HIGH SCHOOLS THAT WORK

Instructional Strategies Motivate and Engage Students in Deeper Learning

SREB

Instructional strategies are becoming increasingly diverse as teachers tap into students' interests and abilities to help them absorb academic and career/technical subjects that will improve their chances of success in college and careers. Teachers are increasing the number of challenging assignments that engage all students in displaying creativity, problem solving and research skills as they learn the content essential to succeed in life. Technology has been a boon to teachers and students in making learning "come alive" and hold the interest of all students.

Help More Students Become College and Career Ready by Successfully Engaging Them in Reading Complex Texts in Science, Social Studies, Mathematics and Career/Technical Classes

APRIL 2013

Research-Based Strategies Help Teachers Build Students' 21st-Century Learning Skills

Teacher effectiveness is vital in determining whether students learn in the classroom. Too many classrooms are characterized by low-level assignments rather than diverse instructional strategies that actively engage students in deeper learning, according to **Tom Dewing**, consultant for Silver Strong and Associates in Ho Ho Kus, New Jersey. Completing more complex assignments is key. "Engagement is the key to learning. When students actively participate and pursue knowledge, they are preparing for life after high school," he said.

Dewing noted the word "strategy" is based on two Greek words — *stratos*, meaning a multitude or an army, and *agein* or *ago* meaning lead, guide or move. A teaching strategy, Dewing said, is an instructional management plan that describes the role of the teacher and student and promotes particular patterns of thought to achieve specific learning goals.

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Types of Engagement

Engagement types include intellectual, social, emotional and behavioral. "Students understand how teachers relate to the subject matter," Dewing said. "If a teacher is passionate and knowledgeable about a subject, students will respond with enthusiasm and interest."

Dewing points to the "knowing-doing gap" as the biggest hurdle for any school or teacher in enhancing learning for students. "Teachers must find a way to bridge the gap between what they *know* about good instruction and what they *do* in the classroom," Dewing said. "The degree to which teachers are able to implement best practices in the classroom in a thoughtful, meaningful way determines the performance of a school or a student."

To overcome the "knowing-doing gap," Dewing said educators must understand clearly what the Common Core State Standards (CCSS) and other rigorous standards are asking educators and students to do.

According to its mission statement, the CCSS initiative aims to *"provide a consistent, clear understanding of what students are expected to learn, so teachers and parents know what they need to do to help them. The standards are designed to be robust and relevant to the real world, reflecting the knowledge and skills that our young people need for success in college and careers. With American students fully prepared for the future, our communities will be best positioned to compete successfully in the global economy."*

Lively Classrooms

One major way to accomplish a lively classroom with hands-on learning is to enhance literacy:

- Emphasize teaching the reading of informational texts.
- Steadily increase the ability of students to understand more complex materials over time.
- Integrate research skills across standards and grades.
- Write to argue, inform and explain to prepare students for college-level assignments.

"Promoting literacy is a shared responsibility for all content teachers, not just English/language arts teachers," Dewing said. Literacy plays an important role in teaching and learning math, science, history, art and career/technical studies.

Teachers can improve students' reading and writing skills by getting them to read for meaning:

- Give students a list of "agree or disagree statements" about assigned texts.
- Ask students to preview the statements and begin reading the text.
- Ask students to indicate whether they agree or disagree with the statements based on what they read.
- Have students justify their agree/disagree positions by citing appropriate evidence from the text.

"Applying the rigorous strategies outlined in the CCSS in all school subjects not only will improve the learning experiences of students in the middle grades and high school but will provide a strong foundation on which to pursue their aspirations after graduation," Dewing said.

Dewing is co-author with Harvey Silver and Matthew Perini of *The Core Six: Essential Strategies for Achieving Excellence with the Common Core*. "The book is designed to help teachers look at the Common Core State Standards and implement six strategies that teach to the common threads that the standards are asking to be implemented," Dewing said.

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The Sweet Spot of Engagement Boosts Student Learning

It is important for teachers to find the "sweet spot" for engaging all students in learning, according to **Steve Barkley**, executive vice president of **Performance Learning Systems, Inc.**, in Madison, Georgia. At the same time, he acknowledges that competition for student engagement has changed over the years. "Many students today enter the classroom from the real world where they engage with electronic gadgetry, sports activities and other events."

Barkley suggests placing emotion and engagement on a continuum that begins with "fear" and ends with "bored." Learning is minimized at both ends of the scale, he said.

"We need to eliminate school and classroom cultures based on fear, where students experience threats, embarrassment and/or violence and where learning is secondary to safety," Barkley said. "However, when students exhibit characteristics of boredom, teachers need to raise the anxiety level by increasing requirements through additional rigor or depth of learning. If students begin to show anxiety, the teacher must reduce that feeling. One way is for students to complete challenging assignments by working together in pairs or groups."

Barkley said the ideal emotional learning spot — the sweet spot — lies between "fear" and "attention." Tutoring pays off because effective tutors hold students in that position. "If tutors see students getting comfortable with learning, they continue," Barkley said. "If they see students getting anxious, they give more practice."

Master teachers monitor constantly to sense when students are moving from the sweet spot of attention to the comfort spot; then they take action to bring students back to the high side of attention. Barkley said teachers must know their students and be skilled at adjusting the pace, assignments and strategies to maximize learning.

Barkley shared five types of engagement as described by author Phil Schlechty:

- **Engagement —** Students are attentive and focused on the task with commitment and persistence; they volunteer personal resources of time, effort and attention.
- **Strategic Engagement —** Students are willing to do the work as long as extrinsic rewards are present. Remove the reward (grades) and students withdraw their effort. Students in this case ask, "Will this be graded?" "How many points?" "Does this count?"
- **Ritual Compliance —** Students want assurance that what they do will pay off in grades and improved chances for college. This scenario generally requires supervision. Producing the work with minimal effort could mean copying work or cheating on an exam.
- **"Retreatism" —** This action manifests lack of compliance in passive ways, such as withdrawing from a task. If challenged, students may move to compliance or rebellion. Teachers often overlook retreatism.
- **Rebellion —** This action focuses attention on something else and often is seen as disruptive.

The five types of engagement can be related on the emotional continuum with engaged learning occurring at the sweet spot.

"Behavioral engagement is when students exhibit on-task behaviors, including persistence with challenging tasks, asking questions and requesting help," Barkley said. "Intellectual engagement is deep involvement and effort by students to understand a concept or master a skill. Emotional engagement is when students exhibit high interest, a positive attitude, curiosity and task involvement."

Barkley emphasized that people desire or volunteer to do things because they matter and are interesting. He said the goal of

education is to create self-direction in students. "It is essential to design instruction that helps students connect with learning while developing autonomy, mastery and purpose," Barkley said.

