

# Working Toward EXCELLENCE

THE JOURNAL OF  
THE ALABAMA  
BEST PRACTICES CENTER

SUMMER 2007

PRINT EDITION

VOLUME 6 ~ NUMBER 2

## Alabama's 21st Century Schools Are Blazing Trails Through Cyberspace

ONE PERSON'S JARGON is another person's professional speech. A real estate agent might refer to a "wrap-around mortgage" without a second thought and then complain about "education-ese" upon hearing a teacher mention "curriculum mapping."

The same holds true in discussions about digital technologies and Internet-based learning. New concepts require new labels. To get the most out of this special issue of Working Toward Excellence, you need to understand what's meant by the expression Web 2.0. It's not hard to grasp—and it's a concept every professional working in education today should know.

When the World Wide Web first emerged as a global phenomenon, most of us defined it in 20th Century terms. It was a vast and amazing resource library. As more and more content appeared, we found we could discover something about nearly everything, and many educators naturally thought: "This could be a great teaching resource." We were mindful, of course, of credibility issues. But what a library!

Many Web users, including educators, still think about the Web primarily as an information repository—even though there is ample evidence it has evolved into something more. Today, as we surf the Internet, we see endless examples of the Web's ability not just to serve up content, but to empower us to share our imaginations, insights and opinions.

Web 2.0 is all about this two-way or group communication. The Web is no longer just a place to search for resources. It's a place to find people, to exchange ideas, to demonstrate our creativity before an audience. Today's web technologies make it possible to build formal and informal communities and networks—using tools like blogs, wikis, and social networking software—that span our communities, our nation, and even the world.

The Internet has become not only a great *curriculum* resource but a great *learning* resource. And trailblazing educators in Alabama are seizing upon the unprecedented teaching potential of Web 2.0 to help their students acquire critical 21st

Century skills and dispositions. They are, in fact, laying the foundation for Classroom 2.0. Consider these examples:

- At West Blocton Elementary, a Title I school in Bibb County, a fourth grade team created a website documenting their research of water quality in the nearby Cahaba River. They received help with the project from third graders in west Florida and the Slovak Republic, won an international prize, and their site is now being visited by schools all over the world.
- At Spain Park High School in Birmingham's Hoover school district, photography students are using blogs to not only post their best images on the Web but to take part in a cross-critique of their work with other photography students at several schools across the USA.
- At Paine Intermediate School in Trussville, students organized a project to raise funds so parents in Africa

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### MORE STORIES ON THE WEB!

Our Web Edition of *Classroom 2.0* has more stories, special features, photos and graphics, and lots of resources. You'll also find the content of this print edition, with embedded links that lead to sidebars and useful references. Don't miss it!

<http://www.abpc21.org>

## CLASSROOM 2.0

How do we grow the teachers we need for Alabama's 21st Century classrooms? . . . . . Page 3

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*Working Toward Excellence* is a quarterly publication of the Alabama Best Practices Center. The Best Practices Center, located in Montgomery, works to identify and promote promising education practices, with an emphasis on staff development for teachers and administrators. It collaborates with existing organizations such as the State Department of Education, higher education, local school systems and schools, the regional inservice centers and others. It is facilitated by the A+ Education Foundation, with the generous support of BellSouth Foundation, Community Foundation of Greater Birmingham, Microsoft Corporation, Wachovia Foundation, and the State of Alabama. For more information, call (334) 279-1886.

**This Classroom 2.0** issue of *Working Toward Excellence* was researched, developed and written by John Norton and Sheryl Nussbaum-Beach, ABPC's consultants for 21st Century learning.

**ALABAMA'S 21ST CENTURY SCHOOLS**  
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could obtain mosquito nets to protect their children from malaria. To find out more about the problem, the kids arranged a live Internet interview with a Peace Corps worker based in a small village in Senegal, which was broadcast throughout the Grade 3-5 school. Donations flowed in!

- At George Hall Elementary, located in a high-poverty Mobile neighborhood, K-5 students are creating documentaries about their field trips to places like the State Capitol and the Shakespeare Festival in Montgomery, or the firefighter school right in their own city. Then they load their stories onto the Web, where students anywhere in the world can see, hear and respond to what the Hall students are learning.
- At Cullman Middle School, students sharpened their writing skills—and their imaginations—by working on collaborative book projects at a free website that allowed them to edit and add to each other's work.
- At rural Fayetteville School (K-12) in Talladega County, some fourth graders got so excited about black holes and deep space that they formed a "wiki club" and created their own web-based site to explore the topics further. "I gave them basic information but they were able to use the technology and the Web to explore space phenomena to their hearts' content," says teacher Amanda Spurling.
- At Challenger Middle School in Huntsville, faculty members who are learning how to use Web 2.0 tools in their classrooms can draw upon (and add to) a resources wiki developed by the school's 21st Century teacher team, which shares ideas about how to teach with blogs, wikis, podcasts and other web-based technologies.

- At Calcedaver Elementary, in the upper reaches of Mobile County, students in the fourth, fifth and sixth grades spoke live over the Internet with a member of their close-knit community serving in Iraq. Using the free web telephone service Skype and webcams, John Byrd Jr. was able to see and talk to his daughter, fourth grader Lorin Byrd, and then answer students' many questions about Iraq and the Middle East.

**The ABPC-Microsoft Partnership**

These examples are among dozens that have emerged during a pilot project organized by the Alabama Best Practices Center and supported by a two-year grant from the Microsoft Partners in Learning program.

The project, which combines live online professional development, an email-based virtual learning community, and several face-to-face gatherings, has helped nearly 40 schools and more than 200 teachers and principals move beyond keyboarding, word processing and LCD projectors to exploit the teaching/

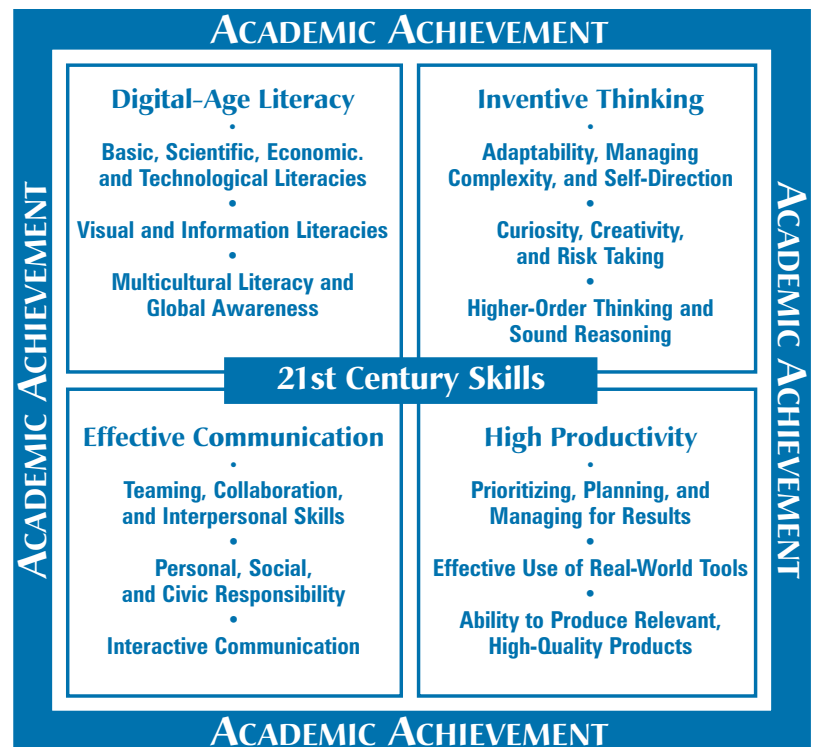
learning potential (as one 21st Century educator has described it) of the greatest technological innovation since the Gutenberg printing press—the Internet.

April Chamberlain, one of 10 teachers from across the state who served as Fellows for the 21st Century project, described the power of the project model, which engaged small groups of 5-6 teachers at each school in an intensive professional development experience.

Chamberlain, who serves as a technology teacher leader in the Trussville City Schools, used TCS's Hewitt-Trussville Middle School as an example. "I think the 21st Century team here is getting the knowledge they need to build Classroom 2.0 and they are beginning to pull in other teachers to design work that will engage the students."

"From this the ripple will spread," Chamberlain believes. "This is our only school that has a 21st Century team, and they're able to talk the talk and walk the walk, and others can see that. There's no question that having a team of teachers

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# Growing 21st Century Teachers For 21st Century Classrooms

*Smart schools and districts are finding ways to accelerate the adoption of technology-infused teaching practices that address 21st Century skills.*

HOW DO EDUCATION leaders effectively promote the knowledge, skills and sense of urgency for 21st Century teaching and learning among all the teachers in their schools?

