



Connecting Classrooms to Careers to Shrink California's Skills Gap

Investments in Deeper Learning Help Ensure California's Global Success

Acknowledgements

Council for a Strong America is a national, bipartisan nonprofit that unites five organizations comprised of law enforcement leaders, retired admirals and generals, business executives, pastors, and prominent coaches and athletes who promote solutions that ensure our next generation of Americans will be citizen-ready.

ReadyNation: Business, Kids, Workforce

Business executives building a skilled workforce by promoting solutions that prepare children to succeed in education, work, and life

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Authors:

Sandra Bishop-Josef, Ph.D., Research Director
Sarah Baizer, Research Senior Associate
Meghan Moroney, Communications Director, California
Susan Bonilla, State Director, California
Sara Watson, Ph.D., Global Director

Contributors:

Sue Vaccaro, Consultant
Mariana Galloway, Graphic Designer
Evan Potler, Creative Director
Miriam Rollin, Vice President and Chief Operating Officer
David Kass, President

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Summary

If current education and labor market trends continue, Solano County will face a serious skills gap in the coming decade, suffering a shortage of highly-skilled workers (those with bachelor's degrees or higher). In California, 20 of the top 30 occupations with the highest projected gaps will require some postsecondary education, with the majority requiring a bachelor's degree or higher.

The skills deficiencies go beyond those related to specific occupations. California businesses are also concerned about the lack of increasingly important “deeper learning” skills— such as communication, collaboration, and critical thinking— required for virtually any occupation in today's world. In a recent survey conducted by the Wall Street Journal, business executives reported that such skills are extremely important and that they frequently have a difficult time finding employees with these skills.

A pipeline of skilled workers will be hard to create when 18 percent of California's high school students fail to graduate on time. The results will be costly for students, businesses, and our entire state—reflected in the price tags for remedial education, lowered lifetime earnings, and poorer tax receipts.

To reverse California's skills-gap troubles, ReadyNation's business members urge the adoption of educational approaches

that will help ensure students develop their mastery of core academic content and the deeper learning skills needed to produce a world-class, competitive workforce.

California has invested in these approaches, but not sufficiently: While competitive grants



have provided some students with these opportunities, support is frequently not sustained. Further, deeper learning programs do not reach many students who can benefit from them.

The bottom line: The future of California's economy depends upon the caliber of our workforce. If we expect to compete and succeed in the global marketplace, we must act now to ensure our businesses have the skilled workforce we need.

Unprepared Students, Unprepared Workforce

Although businesses have always needed workers proficient in the “3 Rs” – reading, writing, and arithmetic – today’s fast-paced, international marketplace requires even higher proficiency levels of these basic skills. But they are too often lacking, especially among those entering the workforce.

- According to the “Nation’s Report Card”—the National Assessment of Educational Progress—only 28 percent of California 8th graders are proficient in reading, only 27 percent are proficient in math and only 24 percent are proficient in science.¹
- 18 percent of California high school freshmen fail to graduate within four years.²

In addition to basic competencies, employers are increasingly concerned about a lack of communication, collaboration, and critical thinking skills—deeper learning skills. In a survey of 900 executives conducted by the Wall Street Journal, most (92 percent) believed that these skills are as important or more important than technical skills.³ In that same survey, nearly 9 out of 10 executives reported that they have difficulty finding employees with these skills.

California’s Skills Gap

With education outcomes that need improvement, in addition to jobs that place an increasing emphasis on education and a variety of skills, how will the California workforce of the future fare?

Rising Education Requirements

If current education and labor market trends continue, California and Solano County could face a serious skills gap. Consider these projections for 2016-2026:⁴

Examining state rankings on the percentage of students who graduate from high school on time, California ranks at 31st place.

- Growth rates for occupations in California and Solano County are heavily skewed toward jobs that are highly-skilled (requiring a bachelor’s degree or higher) or medium-skilled (requiring an associate’s or vocational degree or professional accreditation).
- In California as a whole, 80 percent of the fastest growing occupations that have above average wages will require an associate’s degree or higher; the figure for Solano County is 63 percent of the fast-growing, high-wage jobs requiring an associate’s degree or higher.