In a survey conducted by Vito Perrone, former professor at the Harvard Graduate School of Education, students reported that they were most engaged intellectually when involved in defining learning content, when they had time to wonder and find a particular direction that interested them and when topics had a "strange" quality — something common viewed in a new way, evoking a question.

How can a teacher who is required to teach standards maintain control and autonomy in the classroom? **Barkley suggested teachers need to connect real life to the content being taught to get the emotional engagement that draws students to learning**. He encouraged teachers to find the sweet spot of student engagement to be successful in preparing students for further education and careers.

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Challenging Students to Read More in Literature and History Classes

Two teachers and a librarian at **Monarch High School** (MHS) in Louisville, Colorado, challenged students in literature and history classes to read 2,500 pages during the 2011-2012 school year. The challenge was successful and yielded positive changes in students' attitudes toward reading.

The idea to promote reading at MHS originated with American history teacher **Deann Bucher** after attending the *HSTW* Staff Development Conference in summer 2011. "I learned that students perform better in all content areas when they read more," Bucher said. "Some schools have seen as much as a one-year growth in reading when students read the equivalent of 25 books per year outside of class."

"I enjoyed many new books I never would have thought to read." "I rediscovered the joy of reading."

Students, Monarch High School

MHS is a highly successful school for most students, Bucher explained, but some students do not reach their potential. "I needed ways to raise student achievement, and I realized that the answer was to increase students' abilities to engage with texts," she said.

Launching the Challenge

Bucher met with American literature teacher **Mystayn Barnes** and librarian **Beatrice Gerrish**. The result was the challenge to read 2,500 pages. Of those pages, 100 would be by a world author and another 100 would be nonfiction. Students would write summaries of their reading and post information on Edmodo, a secure social learning network for teachers and students.

In the first year, 150 students participated from one history class (taught by Bucher) and two literature classes (taught by Barnes). In 2012-2013, most history students, along with students in literature classes, are participating in an expanded program.

"We wanted students to read more and enjoy it," Bucher said. "We started with the belief that if students read more they will raise their reading scores and across-the-board achievement."

The Reading Challenge team launched the program by surveying students to determine individual attitudes about reading. "To get better at reading, you need to practice," Barnes told *The Boulder Daily Camera* in Boulder, Colorado. "You're not going to practice something you hate."

Book Lovers or Haters

Using data from the survey, the team ranked students as "reading lovers," "neutrals" and "reading haters." Gerrish took responsibility for working with the reading haters. She met with them individually and in groups to help them find books and magazines of interest. She also taught students to use the library as a resource. "I lowered some of the library's restrictions on due dates, fees and access times so that students would be more comfortable with the checkout process," Gerrish said.

Needing to increase the library's collection of books to serve students better, Gerrish applied for and received a $1,500 grant from the Parent Teacher Student Organization. She combined that amount with her library budget of $1,000, a sum of $1,200 from the Impact on Education Foundation and $400 from the district office. The money was used to purchase Nook e-readers, iPod portable media players, special-interest books and magazines, plus Reading Challenge t-shirts.

Best-Liked Books

The reading haters found the following books most interesting: *The Hunger Games* series by Suzanne Collins; *The Maze Runner* trilogy by James Dashner; *Before I Fall* by Lauren Oliver; *Into Thin Air* and *Into the Wild*, both by Jon Krakauer; and the *Rot & Ruin* series by Jonathan Maberry. "Loading books on Nooks and iPods made them more approachable for many students," Gerrish said.

Parents indicate that the library expenditure for the Reading Challenge was a good investment in bringing about positive changes in students. Gerrish said one mother "shed tears of joy" that her popular son, a star football player, stayed home to read using his Nook. Another parent emailed the school, "We are experiencing amazing progress with our son. He was never a reader. When I heard about the reading goal at school, I was really worried. Now, it's as though something clicked. It's a parent's dream."

Positive Responses From Students

Students' responses were positive. One student said it was "cool" to read. Others arrived at class early to read and asked for more in-class reading time. Students participated with teachers in spontaneous book discussions, traded books with one another and encouraged classmates to read. One student said: "I enjoyed many new books I never would have thought to read." Another said, "I rediscovered the joy of reading."

The Reading Challenge team conducted a survey to measure the success of the project. "When we began the challenge, we had one goal — intellectual engagement," Gerrish said. "We discovered that the challenge resulted in unexpected improvement in social, emotional and behavioral engagement."

More than 60 percent of students said they read zero to one hour a week before the challenge. By the end of the year, that percentage had dropped to 20 percent. Fifteen percent of students were reading as many as five hours per week by the end of the year. In addition, 43 percent of students reported being better readers and 58 percent said they would continue reading during the summer.

"Perhaps the most impressive figure of all is that the students of just two teachers — Bucher and Barnes — read a total of 384,581 pages of text during one school year," Gerrish said.

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Got Rigor? One School Increases Mathematics Achievement

"You have to be willing to put yourself out there and try something new," according to **Andrea Richardson**, math department co-chair at **Farmington High School** (FHS) in Farmington, Missouri. FHS is an hour south of St. Louis in a city with a population of just over 16,000. Forty-three percent of students are eligible for free or reduced-price lunches.

"Faculty and staff knew we had to do just that if we wanted to increase student achievement in math and decrease the number of students taking remedial math in college, Richardson said" The result is an innovative math course sequence. The sequence courses are Algebra 1, Algebra 1.5, Algebra 2, Algebra 2.5, College Algebra, Informal Geometry, Formal Geometry, Probability and Statistics 1, Probability and Statistics 2, College Trigonometry, College Pre-Calculus, and College Calculus.

New Math Class

In 2008 the school created a new math class known as Algebra 1.5 to serve as a bridge between Algebra 1 and Algebra 2 for students not quite ready for Algebra 2. In conjunction with Algebra 1 and geometry, the new course is designed to keep struggling students on schedule for graduation.

FHS has continued to offer a nontraditional path for math students. Those who do not score well on the ACT or the Compass assessment can take Algebra 2.5. Taught like an intermediate college algebra course, it is intended to keep students from taking a remedial math class in college. For non-struggling students, FHS offers dual credit courses in college algebra, trigonometry, pre-calculus and calculus.

As the Common Core State Standards (CCSS) are implemented, FHS will require all students to take a one-semester course titled Probability and Statistics 1. "We decided it would be best for students if we took the statistics standards out of the CCSS-recommended Algebra 1, geometry and advanced algebra curriculum and taught it in one course," said **Jane Harris**, math department co-chair. "This is part of fulfilling the math department's goal of doing what is best for students."

