT) credit for all students. The academic requirements are four credits in English, three credits each in mathematics and science, and three and a half credits in social studies. This means that the graduation requirements at CHOICE are higher than those of the traditional high schools in the district. To make it work, the school dropped most remedial English and mathematics courses from the schedule and concentrated on increasing the rigor of classroom assignments, including requiring homework.

The rule for staff and students at CHOICE became “Respect Yourself and the Rights of Others.” It encourages students to develop and practice empathy, consideration for others and effective communication, goal setting, problem solving and interpersonal skills.

Friendly Classrooms

In the new school environment, teachers focus on getting to know students on a personal level. All teachers work to establish relationships with students, beginning with the initial school orientation. They make their classrooms friendlier by adding posters and decorations depicting teachers’ hobbies and interests.

CHOICE also implemented an advisory program that allows teachers to get in touch with students. Students meet with their advisers 10 minutes daily and 30 minutes each Tuesday to talk about schedules, progress reports, transcripts and plans for the future. The program features in-class assignments and one-on-one check-ins every three weeks during which advisers review grades, adjust schedules, assist in graduation planning and help students obtain extra help.

A leadership class is responsible for planning activities to bring students together. In many cases, these at-risk students have never participated in a club or other school activity.

Extra-Help Options

Students receive support from a variety of extra-help options. The district provides transportation so students can attend after-school tutoring sessions. Six weeks before the state assessment, all students participate in test preparation classes in lieu of electives. A special reading workshop is provided to build students’ literacy skills.

Extra help goes beyond academics to include personal support programs. CHOICE has an on-site childcare center for student parents, a homeless liaison, a dropout prevention program, drug and alcohol counseling, and a Native American education coordinator.



In the new school environment, teachers focus on getting to know students on a personal level. Students receive support from a variety of extra-help options.

CHOICE has seen an increase in student achievement and a decrease in discipline referrals. Reading achievement on the state assessment rose from 34.4 percent passing in 2005 to 46.2 percent in 2006 and 64.5 percent in 2007. Similarly, writing achievement increased from 23.8 percent passing in 2005 to 38 percent in 2006 and 83.3 percent in 2007. The number of discipline referrals dropped from more than 3,000 in 2005 to 1,075 in 2007.

New Perceptions

Teachers have noticed changes in students' perceptions of graduation, college and future goals. "Students who thought school wasn't for them are now excited about coming to school," *HSTW* site coordinator **Stacey Anderson** said.

The biggest celebration for staff occurs when students complete their graduation presentations. Each student is required to make a presentation to teachers on "why I am ready to graduate." Students can use overheads, PowerPoint or other technology as they talk about their highest quality high school work, demonstrate readiness to graduate, exhibit oral presentation skills and explain their post-high school plans. They receive feedback from staff regarding strengths, weaknesses and accomplishments while at CHOICE.

Prior to the presentation, each student prepares a portfolio that includes one sample per year of his or her best work from mathematics, science, technology, CT education, fine arts, health and social studies. The portfolio contains items that demonstrate the ability to write clearly, think critically and be creative. It also contains a résumé, letters of recommendation, state test scores and awards.

The final activity for CHOICE students is a senior project. Students must satisfy the following criteria: choose a topic; document all work on a time log; maintain a journal with a minimum of two entries per week; research the topic in depth; choose a community mentor; develop a project plan; complete the project; create a presentation representing all aspects of the project; and present the project to a panel consisting of the principal, a teacher adviser, two other teachers, the community mentor, two fellow students and one person of significance such as a parent, a partner or a friend. The senior project must have a service component that represents a positive contribution to the community.

The senior project presentation must be at least 10 minutes and the format must be a report, a PowerPoint presentation, a video, a brochure or other appropriate medium. The project allows students to demonstrate that they can draw upon all of the skills they have developed throughout their school careers.

Making Standards Work in a Large School District

Some 75 teachers from three high schools in the **Hazelwood School District**, a large district in metropolitan St. Louis, Missouri, worked together by content area to identify power standards for required core courses. They also developed common assessments, determined proficiency levels for each assessment, analyzed test items, and discussed what works and does not work.

One example of collaboration was the multi-school mathematics team, which included high school teachers, department heads and administrators, plus a curriculum consultant and a team facilitator. After identifying the power standards, the team worked on ordering the standards and designing common pacing guides.

