

Calif. School Network Readies Students for College and Career

By

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With a program called Linked Learning, California educators show that academics and career and technical education don't have to be mutually exclusive.

Porterville, Calif.

To the national debate about whether students should pursue career and technical education or college preparation, a California program wants to add an emphatic declaration: *Yes.*

The refusal to choose between one instructional emphasis or the other symbolizes the work being done to build career pathways in nine school districts as part of Linked Learning, an initiative cited as a national model of career and technical education.

One of the places the project is unfolding is in a cluster of high schools in a district that serves a predominantly Latino, low-income community here among the Central Valley's olive and orange groves.

At one school, a half-dozen students huddle around big desktop computers. The complex formulas they're calculating and programming into the computer will tell a robot how to restack blocks of blue and red cubes. When they give the robot the command, the job comes off perfectly. Barely old enough to drive, these students are learning to negotiate the real-world engineering that shapes manufacturing.

A few hallways away, teenagers master the high-tech tools of the performing arts world. Aspiring musicians sit at rows of electric pianos, listening through head-

sets to the music they create as it is automatically notated on computer screens. At another school, students juggle computers and soundboards to produce a morning broadcast.

When they're not in classrooms, students from these schools are out in the community, working in local engineering companies, staging musicals with preschoolers, or helping design sound for a street concert.

The point, leaders of the work say, is to create a more relevant, engaging school experience for young people by blending the rigorous core academics they need for college with the career and technical education that prepares them for good jobs, and to do it in an applied, hands-on way that includes real-life work experience.

Skeptics argue, with some historical basis, that too many career and technical education, or CTE, programs limit students' options by funneling them into potentially dead-end occupations, and reducing their chances to fulfill college-going requirements. But more and more, activists envision a new kind of CTE: one that, done well, doesn't lock teenagers into tracks, but expands their options.

They argue that if career pathways are tough enough academically, and impart valuable and generalizable career skills, students are equipped to pursue career options that are as likely to include a bachelor's degree as an industry certification.

"We want to make sure that everyone

is college- and career-ready, that we don't end up with a blue-collar track and a college-prep track," says John Snavelly, the superintendent of the 13,000-student Porterville Unified School District, which has developed nine career pathways at five of its high schools here.

Whether or not the programs here, and in eight other districts across the state, will live up to that vision remains to be seen. The oldest are in their third year, so data to illuminate their impact on students are limited.

Many have longer roots as career academies, which California has nurtured for many years. But in their newest incarnation—as part of the Linked Learning initiative, with specific and ambitious requirements—they are only just beginning.

Scaling Up

Supported largely by the San Francisco-based James Irvine Foundation, Linked Learning is an attempt to help entire districts do what a loose network of demonstration schools had been trying: to take career-themed programs to a new level with high academic and technical expectations.

Founded in 2006 with Irvine Foundation money, the Berkeley-based organization ConnectEd, which oversees the program, had called its approach "multiple pathways," but rechristened it Linked Learning to better capture its vision and distinguish it from New York City's "multiple pathways" work to customize the high school experience for nontraditional students.

ConnectEd's effort to build its network of schools into district-wide projects came as California's own efforts to improve high school education began to reflect a commitment to a new vision of career and technical education. In 2005, the state education department released a new CTE curriculum framework that emphasized preparing students for both college and careers. The state devised a process to certify more career and technical courses as meeting the admission requirements of its two university systems.

ConnectEd delineated standards for what it considered high-quality career-pathways programs. The standards outline 39 measures of quality, including tough academic and technical study that prepares students for both college and jobs, and strong partnerships with local businesses and colleges, to facilitate curriculum design, high school work experience, and post-secondary articulation. It also mapped out a certification process for programs that meet the mark, and a guide for districts trying to build systems of career pathways.

Training Teachers

The organization developed an approach to pathways study that hinges on interdisciplinary, project-based learning, and it teamed up with six California State University campuses to craft training for preservice teachers in the pedagogy, teamwork, and curriculum-design demands of such an approach.

