SPOTLIGHT
on SONOMA COUNTY SCHOOLS
2014-15

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When I’m out in the community and talking about education in Sonoma County, I always emphasize the fact that our schools are among the best in California—and they are. But this year I’ve also been informing the community about how our schools are changing.

The school down the street may look the same as always, but it’s home to new ideas about how we fund education, what we want students to learn, how we teach, and how we assess learning. In many instances, teachers are moving away from the familiar “stand and deliver” model of education and developing new and highly interactive environments for student learning. This publication profiles some of the innovations you can see in classrooms across our county today.

These shifts are part of a movement to create 21st century schools that can deliver a world-class education to Sonoma County students. Yes, we are working to modernize our classrooms in response to changing times, but the real purpose of these changes is to ensure that all students are college and career ready when they graduate from high school.

It’s often said that we’re living in a rapidly changing world. Preparing students to thrive in that world has challenged schools to rethink the old ways of doing things and reinvent education for modern times. We are creating opportunities for students to learn, understand, and apply academic content in ways that prepare them for future success.

Although the world may be changing rapidly, change in schools is happening incrementally. Our county has thousands of classrooms and each one is unique. Some teachers have been leaders in moving to these new ideas for education, while others are just starting along the path.

I invite you to learn about 21st century schools and join me in supporting the work our local school districts are doing to improve education for Sonoma County’s youth.

Steven D. Herrington, Ph.D.
Sonoma County Superintendent of Schools

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SONOMA COUNTY NUMBERS

40 school districts
182 schools
3,748 teachers
70,932 students

Public education is going through a transformation and our schools are changing.

At Penngrove Elementary School, Luis Borges, Kathryn Stinson, and Logan Jones learn in a redesigned classroom that offers many ways for students to come together for collaborative group work.
Delving deeper

One of the ways that schools are working to prepare all students for the next step after high school is by following our state’s new guidelines for academic instruction. The Common Core and Next Generation Science Standards help clearly define what students need to learn in our 21st century schools. The standards focus on the critical thinking, problem solving, and analytical skills that students must have to succeed in college and career.

An important and sometimes misunderstood aspect of the standards is that they don’t dictate how teachers teach; they define what students need to learn. Teachers devise their own lesson plans and curriculum, tailoring their instruction to meet student needs.

Although there are many aspects to the standards, one goal is to build deeper understanding of academic content. In English-language arts, this has led teachers to emphasize “close reading.” This is a way of studying written text that focuses students on the words, structure, and purpose of what they’re reading so that they can answer complex questions with careful thought.

In 2013, the Sonoma County Office of Education trained local educators in close reading strategies, then created a structure for trained teachers to provide professional development for their peers. El Molino High School English department chair Dani Barese was one of the teachers who became a close reading expert; she has presented the strategies to others and incorporated them in her own classroom. “I challenge students to tackle difficult texts and ideas, and to own their opinions of those texts,” she says. “They are given difficult tasks and must think critically about them.”

At Analy High School, teacher David Casey encourages students to delve deep into mathematics through the hands-on activities he regularly includes in his lessons.

In one three-part activity, his students build rockets from paper cylinders and cones, then calculate the volume and surface area. They launch the rockets with compressed air, measure the apex angle of the resulting flight with inclinometers, and use trigonometry to calculate the rocket’s height. In the final part of the lesson, they build a second rocket using what they’ve learned and graph the differences in flight.

While formulas and calculations are part of this lesson, students are also able to see abstract mathematical ideas made real. They apply and deepen their understanding when they modify the rockets and repeat the activity.

Science is another content area where new standards come into play. Here the goal is to engage students in actually doing science, rather than simply learning about it. “One of the primary tenets of these science programs involves moving from teacher-led thinking to student-led thinking,” says Susan Dalton, a third-grade teacher at West Side School in Healdsburg.

Dalton, a recipient of two recent science-based teaching grants, explains that she’s not using a different science curriculum to implement the standards. Instead, she is reframing her lessons so that students learn to ask productive and relevant questions for investigations, in the same way that working scientists do.

West Side School teacher Susan Dalton and her third-grade class studied the life cycle of fish through hands-on exploration. Here, they release newly hatched fish raised in their classroom. —Photo courtesy of West Side School
Redesigning classrooms

Take a peek in Heather O’Neil’s third-grade classroom at Penngrove Elementary School and you’ll see an example of how classroom spaces are changing to accommodate new ways of learning.

