the power of real-world application

Industry-themed pathways that connect learning with students' interests and career aspirations can transform the high school experience.

During my four years as the chief academic officer for Oakland Unified School District, I wrestled daily with the challenges of improving teaching and learning across a large, complex system. I witnessed some real success; OUSD has charted a 118-point API gain since 2006, surpassing Los Angeles, West Contra Costa, and Fresno in the rankings of large urban districts in California.

Those gains were fueled largely by dramatic improvements at the elementary level, more moderate gains in middle school, and the success of some of Oakland's charter schools. Improvement in Oakland's high schools has been uneven at best, with some schools actually declining in performance.

Like every other district in the nation, Oakland Unified is contributing to the more than 400,000 students who will drop out of U.S. schools this year. That's a rate of one student every 12 seconds. In California, as you are probably painfully aware, almost a third of new ninth-graders drop out before graduating. Another third finish high school but lack the academic and technical readiness to succeed in college or career.

Only a third of high school students in California graduate on time and transition easily to postsecondary education and lasting career success. These numbers are even more dismal for our African American, Latino, and English learner students.

We've heard a lot about the three "R's" of high school reform: Rigor, Relevance, and Relationships. Many districts have improved student and staff relationships and reduced violence through small schools and small learning communities, no small achievement. Hundreds of schools have expanded CTE and ROP courses and created internships to increase curricular relevance for students.

Rigor has been pursued primarily through a focus on grade-level, standards-based curriculum and instruction aligned to the California Standards Test with the goal of improving access and closing the achievement or equity gap. Despite important progress, a piecemeal approach to the three R's has rarely resulted in the transformative success we all seek for our high school youth.

The good news is that some high schools are succeeding in turning outcomes around. When I visited Oakland's high schools over the years, a pattern emerged. Successful schools knew their students well and had high expectations for learning outcomes and behavior. These schools infused the core academic curriculum with hands-on learning focused on real-world applications. Schools adopting this applied learning approach were seeing improved student achievement, engagement, attendance, retention and postsecondary matriculation rates.

Students in these successful schools told me that one of the reasons they came to school each day was because they were interested in what they were learning and could

By Brad Stam

see connection to how they would use the information after high school, either in pursuing a two-year or four-year college degree, industry certification, or career-oriented employment. I learned that this comprehensive approach to improving high schools was called linked learning.

Linked learning transforms students' high school experience by linking a college preparatory course sequence with demanding technical education, and by linking real-world experiences with classroom learning to help students gain an advantage in high school, postsecondary education and careers. With linked learning, students follow industry-themed pathways in a wide range of fields, such as engineering, arts and media, or biomedicine and health.

These pathways connect learning with students' interests and career aspirations, leading not only to higher graduation rates, but also to increased postsecondary enrollments, higher earning potential, and greater civic engagement. Linked learning is also a natural partner for the community-based schools approach, deeply involving students in the community through work-based learning and service-oriented projects or enterprises.

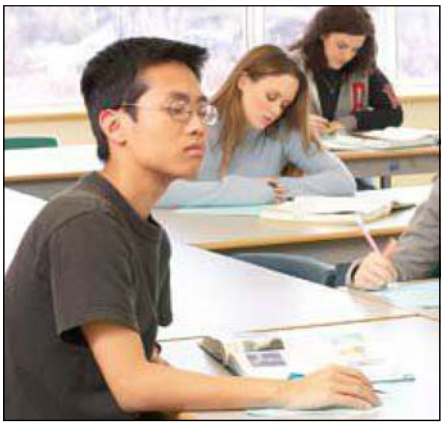
Seeing first-hand how schools adopting this approach were re-engaging students and empowering them to become self-directed learners led me to expand this approach within Oakland Unified, and later to join ConnectEd: The California Center for College and Career. ConnectEd serves as a hub for linked learning, providing professional development and coaching, curriculum, tools and technical assistance to schools and districts; informing and supporting state and national policies; and building public will to expand linked learning to more schools and districts.

What is linked learning?

Linked learning pathways combine academic and technical study, integrating classroom and real-world learning organized around broad industry themes such as building and environmental design or information technology. Linked learning is a flexible approach that can be implemented in charter schools, magnet schools, small schools, comprehensive high schools broken into multiple pathways, and other delivery models. There is no one right way to implement a pathway, but whatever the strategy, each pathway embraces four guiding principles and four core components.