"Power standards are the ones that are the most important," said **Brian Thompson**, assistant principal at **Hazelwood Central High School**. "They have endurance and leverage and are necessary for students to progress to the next level." An example of a power standard would be having students use "appropriate graphical representation of data and, given one-variable quantitative data, display the distribution and describe its shape."

The mathematics team used Bloom's Taxonomy to prioritize items deemed to be essential, important or "nice to know." Team members determined what would constitute student mastery and prepared answer keys, scoring guides with proficiency rubrics and scoring protocols.



"Students who thought school wasn't for them are now excited about coming to school."

— Stacey Anderson
HSTW Site Coordinator

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Instruction and assessments in the Hazelwood district are now standards-driven. With the common assessments in place, teachers have more time to design effective lesson plans. They also spend more time sharing successful strategies with each other.

Students are benefiting from the uniformity of standards and assessments. “The more teachers collaborate, the better students do on tests,” said **Gary Jansen**, associate principal at **Hazelwood East High School**.

Thompson did a correlation analysis to verify the relationship of teacher collaboration time to student academic success on standardized tests. He found a moderate level of correlation between the two variables. “Since this finding is based on our first year of implementation, we believe that the correlation will increase significantly as teachers get better in working together,” Thompson said.

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Improved Behavior Contributes to Higher Scores

Three years ago, **Will Rogers High School** (WRHS) in Tulsa, Oklahoma, was a “campus in crisis” without a plan for improvement. “We didn’t need another program; we needed a process for whole-school reform,” said Principal **Kevin Burr**.

WRHS is an inner-city school that enrolls an ethnically diverse student population — 35 percent black, 28 percent Hispanic, 27 percent white and 10 percent Native American. Ninety-six percent of students qualify for free or reduced-price lunches, and 88 percent sign up.

When school leaders and teachers looked at data, they found discipline was a major factor in low student achievement. In just one year (2005-2006), the school had nearly 14,000 days of out-of-school suspensions among a population of 1,000 students. Clearly, the school needed interventions that would work.

The decision was made to focus on changing the school climate by implementing the Positive Behavioral Interventions and Supports (PBIS) model. It supports the *HSTW* Key Practice of building a culture of continuous school improvement. A committee consisting of teachers, administrators, the school social worker and a PBIS liaison participated in a two-day retreat to learn how to motivate students to work harder to achieve success.

The committee developed a multi-year process:

- Year One (2006-2007) focused on strengthening common area (school building) procedures for staff and students, including expectations, supervision, encouragement and consequences. Teachers greet students by name and participate in the campus reward and recognition program. Students are required to rephrase negative statements and to walk properly instead of engaging in horseplay.
- Year Two targeted the classroom environment. The committee created a discipline matrix that gives details of three levels of teacher actions, including classroom interventions/notifications, written referrals and immediate removal. Classroom interventions are appropriate when student behavior, such as failing to complete an assignment, interferes with a student’s own learning. Written referrals, which do not include removing a student from the classroom, are given for behavior that interferes with other students’ learning. A student that creates a hostile environment is immediately removed from the classroom.
- Year Three is concerned with students’ social behaviors. The school offers an appropriate curriculum, a resource officer and other support.
- Year Four will involve the community through implementation of a community action plan, vertical teams and career clusters.

A pyramid of academic and behavioral interventions has been put into place at the school. Teachers met with instructional coaches during planning periods to brainstorm actions and to participate in professional development to implement the approach. Universal academic interventions include literacy strategies, monthly instructional strategies meetings, a freshman academy and ninth-grade career clusters. For the 10 to 15 percent of students who need targeted interventions to be successful, the school offers a GEAR UP program to encourage students to graduate and enter higher education, double-blocked algebra classes, the READ 180 literacy program, and co-teaching/inclusion to boost academic skills. Students in this group receive aggression replacement therapy to improve behavior. Students who need intensive interventions have access to a social worker, group therapy and a credit recovery program.

As a result of developing an improvement process and building better relationships with students, the school cut discipline referrals in half, from more than 4,000 in 2005-2006 to approximately 2,000 in 2007-2008. Suspensions declined in all ethnic groups from 957 to 405 in two years. The number of suspension days dropped to 4,000. Special education students had fewer suspensions, down from a high of 600 to a low of 170.