At the start of last school year, her 25 students each had a rectangular desk and the room was jam-packed. This setup was fine for independent learning, but O’Neil wanted a more flexible classroom that would encourage her students to “learn where they learn best, together or apart.” With support from her principal, she made a mid-year switch and redesigned her classroom following a 21st century model.

The desks are now gone, replaced by trapezoidal tables that can be configured in a variety of ways, for both large and small groups. The tables have a white board surface, allowing student groups to map out their ideas together. Ottomans, stools, and yoga balls have replaced chairs—they’re easier to move around as groupings change. Chromebooks are available and can be positioned wherever students come together to learn.

Another new style of classroom can be seen at Meadow School in the Waugh School District. Principal Melissa Becker was inspired by a presentation by Dale Dougherty, founder of the Maker movement. His ideas about learning through hands-on “making” resonated with her, so she set about creating the first-ever Maker Lab for elementary students.

With an assortment of donated supplies from families, a grant from the local Rotary Club, and a committed group of parent volunteers, the new learning space took shape. Becker then created a series of challenges—build something to propel a marble or make a tower using only spaghetti and marshmallows—and class groups began taking “field trips” to the school’s Maker Lab to respond.

Today, the Lab is a place for creative problem solving and teamwork. Students are engaged and on task; they are figuring things out. Learning is taking place through hands-on exploration as they think about and apply math and science concepts to new challenges.

Many other Sonoma County schools now have or are developing Maker classrooms to give students the opportunity to “learn by doing.” Comstock Middle School earned a 2014 Jack London Award from Sonoma State University for its Project Make initiative and the Sonoma County Office of Education is now developing a Maker classroom that will be available to school groups across the county.

Creating instructional spaces that are more like real-world work environments is another way schools are changing the look of their classrooms. In April, Santa Rosa’s Piner High School unveiled its high-tech SPARQ Center. This 4,000 square-foot building is filled with equipment that scientists use in the field—an astronomical telescope, GIS and GPS technology, and meteorological instruments. Here, students concentrate on the study of STEM subjects—science, technology, engineering, and mathematics—in an environment that extends their learning beyond traditional high school classrooms. Using state-of-the-art tools and accessing real scientific data, they complete authentic research-based projects that prepare them for further study and successful careers.

In Meadow School’s Maker Lab, Posey Chiddix and Andy Mokski were challenged to build a tower out of spaghetti and marshmallows in just ten minutes. After the class discussed the exercise, each group built a second tower and explained how they had made improvements.
Learning together

The ability to work effectively with diverse people is a valued skill in our interconnected world, so it’s a skill that today’s students need to learn. When students collaborate in an educational environment, they not only share ideas and work on projects in tandem, they also learn from each other.

This kind of collaboration can begin in the early elementary grades, as evidenced by Jenna Betz’s first-grade class at Roseland Elementary School. Working in pairs or small groups, students help each other measure and count as they solve math problems. Since most of her students are English learners, Betz often groups the students by language proficiency and integrates language tasks in the lesson by having students write sentences about their solutions and share aloud with a partner. The first-graders might then review each other’s written work and suggest corrections.

Collaboration takes center stage at Technology High School in Rohnert Park. According to science teacher Greg Weaver, “Collaboration is one of the most important pieces of the Tech High philosophy. We encourage students to collaborate and help each other on projects and assignments so everyone can be successful.”

At this school, project-based learning is used across the curriculum. This dynamic approach to teaching presents students with real-world problems as a framework for learning. Working in teams, students explore academic content, think critically about it, forge creative solutions, and process what they’ve learned as they meet the demands of the project. This might bring students together to develop and assess physics calculations or it could result in a home security system built using student-written code.

Last year, Weaver’s engineering freshmen worked in groups to create models for sustainable housing. As part of this collaborative assignment, each team researched a different aspect of sustainable building—home design, building materials, energy storage, water usage—then the students became teachers as they presented their research to the other groups. After learning this essential background information from each other, each group developed computer drawings and physical models, then sold their ideas to a parent audience acting as homebuyers.

At Petaluma’s Kenilworth Junior High School, English teacher Laura Bradley uses a class set of laptops and resources available via Google Drive to create an environment where students can collaborate on written work.