In our two-year pilot project funded by the Microsoft Partners in Learning program, the Alabama Best Practices Center sought to maximize our available resources by adopting a “champion-building” approach to spreading awareness and interest in Web-based teaching strategies.

We asked each principal in our 40 participating schools to select a five-teacher team to join our 21st Century Schools professional development community. Each team agreed to share what they learned with their own faculties, including the rationale behind the urgency for change, and the exciting possibilities of technology-infused learning.

This champion-building approach was most effective when principals followed our suggested guidelines for participant selection and chose teachers who were already comfortable with computers and the Internet. Our goal was not to train teachers to use technology (a massive undertaking far beyond our means) but to create “aha” moments among creative, forward-thinking teachers by introducing them to the concepts of “Classroom 2.0” (see page 1). We hoped they would be intrigued by—and ultimately be champions for—the potential of blogs, wikis

and other social networking tools to engage students in higher order learning experiences.

Did it work? In the majority of schools, it did, to varying degrees. In other schools, few if any effective advocates emerged. Here are some factors that influenced the success of our champions approach:

► Each school’s teacher team needed to include a “critical mass” of curious and comfortable technology users. Some principals made the decision to include reluctant technology users which weakened the model. We were more successful in guiding principal selection in our second year by being more explicit about the reasons behind our selection guidelines.

► In schools particularly vulnerable to the sanctions of high-stakes testing and *No Child Left Behind*, it is often difficult for teachers to shift their attention to new ways of teaching. Under pressure, we fall back on what we know best. Adopting more student-centered classroom activities and using unfamiliar tools feels risky. And the short-term payoff, from the point of view of pragmatic school leaders, may seem questionable in the face of standardized tests that are not closely aligned with 21st Century skills. The most successful teams in such high-needs schools had strong principal leaders who supported their experimentation.

► Teachers in districts without clear policies about safe access to

the Internet were often frustrated by their inability to make use of websites and web tools introduced during our online professional development sessions. In a few cases, the district’s inflexible filtering policies sapped away most of the enthusiasm for Web 2.0 projects. In other districts, IT leaders and other central office staff worked with schools and with our project to find common ground.

► In underfunded schools, reluctant teachers often fall back on the lack of computers and other equipment when arguing against technology integration. Even less-resistant teachers may feel faint of heart when they hear stories about schools where classrooms are filled with hardware and every child has Internet at home. One role of the 21st Century “champion” in these schools is to demonstrate how much can be accomplished with available technologies. (See page 10.)

► Some schools had strong 21st Century teacher teams, but enthusiastic team members found it difficult to transfer their own “aha” experiences to other faculty members not involved in our professional development activities. One team, in summarizing their experience, told us:

*A challenge has been to get our faculty to buy into the changing student we are facing and the new tools we have available to teach with. Many teachers do not see a need for adding*

*Continued on page 4.*

## ON THE WEB!

### Video Sharing at TeacherTube

To see how Web 2.0 can help teachers improve their practice, explore the new “YouTube for educators.” At TeacherTube, you can peruse, rate and add to a mushrooming library of classroom-related media created by teachers. Plus you can network with other educators around interests. We give it 4.5 apples!

<http://www.teachertube.com/>

*any new technology and even view current use of technology by our students as detrimental to their learning.*

In part, this is a principal leadership issue, but it also suggests that our model could be strengthened by adding a more substantive teacher leadership development component. In order to become change agents, visionary teachers need a “toolbox” of leadership skills that can make them more effective in convincing their colleagues that the investment of time and “mental sweat” will make a significant difference in student success.

### Promoting technology-infused teaching

Teacher reluctance to consider—much less embrace—new ways to teach with technology is common not only in our project’s schools, but in most K-12 schools where we’ve visited or worked in the past two years.

“I have people who have been teaching here 30 years or more,” one rural elementary principal told us. “And some of them will say, ‘I’ll do my grades on computer, I’ll do my attendance on computer, but I just don’t think I can teach with computers.’”

“Nobody is openly refusing,” the principal says. “They’re simply afraid. They will promise to try—and in the next breath, you’ll hear, ‘But I just can’t, I just can’t.’”

Even in “cutting edge” districts like Trussville City, where administrators, principals and teacher leaders keep the 21st Century message at a high pitch, teacher reluctance is an everyday fact of school life.

“For the most part, teachers are really open to change and open to trying new things,” says Trussville City principal Sunny Williams. “But change is scary, too, and it’s usually happening on top of how you get papers graded, talk to parents, get ready for testing, and deal with kids who don’t do their homework.”

At Hewitt-Trussville Middle School, Williams is working to lessen the stress factor by creating more time to work with new tools and new ways of teaching. In the Fall of 2006, at the suggestion of her teachers, Williams reorganized the HTMS schedule to create an extra planning period in every school day. After some experimentation, Williams and her faculty agreed to use the collaborative time for grade-level and subject area planning tied to the district’s new curriculum maps. Technology integration is a planning priority, supported by the expertise of a district specialist and the middle school’s most 21st Century-minded teachers.

Niki Lincoln, a young second-year social studies teacher at HTMS, frequently uses technology-infused learning strategies in her own classroom and she’s eager to support more experienced professional colleagues who were born long before the “digital generation.”

Last semester, Lincoln worked with other teachers on her seventh grade team to create a cross-curricular unit for the

study of Europe. Her idea was to use wikis and other free Internet tools like Skype (which combines live voice and video, instant messaging and file sharing) to collaborate with classrooms of students who *actually live* in Europe.

One of the reluctant teachers on her team actually taught Lincoln in sixth grade. “She was a favorite teacher of mine whose methods were tried and true.” The teacher’s initial reluctance was overcome, Lincoln says, after a presentation during a day-long district technology conference which included a live web-based chat with a teacher in Shanghai.

That got her!” Lincoln says. “Experiencing that conversation broke the barrier for her. Suddenly Web 2.0 wasn’t just something else to learn, something else to do. She immediately realized that our kids could interact and ask questions of their peer group thousands of miles away. When she saw the potential power of it, then she became engaged.”

Sunny Williams believes such stories validate her school’s decision to carve out focused daily collaboration time for teachers. Even so, she says, “the stress level about 21st Century teaching is still high for some teachers. They have a lot to learn. And while we have more time to collaborate than many other schools do, with the extra time comes an increase in responsibility and expectations. The expectation now is that they ARE designing lessons that include those things.”

Patience and persistence combined with lots of teacher sharing—plus recognition and rewards for credible efforts—will eventually overcome any lingering fear, Williams believes. Seeing the principal using Web 2.0 tools doesn’t hurt either. Williams keeps a regular blog herself, where she posts intriguing questions and asks students to comment. Dozens do. “My attitude about it is that if I learn it, then it’s easier for

me to expect all of our teachers to learn it.”

For teachers who have been teaching a long time, Williams says, the shift to student-centered, digitally-infused teaching “is probably the most significant change in teaching practice they’ve ever been asked to achieve. We’ll get there, but of course there’s going to be some trauma.”

### Moving from regulations to true integration

In a 2006 document, now part of the Alabama Administrative Code, the State Board of Education described 10 skills that all Alabama teachers “shall learn” in the area of technology integration and use. Here’s a sample:

*The teacher shall learn to facilitate students’ individual and collaborative use of technologies (including, but not limited to spreadsheets, web page development, digital video, the Internet, and e-mail) to locate, collect, create, produce, communicate, and present information.*

As important as it is for the Board to define these skills in law—and to direct school systems to provide appropriate professional development—these ambitious paper requirements will not become a reality without significant investments in training and resources and smart actions by local district and school leaders.

How can we accelerate the adoption and full integration of 21st Century teaching and learning strategies?

**Here, in summary, are some of the “smart actions” already being taken by leading-edge Alabama educators that are worthy of emulation:**

➤ **ADDRESS** the issue of Internet safety and access proactively by creating a district-level policy development committee that includes

all stakeholders (top administrators, board members, IT staffs, principals, parents, teachers, and students). Make classroom Web use a non-negotiable—the issue is not whether, but how.

► **CREATE** time during the school day for teachers to collaborate around 21st Century curriculum and instruction. Partner reluctant teachers with trailblazers. Make technology integration a priority in the professional development budget.

► **HELP** teachers make the connections between best-practice teaching (including project- and problem-based learning) and the potential for web tools and other digital technologies to magnify the effects of teaching strategies that emphasize 21st Century skills and “learning by doing.”