To support teachers already in pathways programs, ConnectEd created curriculum units and training institutes. One recent training, for instance, was a four-day workshop to show math teachers how they might impart pre-algebra and Algebra 1 skills by having students build a scissor lift or wind turbine.

Here in the Porterville district, rising high schoolers can choose

between a traditional comprehensive high school program or one of the nine pathways the school system has developed through Linked Learning. The pathways offer dozens of snapshots of students blending academic and career pursuits. In a video-production class that is part of Monache High School's multimedia and technology pathway, Desiree Quezalda, 16, who aspires to a career in media production, edits digital footage for a segment about the school's dress code that will be shown on the next day's morning announcements.

In the adjoining master-control room, Tyler Santry explains how he and Anthony Gamboa use two computers and a soundboard to produce the show, cueing the anchors and controlling the sound and cameras. Santry, 17, isn't sure about his career choice yet, but likes the program for its small classes and hands-on approach. For Gamboa, 16, the soundboard work fuels his dream of becoming a sports broadcaster and makes the rest of the school day tolerable.

"This is the stuff that really excited me and got me to want to come to school," Gamboa says. He still hates reading the books required in many of his classes, he says, but he endures it to get his hands on the soundboard daily.

Across Monache's sunny courtyard, you can't find the computer-networking students in their classrooms. That's because they've fanned out across campus to service computers. Their teacher, Anthony Gale, says some students will use the work to get a jump on industry certifications, and others will highlight it on applications for college programs in computer engineering.

At Porterville High School, students in the culinary strand of the business and finance academy, clad in long white aprons, are preparing and serving salad, lasagna and layer cake for 30 visitors. Other students in the academy, but in the retail strand of study, are thinking more about numbers than about food.

Jorge Munguía had thought he would work his way up in retail management after high school, but got the chance through his pathway to earn a certification that lets him use computer software to help people prepare the short form of the federal tax return. Now that he has a volunteer job helping low-income families file those forms—and boasts a 4.0 grade point average—Munguía is thinking of applying to a California State University campus and earning a degree in accounting. "It opened new doors for me," he says.

New Learning Frame

Not all pathways programs fuel career choices; many students say the pathways—and their project-based, hands-on methods—are just a more interesting way to learn.

Dalton Rogers, a student in the performing arts pathway at another district school, Harmony Magnet Academy, chose the program, a 25-minute drive from his home, for its small-school environment, but is aiming for a career in law and politics. His internship as a student ambassador to the local Chamber of Commerce helps build his public-speaking skills, the 17-year-old says, because it requires him to represent his school with meet-and-greets and PowerPoint presentations.

Teachers in Porterville try to tailor their content to each pathway's focus. Lou Massei, who teaches biology at Monache High, builds cell models as a fall project with his nonpathways students. But his classes of multimedia- and technology-pathway

students build the model virtually, ending up with a computer-based, animated version.

Building an integrated curriculum is a crucial part of the Linked Learning approach. A favorite project of Harmony Magnet students last year was solving a fictional murder. Biology teacher Nancy Owen purchased a DNA sample that her classes analyzed as evidence from the “crime scene.” English students fleshed out the crime, turning it into a script, and the musical-theater class performed it. The video-production class recorded it.

“It was like blending all the subjects together, and I still got the education I needed. It was a blast,” says Derek Kirk, 16, a student in Harmony’s performing arts pathway.

Full integration remains a challenge, however. Vicky Edwards, an English teacher at Harmony, says it’s been easier to integrate her subject with the performing arts pathway than with the engineering pathway, but she and her colleagues are still working on ways to do that better. One idea is to read *Life of Pi* and have engineering classes develop design briefs—project overviews to present to a client—describing how they would build the lifeboat described in the novel.

Part of the Irvine Foundation grant to the Porterville district pays for teachers to take extra time together to design such integrated units. Edwards and her colleagues stay late once a week and take time in the summer to do that work, she says. She has also attended ConnectEd’s summer training institutes on curriculum, and uses the organization’s integrated curriculum units in her teaching.