Improved student attendance and behavior have led to higher student achievement. Scores for all student groups, with the exception of special education, exceeded the school's targets on the 2007-2008 English II Academic Performance Index. Students' scores on end-of-instruction tests in reading and Algebra I improved, and the graduation rate increased from 48 percent in 2005 to 55 percent in 2008.

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Using the Power of I in High School Courses

Teachers and administrators at **Truman High School** (THS) in Independence, Missouri, were frustrated with the quantity and quality of work being done by students. Because a few teachers had used the Power of I grading policy successfully, school leaders appointed a task force to examine the possibility of implementing it schoolwide.

THS is in a suburban school district near Kansas City. It enrolls 1,620 students, with 82 percent white and 18 percent minority. Thirty percent of students are eligible for free or reduced-price lunches.

The task force based its work on two philosophies about late or incomplete work and homework: Hold students accountable for completing their work as a way to increase academic achievement, and homework is designed to provide quality, independent learning that has a purpose.

Major Assignments

All THS teachers agreed to use the Power of I for at least one major assignment in each six-week period. Students are required to complete their work to a satisfactory standard. Work that is not turned in or is not up to par receives a grade of I for Incomplete until the student redoes the work to meet standards.

The object is to emphasize to students that the assignment is important and teachers will do everything possible to ensure students complete it to proficient standards. Teachers set a time for students to come in for support in improving their work. The Power of I supports rigor and lets students know that teachers care about their success.

"Beyond the once per grading period requirement, teachers are free to use the Power of I as often as they see fit," said **Bill Brooks**, high school redesign coordinator at THS. "Some teachers use the policy for every assignment, while others focus on major assignments and projects during the grading period."

Required Homework

Advanced Placement (AP) history teacher **Cara Satterfield** uses the Power of I in requiring all homework be completed before a student is eligible to take a test.

"This is the key to getting more students to do homework," she said. Satterfield has seen a major change in the atmosphere of her classroom as a result of implementing the Power of I. "Students need to learn the material at home so that we can discuss, debate and analyze it at school," she said.

Another THS teacher reported, "I have seen drastic improvements in students' grades because of the Power of I. It is nice to be able to tell students and parents that I require critical assignments to be turned in."

In mathematics classrooms, teachers report more students pass tests as a result of the Power of I. After an initial adjustment, most students do their work.

Teachers' plans

Teachers are asked to submit their plans for using the Power of I in the upcoming school year by the beginning of August. They are given opportunities to share their experiences from the previous year, discuss the grading approach with their supervisors and collaborate with other teachers to develop methods that will work best for them and their students. Administrators survey students to see what does and does not work in deciding how to refine the use of the Power of I.

Biology teacher **Jeff Roudebush** saw failure rates per semester drop from 17 percent in 2003-2004 to 2 percent in 2006-2007 after implementing the Power of I.

Two years ago, 80 freshmen were reclassified and did not advance to the 10th grade. In 2007-2008, the total declined to 10 freshmen repeating the ninth grade. Unit exam scores have increased, end-of-period grades are mostly Cs and above and AP scores rose in 2007-2008.

"Class time is more rigorous, more analytical and more engaging," Brooks said.

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Using Project-Based Learning to Teach Standards and Skills in Core Academic Classes

Akins New Tech High is one of five small learning communities or academies at Akins High School in the Austin, Texas, school district. It enrolls 330 students in grades 10 through 12. The ethnicity is 49 percent Hispanic, 26 percent white, 20 percent black, 4 percent Asian and 1 percent Native American.

The focus of instruction at Akins New Tech High is on project-based learning to teach state standards and modern skills in core academic classes. With American businesses asking for better-prepared graduates and with the reality that traditional instruction does not work for everyone, the new academy felt a responsibility to do more for its students. “Our challenge was to create a rigorous, relevant, student-centered environment to prepare all students for the 21st century,” according to Director **Connor Grady**.

To ensure that the approach is successful, all teachers complete intensive professional development when hired and participate in follow-up training throughout the year and in the summer at the New Tech All Schools Conference. The training includes developing projects that meet state standards and taking part in peer evaluation through the critical friends protocol, an opportunity to share classroom assignments and receive feedback from peers. Teachers also participate in professional development specific to the New Tech model several times during the year, where they discuss ideas with teachers from other schools in the New Tech system.

“Project-based learning does not exclude the use of traditional assignments such as homework, journals, research and note taking, but these assignments should have context within the larger project.”