► **PROMOTE** the understanding, schoolwide, that digital equipment (computers, OVD projectors, smart-pads and boards, e-clickers, digital cameras and recorders, etc.) should never sit idle. The sharing of equipment, wherever it is located, is necessary to maximize student and teacher learning with technology.

► **SINGLE OUT** leading-edge 21st Century teachers both for recognition and for leadership roles. Provide supplements to several teachers in a school who are well-prepared and willing to work with other teachers on technology-infused student projects.

► **DEVELOP** strategies, based on district and school size, that ensure every teacher has engaged in a deep conversation about the need to prepare students for life and work in the 21st Century. Group study of books and articles provide a good jumping off place for such discussions.

► **ESTABLISH** student clubs and teams, like one school’s SWAT team (Students Working to Assist

with Technology), that (1) involve students in growing their own expertise about the use of digital equipment and web-based tools; (2) allow students to help teachers and other students learn and problem-solve, and (3) increase the level and quality of conversation about 21st Century learning among students and teachers across the school.

► **ASK** each teacher to complete at least one highly engaging technology-infused project with his or her students during a specified time period. Provide support from an enthusiastic teacher-coach. In our experience, teachers who see the “payoff” in student engagement and deeper learning are much more willing to do the hard work that technology integration requires.

► **SPONSOR** a substantive day-long technology conference for teachers at least once a year. Include a blend of thoughtful conversation about the rationale behind 21st Century learning, presentations by real teachers of successful 21st Century projects, and opportunities for hands-on experimentation with at least one collaborative web tool (blog, wiki, social network, podcast, etc.). Build a follow-up plan that helps ensure teachers will go back to their own classrooms and try some of what they’ve learned.

### Don’t overwhelm teachers

“We’re introducing a lot of ideas about teaching with technology,” one district technology coach told us. “But we don’t want to overwhelm our teachers.” What works best, she says, is to constantly share the exciting results other teachers are getting “and offer a lot of support and encouragement.” That way, she says, “we reduce the risk and increase the buy-in.” ❖

## WEB SAFETY & ACCESS: IT’S SPOOKY OUT THERE

“The Internet can seem pretty frightening to cautious educators,” says one high school teacher in the ABPC program (who asked us not to use her name). “In my school, they’re afraid that if they let students use the Web in class, they’re going to access inappropriate material and the teacher is going to be held responsible.”

“There’s a fear factor involved at the district level, too,” she says. “Some administrators are worried that something really bad will happen that somehow involves the Internet, and the school system may be liable.”

Concerns about Internet safety can lead to district policies that make it very difficult for classroom educators to fully integrate web tools and resources into their lesson plans. District technology directors may opt for a “safety first” approach in response to the concerns of superintendents and school boards—whom many IT leaders see as their primary clients. In these instances, system firewalls and content filters are so tight or so unpredictable that teachers can’t be sure what websites and tools will be reachable—or when. And no teacher is going to integrate technology-infused lessons into the daily classroom experience when there is a good chance they won’t come off.

As the national debate grows around the need to address 21st Century skills, many districts in Alabama are beginning to take a second look at the safety vs. access issue. Some districts are adopting or considering a “layered” approach that offers teachers higher levels of Internet access and then scales down access for high, middle and elementary students. This frequently requires a “revamp” of the existing technology infrastructure to allow for multiple password systems and layered filtering.

Some districts are also building “intranet” systems that allow students and teachers to use a collection of social networking tools (blogs, wikis, podcasts, discussion boards) within a closed and relatively more secure Web-like environment. While some self-assured teachers can feel constrained in such an environment by the lack of access to the latest social software and the vast collaborative potential of the actual World Wide Web, other less intrepid educators may be more willing to experiment with technology integration in what one teacher described to us as “the Web wading pool.”

Perhaps the most common evolutionary change taking place in school districts is the move to increase training for both students and teachers on the responsible use of the Internet. “Some IT people don’t trust teachers to keep things safe,” says one school technology director. He believes programs like the popular iSafe curriculum—now used by more than 130 K-12 schools in Alabama—can help increase that trust. ❖

**Resource:**  
I-Safe Curriculum  
<http://www.isafe.org/>

who get professional development together and work on this together has really accelerated the process.”

“This opportunity has changed the whole way I think about 21st Century learning,” says Amanda Spurling, an elementary teacher at Fayetteville School in Talladega County. “When my principal asked me if I’d be on the technology team for this program, my first thought was, ‘oh yeah, we’ll get lots of cool gadgets!’ We haven’t gotten any gadgets. Instead, we’ve received so much knowledge about how to use what’s available for free on the Web, and that’s so much more valuable.

“I now understand,” Spurling says, “that teaching with technology is not just about me, the teacher, controlling a space on the Internet. It’s about kids sharing their work and talking about the content we’re studying. Before it was just resources—now it’s about communication, and that’s certain to increase learning.”

Liz Reints, an achievement specialist at George Hall Elementary in Mobile, says “the 21st Century Learning project has pushed us into taking a big leap in learning with our students. When we began two years ago, our teacher technology team was more about us, quite honestly, than it was about the kids.”

“We had a lot of growing and learning to do,” Reints says. “When we first learned about using web tools, we really thought about them in a teacher-centered way—how students would use what we put on the Web in their classwork. But the 21st Century Learning project pushed us to go beyond that.”

“In our second year,” she says, “we had to focus on actually developing a project with our students, giving them the opportunity to be content creators with a worldwide audience. That’s made a huge difference in their engagement and how they think about school. They are coming to understand how exciting learning can be.”

## Making the Case for Classroom 2.0

The teachers and administrators in our 21st Century Schools project are, as one district superintendent puts it, “facing the brutal facts” about education in the Digital Age.

Through a process of study, reflection and experimentation, these educators are coming to see that the teaching methods and curriculum goals of past generations are insufficient to produce high school graduates who have the skills, knowledge, and habits of mind to thrive in a global society where digital technologies are rapidly redefining not only our jobs and our communities, but our very concepts of time and space.

These Alabama educators understand the ninth grader in a recent national survey who said, “When I go to school, I have to power down.” They have examined their own schools and see the truth in Microsoft chairman Bill Gates’ recent comments to a Congressional panel, when he warned that “our current expecta-

tations for what our students should learn in school were set fifty years ago to meet the needs of an economy based on manufacturing and agriculture. We now have an economy based on knowledge and technology.”

Gates pointed a finger at schools, especially high schools, that “have simply failed to adapt to this change.” However, as he noted, children have not failed to adapt but are “fully immersed in digital culture.” As a result, he said, “while most students enter high school wanting to succeed, too many end up bored, unchallenged, and disengaged from the high school curriculum.” They are “digital natives” caught up in an industrial-age learning model, he said.

Closer to home, Trussville City superintendent Suzanne Freeman echoes Gates’ concerns: “The world where our students are going to work and live as adults is quite different than it was 20 years ago. Now we have to prepare kids to be responsible self-starters who can organize and complete tasks. More and more, companies are turning to employees and simply saying ‘you and your team get this done.’”

Successful schools today must assure “that kids not only know the content but that they can analyze and synthesize,” Freeman says. Educators are lowering standards for students when they limit their focus to teaching the facts and having students “regurgitate” them on tests that are often assessing for industrial-age skills.

Freeman and others cite studies indicating that by their senior year, barely one-fourth of today’s students agree that school is meaningful or their courses are interesting—and less than half believe that what they learn in school will have any bearing on their success in life.

By engaging students through technology, project-based learning, and a curriculum focused on the skills and knowledge students will

need in the real world, we can turn these statistics around, Freeman believes. To truly meet students’ needs in the 21st Century, she says, Alabama educators must adopt the attitude toward students that “it’s not enough to just give us half your brain—we want all of your brain.”

## A New Kind of Student

Veteran English teacher Jennifer Barnett, who spends most of her time with teenagers, says there is no question that today’s students have embraced the Digital Age. “A huge number have some sort of social networking going on, whether it’s that they blog often, or they have a MySpace or Facebook page, or whatever. They’re all very familiar with one another.”

And despite parent and societal fears, says the Fayetteville High teacher, “most kids are out there looking for interesting, positive, stimulating things on the Internet. And what’s even more interesting and fun is that they look for ways to create those things themselves.”

“The whole Web 2.0 thing is perfect for today’s kids,” Barnett believes, “because they would rather spend their time looking at student-created content that’s not slick and professional, but that’s done by somebody like them. Anytime I show them stuff like that, that is so much more interesting to them than the videos I order from a catalog that tells me ‘this will engage your student.’”

“It doesn’t engage them nearly as much as what somebody else their own age has to say about it. And letting them know they have a voice and somebody’s listening to it? Golly. That’s what kids really need.”