Supporting Students

FHS offers a variety of student supports beyond the new class offerings. They include ACT bell ringers, before- and after-school tutoring, common assessments, Moodle sites set up to support students with resources, classrooms designed for students to sit in groups of two to four for daily cooperative peer support, and Cornell Notes. Teachers use formative assessment strategies such as exit slips to serve their students better. Students also have access to a wide range of technology such as classroom computers, graphing calculators and geometric software.

Leaders and teachers at FHS determined these student supports would not be enough to meet their goals. "We knew we needed to focus on teachers in order to help students," Richardson said. Each new teacher has a mentor teacher for two years. Teachers use collaborative planning time to review benchmark data, modify curriculum plans as needed, create common assessments, share successes and learn more about implementing different technologies.

FHS has found success in this journey of nontraditional teaching. Failure rates for freshmen in Algebra 1 decreased from 18.5 percent in 2009 to 14 percent in 2012. **The percentage of college freshmen who graduated from FHS and took remedial math classes declined from 22.9 percent in 2006 to 14.2 percent in 2010.**

The school has experienced growth in other areas:

- The graduation rate increased from 59.8 percent in 2006 to 75 percent in 2012 — 3.5 percentage points above the state average.
- A total of 138 students completed 380 dual credit classes in 2007. The total rose to 282 students completing just over 900 dual credit or dual enrollment classes in 2012.
- The daily attendance rate rose from 91.9 percent in 2007 to 94.1 percent in 2012.

For schools considering a nontraditional approach for students, Richardson and Harris offered this advice:

1. All staff members must set high expectations for students.
2. Students need to believe they can be successful. FHS uses mastery learning, positive relationships and an effort-based system that allows students to redo assignments rather than receive a grade of F. Teachers do not accept zeros or no effort.
3. Teachers must keep an open mind and be willing to try new strategies.
4. Administrators need to be flexible and supportive of teachers, including coordinating professional development opportunities.
5. Teachers and administrators alike must remember that the evaluative process never ends.

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Teacher Uses Engaging Literacy Strategies to Motivate Students to Achieve

Cyndie Wilkins, a family and consumer sciences teacher at **Fairhope Middle School** in Fairhope, Alabama, encourages teachers to become "stars" in their own classrooms. For example, she pedals into the room on a unicycle and shares her autobiography with students to inspire them to write their own life stories.

"I'd like to see more teachers incorporate their talents, achievements and interests into the lessons to demonstrate to students the value of working hard and setting goals," Wilkins said.

The Wilkins approach to writing consists of several steps:

- **Students are assigned to examine their personal life events, talents and interests in a written autobiography.** They use graphic organizers to list eight highlights of their lives. The events can be positive or negative. "Graphic organizers are great visual representations of students' work," Wilkins said. "They help students brainstorm to understand concepts before beginning the writing process."
- **Students use a "Life Map" — an eight-wheel graphic organizer — to draw pictures in each section of the wheel.** The pictures represent the events listed earlier. Students draw self-portraits in the center of the wheel.
- **Students read an anonymous autobiography (actually the life of Wilkins as a middle grades student) and use Cornell Notes to record facts and interesting ideas from the life story.** They discuss and evaluate the style, facts and ideas of the story as they collectively guess who wrote it.

Wilkins then introduces herself, displays a personal storyboard that remains in the classroom and demonstrates her unicycle skills to represent the challenges and determination required to ride.

"Ultimately, the students are ready to write," Wilkins said. "They have learned to pre-write with graphic organizers and have read a good example of an autobiography. Students embark confidently on the writing assignment for a successful experience."

One student with a severe learning disability told Wilkins that using graphic organizers to approach a writing assignment is easy, just like connecting the dots. "However, the steps in an assignment can be challenging for some students, who often require guidance and assistance from the teacher," Wilkins said.

"Middle grades career/tech classes typically have a combination of students with high to low achievement and high to low reading skills," Wilkins said. "The dilemma of middle grades teachers is to find creative teaching methods for outstanding results. I have discovered a 'hook' that entices students to try a writing assignment. **The key is to address various learning styles in a way, such as an autobiography, that focuses exclusively on each student. With this approach, students have a 90 percent autobiography completion rate and average assessment scores of 93 percent."**

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Motivate Students by Creating Authentic Project Assignments Linked to Their Interests

The Amusement Park Challenge: Finding the Slope of a Roller Coaster

Do you love the thrill of riding a steep roller coaster? **Nick Drennan**, mathematics teacher at **Penta Career Center** in Perrysburg, Ohio, counts on his students to say "Yes!" to that question as they engage in solving his Amusement Park Challenge performance task.

Penta Career Center enrolls approximately 1,600 students from 16 school districts. Students choose to attend the center, spending half a day in career/tech labs and the other half in academic classes. The Algebra 1 class size is generally 20 to 28 students from different schools and labs.

Drennan designed the Amusement Park task for his Algebra 1 class based on the roller coasters at Cedar Point Amusement Park in Sandusky, Ohio. Students calculate the slope of the first descending hill of nine roller coasters and use that slope to write equations of the line for each hill.

Criteria for Success

Students are given the lift distance, the vertical drop distance and the angle of descent of each roller coaster. They graph the hills on a coordinate plane using graph paper and a protractor. Drennan demonstrates one roller coaster to clarify the criteria for success.

As the students discuss their work, Drennan finds their graphs often are not exactly alike. "I want students to see the need for precision," Drennan said. "They need to know that human error can affect the accuracy of their work. One degree can cause a huge problem." If necessary, Drennan offers an explanation of the angle of descent.

Drennan uses engaging projects in his classes throughout the year. He designed the roller coaster project to be hands-on and to facilitate collaboration between teachers and students. "The task reviews the point-slope form of a linear equation and introduces students to slope-intercept form," he said.

Class Discussions

Class discussions are included in a review of lines with undefined slopes. For example, the Roller Coaster # 8 "Top Thrill Dragster" has a vertical drop for its first hill. The students also discuss the fact that an angle of descent greater than 90 degrees means a positive slope with the car hanging below the roller coaster upside down as in Roller Coaster # 9 "The Maverick."

"I use a rubric to grade the projects," Drennan said. He allows two points for each graph, two points for each slope, two points for each correctly written equation, one point for each reflection question (a total of 10 questions) and five points for neatness. "Students improve in their understanding of graphing, slope, real-world application of slope and especially in writing equations," Drennan said.

Students developed a greater understanding of quadratics and trigonometric functions and a greater appreciation for math in completing a real-life project that they were able to see and do.

Nick Drennan, Penta Career Center

Students in Algebra 2 complete a project using quadratics in which they launch water balloons, measure the distance the balloons travel and use trigonometry to find how high they soared. "Students then graph and write the equation for a water balloon's path," he said.