In one example, her students worked in teams of four to create a single Google Presentation about the literature themes they were studying. Because all group members were connected to a single presentation, they could collaborate in real time to choose wording for each slide, add compelling images, insert and cite quotes, and create a unified group presentation.

In this and other assignments, Bradley finds that using collaborative technology is beneficial. She sometimes uses class blogs as a way for students to discuss literature and has seen students write more, take writing more seriously, and explore readings in greater depth than with pencil-and-paper assignments. The blogs open the door to a new style of discussion and peer-to-peer collaboration.

Students aren’t just learning from their teachers; they are also learning from each other.
Turning to technology

It wasn’t very long ago that technology was first introduced in schools. In those days, computer labs featured rows of desktop computers that allowed for occasional tech-based lessons. Now with wireless connectivity and powerful mobile tools, schools can take students beyond the walls of their classrooms on a daily basis.

Several schools are using one-to-one technology, providing each student with a tablet or laptop to support learning with these 21st century tools. Although one-to-one technology is not the norm in all classrooms, shared class sets of mobile devices allow teachers to conduct technology-infused lessons in the regular classroom with ease.

The prevalence of technology took a big step forward this spring when the state asked every school in California to field-test its new Smarter Balanced Assessment. This computer-based testing system required schools to put faster networks in place and acquire additional equipment. In April and May, over 31,000 Sonoma County students successfully completed the assessments on Internet-connected laptops, tablets, and desktop computers. The Smarter Balanced Assessment will now be implemented annually, replacing STAR testing.

The move to computerized testing brings the power of technology already used in business and industry into the realm of education. The system utilizes computer-adaptive testing, offering each student different questions based on previous responses in order to identify gaps in learning. The resulting data gives teachers information they can use to improve teaching and learning.

As an instructional tool, technology has the power to captivate students—and schools are taking advantage of this in creative ways. At Technology Middle School in Rohnert Park, technology director Dan Exelby started a MinecraftEdu club that attracts students during their lunch period. “MinecraftEdu is the single most engaging activity I’ve ever seen used with middle school students,” he says.

MinecraftEdu is an online game, played on a closed network, that uses the engagement of digital gaming to foster 21st century skills. Students must apply creativity, critical thinking, problem solving, and design thinking strategies to be successful. The game can be adapted to support any content area and Exelby hopes to partner with other educators to move the school’s use of MinecraftEdu into core academic classes this year.

Students have also developed key academic skills through another tech-based activity: building and programming robots. In early May, more than 300 students took part in the Sonoma County Robotics Challenge, an annual competitive event that is the culmination of months of preparation by grade 4-8 student teams.

While the small robots made from Lego kits may appear toy-like, the learning that goes into the creation of these devices is substantial. Students apply mathematics, science, engineering, critical thinking, teamwork, and presentation skills through their robotics activities. They learn to use a graphical interface to program the robots, then carry out trial-and-error activities for fine-tuning or modification. The processes they use are similar to those of real-life engineers—brainstorming solutions, designing and evaluating prototypes, and refining designs. From conception to competition, the entire activity is an engaging experience for these 21st century learners.
Connecting one subject area to another is becoming more common in today’s schools. The reason? It provides opportunities for students to process the information they’ve learned in new ways, leading to deeper and more lasting understanding.

At Santa Rosa Charter School for the Arts, third-grade teacher Bonnie Raines has a unique way of melding subjects. Each year, she and her students embark on a yearlong project that brings learning together around a broad topic and culminates in a performance.

The “Grit and Zest” topic chosen last year highlighted two traits that students need in both school and adult life. To focus on these characteristics, students interviewed adults who had overcome hardships, studied the risks and adversities experienced by historical figures, then wrote about these stories and created drawings. They applied science to an art project that used an electrical circuit to symbolize the end of hardship as “light out of darkness.”

As these and other experiences built understanding, the students developed stories, dances, and music for their performance. They worked in teams to create scenery, using math to calculate panel sizes and collaborating to reach agreement on how to represent the abstract ideas of grit and zest. As the students planned and practiced, they processed information and created a final product by applying 21st century skills—creativity, problem solving, perseverance, collaboration, and the ability to work through multiple ideas and concepts.