Barnett’s thoughts are reflected in a comment by Liz Reints, the George Hall Elementary achievement specialist. “The Internet offers so many ways to have kids peer-review each other’s work, through com-

menting in blogs or wikis, and so forth. Kids really care more about what other kids say than they do about what we say. And when they know they have a peer audience, they do more and take more care with what they do.”

## A New Kind of Teacher

What then is the teacher’s role in a world where students have instant access to information and no longer have to rely solely upon a teacher to read and judge their scholarship, ideas or opinions?

Barnett, Reints, Freeman and other forward-thinking educators we interviewed argue that while 21st Century teachers may no longer serve as the chief dispensers of information and ideas, they will continue to provide the most essential service of professional educators—creating learning opportunities that help students develop the skills, motivation and discrimination that produces successful life-long learners.

“Our students are growing up digital,” Barnett says, “but even though they are immersed in technology, kids don’t automatically see the need for many of the tools and skills we want to teach them around 21st Century learning. For example, they don’t see the ability to work in teams and collaborate as all that important to their futures.”

In part, she says, the teacher’s job is to “manage discovery”—or to use a media analogy, to be “producers” of learning. “You have to create opportunities for students to discover the need for these skills in order for them to want to do the work.”

“If I just go in and say, here is an assignment, it’s worth so many points, and I want you to collaborate, now go do it—well, that’s nothing more than me handing them a worksheet and saying,

‘Do this.’ If they don’t know why they need to know how to do it, then they might as well not do it. Our job as teachers is to help them discover the ‘why.’”

In order for teachers to integrate not only technology but these new ideas about teaching into their practice, many will need to go through a discovery process of their own.

“As long as it’s perceived as somebody else’s stuff—something they’re being ‘told’ to do, teachers aren’t going to change,” says Barnett, who is considered a technology leader in her school. “We won’t get buy-in by just talking to them. They have to try it and see its value. They’ve got to be the one doing the walking—not being carried. It can’t just come down from the top.”

“And I can understand how people are confused,” she says. “Because there is so much talk, there is so much jargon, there are so many details.”

Cathy Gassenheimer, president of the Alabama Best Practices Center, says ABPC’s two-year partnership with Microsoft has been aimed at addressing just such concerns.

“Our goal has been to help a group of interested educators get past the jargon and the initial uneasiness about using tools that are often more familiar to their students than themselves,” she says. “We wanted to show them what some trailblazing teachers were already doing to excite and engage their students using digital tools and the Web. In a variety of ways, we have encouraged them to take the plunge and create their first Web 2.0 products.”

The Best Practices Center also wanted to help teachers “make the connection between these new technologies and other teaching strategies that have been shown to be highly effective,” says Gassenheimer.

“Our Microsoft project has not been about technology, it’s been about using technology as the medium to pursue the kind of best-practice teaching we’ve been exploring in our Powerful Conversations Network, or that we see in the Alabama Reading Initiative or Working on the Work (WOW), Learning by Doing, and other programs that emphasize problem-based learning and higher-order thinking.”

Gassenheimer says the 21st Century Learning pilot project “has been a revelation for us and to many of the teachers and principals who have participated. We all see much more clearly the imperative to help students master the skills needed to succeed in the Digital Age.”

“We’ve also learned so much about the best ways to build teacher learning communities around this issue. Our project schools are clamoring for more—and we are hard at work looking for the support to make that happen. Best of all, we now have a cadre of teachers who have embraced the big idea of Classroom 2.0, and we would love to engage them as exemplars and mentors in spreading these ideas to many more schools.” ❖

## ON THE WEB!

### ABPC’s 21st Century Learning Wiki

Here’s the central repository of information about our 21st Century Learning initiative, including samples of curriculum and professional development activities, conference presentations, projects completed by school teams, and other cool resources.

<http://abpc.wikispaces.com/>

## CSI: Cahaba Student Investigators

*Science and civics (Thinkquest website)*

West Blocton Elementary School

<http://www.bibbed.org/wbes/CSI/index.html>

The CSI team based at West Blocton Elementary has been called in to solve “The Case of the Mysterious Macros” at this prize-winning site created by six elementary students for the 2007 International ThinkQuest competition. At their “About This Website” page, the kids describe their work in detail (something we wish more student project sites would do!), including lessons learned. Here’s what they wrote about choosing a topic:

“We live near a refuge and the management staff needed someone to do a water quality study, so we decided to help out while making a website about what we learned! It was a little scary to commit to this project because we didn’t know anything about our topic. We decided to jump right in and find out all that we could.”

The colorful site, which includes cartoon drawings of each team member, fully demonstrates the higher order learning that took place as the students researched water quality issues and aquatic ecosystems. You’ll see lots of photos, interesting sidebars, and impressive academic citations.

Four members of the CSI team are fourth graders at WBES. Another team member attends school on the Gulf Coast of Florida. And the sixth member is a third-grader who lives in Slovakia. How’s that for a classroom without walls?

## Voices from the Schoolhouse

*History and civics (wiki/multimedia project)*

Hewitt Trussville Middle School

<http://voicesfromtheschoolhouse.wikispaces.com/>

What was school like for students who graduated from high school more than 65 years ago? Students in Erin McGuyer’s technology classes at HTMS found out in a project-based learning activity that documented some of the education history of the Trussville community.

With the help of several small grants, students were able to build a mobile recording studio which they “took on the road” as they interviewed representative citizens across five or six generations and asked them to share their family and personal stories about school.

The project relies on a web-based wiki, “Voices from the Schoolhouse,” to serve as the central repository for the students’ work products, including still photos, movies, and podcasts of the student-led interviews. Although the wiki is still a work in progress (which is, after all, the idea behind wikis!), there’s already plenty to hear and see at the site, including selected pages from the very first HTHS Yearbook (circa 1940).

Web-based oral history projects like this have several good effects. They not only engage students through exciting technology tools and create public audiences for their work, they can deepen their thinking about history and have the potential to form a greater bond between today’s students and the kids of yesteryear.

## Madness in the Method

*Senior English (class blog)*

Mrs. Caldwell – Mountain Brook High School

<http://mrscaldwell0.edublogs.org/>

During the 2007 school year, senior English teacher Brandi Caldwell came up with quite a few innovative blogging ideas that extended the thinking and writing in her senior literature classes.

The first entry you see when you open the blog supplements a study of satire. Caldwell has posted three editorial cartoons and asked students to choose a cartoon and explain its satirical nature. Caldwell, who gives extra points to participating students, drew 11 comments for this activity. Several other entries extended student discussion of a book study—Mary Shelley’s

*Frankenstein*. Here, Caldwell used a high-interest prompt (24 replies) to increase participation: “Choose a movie and explain why you think it exemplifies the themes in *Frankenstein*.”

Caldwell switched her blog services in mid-year. Be sure to follow the link in the right navigation bar to see her earlier class blog and more examples of how she extended student engagement beyond the class period each day.

## Political Parties and Elections Projects 2007

*AP and Advanced Government (wiki & Tapped In)*

Mrs. Gaddy – Hillcrest High School

Each year, Scarlett Gaddy’s government classes devise and conduct election campaigns as part of their study of the American political system. “It has become a fixture for my classes for the past 17 years,” she says at this special wiki developed to support the project. “This is the first year we have conducted any portion of the elections online.”

Students developed their own political parties and used the project wiki to post their party platforms, which were required to address taxes, education, economy, foreign affairs, gun control, abortion, social security, Medicare, immigration, and the environment. They also chose or created campaign songs, PowerPoint presentations of their platforms, campaign commercials, and even “instant polls.” (See the OPP Party page for samples of each.)

While the wiki provided a “public face” for the project, Gaddy also made extensive use of private space at Tapped In, an NSF-funded virtual community platform available free to educators ([tappedin.org](http://tappedin.org)). Gaddy says Tapped In offered a safe and secure space with discussion boards, file sharing and instant messaging that students were able to use for various campaign purposes.

## Room 170 Online

*11th Grade American History (blogs and wikis)*

Miss Kincaid – Northridge High School

<http://room170online.blogspot.com/>

Elizabeth Kincaid weaves blogs and wikis into a purposeful tapestry for her American history students. The link above leads to her primary classroom blog, filled with intriguing graphics and primary source images from history. From there, students may be sent to a Google Document for their World War I assignment, or to Kincaid’s wiki, where they are asked to help develop an illustrated glossary of key terms and figures from historical eras. Or they make click on a Norman Rockwell magazine cover and find themselves in the EBSCO document database (see p. 16) where they will read F. Scott Fitzgerald’s Jazz Era story “Bernice Bobs Her Hair” from the actual pages of the May 1, 1920 edition of the Saturday Evening Post.