— Connor Grady
Director
Akins New Tech High

Questions or Problems

Project-based learning differs from “doing projects.” Projects are defined as large activities to be done after students have completed homework assignments, lectures and readings. They usually are culminating events at the end of a unit or a semester. Project-based learning, on the other hand, pulls students through the curriculum by means of a driving question or a realistic problem that provides a “need to know.” Lectures, readings and skill-building exercises are integrated into the problem as students need the information.

“In project-based learning, we begin at the end and work backwards,” Grady said. “Students define an overarching or guiding question, decide on a product, and develop a structure to find answers to the question.”

An entry document helps students understand what they know and what they will need to know to complete the project. Entry documents, created by teachers to meet state standards, introduce the project to students. An entry document can take many forms — from a traditional letter to a video or a podcast — as long as it presents an overarching question and allows students to generate a list of “knows” and “need to know.” Students receive project due dates and guidelines, including a detailed list of items that will be required for the project presentation.

Sample Project

One project that Akins New Tech students are asked to complete involves designing four holes for a miniature golf course. Groups of students use the law of reflection, angle measurements and geometric constructions to develop a scale drawing of each hole. Each group also creates a working drawing that shows the path that a ball would take to make a hole-in-one when banked off of one or more walls of the hole. Groups present their designs to a panel of miniature golf course owners, the school internship coordinator and a geometry teacher. Winners are chosen based on creativity, accuracy, knowledge of geometry and presentation skills.

“Project-based learning does not exclude the use of traditional assignments such as homework, journals, research and note taking, but these assignments should have context within the larger project,” Grady said. “Students should see a clear connection between an assignment and the project.”

Rubrics are a vital part of project-based learning because they tell students how they will be graded. A rubric addresses academic standards and states the rigor that will be required to achieve advanced levels of performance. “The rubrics are handed out in the early stages of the project to set expectations for student work,” Grady said.

Benefits of Project-Based Learning

Akins New Tech High sees these benefits from project-based instruction:

- Project-based learning is closer than traditional learning to the way professionals outside of school solve problems.
- Students in a project-based learning classroom seldom ask, “When will we ever use this?”
- Skills developed in a project-based learning classroom can be used anywhere.

The attendance rate for New Tech students exceeds that of Akins High School students — 93 percent for New Tech students compared with 90 percent for Akins High School students in 2007-2008.

Twelfth-graders enrolled in New Tech High had higher Texas Assessment of Knowledge and Skills (TAKS) passing rates in English/language arts, science and social studies and made greater gains on TAKS from 2007 to 2008 in all three subjects when compared with Akins High School 12th-graders and seniors across the district.

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School Builds Self-Directed Study Into Daily Schedule

Meadowbrook High School is located in a primarily white suburban school district in Richmond, Virginia, but it has the demo-graphics and challenges of an inner-city school. The student population is 61 percent black, 17 percent Hispanic, 16 percent white and 6 percent other minorities. The student transient rate is 45 percent per year.

Motivating students to learn had become a problem at Meadowbrook. “Our students were happy to take zeros,” said **Wendy Gonzalez**, a school improvement coach at the school. “One student said he wasn’t going to do his work because he knew he would be put in remediation the following year and would worry about it then.”

The school had a remediation program, but it was voluntary and many students were not able to stay after school. The decision was made to build time for remediation into the regular school day.

By adding 15 minutes to the beginning and end of the school day and shortening some class time and class-change time to gain an additional 15 minutes, the school created a 45-minute self-directed study (SDS) period each morning. The timing ensures that all students — even early-release students — can participate. The period is late enough in the school day that students who are tardy will not miss SDS.

Six activities take place during the SDS period: tutoring, independent study, testing, library/media center time, guidance activities and club participation. The period is never cancelled. “Self-directed time is sacred at Meadowbrook,” Gonzalez said. “Even administrators cannot pull students out of it.”

Tutoring — The school’s A, B, C, Not Yet grading policy does not recognize a zero for late or incomplete work. Rather, students must redo the work until it meets standards. When students need to redo or make up work, teachers provide passes to the tutoring option. To accommodate students assigned tutoring for more than one subject, the school specified a certain day for each core subject — mathematics on Tuesday, English on Wednesday, science on Thursday and social studies on Friday. If students are not assigned to tutoring in one of the core classes, they can attend tutoring for an elective.