Drennan feels strongly that students comprehend the material much better when they are excited about it and can do something hands-on. "In past years, my students have struggled with the concept of slope and writing linear equations," he said. "But the amusement park project has improved students' understandings of slope and y-intercepts.

Students developed a greater understanding of quadratics and trigonometric functions and a greater appreciation for math in completing a real-life project that they were able to see and do, Drennan said.

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Reaching and Teaching Students: A Teacher of the Year Tells How

Reggie Fryar teaches social studies at **Van-Cove High School** in Cove, Arkansas. The small rural school serves 200 students in grades seven through 12. Generational poverty abounds in a community with a population of 500 and a median family income of $20,000 annually. Many students have never visited farther than the county seat, 30 miles away.

Fryar is in his 32nd year of teaching. In 2006 he was named National Rural Education Teacher of the Year. With this experience, Fryar has learned that sometimes a teacher must go "over and above" to reach and teach students. He adheres to eight key strategies:

1. **Establish relationships and connections with students.** Let students know you care. Get to know them, find out their interests and learn what is going on in their lives. "I use the information to encourage students to do their best," Fryar said.
2. **Show passion for your subject.** Love what you are teaching and have deep knowledge of the subject. "I go to extreme lengths to engage students with history," Fryar said. "I'm always seeking ways to compel students to interact with the content they are learning." He dressed as a crusader to interest students in world history. He also brings in research and artifacts to make learning real.
3. **Require students to read, research and report.** Ask students to conduct research to find information specific to an assignment and present it in an interesting way. Individual students or teams of students can become "experts" on a topic, develop presentation materials and "teach" the information to the class. They use the text as a reference only.
4. **Make learning real.** Organize field trips and invite speakers to make the content come alive. Use the Internet and virtual experiences to bring more relevance to a topic. "Do everything you can to bring the world to the classroom," Fryar said. His students participate in a Global Village project with Heifer International to experience life in a Third World country.
5. **Use hands-on experiences to engage students.** Do not rely on lecturing and asking students to read the textbook and answer questions. Include a hands-on project in every unit. Fryar's students have done posters, models, dioramas and costumes to illustrate content. Students look forward to new projects as well as those they have seen displayed in the classroom or heard described by siblings and friends.
6. **Integrate other subjects to show connections between disciplines and to create opportunities to collaborate with other teachers.** Fryar incorporates literacy, math and technology skills into almost every assignment. He works with the English/language arts teacher to match literature assignments to social studies units. He reaches out to the family and consumer sciences teacher for sewing projects to make historical costumes or for guidance on how food was prepared through the ages.
7. **Push students to realize their own potential and to learn "what's out there" for them.** Many of Fryar's students have few reasons to expect a better life. Fryar takes students on college tours and has encouraged many former students to enter postsecondary education. He became a Quiz Bowl coach to equip some of his more advanced students to compete intellectually. Van-Cove High School was the Arkansas Quiz Bowl Champion three years in a row in 2004, 2005 and 2006. Fryar became an adjunct professor so that students could earn postsecondary credit in high school.
8. **Recognize students' efforts.** The wall outside Fryar's classroom and the ceiling inside the classroom are galleries of student projects. The classroom walls are covered with flags from other countries sent to him by former students. "When these students come home, they visit the school to see their flags on display," Fryar said.

Van-Cove students appreciate what their social studies teacher is doing for them. In 2009-2010 they held bake sales and did odd jobs to raise money to buy a new set of classroom maps for "Mr. Fryar" because the old ones were worn and out-of-date. The principal participated in the surprise, calling Fryar out of the classroom so that the students could install the new maps. "I was in tears when I saw the maps and the happy faces of the students," Fryar said.

Students know they can go to Fryar when they have problems or want to celebrate success. "Teaching is about teaching students emotionally and intellectually," Fryar said.

Since he works with senior high school students, Fryar's primary focus is on college readiness and success. "Between 2008 and 2012, the school experienced increases on the ACT of 12 percent in English, 16 percent in math, 10 percent in reading and 11 percent in science," he said.

"The ACT profile report for 2012 showed that 100 percent of Van-Cove students in high-rigor courses met the ACT benchmarks, compared with 73 percent statewide," he continued. **"One hundred percent of social studies students in high-rigor courses at Van-Cove met the ACT benchmarks, compared with 53 percent statewide."**

Fryar said ACT reported the percentage of Van-Cove social studies students who were ready for college-level coursework in 2012 was 7 percent above the state average and 3 percent above the national average.

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Students Work Together on a Mural Arts Program for Their Historic Hometown

Students at **Rensselaer Educational Center**, a technical center of Questar III board of cooperative education services in Troy, New York, have completed a project of lasting value to the community. They designed, painted and erected an 88-foot mural depicting Troy's technology evolution from industrial water power to nanotechnology.

Questar III serves more than 400 students in a mixed urban and rural community. Many of the students are economically disadvantaged and socially challenged. Many are from families with limited education and few high school graduates.

"While working together in the classroom to plan how to support and secure the mural and during the mural installation process, construction tech students developed their abilities to solve problems and work cooperatively and effectively as a team."

Michael Gerrish, Rensselaer Educational Center

The mural project involved students from three Questar III programs: New Visions Visual and Performing Arts, Alternative Learning, and Construction Technologies. The program originated with students in the New Visions program, which blends an integrated curriculum in college-level English, music, art, theater and film studies with hands-on experience in a creative academic environment.

One student designed the mural and a high school classmate transferred the design onto 11 eight-foot panels. Other students painted the panels, which were erected in Troy's Little Italy neighborhood. Students in the construction technology class at Rensselaer built, transported and installed the construction base for the mural on a fence between a bocce court and an area known as "the market."

Michael Gerrish, the students' art teacher at the time, has retired from classroom teaching but continues to promote the overlap of art, education and technology through workshops and writing. "The mural project melded art, technology, history and social development into a student-centered curriculum," Gerrish said.

To prepare for the mural project, students went on field trips to neighborhoods in Troy. They secured permission from the city to erect the mural in a location that could use some upgrades and would serve as a reminder of the city's rich technological history. The Little Italy neighborhood group provided financial support for the mural. The entire process, from proposal through installation, was completed in eight months.

Several weeks after the mural was installed, the students and their teachers returned to the site to celebrate their achievement. "I asked each student to reflect on the events of the project," Gerrish said. "I reminded them of the history they had learned and how it was transformed into a work of art. We are proud that our students' imagination, creativity and hard work brought this history to life."

Gerrish observed student growth in many ways. "The lead artist was able to develop his ideas about designing art for a public place, communicate the enhanced concepts and direct others to bring the design to completion," he said. "His artistic vision expanded as he learned more about the history of his subject.