Guiding principles

1. Pathways prepare students for postsecondary education and career. A pathway is always about both objectives; it's never a choice between one or the other. The probability of making a living wage in today's economy without some form of postsecondary education is already low and will only diminish. Increasingly, career success depends on postsecondary education and gaining a formal credential, certificate, associate's degree, bachelor's degree, or higher level of achievement.



2. Pathways lead to the full range of postsecondary opportunities and career opportunities. They eliminate tracking and keep all options open after high school. Students graduate prepared for a full range of opportunities: two- and four-year college, apprenticeship, formal employment training and military service.

3. Pathways connect academics to real-world applications. Each pathway integrates challenging academics with a demanding technical curriculum. Pathways alter how core academic subjects are taught, they do not lower expectations about what is taught. Students master academic learning outcomes through the power of real-world application – they learn by being presented with authentic problems and situations that are part of the modern workplace.

4. Pathways improve student achievement. Pathways are based on support and accountability for achieving clearly defined student outcomes. They are designed to produce higher levels of accomplishment in a number of measurable arenas, including academic and technical scores, high school completion, postsecondary transitions to career and education, and attainment of a formal postsecondary credential. They also increase student proficiency in areas such as critical thinking, problem solving, media and information literacy, and collaboration.

Core components

Each pathway is organized around a major industry theme such as finance and business; biomedicine and health; engineering; or law and justice. In turn, each pathway contains four essential ingredients.

1. A challenging academic component prepares students for success – without remediation – in California's community colleges and universities, as well as in apprenticeships and other postsecondary programs. Pathways complement traditional learning with project-based instruction that links to real-world applications.

2. A demanding technical component delivers concrete knowledge and skills through a cluster of three or more technical courses.

3. A work-based learning component offers opportunities to learn through real-world experiences. Students gain access to intensive internships, virtual apprenticeships, and school-based enterprises. These experiences complement classroom instruction, helping sharpen students' desire to increase knowledge and skills relevant to their career interests.

4. Individualized student support coordinates a variety of academic, college and career, and social-emotional supports within a pathway to meet individual student needs so that all students achieve the pathway learning outcomes.

With linked learning, students in a building and engineering pathway learn about geometry and algebra while designing and building a structure. Students in an arts and media pathway learn persuasive writing skills while developing business plans, or creative writing skills while drafting scripts.

While students in these schools are expected to enroll in an industry-focused pathway, they are not expected to pursue a career in that area after high school – although many may choose to do so. The themes are broad enough that each exposes students to material relevant to dozens of careers.

Whichever pathway they choose, linked learning makes school real and exciting for the thousands of students who are bored with only receiving the conventional high school curricula. It helps answer a simple question asked by so many students every day: "Why do I need to learn this?"

Any school can be theme-based, but a key difference with pathways is that academic course content is coordinated with and reinforces technical course content and vice versa. Through extensive collaboration supported through the master schedule, the science teacher learns from the technical teacher what students did not understand in class and then can review those theories.

Likewise, the technical instructor learns what theories to bring to life in the next hands-on technical class. This coordination helps students gain a greater depth of knowledge by seeing the connection between academic theories and real-world applications.

A powerful and proven approach

While linked learning is hardly the norm, it is already a powerful – and proven – approach in communities across California. It is operating in places like the School of Digital Media and Design at Kearny High in San Diego; Arthur Benjamin Health Professions High School in Sacramento; the Architecture, Construction, and Engineering Academy at Jordan High in Long Beach; and the Academy of Business and Finance at Porterville High in the Central Valley.

Today in California more than 500 Partnership Academies each organize instruction around one of the state's industry sectors, and another 300 career academies are in operation. Many of these schools offer linked learning.

Not only do we need schools that offer quality pathways, but we also need districts that offer systems of pathways so that students are offered a choice among industry themes, schools are provided appropriate professional development and supports, and the district can sustain the approach even through leadership transitions. ConnectEd, with generous funding from the James Irvine Foundation, has launched a demonstration project to help nine districts develop such systems.

The district initiative

The California Linked Learning District Initiative has provided more than $10 million to nine districts that have developed and are implementing master plans for expanding linked learning in their high schools. Each district aims to implement six to eight pathways, with the majority of them receiving linked learning certification that identifies them as high quality pathways likely to lead to improved student outcomes.

Antioch, Long Beach, Los Angeles (Local District 4), Montebello, Oakland, Pasadena, Porterville, Sacramento and West Contra Costa are participating. San Diego and Stockton Unified also received planning and development grants. These participating districts have high school enrollments of at least 5,000 students; 30 percent or more of district students eligible for free or reduced-price lunch; and some existing capacity to develop larger systems of linked learning.