Focus on Science, Technology, Engineering, and Math (STEM)

Jobs that are heavily reliant on science and technology are growing. One-third of the occupations in California with large projected gaps will likely require STEM-related degrees or specific training in a medical or health care field.⁵

High Cost of the Skills Gap

The lack of a skilled workforce comes at a high cost for individuals, businesses, and the economy. The unemployment rate for California workers with only a high school

diploma (13.4 percent) is almost three times as high as that for workers with a bachelor's degree (4.5 percent).⁶ Additionally, attaining postsecondary education has a strong impact on wages: California workers with associate's degrees earn \$16,600 more than those with only a high school diploma.⁷ The differential is even higher in Solano County, with workers with an associate's degree earning \$18,500 more than those with a high school diploma.

Remedial courses and training to help students catch up and get on track for higher education and training are helpful, but they are expensive and inefficient. Approximately "75 percent of students entering community college and 43 percent

of those entering California State Universities are deemed in need of remediation in one or more subjects,"⁸ which costs California students approximately \$205 million in out of pocket costs annually.⁹

Closing the Skills Gap Through Deeper Learning

Business leaders know that young people entering college and the workforce need deeper learning skills:¹⁰

- A mastery of core academic subjects;
- The critical thinking and problem-solving skills necessary to find answers to challenges that—unlike multiple choice tests—are not necessarily on the page in front of them;

Estimated Average Annual Growth Rate

(2016 Q3-2026 Q3)



Educational Attainment

(BLS Typical Entry-Level Education)

Doctoral or professional degree	1.3%	1.2%
Master's degree	1.5%	1.5%
Bachelor's degree	1.0%	0.7%
Associate's degree	1.0%	0.9%
Postsecondary non-degree award	1.2%	1.1%
Some college, no degree	0.3%	0.2%
High school diploma or equivalent	0.5%	0.4%
No formal educational credential	0.7%	0.5%

California

Solano County

Source: Chmera

- Effective written and verbal communication skills to work as part of a team, or to interact with the public;
- Collaboration skills, such as interpreting others' messages and responding appropriately;
- The ability to direct their own learning, setting goals and tracking progress toward those goals;
- An “academic mindset”: self confidence, persistence and an understanding of how school prepares them for future success.

These are skills that can be taught and reinforced, especially through hands-on learning and in the workforce. All of this goes beyond “textbook” learning to provide students and workers with the skills now needed in a competitive global market.¹¹

Vacaville High School

Vacaville High School offers seven career pathways to prepare students for jobs in the regional workforce. Students self-select into one of the following cohorts: bio-technology, engineering, robotics, kinesiology, animal care and services, culinary arts and med science. Most coursework meets A-G requirements.

Work-based learning experience is an essential part of each pathway program. Students in the Med Science program, for example, gain hands-on experience at North Bay Hospital, where they volunteer 20 hours per semester as student interns. The internship gives them ample opportunities to apply critical thinking skills and collaborate in a team environment.

This deeper learning approach is being implemented around the nation, including through innovative education models at the K-12 level. Many of these programs spark students' imaginations, provide opportunities to attain credentials, and help give their education greater, real-life relevance by demonstrating practical connections between what they learn in the classroom and what they might do on the job, later in life – often through real-world, work-based learning experiences supported by industry and community partners.

Career Academies

“Career academies” demonstrate a proven approach found throughout the United States that incorporate real-world, work-based learning. Although some programs are stand-alone schools, most are pathways within larger comprehensive high schools. Often called a “school within a school,” pathways typically comprise no more than 200 students who stay together with the same teachers for the duration of the program. That continuity helps create close relationships among the students and with their teachers. It can create the kind of “team player” mentality employers too often find lacking in many of their employees.¹²

Key elements in proven and promising high school education models, such as Career Academies, are:

Work-based learning such as mentorships, job shadowing opportunities and internships with local employers brings actual career relevance to the students, deepening their understanding of how traditional academics are used in careers. This helps direct them toward training and education opportunities that will get them the skills California employers are seeking.¹³

Project-based learning helps students make connections across subjects and brings greater relevance to classroom learning. Students work together on projects, developing academic and technical skills, as well as more experience with collaboration, communication and critical thinking.¹⁴

School-based enterprise, like student-led businesses or community service initiatives, is another form of work-based learning. It allows students to design, produce and deliver real products and services.