"The construction tech students were able to take on leadership responsibilities in the classroom and on the job site by completing various structural components," Gerrish continued. "While working together in the classroom to plan how to support and secure the mural and during the mural installation process, construction tech students developed their abilities to solve problems and work cooperatively and effectively as a team. These skills are valuable in any job environment."

Focusing on cross-curricular projects, Gerrish puts students' interests and needs at the forefront of the curriculum. His website (whyart.com) lists core beliefs:

- Everyone is different.
- Everyone has intrinsic value.
- Everyone has something to contribute.
- Our role as mentors, leaders and human beings is to find the value, nurture the value, and honor individuals and their values so that they can thrive and find success.

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Learn Proven Strategies That Motivate At-Risk Students to Meet Higher Standards

Middle Grades School Combines Strategies to Provide a Successful Learning Environment

J. H. Workman Middle School in Pensacola, Florida, has been a *Making Middle Grades Work* (*MMGW*) school for four years. Leaders and teachers at this Title I school have combined many principles and practices to make learning successful for students.

The school enrolls approximately 1,000 students. The student population is 50 percent black, 33 percent white, 6 percent Hispanic, 5 percent multi-racial, 3 percent Asian, 1 percent American Indian or Alaskan Native, and 2 percent other ethnicities. The majority of students (69 percent) qualify for free or reduced-price lunches.

In 2012 Workman Middle School was authorized as an International Baccalaureate (IB) World School offering the Middle Years Programme in grades six through eight. **The school is the first public middle grades school in the Florida panhandle to offer the internationally recognized framework of curriculum and global education. It is one of 914 authorized IB World Schools in 75 countries offering the Middle Grades Programme.**

"This accomplishment is due to the dedication and hard work of administrators, staff, teachers, students and parents," said Principal **Juanita Edwards**. "Teachers have collaborated to create a challenging and engaging curriculum that meets state and district requirements while connecting students to the local and global community."

Several actions have led to an improved learning environment for students and teachers:

- Planning time within each school day allows teachers to map the curriculum and collaborate on units and daily lesson plans. The content of each planning meeting is documented in a written report of the agenda, discussion notes and plans for future action. Increased professional sharing in these meetings uncovered the need to motivate at-risk students.
- School leaders and teachers created and implemented a new behavior system to meet the needs of a diverse student enrollment. Parents receive behavior report cards on students who need to be more respectful and responsible. Teachers write comments on the reports and a parent signs and comments on the student's behavior. Parents are asked to contact the guidance department to schedule a conference to talk about a student's repeated behavior issues. **As a result of the new system, the school has changed into a more positive and enjoyable learning environment with a significant decrease in discipline issues. In one school year from 2010-2011 to 2011-2012, the number of office discipline referrals decreased from 1,383 to 1,064.**
- After attending several SREB workshops, school leadership team members began mapping the school curriculum. "Mapping gave the staff an opportunity to examine the skills and topics being taught in all subjects and grade levels and to reflect on their alignment with state and county curriculum pacing guides," Edwards said. "We worked to eliminate gaps and redundancies in teaching, ensure scaffolding of skills throughout grade levels and allow the staff to see where cross-curriculum connections are possible." The mapped curriculum was made available on the school website so the entire school and the community could have access to it.

"By utilizing best teaching practices gained from professional development offered by the International Baccalaureate program, the Southern Regional Education Board and Florida's Positive Behavior Support project, our school has flourished over the past few years," Edwards said. "The support and coaching from *Making Middle Grades Work* has helped us achieve a more positive school climate and a successful learning environment."

Because of a change in the state assessment, Workman Middle School is unable to provide comparative scores of student achievement at this time, Edwards said.

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Gain Proven Teaching Strategies That Advance Students' Creativity, Problem-Solving Abilities and Research Skills

Bell-to-Bell Teaching: Motivating Students to Reach Higher Expectations

What teacher would not like to maximize learning from start to finish in a class period, keeping students productively engaged and motivated to reach higher expectations? Teachers at **Northwest Technical School** (NTS) in Maryville, Missouri, are using "bell ringers" successfully to ensure that students get the most out of every minute in the classroom.

NTS serves 14 area schools, including its home school of Maryville High School. In 2010, NTS received a five-year grant to participate in the *Technology Centers That Work* (*TCTW*) initiative. **Bing Boettner**, health services instructor, attended *TCTW* training, where she learned to use bell ringers to enhance student engagement. Since then, she and her fellow teachers have identified a myriad of ideas on how to begin the day in the classroom:

- Technical and industrial instructors use the *Practical Problems in Math* book series for some of their bell ringers.
- Agriculture instructors and a computer apps instructor use pre-assessment and review questions as bell ringers.
- A child care instructor reserves the first few minutes of her class for students to work on semester-long projects, such as writing a children's book.
- A business instructor maintains a teacher blog that can be accessed by students from their assigned computers.
- Another instructor considers bell ringers to be incentives for students to arrive on time. She likes to use three- to four-minute character-focused movies from the website www.simpletruths.com. Students use a listener sheet to summarize what they see and hear.

In the past two years, Boettner's use of bell ringers has evolved from occasional to a daily routine. To cue her students, Boettner plays a short music clip from Rick Morris' CD of television themes (www.newmanagement.com). Students use spiral notebooks to write answers to a question posted on the board. Boettner checks the notebooks every three to four weeks and gives a 10-point quiz grade for each week's entry.

Boettner lists nine bell-ringer tactics:

1. Pre-assessment
2. Review of the topic from the previous day
3. Scenarios such as "What's wrong with this picture?"
4. Literacy strategies such as journaling and KWL (What do you know? What would you like to know? What did you learn?) and other graphic organizers
5. YouTube video clips (free conversion downloads such as keepvid.com)
6. Character education topics from the Northwest Regional Culture of Character Partners Achieving Character Excellence (PACE) initiative (responsibility, respect, self-control, citizenship, compassion, tolerance, honesty, cooperation, perseverance, patience, confidence and integrity) http://www.nwmissouri.edu/rpdc/pace/traits.htm
7. Cartoons
8. Five-item daily quiz (multiple choice)
9. Entry and exit slips

Boettner incorporates bell ringers such as exit slips at the end of class periods. Here is how an exit slip works: A few minutes before the bell rings, she hands out index cards to everyone in the class. She poses a question and each student writes his or her answer on the index card. Students drop their cards in a tray as they leave the room. "I love to read students' responses," Boettner said. "Their answers help me see their learning needs while catching a glimpse of their unique personalities."