Each student in Kincaid’s 11th grade classes also has a blog where they post project and homework assignments. Kincaid’s blogs and wikis highlight some of the rich Classroom 2.0 possibilities for history teachers, given the vast amount of engaging primary resource materials now available on the Web.

## CMS Professional Learning

*Web 2.0 support for teachers (wiki)*

Challenger Middle School

<http://cmsprofessionallearning.wikispaces.com/>

The homepage of this professional development wiki developed by the 21st Century teacher team at Challenger Middle is, well, plain. But looks are definitely deceiving.

The team, which included principal Edith Pickens, set out to create a set of resource materials that could support faculty colleagues as they explored ways to use Web 2.0 tools in their classrooms. Click under Professional Learning Topics to visit pages that explain podcasting, blogging, wikis, digital storytelling, Skype, webquests and other interesting tools and websites.

The informal but very useful mix of information (including video clips) on

# An Alabama Sampler

each topical page is aimed, in part, at enticing faculty to engage in more conversations about Classroom 2.0. The PD wiki also reinforced a faculty inservice presentation by the team members where teachers rotated through 20-minute introductory demonstrations of web-based teaching tools.

## Safely Surfing Cyberspace

*Internet safety activity (webquest-plus)*

Wrights Mill Road Elementary School

[http://snipr.com/WMElem\\_safetyquest](http://snipr.com/WMElem_safetyquest)

**"The Committee Against Kids Using Computers (CAKUC)** has determined that the Internet is too dangerous for children," begins the introduction to this webquest. "They want to outlaw the use of computers for all children under the age of 12. Can you believe it?!"

Third through fifth graders at Wrights Mill Road Elementary are then asked: "Can you show your teachers and parents that you know how to stay safe while using the Internet so the members of CAKUC won't ban computers? We need your help to complete the 1) Safely Surfing Cyberspace web quest, 2) get your Internet Driver's License and 3) design a multimedia project to teach your friends how to stay safe, too."

Devised by the 21st Century Learning team at WMRES, this project not only leads students through an analysis of Internet safety information gleaned from a variety of websites, it helps the learning stick through the production of a PowerPoint (3rd), podcast (4th) and movie (5th). Students also take a test at the PBS Kids website that can earn them an "Internet driver's license." (You can access the multi-media products at [snipr.com/websafe](http://snipr.com/websafe).)

## Collaborative Books

*Schoolwide literacy project (wiki)*

Cullman Middle School

<http://cullmancollaborativebooks.wikispaces.com/>

**"What would happen if we invited kids** to write collaborative stories?" wondered the 21st Century teacher team at Cullman Middle. Here's the result, which makes full use of a wiki's ability to allow multiple authors to add, subtract and edit content.

Students could choose from among fantasy, fiction, mystery, fiction based on fact, and poetry (the most popular, as it turned out). The results are sometimes a bit messy, but teachers say the project created great excitement among students—including many who had shown minimal interest in writing in the past.

CMS technology coach Aimee Smith says the project also complemented the first phase of Cullman City's one-to-one laptop initiative, which provided a portable computer to each 7th and 8th grader for school and home use.

## Multimedia Field Trips

*Schoolwide project (Wetpaint & multimedia tools)*

George Hall Elementary School

<http://georgehall.wetpaint.com/>

**Wetpaint is a free web tool** that might be described as a "wiki on steroids." It combines the collaborative features of a wiki with the graphics and content management capabilities of website creation software like FrontPage or Dreamweaver. Students and teachers at Mobile's George Hall Elementary put those capabilities to good use in creating this gallery of podcasts, photo stories and blogs to document the academic field trips made by the school's PK-5 students.

Use the left navigation bar to find accounts of these trips, including photo slideshows written and narrated by the students themselves. On the homepage, there's even a podcast of fourth graders sharing their ideas about the value of the project and the products they created.

On the homepage you'll also find lots of comments by impressed visitors. A professor from the University of South Florida wrote: "I teach similar kinds of

literacy activity with my undergrads at the University of South Florida in Tampa. This is the kind of work I hope my teachers will do when they are out there. Keep up this great work. It puts the kids in charge of their own learning."

## A Daily Dose of Digital Photography

*Photography (blogs and wikis)*

Mr. Myers – Spain Park High School

<http://www.sphsdigital2.blogspot.com/>

**Teacher Erik Myers employs a mix of blogs** and wikis in his photography curriculum at Spain Park High to manage his classes, showcase student work, and invite comments from peers and visitors who drop by to view the eye-popping digital art.

This link leads to Myers' blog, "A Daily Dose of Digital Photography," where he selects and posts a daily image from the work of his advanced digital photography students. Each contributor includes a brief reflection on the image and (typically) 5-6 visitors offer their critiques. This Web 2.0 strategy is furthered through cross collaborations Myers and his students have developed with high school photography programs in Rhode Island and Washington State.

Also see Myers' blog focused on art shows and exhibits ([sphsdi.blogspot.com/](http://sphsdi.blogspot.com/)) and the wiki he relies on to manage student assignments and announcements ([digitalimaging.wikispaces.com/](http://digitalimaging.wikispaces.com/)). While it's still quite rare for a high school to have a full-time photography teacher, Myers' strategies could easily be adapted to other arts-related courses.

## Tucker's Treasures Podcast Corner

*Second grade (student podcasts)*

Ms. Tucker – Vestavia Hills Elementary East

<http://snipr.com/tuckerpodcasts>

**Second graders in Christina Tucker's class** at Vestavia Hills East are on the verge of becoming professional broadcasters, with four audio podcasts under their collective belt. This link leads to their first effort, a Veteran's Day interview with a retired lieutenant who served in Vietnam. Click on "next" in the bottom right corner to move forward to other podcasts featuring the students' New Year Resolutions, class news of the week, and a guest appearance by another second grade class in which they reflect on the writing of poetry and share a favorite poem.

Tucker's project demonstrates once again that students in the very early grades can get involved in and excited about technology-infused learning that lets them share their work and ideas with a real audience.

## Golden Eagle Survival Guide

*New student information (website & mixed media)*

Athens Middle School

<http://www.amssurvivalguide.org/index.htm>

**Students and teachers at Athens Middle** are developing an information guide for incoming seventh graders, with a "Survivor" theme. From a central webpage index, visitors can jump to areas like Ancestry, Immunity Challenges, Warriors (sports, of course!) and Tips from the Natives. At the homepage, incoming students can also sample a recent broadcast from AMS's daily schoolwide news broadcast.

The Ancestry link leads to one of the most interesting features—a wiki titled "AMS Through the Years" ([cordboard.wikispaces.com/](http://cordboard.wikispaces.com/)). Here, Pam Corder's language arts students have created podcast and video interviews and features that help document the school's history. There are also interviews with the principal, several teachers and a selection of students.

One of the wiki pages tells the story of the historic Donnell House, which sits in the center of the AMS campus. Accompanying the text is an excellent video of the house and grounds, hosted by an AMS eighth grader who may be destined for broadcast news. ❖

# Schools Must Bridge the Digital Divide: Every Student Needs 21st Century Skills

*Educators in some high-needs Alabama schools declare their students will not be left behind in an era driven by technology and innovation.*

## ON THE WEB!

### Web 2.0 Projects in Alabama Schools!

We've created a terrific page at the Delicious social bookmarking site where you can link to over 170 present and past projects of teachers and administrators in our 21st Century Learning program. Blogs, wikis, podcasts and much more!

<http://del.icio.us/abpcjohn>

BY JOHN NORTON

KURTAVIA, A FIRST GRADER at George Hall Elementary in downtown Mobile, sits at a computer bigger than she is and strikes several keys. A window pops up on the screen and when she clicks the Play button, we see a colorful image of a group of firefighters battling a blaze.

On an audio track, I can hear Kurtavia explaining what we're seeing on the monitor. As she clicks through the slideshow, her "internet voice" clearly and succinctly describes this digital documentary of a field trip her class made recently to the Mobile Fire Training Center and several area fire stations.

"Kurtavia not only narrated our report," tech teacher Robin Ogburn says proudly, "she also wrote most of it."

This six-year old girl from one of Mobile's most depressed neighborhoods is fully aware that her photostory can be viewed by anyone anywhere in the world with Web access. To her, it's an exciting process that allows her to share something important from her own life experience. "Other children can learn from this, too," she tells me.

Kurtavia is less aware that by creating this web-based product,

which requires her to analyze and synthesize information from different sources, she has begun to make her way across the digital divide—taking her first steps toward a future in which such skills will be essential to her success.