Support services, including counseling as well as additional instruction in reading, writing and mathematics, help students keep their grades up and stay on track for graduation.¹⁵

In a well-designed study of career academies across America, students were twice as likely as nonparticipants to be working in the computer, engineering, and media technology sector eight years after graduation, thus helping to increase the supply of STEM workers.¹⁶ Young people who went through career academies earned more and were more productive than those not in the program.¹⁷

Deeper Learning Educational Models Show Promising Results

A study by a respected research and evaluation organization, the American Institutes for Research, provides promising results supporting the deeper learning approach.¹⁸ The study compared student outcomes in 13 pairs of deeper learning and traditional schools serving similar, disadvantaged students in several districts in California and New York. Students in deeper learning schools:



Armijo High School

Advancement Via Individual Determination (AVID) is both an official chartered club and an elective class offered at Armijo High School. During class, students are introduced to the college culture immediately through a curriculum focused on college and career readiness. They learn the Cornell Note taking strategy, engage in project-based learning activities and explore career opportunities available within the region, all the while building skills employers are seeking in the 21st century.

- Were 16 percent more likely to graduate from high school on time (65 percent versus an estimated 56 percent who would have graduated on time in comparison schools¹⁹);
- Achieved higher scores on tests of English language arts, reading, math, and science;

- Were 19 percent more likely to enroll in four-year colleges and 62 percent more likely to enroll in selective colleges; and
- Reported higher levels of some non-cognitive skills, including collaboration, academic engagement, motivation to learn, and self-efficacy. However, for other non-cognitive skills, there were no differences (creative thinking, perseverance, perceived control, and self-management).

A number of schools around the nation have adopted educational approaches to promote deeper learning and help ensure that students focus on problem solving, critical thinking, and communication and collaboration skills, to be college- and career-ready. Included among the educational models that focus on developing deeper learning skills are Expeditionary Learning, EdVisions Schools, Big Picture Learning, and New Tech Network.



Will C. Wood High School

Auto Technology students at Will C. Wood High School are putting their education to good use by repairing cars for formerly homeless residents at Opportunity House, a local nonprofit. The project-based assignment gives students a chance to see first-hand the value of their work as they help provide transportation to community members in need.

Other career pathways offered at Will C. Wood High School include manufacturing, robotics, engineering and design, kinesiology, law enforcement and more. All pathway students are required to complete a 20-hour internship and present a final exhibition senior year. The communication and collaboration skills gained from these experiences helps ensure students are prepared for success in both college and careers.

In California, there are several school models that focus on cultivating deeper learning skills:

- **Expeditionary Learning (EL)** is a comprehensive school reform model that uses project-based learning to help students cultivate critical thinking, problem solving, and collaboration. A hallmark of this school reform model is learning expeditions, which are interdisciplinary real-world projects that serve as the primary curriculum units in EL schools. Student success is assessed using three indicators: mastery of knowledge and skills, quality of student work, and character.²⁰ Expeditionary Learning has a network of 152 schools in 30 states, including nine schools in California, in Big Pine, Escondido, Grass Valley, Oakland, Truckee, Kings Beach, and Vallejo.
- **The EdVisions school model** provides self-directed, project-based learning for

its students. The key elements of EdVisions schools are: small learning communities, self-directed project-based learning, authentic assessment, and teacher ownership/ democratic governance. EdVisions schools operate 37 schools in 11 states, including five in California, in Altadena, Solvang, Weed, and Vista.²¹

Although definitive evaluation research has not yet proven the effectiveness of models such as these, through these promising models California high school students can understand the skills they will need in a particular occupation and can make more informed decisions about postsecondary education and training. Whether they go directly into the workforce or pursue advanced education, these students will ultimately enter the workforce much more prepared to hit the ground running, potentially reducing the time and cost of on-the-job training.

Conclusion

California runs the risk of falling behind when it comes to preparing the future workforce to compete successfully in a global economy. Recognizing this risk, the state must take steps to address the skills gap, and continue on that course. To meet the future demands of a more skilled and educated workforce, policymakers should invest in what really works and support promising and evidence-based approaches that will ensure young people enter the workforce with the skills California businesses need.

Innovative educational models, such as those incorporating deeper learning approaches, merit greater support to ensure students exit high school better-prepared for promising careers, as well as whatever postsecondary education and training they might pursue. California must expand previous support for these models, so they are sustained and reach more students who can benefit from them. If we are serious about securing California's economic future, we must act now to provide our businesses with the highly-skilled workforce needed to innovate and grow in the increasingly global marketplace.

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211 Sutter St. / Suite 401 / San Francisco, CA 94108 / 415.762.8270