Not all of Boettner's bell ringers connect to the subject of the day. Periodically, she assigns a day for "celebration" of events in students' lives to help connect with students on a personal basis. She uses the SmartArt feature of Microsoft Word for this activity. "You can insert any of the designs to make hierarchies, cycles, lists, processes, matrices and pyramids," Boettner said. Her favorite feature for celebrations is the cycle feature. Students write their classmates' names in the appropriate space and record what they want to celebrate as students take turns sharing with the class. Celebrations range from winning big at a sporting event to receiving a scholarship.

Boettner also endeavors to improve students' literacy skills. "I am concerned about the seeming lack of interest among students in honing their reading and writing skills," she said. "Reading and writing are skills for life." She calls attention to the Career and College Readiness Anchor Standards for Reading in the Common Core State Standards (CCSS): *"When reading scientific and technical texts, students need to be able to gain knowledge from challenging texts that often make extensive use of elaborate diagrams and data to convey information and illustrate concepts. Students must be able to read complex informational texts in these fields with independence and confidence because the vast majority of reading in college and workforce training programs will be sophisticated nonfiction. It is important to note that these Reading standards are meant to complement the specific content demands of the disciplines, not replace them."*

"It is imperative to find ways to incorporate reading and writing skills into the curriculum no matter what subject we teach," Boettner said.

While Boettner lacks enough data to form conclusions about the use of bell ringers in the classroom, she has observed positive changes in student performance:

- **Students are more attuned to the subject matter at the start of the day.**
- **Students' responses are longer and more reflective or thoughtful.**
- **Students' vocabularies have improved.**
- **Students are retaining more difficult terminology.**

Sending school enrollment at NTS is the highest in eight years. Enrollment in three-hour block classes is at an eight-year high with a 10 percent increase from 2011 to 2012 and a 68 percent increase from 2008 to 2012.

"Bell ringers help make classrooms more positive places that foster learning and collaboration," Boettner said. "They may even be one small part of why attendance has increased in my class and others."

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Learning the FUNdamentals of Project Management

Students at **Tulsa Technology Center** in Tulsa, Oklahoma, can enroll in a program that teaches project management by having students do real-world projects. Teams of students initiate, plan and execute the projects with appropriate supervision from instructors. During the first weeks of school, the projects are focused on building team relations, accountability, responsibility and soft skills.

Each project is team-based with each team member playing a role, including project manager. Each team has a budget, a list of materials with costs and a set of parameters. **Projects range from model building to improving communication skills as students prepare for real-life projects later in the course.**

- **Build a Bridge —** Students construct a model bridge over a body of water. They are given specific dimensions, a price and materials list, a budget and time constraints.
- **SNAFU (Situation Normal: All "Fouled" Up) —** Not just a communications project, this project helps the team understand the importance of detailed descriptions, precise instructions and getting others to see the vision.
- **Marshmallow Tower —** The team builds a model tower from spaghetti, marshmallows, graham crackers and Hershey bars. Office supplies may be used. The team must adhere to specific dimensions of the tower.
- **Save the Egg —** Each team designs and builds a container to protect a raw egg from breaking when dropped from eight feet. The constraints are time, budget and how to determine the materials needed for the project.

Real-Life Projects

Students then experience live projects such as the Elite project in which a client needed marketing promotions for a gymnastics and cheer gym, the GOTTOGO website for the robotics team competing in its first competition and a typography commercial for Bridge Employment Services. "The Film Festival project was a big success," said Tulsa Tech Instructor **Teresa Pinkston**. "It was a student-led project created *by* students *for* students."

As each project comes to a close, the project manager uses a survey to obtain customer feedback and data to share with the team. The project manager debriefs the team with the information at a lessons-learned session. "The purpose is to help the project team share knowledge gained from the experience," Pinkston said. "The debriefing also promotes the repeat of desirable outcomes and avoidance of undesirable results. Students record information on strategies and processes that lead to success as well as areas of potential improvement."

Pinkston said elements of project management are essential to all projects, regardless of the discipline. "Using the sequence of initiate, plan, execute, control and close, students can find success and gain higher level skills as they move to another project," she said.

Evidence of Success

Project Management is a course in the Media Producer program, which is in its second year at Tulsa Tech. Evidence that this approach is working lies in testimonials from students and business partners. Kris Reynolds, past president of the Tulsa Chapter of the Project Management Institute (PMI), was a resource and mentor in bringing project management skills into the curriculum at Tulsa Tech. He says these skills help define and organize the planning and execution of any project.

"Tulsa Tech students understand that they will use the project management skills throughout their lives," Pinkston said. One student was asked to speak to more than 200 professional managers at a PMI leadership conference in Tulsa in May 2012. She described her experiences in the Project Management course and led the audience in the tower-building exercise. "Even if we don't become the head of a company, a lot of what we learned in Project Management is just life skills," the student said. "We learned how to work with people, how to be flexible and how to work with change in the workplace, projects and clients. It was very beneficial."

Leaders of the gymnastics and cheer gym said, "We were excited to work with students from Tulsa Tech. We knew going in that they weren't experts, but we were extremely impressed by the quality and professionalism of the students."

Bridge Employment Services is partnering with the Media Producer program again this year and the robotics team will continue to have business support. "Just like in the real world, repeat customers are evidence of success," Pinkston said.

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Get Out of Your Seat! An Active Approach to Education

Differentiated instruction…high expectations…problem solving…critical thinking…collaboration. Teachers at **Frankfort High School** (FHS) in Ridgeley, West Virginia, are more familiar with these 21st-century buzz words after participating in a new kind of professional development.

FHS enrolls 550 students in grades nine through 12. The teaching staff includes 61 members.

In summer 2010, Principal **Joseph Riley** and Vice Principal **Kelly Haines** attended the West Virginia Principals' Leadership Academy, where they were inspired to introduce an "active approach to education" at their school. Working together, the two administrators created a variety of challenges and problems for faculty and staff to solve during a collaborative, student-centered professional development workshop. The participants were randomly placed on teams and presented with a "dare" to complete each challenge.

"Our focus was on team building in the area of professional development," Haines said. "We wanted to get our teachers up and moving to do things that they can use to engage students in the classroom."

Since that summer, it has become a tradition at Frankfort High School to begin the school year with an "active approach to education." The faculty and staff praise the team-building, problem-solving agenda. One faculty member said, "This was the best school opening we have ever had. It really seemed to build school culture." Another teacher said, "The activities renewed my school spirit."

Teachers at the workshop participate in six activities that illustrate the importance of preparation in learning and how to use engagement, collaboration and problem solving with teachers and students:

Alphabet Game — Using large letters displayed on the floor, team members spell an assigned phrase in the shortest period of time.

Mine Field — This activity shows the value of coaching another person through a maze.

Bull Ring — Participants have time to work with others to improve their scores.