Still, some classes in Porterville remain mired in a more traditional approach. One student here, for example, describes slogging through *The Great Gatsby* by doing assigned readings, written summaries, and tests, without any connections to other subjects. “I hate it,” he says.

Role of Business

Partnerships with business and higher education have shaped Porterville’s pathways programs. Each pathway’s advisory board includes local employers who advise on curriculum design and offer real-world opportunities to students.

Students from Harmony Magnet trained for mock job interviews with roundtables of business leaders. Those from the engineering pathway, for instance, were grilled by a panel that included managers of local architecture and engineering firms and of municipal waste-management and engineering departments.

The panel for students in the performing arts academy included a set designer, a makeup artist, the owner of a local community arts center, and a retired bandleader.

A couple of students impressed employers enough to snag summer internships. The owner of an engineering firm offered to create and supervise a project in which students will design a bridge and calculate its cost, says Ruben Alvarez, one of the Porterville district’s two work-based-learning coordinators.

Deborah Hanks, a pathologist who owns a local laboratory, advised Porterville High’s health-sciences pathway that up-

perclassmen needed more-rigorous chemistry courses.

“I just know too many high school valedictorians who are interested in health fields and go off to [the University of California] and are slayed by chemistry,” she says.

Dr. Hanks also brought two of the academy’s students into the lab for internships, where they learned how to differentiate healthy tissue from diseased tissue, using the samples she has collected. One of those students, Daisy Suarez, 17, says the lab experience excites her. “I’m right for this,” she says.

A higher education presence on the pathways’ advisory boards also helps shape the programs. Making up that contingent are representatives of local community colleges and both state university systems.

James Carson, who oversees articulation agreements for Porterville Community College and serves on the district’s pathways advisory board, says the college now holds “articulation events” with Porterville high school teachers to build shared ideas of what students need to succeed in community college.

“They bring their course outlines, their syllabi, their textbooks, their exams, and we trot out all our stuff for them, and we figure things out,” he says. “This is making articulation work much better. We’re finally all talking to each other.”

Coordination with business and higher education helps students see connections, says Monache High Principal Richard Smithey.

“All of a sudden, instead of being isolated as a traditional high school, we become connected to local businesses and the colleges,” he says. “Kids see that it makes sense, that all those things go together. It’s really great.”

Students aren’t required to pass what’s known as the “A-G” sequence of courses needed for admission to California State University or the University of California, Smithey says, but most do. “In the past, with a more traditional vocational approach, chances were slim they would do those courses,” he says.

A Work in Progress

As promising patterns emerge, rough spots remain. In a rural area with a limited variety of businesses, it’s not always easy to create student-work opportunities that are directly related to career pathways, particularly in high-technology.

“We have no Intel here. We don’t even have a Kinko’s,” says Mimi Schuler, the Porterville district’s other work-based-learning coordinator. Students often do information-technology internships in other businesses, such as hospitals or city government offices.

Class scheduling can be difficult as well. To facilitate tougher graduation requirements and fit in all the classes students need for their pathways, the district moved this year from a six-period to a seven-period day, and is considering another move to block scheduling. Officials are also mulling ways to keep pathway students together in core academic classes.

Challenging, also, is ensuring that the district’s younger students are fully informed of their academic and career op-

tions. The district can't afford to add career or guidance counselors, says Snavely, the superintendent. But administrators know that they must take care to avoid creating or entrenching patterns in which less fortunate children might aspire to lesser goals than their more privileged peers.

So they're working to send the message through elementary teachers about students' many options.

District officials also went on an 8th grade recruiting "road show" to 17 middle schools to talk up the programs, and bused 8th graders to a movie theater to show them video clips about the programs and answer questions, says Cynthia Brown, the district's director of student pathways.

Even with its rough spots, the Linked Learning approach holds the promise of creating new opportunities for students, district leaders say. They believe it opens up vistas dotted with jobs, industry certificates, two-year and four-year degrees, or more—options that students can pursue in myriad ways.

"This really allows us to educate each student as an individual," Brown says. "Whether it's joining the workforce here or somewhere, before college, after college, or even without college, they can follow the roads they choose as far as their potential takes them." □

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