Guidance — The school offers guidance and career counseling services during SDS for students who need help with their course schedules or college applications. Students can ask for a private counseling session.

Testing — As part of the A, B, C, Not Yet policy, students can retake summative assessments once to achieve a grade of up to 80 percent. Formative assessments can be redone as many times as needed until students score 74 percent. The third aspect of the SDS testing period is retesting within the school day. A central location was created to help handle all of the retesting for teachers, who leave the testing materials in a drop box so that proctors can administer all of the tests in one room.

Library/Media Center — Many Meadowbrook students lack access to a computer at home. If they are not involved in tutoring or testing, students can visit the library/media center during SDS to do computer searches associated with their course work.

Independent study — Students are required to focus on classwork. When some students failed to bring their work, the school provided self-directed study kits to anyone without an assignment. Now students bring their own work so they do not have to complete the kits.

Clubs — Many Meadowbrook students were not invested in the school or in education. The school provided time during SDS for club meetings on a rotating schedule each Monday. This schedule, along with no tutoring or testing on club day, allows more students to join and be involved in clubs.

Gonzalez tracks data related to the number of students attending each SDS option, including the total sent to tutoring. In the 2007-2008 school year, students received tutoring a total of 36,192 times across all subject areas. More than 4,400 tests were given to allow students to achieve at higher levels. If a teacher has many students failing a course but has not referred anyone to tutoring, Gonzalez talks with the teacher about the benefits of SDS.

“The number of students passing courses has increased, and students are scoring higher on end-of-year tests,” Gonzalez said. The pass rates increased 3 to 9 percentage points across all content areas. The biggest gains took place in the special needs and English as a second language subgroups.

Other schools in the district have noticed Meadowbrook’s success and are beginning to develop their own SDS programs.

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Using Creative Learning Structures to Promote Success

Nine leadership teams of teachers and administrators have helped **Farmington High School**, a large rural *HSTW* site in Farmington, Missouri, increase student performance and reduce student failures. The teams focus on student performance, attendance, school climate, community involvement, reading, transition, extra help, seminar/advisement and administrative issues.

As a result of a schoolwide emphasis on achievement, the school made AYP for all subgroups in 2006 and 2007. It had 66.9 percent of students performing at the proficient or advanced level on the state assessment of communication arts and 61.3 percent reaching proficient or advanced on the state mathematics test in 2007. It also received an award of excellence from *U.S. News and World Report*.

The school focused on instruction by conducting the following activities:

- **Walkthroughs** — The FHS administrative team schedules and conducts student-focused walkthroughs on a weekly basis to evaluate the level of student engagement and rigor in the classroom.
- **Differentiated instruction** gives students options and meets the learning needs of diverse groups of students.
- **Class-Within-A-Class (CWC)** is used as an inclusion model to incorporate special education students into the regular education classroom. A special education teacher works in cooperation with the regular core subject teacher to provide instruction and to monitor student achievement. Most CWC classes have 20 to 30 students, including approximately eight to 12 students with individual education plans. This approach allows flexible grouping and differentiated instruction lessons to be taught on a more regular basis while upholding high expectations for all students in the classroom setting.
- **Student-centered and research-based instructional strategies** — Professional development is an important aspect of school improvement. FHS teachers participate in instructional meetings twice a month to discuss teaching strategies that directly impact student performance. During the past three years, teachers have studied the following books: *Fulfilling the Promise of the Differentiated Classroom* by Carol Ann Tomlinson; *Classroom Instruction That Works* by Robert Marzano, Debra Pickering and Jane E. Pollack; and *The Inspirational Teacher* by Gary McGuey and Lonnie Moore. All three books focus on rigor, relevance and relationships in school reform.



“It is vital to have dynamic teachers who motivate students to achieve beyond their own expectations.”

— Matt Ruble
Principal
Farmington High School

The core flex schedule at FHS is a modified block, allowing students to work with their core teachers for an hour per day and to take elective classes every other day for an hour. This schedule gives students more time in mathematics, communication arts and science while allowing them to take elective classes to explore career interests such as engineering, agriculture, business education and television broadcasting.

The schedule is also flexible enough to include extra help during the school day for students who need additional assistance in mathematics, communication arts and science. An extra-help class counts as a general elective credit and provides tutoring and reteaching of key concepts.