### Equity in the new millennium

Can we simply define the *digital divide*, as Wikipedia does, as the gap between those with regular, effective access to digital and information technology, and those without this access?

Consider, though, that some schools serving students on the wrong side of the Digital Divide may (as a result of federal and local funding or grant opportunities) have multiple computers in every classroom, fully equipped technology labs, a totally wired building with wireless Internet capability, and a certified technology teacher. Other schools—especially in rural communities with a small tax base—may have much less.

Thoughtful 21st Century-minded educators in both urban and rural schools tell us that the Digital Divide is not just about hardware and software, or the basic training it takes to use them in the classroom. In our conversations with these teachers

and principals, many of whom have participated in ABPC's 21st Century Schools program, they highlight other issues that tend to widen the divide:

**Home access**—Many 21st Century-minded teachers in more affluent schools are extending their students' learning experiences by creating websites, blogs and wikis that engage learners before and after school in discussions and projects. In higher-needs schools, the percentage of students with high-speed Internet access at home is much lower, making it difficult for teachers to justify online enrichment activities outside of school hours.

**Parent concerns**—While parents at every socio-economic level have concerns about the potential negatives of technology and the Internet, these concerns are more pronounced among families where adults have little personal experience with the "digital age" and rely on secondary sources of information (news media, church, social gatherings) to form their opinions. When parent resistance is high, schools are less likely to pursue activities that require access to web-based tools, email accounts, and the like.

**Focus**—In schools with many struggling students, the intense focus on raising student test scores and trying to meet NCLB's Adequate Yearly Progress (AYP) benchmarks discourages experimentation with new technologies and new ways of teaching. Computers often become instruments of remediation and drill, rather than portals to web-based tools and networks that can help students develop 21st Century skills.

**Staffing**—Several rural and inner-city principals told us that—given the smaller recruitment pools available to them—it is more difficult to hire teachers who have a background in technology-infused teaching, or at least some enthusiasm for acquiring the necessary knowledge and skills. In rural areas, in particular, schools often have stable, more “mature” faculties who prefer to stick to tried-and-true methods and are less eager for innovation.

**Sustainability**—What happens when an elementary school develops a strong focus on 21st Century learning but feeds into a middle school with little interest in integrating technology into curriculum and instruction? While this problem is a bit unique to high-needs schools, it is more common—and the consequences of this lack of continuity are more dire for students. In some forward-thinking schools, it can also reduce teachers' sense of urgency for change and create resentment toward colleagues in other schools.

In the minds of the educators we interviewed during recent “best practice” visits to several urban and rural schools, these are obstacles to be overcome—not impenetrable barriers that relieve their schools of the obligation to help their students develop the skill sets that experts say will be sought after in the 21st Century workplace.

## George Hall Elementary

At inner-city George Hall Elementary, where almost 100 percent of students qualify for free lunch, principal Terri Tomlinson estimates that fewer than 15 percent of students have access to high-speed Internet at home. “If our kids are going to learn these 21st Century skills, they are going to need to get it here in our building.”

Tomlinson knows her first responsibility is to assure children have the basic math and literacy skills they need to become self-learners. But like many other educators involved in transforming struggling high-needs schools into high performing learning communities, she and her faculty are not satisfied to invest all of the school's time and attention on basic skills and the lower tiers of intellectual development. They want their kids to have the same chance to compete in an innovation-based economy as children from the most privileged public schools in Alabama.

With the right support and leadership, Tomlinson says, teachers can have the best of both worlds—they can build strong literacy skills and also use technology to push students into higher levels of learning. She uses the example of George Hall's many field trips, which not only expose children (many of whom have never before ventured much beyond their inner city neighborhood) to the larger world, but are carefully integrated into the reading and writing curriculum.

After each field trip, students return to school and create webcasts documenting what they have seen and learned during their travels.

“That's where these 21st Century learning tools can help us with our basic teaching and learning mission here at George Hall,” Tomlinson says. (See p. 9, “Multimedia Field Trips”)

“The children are actually

talking about where they've been and what they've learned, using new vocabulary in authentic contexts. And the fact that they are doing this for various audiences makes it even more meaningful and purposeful to them. They want to get it right because they understand that people they don't even know are listening and learning from them.”

After attending ABPC's 21st Century Oktoberfest last fall, George Hall's six-member technology team brainstormed the multimedia field trip idea on the ride back to Mobile. With support from technology teacher Robin Ogburn, the team members developed a home for the project at the free Wetpaint.com website, then began capturing digital images of their field trips and working with students to create multimedia files and upload them to the Web.

“We've come a long way in a short time,” says fourth grade teacher Amy Lowe. “I can remember last year, we were watching some of the other schools (in the ABPC 21st Century project) present during our online professional development sessions. There was one elementary school that told how their kids were doing a TV show every morning. And I remember thinking, ‘Oh my gosh, there's no way we could do that.’”

“But now, when you look at it, we're not far from that,” she says. “Our kids are doing podcasting and blogging and learning how to report and narrate. I think what we're finding out is that if you expose them to it, they are much more ready to do these things than we think.”

## West Blocton Elementary

The town of West Blocton, deep in the pine forests of Bibb County, is built over a coal mine that no longer exists. To use an ATM machine, you'll need to drive to near-

*Continued on page 12*

## A DAY WITHOUT PAPER

In this interview with *Working Toward Excellence*, fourth grade teacher Dianna Bush shares some details of her “paperless classroom” experiment at West Blocton Elementary School.

**WTE:** What was the impetus behind your decision to have a paperless day with your students?

**Bush:** We hear and read that some businesses are already evolving toward paper-free environments, and I wanted my students to experience that as one way to call their attention to how the world is changing.

**WTE:** So how did you plan for the day?

**Bush:** I just started looking (in my plan book) at what I was going to be teaching about two and a half weeks out. We were in the planets in science, and we were doing multiplication in math, and we were doing poetry. So I searched the Web at night for places I could go that could be used to teach the content. I planned a whole day’s curriculum and except for PE and lunch, we stayed in the computer lab all day. We had no books. I created a (computer-based) graphic organizer to keep us on track.

**WTE:** Tell us some of the resources you tapped into.

**Bush:** We used the [alabama.gov](http://alabama.gov) site for our Alabama state history lesson. President Ford had just died, so I went to [americanpresidents.org](http://americanpresidents.org) (CSPAN), and everybody researched a president. We went to NASA’s Jet Propulsion Lab website and saw space images that were just exquisite and amazing. We’ve got excellent science books, but the pages can only hold a few pictures. Our kids can go to the NASA websites and click through a slide show and see all these images of Jupiter and Saturn and all the moons.

For the poetry, there was the Shel Silverstein website, which is interactive and full of audio and animation. I had kids just eating it up. We also went to [multiplication.com](http://multiplication.com) and [math.com](http://math.com) and used some of the interactive activities there for specific skills at specific grade levels.

**WTE:** What assignments did you have the students do?

**Bush:** They did write-ups (in Word) on three state parks at the [alabama.gov](http://alabama.gov), and they also had to list 10 Alabama universities since so many kids think there are only two! I ended up with four grades.

**WTE:** So how did students and others assess the day?

**Bush:** The other fourth grade classes were clamoring for it, so I ended up swapping out with the other teachers and doing it for them, because we’re all basically in the same place in the curriculum. Next year, the teachers want to do it themselves.

The kids think I’m a bit nutty on this one, but one day they’ll remember! I had a parent come visit us during our paperless day. She does not have a computer or Internet access at home. She has two daughters here. And she said, “I know we’re going to have to get a computer before they get to high school.”

**WTE:** And your own assessment?

**Bush:** It may not be Classroom 2.0 or cutting edge, and I won’t be bookless next year. But I will continue to have bookless days and eventually we’ll get there—probably not too far in the future. ❖

## SCHOOLS MUST BRIDGE DIGITAL DIVIDE

*Continued from page 11.*

by Woodstock. It’s as close to “rural” as a small town gets.

In a recent presentation, fourth grade teacher Dianna Bush told a group of state business and education leaders that among the 18 students in her West Blocton Elementary classroom, only four had Internet at home, and only six had parents who could communicate with teachers by email, either at home or at work.

Bush told her blue-ribbon audience that for small towns and rural counties, the commitment to prepare children with 21st Century skills “is vital to our economic survival.” She used the example of the nearby Mercedes plant, just across the line in Tuscaloosa County, to make her point. “There are good jobs there but our young people are going to need these new skills to get them. Our county has a lot of timberland. We don’t have many opportunities. We don’t have much of a tax base. We have to prepare for a better future.”