Marble Shoot — This activity reinforces the value of redoing work and collaborating with peers.

"We wanted to get our teachers up and moving to do things that they can use to engage students in the classroom."

Kelly Haines, Frankfort High School

Hula-Hoop Relay — Team members use a rubric and learn about redoing work and engaging others in learning.

Chicken Shoot — This activity teaches collaboration, rubric use and problem solving.

School leaders saw that the active approach worked well with the staff, so they decided to try it with students. Team-building activities have been incorporated into individual classrooms and are used as team exercises for freshmen, sophomores, juniors and seniors. "We are proud to see students working together to solve real-world problems," Haines said.

The West Virginia Department of Education and SREB have shown support for a 60/40 classroom plan in which 60 percent of the time is devoted to student-centered activities while 40 percent is reserved for teacher-centered lessons.

"The active approach to education has definitely increased the percentage of student-centered activities being completed throughout the building," Haines said. "This has been corraborated by weekly administrative classroom visits."

Administrators Riley and Haines perform weekly classroom walk-throughs and produce monthly reports of their findings to be shared with teachers at monthly faculty meetings. "The walk-through program on our iPads allows us to run numerous reports to compile and compare information," Haines said. "The county office can also pull this information for monitoring."

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Using Integrated Learning in Middle Grades Science Classes

Noel Bridges heads the science department and teaches science to students in grade seven at **Southeast Middle School** in Hopkins, South Carolina. She is dedicated to developing and providing integrated, hands-on instruction to engage students in high-quality science experiences and to promote students' interest in further science-related studies.

"I have found numerous resources to support integrated learning in science, but the most helpful approach was developed by Professors Jennifer Richards and Amy Beavers of the University of Tennessee at Knoxville," Bridges said. "Dr. Richards and Dr. Beavers have created an integrated unit on food safety practices that is ideal for engaging middle grades students in this topic."

"A major driving force behind integrated teaching and learning is the belief that when themes, subjects or projects are combined, students begin to see meaningful connections in the subject matter."

Noel Bridges, Southeast Middle School

The Food Safety in the Classroom interdisciplinary unit is a project supported by the U.S. Department of Agriculture's National Integrated Food Safety Initiative. "The curriculum includes hands-on experiential learning through a series of interdisciplinary lessons aligned with state standards in math, science, social studies and language arts," Bridges said. "Supplies and training are available from Dr. Richards at UTK." Bridges has used the curriculum and been instrumental in integrating it into all core subject areas in grade seven.

- Math — concept of scale (example: magnification of bacteria), exponential growth (example: bacterial growth), simple statistical analysis and graphical representation of data (example: mean, median, mode, range and box-and-whiskers plots that are useful for handling many data values)
- Science — scientific inquiry (example: how to set up a lab, identify variables and gather data), learning about bacteria (example: causes of growth, how to kill bad bacteria), basic cell structure and functions
- Social Studies — understanding standards of living throughout the world, informal research skills, geospatial mapping skills
- English/Language Arts — reading nonfiction source material (example: reading for detail and understanding the main idea), process writing (example: expository writing), verbal and written communication (example: group activities, writing a news release)

Bridges uses two creative tools to engage students in the classroom:

- One tool is similar to a restaurant menu. The "menu" contains various assignments under four headings: All students complete the appetizer; students select one of several entrees; students pick and complete two of four side dishes; and students complete an optional dessert for extra credit.

For the appetizer, students list the six primary and three secondary organs of digestion. For the entrée, students use the friendly letter format to write a "love letter" from their muscles to their bones, explaining why they need each other. For the side dish, students create a vocabulary game for the skeletal system. For the dessert, students create a test to assess the teacher's knowledge of the skeletal system. "The menu is highly engaging, because it gives students choices in their work," Bridges said.

- The second tool is a simulated Bingo card containing multiple boxes or tables on a single page. Each box contains a one-sentence description of an assignment. Students are asked to complete up to five of the assignments in a certain time period. "This tool gives students choices and encourages them to complete the work," Bridges said.

"A major driving force behind integrated teaching and learning is the belief that when themes, subjects or projects are combined, students begin to see meaningful connections in the subject matter," Bridges said. "When teachers differentiate the curriculum, they give students choice, control, challenges and opportunities to collaborate. The more these students are motivated and engaged, the more they will learn."

Bridges has seen improvement in student achievement and discipline issues as a result of integrated learning in science. She gives pre- and post-tests, provided by the University of Tennessee at Knoxville, to measure progress on hands-on units. **"I have found as much as an 80 percent improvement in understanding after students completed the unit," she said. "Due to the high level of engagement in the classroom, I have had very few behavioral issues."**

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Use Technology, Including Web-Based Instruction, to Advance Students' Academic Achievement and Emotional Engagement in Learning

Integrating Technology Into Academic Classrooms

More teachers than ever before are using apps — applications of technology — to motivate students to learn at a higher level, exert more effort to learn and become excited about what they are accomplishing. Students apply their learning through various uses of modern technology — a far cry from when PowerPoint replaced the overhead projector.

"Most of my students have access to online technology, and 95 percent of them like it," said **David Harms**, social studies instructor at **Penta Career Center** in Perrysburg, Ohio. "I use technology as a tool to engage students in learning."

In one example of using technology in education, teachers prepare videos of lessons that students can watch anytime. They use class time to engage students in active learning on the topic. Special-needs students can view the videos more than once for additional help with the lessons and parents can look at what students are doing in a particular subject.

Harms provided three resources for video apps:

- Educreations — screen recording software (http://www.educreations.com/)
- Camtasia — for customizing, editing and sharing videos (http://www.techsmith.com/camtasia.html)
- Audacity — cross-platform software for recording and editing sounds (http://audacity.sourceforge.net/)

Harms integrates a variety of technology resources, including Moodle, PowerPoint, Skype, iMovie, Wiki websites, Voki, Xtranormal, Edmodo, Zondle, Socrative and Animoto. He asks students to develop claymation software movies based on the standards they are learning. Some topics have included "How a Bill Becomes a Law," "Stalin's Son" and "The Bill of Rights." When students complete their assignments, they upload the movies to the class Moodle site. "You can also use a Wiki website so that all students can review the movie in preparation for a final assessment," Harms said.

Another strategy is to ask students to design their own Wiki websites when developing a research paper. The assignment requires students to research 10 possible websites to support the thesis and then develop an opening paragraph and a support paragraph to post on a personal Wiki. "Some students won't write more than two or three sentences on paper, but they will write paragraphs of information for the Wiki," Harms said.