These same ideas are present at Mary Collins School at Cherry Valley in Petaluma. As teachers Liza Eichert and Gena Richman work together to develop units of study for their grade 2-3 students, they might design a science lesson that begins with exploration of the local watershed and concludes with an art project illustrating the students’ concern about human impact on the ecosystem.

In another example, Eichert and Richman open a math lesson with artist Piet Mondrian and his use of geometry in art, then move to a discussion of area and perimeter. Students create and then work with Mondrian-like drawings to develop mathematical strategies for calculating the area of their paper.

At the high school level, many teachers create connections between academic and career education with the goal of helping students move smoothly toward college and career. From a community standpoint, these initiatives are especially important—preparing students for future employment is crucial to our region’s economic vitality.

Sonoma County is home to a number of public-private partnerships dedicated to boosting career preparation programs. The goal is to create a “pipeline” that connects K-12 schools, community colleges, and employment opportunities projected for the region.

The Sonoma County Board of Supervisors, Department of Health Services, and Career Technical Education (CTE) Fund are all helping to finance career technical education in local schools. In May, the Sonoma County Office of Education secured a $15 million grant to further boost this effort across a six-county region. Sonoma County is the lead for this grant program, which will enhance high school career pathways and create new linkages between education and employment development.

Students benefit when they can connect ideas and see correlations to the real world.
Recognizing excellence

Meet Sonoma County’s Teacher of the Year

Lee Boyes, a science teacher and chair of Petaluma High School’s science department, was named Sonoma County’s Teacher of Year for 2014. She has been a teacher for 32 years and has held her current position for two decades. According to Petaluma High School principal David Stirrat, her “remarkable combination of drive, innovation, caring, and intelligence make her the finest teacher I’ve seen in my 20+ years in education.”

In her physical science and honors chemistry classes, Boyes engages and inspires students by sharing her passion for science, asking questions that build critical thinking skills, and actively supporting them through difficult content. She reaches out into the community to bring the real-world applications of science to her students and has worked with her department colleagues to organize and present an annual science career fair at her school. Each year, she invites elementary students to her classroom to see science demonstrations presented by high school students. She sees this as an opportunity for the younger students to learn how science can be part of their future.

In addition to her role in the classroom, Boyes is a recognized leader on campus and across the district. She says that “improving the school as a whole is one of my callings.” This has led her to serve on the principal’s advisory council, join the district’s K-12 curriculum committee, and work at the district level on the sequencing of science classes. She has participated in research projects, presented at conferences, written curriculum, and trained other teachers.

Boyes will represent Sonoma County in this year’s California Teacher of the Year program.

“It is teachers like Lee Boyes, with professionalism and unrelenting enthusiasm to educate, who make our schools powerful.”

—Steve Bolman, Petaluma City Schools Superintendent

2014 Award Winners

Austin Creek Elementary School
2014 California Distinguished School

Cinnabar Charter School
2014 California Distinguished School
2013-14 Title I Academic Achievement Award

Administrators of the Year

Gail Ahlas
Superintendent, Roseland School District

Rich Parde
Business Manager, Bennett Valley Union School District

Sue Simon
Principal, Yulupa Elementary School

Robert Steffen
Principal, Rancho Cotate High School

Patricia Turner
Principal, Lawrence Cook Middle School

Classified School Employees of the Year

Fred Allen
Head Custodian, Penngrove Elementary School

Marie Hinton
Librarian, Old Adobe Charter School

Lanore McClintock
School Bus Driver, West County Transportation Agency

Fran Oliver
Office Manager, Forestville School

Rebecca Raiewski
Food Services Manager, Sonoma Mountain Elementary School

Photos: All photos by Scott Manchester except where noted. Cover photos (clockwise from top left): Technology High School students Grant Uboldi, Chris Shayota, Deja Clem and Mary Williams; Michael Gottlieb and Maya Hoffman, Mary Collins School; Kenilworth Junior High School students Joe Lopez, Billy Schuoltenberg and Anthony Taylor; Penngrove Elementary School students Max LaRochelle, Jillian Hamann and Isaac Brooks Long; Santa Rosa Charter School for the Arts student performance; SCOE Community School graduate Eddie Gijon; Robotics Challenge starting line; Roseland Elementary School students Brenda Flores Hernandez, Adrian Pimentel and Zuriel Santiago Cruz.