It would be easy for WBES principal Karen Hubbard and her teachers to fall back on their lack of the latest technology as an argument for not pursuing the teaching strategies associated with 21st Century learning.

“It can be overwhelming to go to meetings and hear about places where everyone has a laptop or...all the equipment to do podcasts and videos,” says first-grade teacher Michelle Carroll. “But we have really had to get past that and think about what we *can* do to bring some of these experiences into our classrooms.”

Carroll and her colleagues are modeling a variety of creative ways to make the most of what they have available in the K-4 school. Students of one teacher frequently “classroom hop” to use a computer in another teacher’s room while working on a project. Dianna Bush borrowed the literacy lab (housed in a portable

classroom) and staged a “paperless classroom” day for her students, where they relied on the Web and other technologies for all their learning. Other teachers came to observe. “Next year, more of us are planning to do it more often,” she says.

West Blocton also maximizes the use of its technology center, which was recently enhanced by a gift of more than two dozen up-to-date computers. Principal Karen Hubbard squeezes her school budget “very hard” to assure that she can keep certified teacher Annette Harris in the center full-time. With Harris’ help, students are establishing safe email accounts (an important first step in using many web-based tools) and learning about social networking through a safe website environment called Think.com, a free service for schools created by the Oracle Foundation.

Oracle also sponsors the international ThinkQuest competition, and Harris annually organizes a team of third and fourth graders to enter the rigorous contest. In June 2007, ThinkQuest announced the West Blocton team’s selection for honorable mention in the category “12 and Under”—an impressive accomplishment. (See p. 8, “Cahaba Student Investigators.”)

Harris also supports the Tech Tigers Team, a club designed to give students the opportunity to practice their technology skills by presenting technology-based demonstrations to the faculty and troubleshooting computer problems. Another group of students produces a tech newsletter to go home to parents once a month. “A lot of our parents are scared of the Internet because they hear so much negative on TV and elsewhere,” Bush says. “So we have to...talk to them, to say ‘Please, let us help your children learn about these things’ and talk about how important they will be in their futures.”

Hubbard says that when her son was in high school, “he was one of the

students who helped the teachers with the technology. Now we have fourth graders who can do that. But they've got to stay engaged—it's got to be sustained when they leave here." For that reason, Hubbard offers the services of her 21st Century teacher team to provide professional development activities for other district schools.

"If they want to become a 21st C school, we'll be a resource for them," she says. "That's the kind of thing you have to do in Bibb County to get what you need."

### Fayetteville School

Due east of West Blocton, across I-65 and Lay Lake, Fayetteville School in Talladega County serves about 600 students in grades K-12. FHS had a graduating class this year of 30 seniors. Although fewer Fayetteville students meet federal poverty guidelines (40 percent receive free or reduced price lunches), teachers say they live in a rural culture where computers, the Internet, and the 21st Century in general are not only less omnipresent but often seen as threatening to traditional values.

During the past several years, an awareness of the urgent need to move to more technology-infused teaching and learning has grown among the school district's leadership. At Fayetteville School, where a team of teachers participated in the ABPC 21st Century Schools program, teachers are experimenting with wikis, blogs and podcasts—sharing their limited equipment in creative ways as they take the first steps toward meeting that need.

Amanda Spurling, a recent college graduate who teaches fourth and fifth grade science, says she uses a variety of approaches to emphasize the 21st Century skills of teamwork, collaboration, project-based learning, and problem solving.

"I don't just use technology, I use hands-on a lot, too," she says.

"But the technology, the web tools and the Internet, are another important avenue of learning. When they graduate from high school, they are going to live in this Digital Age as adults. They are going to have to know how to use technology, how to present information using digital tools."

As a school with a small population spread over 13 grades (including kindergarten), Fayetteville often finds itself "under-resourced"—and technology is no exception. Teachers may have one or two computers in a room, and the technology lab is used most of the day for specific business and tech courses. A portable "cow" (computers on wheels) contains 10 laptops that can be borrowed from the media center, but there's typically a waiting list.

When 11th grade English teacher Jennifer Barnett organizes a web-based project (which is quite often), she supplements the two computers in her room by "farming the kids out." Some students work in the library, some in the lab, some in other teachers' rooms. By using web tools like the wiki, the students can work on projects simultaneously, even when they're not in the same physical space.

"We don't have a lot of technology stuff in our rooms," Barnett says. "But truly, I think all you've got to have is a computer and an LCD projector and access to the Web. There's a whole lot that can be done just with that."

"In small schools like this, that are not poor enough to get the money but not fully advantaged, either, it's real easy to feel so woe-begone about yourself that you aren't willing to try some things," she says. "But that attitude is beginning to change in our school because a lot of people are beginning to see what's possible."

Spurling has shared this story with other faculty members to illustrate the intersection between

old-fashioned enthusiasm for learning and the potential of web tools to accelerate students' acquisition of knowledge and skills.

"The kids just get so much more excited about what they're learning when they have technology," she says. "And quite often, their excitement leads them to places where I have a limited amount of expertise." During a recent study of interesting phenomena in deep space, some students got "very, very excited," Spurling recalls.

"They couldn't believe I didn't know a whole lot about black holes. They wanted the definitive answers. I told them that even scientists don't understand everything about black holes, but if you go research it for yourself, you can decide which theories you think make the most sense."

The highly engaged students immediately formed a study club and used a free website to create a wiki where they could record and discuss all the resources and information they gathered. "They did it all by themselves," Spurling says. "It's all extra work—at recess, at home, in the library, it's on their own."

This story demonstrates the real power of web tools and the Internet to enhance learning, Spurling believes. "It's teaching them that while I don't know everything, and no one can know everything, they have access to the Internet where they can find out a great deal about anything that interests them."

"I think that's been the biggest outcome of our using the Internet more. It's their growing understanding that they have an important role in managing their own learning." ♦

### ON THE WEB!

#### APT PLUS

Alabama Public Television's APT Plus program is well known among many Alabama teachers and schools for its free portal to many of the video resources in the United Streaming database. But that's just the top layer. APT Plus offers access to a dozen other video libraries covering core content areas—plus links to outside collections like Annenberg's teacher PD site, Learner.org.

<http://snipr.com/aptplus>

# Building 21st Century Schools Requires Top-to-Bottom Support

*In the Trussville City Schools, administrators, principals and teachers are building a joint commitment to new ways of teaching and learning.*

SUZANNE FREEMAN'S CONVERSATION is fast and full of energy, and the favorite word of the Trussville City Schools superintendent is "clear."

"We feel our core business is very clear and our direction is very clear," Freeman says. "We have to design engaging and intellectually rich school work for kids. We have to teach at high levels. And we use technology to get us there."

In some ways, Trussville City is like a start-up company working to build a strong customer base. Top leaders in the two-year old district were mostly brand-new to the city when they launched the new school system in the summer of 2005. Freeman, her leadership team, and the TCS school board had the rare (and much envied) opportunity to focus nearly all of their attention on the future—not the past.

But they also knew their progressive vision for the 4,200-student school district would require them to educate their middle class community about the changing nature of learning and work. Parents and civic leaders needed to understand why district leaders believed it was imperative to break away from the traditional teacher-centered, lecture-driven approaches to instruction.

"The world really is flat, and that's a scary idea for a lot of adults to deal with," says TCS school board member John Alex Floyd, Jr., who is well aware of the rapid changes in the way the world communicates through his "day job" as editor-in-chief of Southern Living magazine.

In a multimedia world, heavily influenced by digital technologies, students are no longer content to always be "sitting down in straight rows like we did and memorizing if you had to," says the 59-year-old Floyd. "With all the tools we have now, we have the ability to crack the code of (student) involvement and engagement to a greater degree."

During the first months of the new Trussville City School system, Freeman and Pat Hodge, the district's director of curriculum and instruction, spent many hours in large and small meetings, talking with members of the community about their vision of 21st Century learning.

"We talked to church groups, civic groups, neighbor-

hood meetings, and parents on back porches," recalls Hodge, a respected former principal and central office instructional leader. "It didn't matter to us—we just wanted to share our thinking about the changing world and hear from them about their hopes and dreams for our schools."

More recently, Hodge and Freeman toured the community to discuss 21st Century skills, using as a jumping-off point a December 2006 article from TIME magazine titled "How to Bring Our Schools Out of the 20th Century."

"It's another way to talk about how our kids are doing and how there is room for improvement in terms of student learning," Freeman says. "We make it clear that we are committed to teaching the content in the state Course of Study—that's non-negotiable. But we also talk about going deeper with kids. One of the ideas that's in the TIME article is the need to target conceptual understanding—it's not enough to just memorize the right answer."

