

Preparing 21st Century Citizens: The Role of Work-Based Learning in Linked Learning

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About This Brief

Schools engaged in Linked Learning offer work-based education programs that blend real-world problems with the skills and knowledge to succeed in college and the workforce. This brief describes how schools can create such opportunities for their students and how policymakers can support them. This brief is part of a series of briefs and case studies on Linked Learning. To see the full series, and to view this brief online, please visit <http://edpolicy.stanford.edu/node/661>

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Stanford University School of Education
Barnum Center, 505 Lasuen Mall
Stanford, CA 94305
scope@stanford.edu • 650.725.8600
edpolicy.stanford.edu
[@scope_stanford](https://twitter.com/scope_stanford)

By M. Felicity Rogers-Chapman and Linda Darling-Hammond

Without application, principles and ideals have no bearing and no test
—John Dewey

The idea of linking hands-on learning with academics is not a new one. John Dewey advocated education through experience at the turn of the last century. Unfortunately, relatively few schools offer this integrated approach, typically limiting instruction to textbooks and lectures. Yet, as we outline below, the evidence suggests that students who engage in experiences that connect school learning to the real world, are more likely to stay in school. Furthermore, such experiences increase the chances that students will be both college and career ready. Work-based learning programs are an integral part of Linked Learning and help foster the goal of providing students with the skills they need to succeed in college *and* career.

What Is Linked Learning?

Linked Learning is an innovative approach to high school reform that seeks to prepare students for both college and career by connecting learning in the classroom with real-world applications in the workplace.

Students enrolled in a Linked Learning pathway enter into a four-year program of study that integrates academic content with technical and 21st century skills within a career-based theme, such as engineering, law, or performing arts.

What Is Work-Based learning?

Work-based learning programs provide internships, mentoring, workplace simulations, and apprenticeships along with classroom-based study. In a work-based learning program, classroom instruction is linked to workplace skills through placements outside of the school that allow students to experience first-hand what adults do in jobs.

Benefits of Work-Based Learning

Work-based learning programs provide both social and academic benefits for students. In a seven-year study of one California work-based learning program, researchers found that minority students participating in work-based programs entered college at twice the rate of non-participating minority students and that college enrollment rates were higher for all students in the program when compared to local and state student populations (CART, 2011).

In addition to higher enrollment in college programs, work-based learning programs provide these benefits:

Connections between classroom and real-world learning: Work-based learning links what students learn in school to the skills and knowledge needed for real-world careers. Students apply their classroom knowledge to real-world problems, a key component of the newly adopted Common Core State Standards.

High student completion rates: Work-based programs are linked to career-themed pathways through community college and four-year programs. Many students drop out of high school and college programs in part because they are unable to see any connection between what they are learning and what they may one day be doing professionally. They ask, “Why do I have to learn this?” By linking student learning to career pathways, work-based learning programs can lower the dropout rate (NAF, 2011). Indeed, research has found that students in work-based learning programs complete related coursework at high rates and have higher attendance and graduation rates than those not enrolled in such programs (Colley & Jamison, 1998).

Student ownership: In work-based learning programs, students have the opportunity to explore potential career options. They can ask questions of professionals working in the industry and get an inside view of what different careers may look like. Work-based learning programs help students identify career interests and skills by providing connections to industry professionals and opportunities to see options first hand. Students can then select courses of study that are tied to their individual career goals.

Development of critical skills: Whether students choose a career right out of high school or after college, all future members of the workforce need to develop the so-called “soft skills,” such as creative problem solving, conflict resolution, communication, and teamwork. In addition to these skills, employers want to hire individuals who display positive social skills such as self-respect and reliability (Bremer & Madzar, 1995). Work-based learning programs provide the opportunity for students to develop the skills that will be highly valued in future careers.

Elements of a Quality Work-Based Learning Program

Community Partnerships

A high quality work-based learning program does not place college- and career-readiness into separate silos but instead connects rigorous academic classroom learning with vocational coursework that merges in-classroom experiences with industry-related opportunities. For example, in San Francisco, individual attorneys work with students to prepare for mock-trial through classroom activities (Alliance for Excellent Education, 2013). The attorneys also partner with teachers to help students prepare resumes, go through the interview process, and complete college applications. Mentors share their own college experiences and work with students to navigate the financial aid process.

To create these kinds of experiences, networking and collaboration opportunities are vital. Schools like Construction Tech Academy, on the Kearny High School campus in San Diego, Calif., have an advisory board of industry professionals that facilitate visits to construction sites, connect teachers with potential mentors and internship opportunities, fundraise for supplemental funds, and give valuable insight into grade-level projects. (See sidebar, below.) Teachers also benefit from professional development opportunities facilitated through advisory-board connections. These connections enable them to learn about industry programs and provide connections with industry professionals, enabling them to align curriculum to authentic real-world problems that occur within the industries their students are exploring.

Connecting curriculum to real-world experiences requires teachers to work with industry professionals and with each other. Joint planning time for teachers facilitates the development of integrated curriculum and authentic assessment tools. The school day is organized to provide time for teachers to develop curriculum that integrates subject-matter learning that extends to work-based learning experiences. For example, teachers might develop a course in social justice that includes a part-time internship working with an organization that serves the community.