All teachers are contracted for 21 hours of tutoring, made possible by converting four teacher days into tutoring hours. FHS creates a tutoring calendar that is distributed to parents early each semester. A retesting policy exists in cooperation with the tutoring hours, since it allows any student who makes below a 70 to retake a similar assessment if he or she meets the retake guidelines. The policy allows students to retake tests if they first receive tutoring from a teacher in the specific content area either before or after regular school hours. Students who retake a test can achieve a score of up to 80 percent (a B-minus).

As part of its ninth-grade transition program, FHS offers freshman success teams, involving meetings with students, parents and teachers during the regular school day. The team approach provides ways for students to be successful in their studies. Each student, his or her parents, an administrator and a guidance counselor sign a contract stating what each of them will do to help the student succeed during the freshman year. Any ninth-grader who fails one core area class in a six-week grading period meets with the team and signs a contract to master the work.

Extended Algebra I and Communication Arts I

Students who fail the first semester of Algebra I or Communication Arts I take the course again during the following semester. This program is known as On Track. It allows students to master objectives from the first semester rather than struggle through the second semester without the necessary skills.

To improve reading skills across the curriculum, FHS has set a goal for all students to read 25 books per year, including six each in communication arts and social studies and two in science. Students read additional books during the seminar period, which includes silent, sustained reading each Tuesday and Thursday. This approach has led to increased reading schoolwide. During the 2007-2008 school year, FHS students checked out twice as many books from the library media center and passed more reading counts quizzes than in 2006-2007.

The College NOW project makes rigorous and relevant courses available to college-bound juniors and seniors. Students had access to 14 dual enrollment College NOW classes during the 2007-2008 school year. Enrollment increased from 577 students in 2007-2008 to 875 students in 2008-2009. Thirty-one percent of juniors and seniors participated in the program during 2007-2008. Three seniors earned associate's degrees from Mineral Area College, a two-year community college in Park Hill, Missouri, before graduating from Farmington High School.

“School improvement is an ongoing process,” Principal **Matt Ruble** said. “It is vital to have dynamic teachers who not only care about students as individuals but are also able to motivate students to achieve beyond their own expectations. Our high school is focused on providing a quality education that increases student performance through rigor, relevance, relationships, reading and responsibility.”

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School Schedules Time for Students to Improve

Leaders and teachers at **Frankfort High School** in rural Ridgeley, West Virginia, decided to exert a full-court press to motivate students to achieve at a higher level. They did so by changing the school climate so at-risk students are identified, all students receive time during the school day to improve their academic skills and success is rewarded.

Principal **Joseph Riley** carved 30 minutes from the daily lunch period to create a Foundations class for all students. On Tuesdays and Thursdays, ninth- and 10th-graders focus on improving their English/reading/language arts and mathematics skills; juniors study financial literacy; and seniors work on the senior projects that are required for graduation. On Mondays, Wednesdays and Fridays, students receive tutoring, read or complete homework. Students may get a pass from a non-core teacher to get help as needed.

Students are taught on a rotating subject basis. For six weeks, they learn mathematics. At the end of that period, they switch to English/reading/language arts for six weeks.

Every second and fourth Wednesday, students participate in a program of guidance and advisement activities by grade level. The same adult adviser stays with a group of students throughout all four years of high school. The adviser calls each student's parents to report midterm grades.

The state assessment, known as the WESTEST, is administered to students in the 10th grade, so the Foundations class focuses heavily on students in grades nine and 10. However, the school lacked the data to identify students so it could target their needs in English/reading/ language arts and

mathematics. As a result, Frankfort High School developed its own ninth-grade version of the WESTEST to measure what freshmen know and are able to do. The school used constructed response items from the I KNOW Web site containing released test questions. For more information, go to <https://testadministration.ctb.com/iknow/>.

The results allowed school leaders to create tiers of learners — 20 to 24 students — for each Foundations class. The object is to provide extra help and direct instruction to at-risk students and to allow other students to build on previously acquired skills.

In existence for five years, the Foundations program has produced outstanding results. The school has achieved Exemplary status from the state for the last four years. It also has exceeded the county average on state science tests in recent years.

To encourage continued success, the principal takes all 10th-graders to Hersheypark, an amusement park in the “chocolate capital” of Hershey, Pennsylvania, just prior to the state tests each spring. “The celebration recognizes the hard work of students in the Foundations class and reminds students and teachers that our new culture of high expectations is working and should be recognized,” Riley said.

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