"One drawback to using technology apps in the classroom is the amount of time teachers need to spend in preparation, especially in the beginning," Harms said. "The use of an iPad or a tablet will help reduce the planning time." By using the Educreations app on the iPad, Harms is able to preload presentation materials and record the lessons in real time. With an iPad and an Apple TV, he can record a lesson while the class is viewing it and participating in it. "The wireless capability allows me to present and record while monitoring the classroom and measuring student comprehension," Harms explained.

Harms referred teachers to a "teaching strategy toolbox" at their fingertips. Teacher resources include TeacherTube, a video-sharing website; the Khan Academy, with a library of more than 3,000 videos on various topics; RubiStar for developing rubrics; and EasyBib for resources about writing styles.

"Technology can be the lifeline for many students to become more actively involved in learning," Harms said. "We just need to take the time to use it effectively."

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Don't Fight the Digital World — Embrace It

Some people are uncomfortable with the reality that our students have phones in school," said **Jeff Miller**, math teacher at **Spring Hill Junior High** in Akron, Ohio. "However, we know that students like to stay connected with each other just like adults do. Young people live in a digital world where they need to use tools that are personal and can help them benefit themselves or someone else."

Miller believes teachers and students should learn to use mobile technology, such as iPods, iPads and content area-related apps effectively in the classroom. "Schools can use technology to collect data, both formative and summative, to help drive instruction," he said. "But technology does not replace good teaching and best practices."

Spring Hill Junior High serves 450 students in grades seven and eight. Of those, 22 percent have disabilities. "We have found that technology is a great way to engage special-education students," Miller said. Some 60 percent of students are economically disadvantaged. The school received a $250,000 grant to buy iPads, iPods and laptops for their students.

The school has taken precautionary measures in using the new technology:

- To bring a device to school and use the school's technology, students are required to release the school from liability for content on the device and for any damage done to the device.
- The school has two servers to prevent students from bringing malicious or infected software or inappropriate content. If the student server becomes infected, the teacher server is not affected.
- Students do not use the devices during instruction. Teachers tell students to "stack them" during teaching.

Miller gives five major reasons for using mobile technology at school:

1. Teachers can conduct formative assessments with the devices.
2. Teachers can create summative assessments that can be accessed on the school server, completed on a student's device and turned in for grading.
3. Students can immediately Google a topic that they want to know about in class.
4. More materials and information are portable. Students have access to information "on the go."
5. Students have more personal control over their education. The devices lift the restraints of the traditional school setting, allowing students to learn at their own pace and in their own learning styles.

Miller said the Ohio Department of Education reported gains in mathematics among students in grade eight at Spring Hill Junior High School on the Ohio Achievement Assessment (OAA) in 2011 and 2012. The estimated school mean NCE (normal curve equivalent) gain was 2.3 in 2011 and 3.7 in 2012. The gains were above the growth standard by at least two standard errors. In reading, students in grade seven at Spring Hill Junior High School had estimated school mean NCE gains of 0.1 in 2011 and 2.6 in 2012. The 2012 gain was above the growth standard by at least two standard errors.

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Technology Tools + Rigor = Student Engagement

Teaching and learning have moved far beyond the textbook at **Landrum Middle School** (LMS) in Houston, Texas. Thanks to the effective use of technology, teachers and students are giving real meaning to the concept of "digital learning."

Students and teachers in all classrooms at LMS have access to interactive boards, Kindles, iPads, MacBooks, Dell notebooks and calculators. Students are allowed to use cell phones as learning devices.

Teachers use the tools to make learning relevant, address students' learning styles and prepare students for high school, college and careers. **Students** use the tools to research, write, solve problems, create projects, communicate and learn in a way that makes sense to them.

"When used effectively, technology increases student engagement, enhances rigor and provides more opportunities for students to become independent learners," said **Sharon Jones**, interdisciplinary instructional coach at LMS. "The teacher's role has become that of coach, guide or facilitator."

> "When used effectively, technology increases student engagement, enhances rigor and provides more opportunities for students to become independent learners — The teacher's role has become that of coach, guide or facilitator."
>
> **Sharon Jones,** Landrum Middle School

Jones describes a number of websites used by LMS teachers and students that are available at no cost to the student or the school:

- **Edmodo —** Think Facebook for learning or a tool for creating a virtual classroom. This website is a forum for communicating and collaborating, posting assignments and projects, posting and sharing links and resources, and even submitting and assessing work.
- **TodaysMeet —** Similar to instant messaging, this service is a tool for conducting virtual discussions, Socratic seminars and brainstorming sessions. It is web-based and available at www.todaysmeet.com.
- **Animoto —** This web application produces videos from photos, video clips and music quickly and easily.
- **Weebly —** The easy-to-use "drag and drop" feature of this site makes building websites a snap at weebly.com.
- **Slide Rocket —** This tool is handy for sharing and collaborating on presentations.
- **Jing —** This recording and voice-over tool allows the user to record action that is visible on the computer (a video or movie clip or a classroom activity) and record narration to accompany the recorded video. Students can create a tutorial or narrate a lesson for students who are absent.
- **Skype —** This video conferencing tool extends learning beyond classroom walls and gives new meaning to "Ask the experts." Students can connect within the school, city, state or country and across the globe.
- **Google Docs —** This forum is good for collaborating on ideas and projects, sharing and posting work, and posting assignments and resources.

LMS students have created instructional videos, persuasive advertisements and commercials, informative brochures and pamphlets, research papers with PowerPoint summaries, informative videos and public service announcements, and original websites.

"Students have used TodaysMeet.com to hold electronic discussions and brainstorming sessions within the classroom and with other students and classes on the campus," Jones said. "They have used Weebly to create informational and persuasive websites; Skype to learn directly from experts, including university professors; and Edmodo to collaborate with each other, communicate ideas, and create and share projects with students in other classrooms, the school district and other countries."

Jones has observed and commended students for improving their learning habits:

- Students work as teams to "divide and conquer" a challenge or a project.
- They overcome obstacles (limited access to video footage, unfamiliarity with how to build a website, loss of a personal website).
- They help each other after they become "experts" on something.
- They "step into the shoes" of researchers, scientists, historians, literary critics and web designers.
- They demonstrate a strong work ethic to create a quality product.
- They provide feedback on what they liked, what they would change in the future and what they learned.

Jones challenges students to teach other students and teachers what they have learned and mastered recently. She invites educators at other schools to join her Edmodo site by going to edmodo.com, entering the code 6gwsjt and clicking on "join."

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This newsletter of "best practices" in implementing the *High Schools That Work* (*HSTW*), *Making Middle Grades Work* (*MMGW*) and *Technology Centers That Work* (*TCTW*) school improvement models is based on presentations at the 26th Annual *HSTW* Staff Development Conference in New Orleans, Louisiana, in summer 2012.

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