With District Initiative grants, these districts are broadening and deepening common understanding of and commitment to pursuing a linked learning approach to high school improvement. They are convening broad-based community coalitions for support, guidance and partnership. They are conducting ongoing needs assessments to determine where pathways need improvement and what supports are needed.

To help support their high schools, districts are building central office and site leadership capacity, and engaging their governance boards to modify existing and create new policies, structures and practices that support implementation of high-quality pathways. Finally, they are establishing evaluation systems to demonstrate the success of linked learning.

ConnectEd provides pathway coaches

and technical assistance providers who support the ongoing improvement of pathway quality and prepare schools to pursue pathway certification. Districts participate in an ongoing Leadership Development Series for both district and pathway level leadership teams that tackle challenging implementation issues and promote the establishment of a robust professional learning community between and among leaders across districts.

ConnectEd organizes experiential site visits, provides training in the use of high-quality integrated curriculum and an online infrastructure that supports curriculum development, use of project-based instructional practices, delivery of teacher professional development, posting of student portfolios, and connections with industry professionals.

Local, state and federal support

Support for linked learning is growing at local, state and federal levels. In California, the Linked Learning Alliance – a statewide coalition of education, business, industry and community organizations – meets regularly to advance policy, pathway development and awareness building around linked learning.

In response to state legislation (AB 2648), in 2010 the California Department of Education released Multiple Pathways to Student Success, which explores the feasibility of establishing and expanding pathways in California. It serves as a blueprint for broad expansion in the state. The report cites the approach as "one of the most promising high school transformational strategies we have seen in decades."

Linked learning is gaining exposure at the federal level as well, through H.R. 6174, titled The Linked Learning Pathways to College, Career, and Citizenship Success Act. This bill proposes providing $100 million in fiscal year 2011, and additional funds in the following three years, to build and sustain linked learning pathways throughout the country.

Schools with graduation rates below 60 percent that are serving high concentrations of economically disadvantaged students would receive priority for funding to support linked learning efforts. The bill encourages school districts to partner with a wide range of local stakeholders including businesses, teacher unions and parent organizations.

At the local level, many districts, even beyond those participating in the District Initiative, are adopting linked learning as their primary strategy for improving high schools. And various organizations are developing tools to help with the implementation of high quality pathways that will produce the intended student outcomes.

A group of organizations – ConnectEd, the Career Academy Support Network, the National Academy Foundation, and the National Career Academy Coalition – developed certification criteria and a process to guide pathways in implementing quality programs of study that incorporate linked learning design principles.

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Bright prospects

It is hard to ignore the promise that this approach holds for our high schools. Teachers are reporting that it has breathed new life into their practice. Principals are seeing decreased disciplinary problems and students excited about learning. Communities are seeing new groups of students graduating from high school poised to become productive citizens, whether enrolled in postsecondary opportunities or starting careers or both.

And perhaps most importantly, students are seeing bright prospects for their future and enthusiastic about graduating from high school and moving on to successful postsecondary opportunities and careers.

In the 21st century, with access to factual information increasingly easy and instantaneous, high schools must transform themselves from century-old industrial sorting machines to student-centered communities of experiential, integrative learning that develop 21st century employability skills grounded in rigorous academic and technical content. Linked learning weaves together the academic and technical rigor, real-world relevance, and strong relationships students need to succeed in high school and beyond.

Getting started

To learn more about linked learning and how it can benefit your school or district, I recommend a few specific actions:

• Read the California Department of Education's report, Multiple Pathways to Student Success (www.schoolsmovingup.net/mpstudy/downloads/Multiple_Pathways_Report_2010.pdf), which provides a broad overview of the linked learning approach, evidence supporting it, and plans to expand it in California.

• Join the Linked Learning Alliance (www.LinkedLearning.org) and attend its convenings to network with others who are implementing and supporting this approach.

• Visit the ConnectEd website (www.ConnectEdCalifornia.org) to access its Toolkit, with practical resources for learning about, developing and expanding pathways. In particular, read the guide to building linked learning pathways and the guide to building a district system of pathways. Watch video profiles of students in pathways and of teachers developing curriculum that integrates academic and technical content.

• Educate your school board about linked learning and discuss initial actions you can take to get started in developing and/or strengthening pathways in your district. ■

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