While technologies and Web-based learning are part of the conversation, Freeman says, she and Hodge always present technology as a means to an end. "Technology is really a tool. Kids love technology, and it also helps us teach in new ways. We want to use technology to reflect real life as much as possible, because we think that's what the learning that goes on

in schools needs to be about."

In a document distributed throughout the Trussville community this past spring, Freeman answered a series of "frequently asked questions" about the system's direction. One question asks "What do you think the role of the teacher is?" Freeman's frank answer describes a vision for teaching that will clearly require many teachers to stretch far beyond their current practice.

"One of our system beliefs is that teachers are instructional leaders and curriculum designers," it says. "Hence, our goal is to empower teachers, provided they are truly focused on engaging all students, so that students are learning at high levels."

The document says teachers will be expected (and supported) to design engaging work using a variety of resources "which could include the textbook, resources on the internet, books, media, field trips, a variety of technologies, etc. to ensure that all students are doing work that is meaningful and relevant to them..."

## Preparing Teachers for 21st Century Learning

Freeman's district leadership team includes both curriculum director Pat Hodge and director of technology Shawn Nutting, whom Freeman hired from industry to help TCS infuse 21st Century tools

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into every aspect of the district's operation, from a one-to-one student laptop initiative to a comprehensive student data management system.

Because they "are both always thinking down the road," Freeman says, Hodge and Nutting have become close collaborators who "are on the same page" about the total integration of technology and instruction.

This close working relationship was further strengthened in the 2006-07 year when Nutting recruited teacher April Chamberlain direct from her Paine Intermediate School classroom to fill the new position of District Technology Integration Specialist.

Chamberlain drew the attention of district leaders for her innovative use of the Web in her daily classroom teaching, including projects that involved elementary students in blogging with soldiers in Iraq, developing a website for kids about safety and risk-taking, and starting an in-school TV station at PIS.

In 2005, Chamberlain was also selected as one of the Alabama Best Practices Center's ten 21st Century Teacher Fellows. Nutting said her professional development experiences in the Microsoft-sponsored ABPC program was "icing on the cake."

"April has been a huge asset in our office, because she's really the one who's designing our 21st Century schools," Nutting says. "She's constantly on the Web with other creative educators talking about new ways that teachers can use what's available on the Internet to engage kids and deepen learning."

Nutting and Hodge also see Chamberlain as the "credibility link" between the central office and the 300-plus teachers and administrators in the Trussville system. She spends much of her time in the district's four schools, meeting with teams of teachers to discuss technology integration ideas. She also supports the district's Technology Team Leaders

—four teachers in each school who serve as "first contacts" for faculty with questions about everything from equipment failures to setting up a safe blog or wiki.

From Chamberlain's perspective, her many years in the classroom and her own time spent as a technology team leader at Paine Intermediate help her empathize with teachers who struggle to adapt to 21st Century teaching strategies.

"We're introducing a lot of technology, but we're trying not to overwhelm our teachers," she says. "It's a situation where 'you don't know what you don't know,' so we're trying to raise awareness about the tools available on the Web, and the way teachers are using those tools, and then support teachers if they want to try something new."

During Trussville's first year as a school district, Chamberlain says, much of the technology focus was on investments in equipment and infrastructure, including laptops for teachers throughout the system.

"It was a hard learning curve for us," she says. "Spending money on equipment didn't make change happen. We found that dozens of teachers weren't even using their laptops in their classrooms. We saw that change was going to require workshops, activities, classroom visits that helped teachers see how technology could pay off for them."

A major turning point, says Chamberlain, was the Trussville Educator Technology Conference, held in January 2007. The district's 300 teachers gathered at Hewitt-Trussville Middle School for live and online presentations from a mix of outside experts and a dozen innovative teachers from across the system.

"We're a small district and we think every teacher needs technology training," she says. "We know we can't afford to send every teacher to an outside conference, and even if we could, it would be difficult to assure

that each teacher got just what they needed in the way of training."

Next year's conference will include even more hands-on opportunities and more focus on how to use the technology to deepen learning. "Our district is very involved with Schlechty's Working on the Work (WOW) program, and we want to help more teachers see how Web 2.0 tools and other technologies can really support the kind of learning process represented in WOW," she says. "Our goal is for technology to be the invisible thread that runs through all of our curriculum and instruction."

To further support this goal, the district is creating the new role of "Lead Technology Teacher," adding a fifth member to each school's technology leadership team. Like the existing technology team leaders (TTLs), the Lead Technology Teachers (LTTs) will be full-time classroom teachers. They will receive extra professional development and release time (and be compensated with a \$1000 stipend) to develop cutting-edge technology-infused lessons that focus on 21st Century skills.

## A Districtwide Vision

While Trussville's leaders would not yet claim to be a cutting-edge 21st Century school district, it's clear from interviews with students, teachers, principals, district office staff and members of the community that the change message are beginning to permeate the entire system.

Erin McGuyer, a social studies and technology teacher, says the district's vision is not isolated in the central office. "It may begin there, but it's not skipping our school-based administrators and coming straight to us. All of our administrators realize that we're in this together, and we all have a responsibility in integrating technology."

Sunny Williams, principal of Hewitt-Trussville Middle School, agrees that she and her principal colleagues fully share the district's 21st Century vision. "From everything we hear and read, it's clear that we don't have a choice. We have to change," she says.

"If we don't, we're doing our students a huge disservice. The job requirements these kids are going to have when they're grown we can't even imagine. So how can we teach them all the facts they need to know to be successful 20 years from now?"

"So what we need to do is teach them how to be adaptive, how to find the information they need," Williams says. "What you do when you don't know something, that's more important in some ways than the individual facts. We still have to cover the content, but the way we go about getting the content across can also teach them how to deal with ambiguity, how to solve problems, how to work together." ❖

(A more detailed version of this story is available in our web edition at [www.abpc21.org](http://www.abpc21.org))

# Alabama Resources for 21st Century Learning!

Find links to other resources on this topic at: [www.bestpracticescenter.org](http://www.bestpracticescenter.org)

## ALSDE Office of Technology Initiatives

The Office of Technology Initiatives in the State Department of Education, under the direction of Dr. Melinda Maddox, is leading many of the state's most important initiatives around 21st Century learning. Teachers will be familiar with the OTI's role as coordinator of the summer Alabama Educational Technology Conference (AETC), and its management of programs like ALEX, ACCESS, Technology in Motion, and eLearning Alabama, the OTI's online professional development program. The OTI webpage is a good jumping off point to all of these programs. You can also download the state Technology course of study and the State Technology Plan: *IMPACT: Indicators for Measuring Progress in Advancing Classroom Technology*

[http://snipr.com/alsde\\_oti](http://snipr.com/alsde_oti)

## Technology in Motion

Technology in Motion is one of the crown jewels of Alabama's ed tech programs. TIM was a huge help during several of our face-to-face conferences, providing a wireless laptop network and the know-how of Elizabeth Whitehead and other TIM technology specialists. Based at various Regional Inservice Centers around the state, these specialists can help schools advance their digital learning agenda through online and face-to-face workshops, support for professional study groups, equipment loans, and more. The TIM's professional development follows the philosophy and standards of the National Staff Development Council—it's practical, job-embedded, hands-on learning. Visit the TIM website and find out more about the services and how to contact your area specialist.

<http://www.technologyinmotion.state.al.us/>

## Alabama Learning Exchange (ALEX)

The ALEX motto is "quality for every facet of learning." The Quality focus of this excellent state-supported resource is apparent as you peruse the ALEX website. It's a great place to search for technology-infused lesson plans tied to the state Courses of Study. Need some Personal Workspace for developing lesson plans or teacher websites? Click on the button. ALEX is also a good starting point if you're searching for professional development opportunities with a tech twist. Check out the ALEX listserv discussion groups for teachers and professional support staff. And be sure to explore the assortment of content-area resource links recommended by teachers—and help build the database by recommending your own.

<http://alex.state.al.us/>

## Alabama Virtual Library

The Alabama Virtual Library is a free public resource that gives students, teachers—and all citizens of the state—access to databases that are typically available only to those who can afford to pay subscription fees. Brought to you by The Office of the Governor and the Alabama State Legislature, the Virtual Library (much like a physical library) offers essential information resources, including magazines, journals, and newspaper articles. This "equitable core of information" includes the massive databases of EBSCO, Thomson Gale and Britannica. It's a "must go to" place for 21st Century teachers. Any state resident can gain home, school or work "remote access" by visiting your local public library or school media center. Find out more at the AVL website.

<http://www.avl.lib.al.us/>

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