Performance-Based Assessments

Learning and accountability employ performance-based or mastery learning assessments in which students can demonstrate deep knowledge and skills. These assessments occur frequently as an integral part of the work—not just as exit tools or a one-time, high-stakes test. Teachers work with industry professionals to set authentic work-based learning outcomes for students, deciding what they are and how they will be measured. Rubrics serve as a tool for authentic assessment of work-based learning. For example, at New Tech High School in Napa, Calif., Algebra 2 students apply their algebraic knowledge to compare the benefits and drawbacks of different types of hybrid cars. They then present their findings to a group of parents and teachers who evaluate students on each of eight student learning outcomes.

Spotlight: Work-Based Learning in Action Kearny Construction Tech Academy, San Diego, CA

Kearny Construction Tech Academy (CTA) exemplifies a successful work-based learning program. CTA provides three pathways that integrate architecture, engineering, and construction into all areas of the curriculum. Professionals from these fields collaborate with students and review their work, providing authentic assessment. The ongoing commitment at CTA to a strong work-based learning program has resulted in numerous positive student outcomes. For example, the graduation rate at CTA in 2011 was 92.4%, and 36% of those graduates had successfully completed the “a-g” requirements needed for admission into the University of California and California State University systems. A large majority of students, typically around 80%, are admitted to two- and four-year college, and the remainder are often placed in apprenticeship programs for skilled trades (San Diego Unified School District, 2013; School Redesign Network, 2007).

Successful strategies used at CTA include:

- Assigning student complex projects connected to real-world situations in the fields of engineering, architecture, and construction. For example, ninth grade students explore the inner workings of an amusement park through an onsite visit to nearby Legoland while it is closed and then design their own amusement park project. Students develop a site plan, generate scale drawings, and present their design to industry professionals.
- Connecting professional development with curriculum and industry. Teachers attend a two-week camp every summer to support use of integrated curriculum and authentic assessment tools. At this camp they develop projects that connect academic content to real world projects.
- Providing a college- and career-readiness focus in which students take a college-preparatory sequence and a full sequence of vocational coursework. The senior portfolio required of all students at CTA includes a resume, college application, and budget for college expenses.
- Designing schedules to accommodate real-world learning using block scheduling; opportunities for concurrent enrollment in college, university and trade programs for credit; and other flexible scheduling of traditional coursework. Block scheduling allows students to take eight courses instead of six over the course of a school year, providing them with time in 12th grade

Spotlight (continued)

to participate in internships where they can apply their skills to real-world problems and still complete coursework that will prepare them for college.

- Creating individual learning plans and instruction allowing students to move seamlessly between real-world work experiences and on-site instruction.
- Maintaining frequent communication between parents and teachers, including bi-monthly reports that track each student's progress.
- Building strong partnerships with post-secondary programs. For example, CTA students with qualifying GPAs are guaranteed admission to the San Diego State Construction Management program.

Source: Friedlaender, et al. (2007); EdDate (2012).

Developing high-quality work-based learning programs in schools requires:

- **Integrated, relevant curriculum:** Schools develop curriculum that integrates subject-matter learning and extends to work-based learning experiences. It is not enough to place students in internships or pair them with mentors. Successful work-based learning programs have a curriculum that includes goals for both students and employers and instruction from both academic and industry-related individuals.
- **Integrated career-related activities:** Such activities are integrated into all aspects of the curriculum. Work-based programs help students to be active learners and to develop career awareness, exploration, and preparation (NAF, 2012). Career awareness occurs by introducing students to a wide variety of fields and careers and the post-secondary education requirements associated with them. Career exploration activities provide students with experiences that help refine their areas of interest and explore them deeply. During career preparation, students have the opportunity to engage in in-depth experiences related to a specific career. These career activities are usually followed by one or more internships, typically occurring during 11th or 12th grade.
- **The use of authentic assessments:** These assessments serve to hold all involved accountable for the learning that occurs on and off the school site. Work-based learning programs employ performance-based or mastery learning assessments that allow students to demonstrate deep learning of skills and knowledge. These assessments occur not only as exit tools but also throughout the year. They present

multiple opportunities for students to demonstrate mastery and for teachers to identify and support struggling students rather than focusing solely on a one-time, high-stakes test. To implement these assessments, schools set explicit goals that are agreed to by teachers, students, and community partners. They determine in advance how they will measure student success and in what ways students will present or demonstrate the learning from the work-based experience. They create rubrics aligned to specific student outcomes that provide a tool for holding students, teachers, and employers accountable for learning and for guiding self-assessment and improvement for students.

- **Joint planning time for teachers:** This time facilitates the development of integrated curriculum and assessment tools as well as professional development opportunities for teachers to tour industry programs and develop aligned curriculum.
- **Flexible scheduling:** Many activities related to work-based learning programs don't fit neatly into a traditional school day. Successful work-based learning programs accommodate real-world learning by block scheduling, providing opportunities for concurrent enrollment in college, university, and trade programs for credit and other flexible scheduling of more traditional coursework.

The Big Picture: Policy Recommendations to Expand the Use of Work-Based Learning

Work-based learning is an effective educational strategy for preparing students for success in college and career in the 21st century economy. Policymakers can provide support for work-based learning by:

- **Advocating for policy at the state level** for legislation that supports the funding of work-based learning initiatives. For example, in California, AB790 (Furutani) funded the implementation of the Linked Learning pilot program—an education initiative that connects classroom instruction with work-based learning experiences;
- **Developing partnerships with the business community** that generate long-term commitments to bring students into the workplace for meaningful experiences;
- **Funding professional development** that allows teams of teachers and leaders to develop links between the work-based learning experiences and classroom instruction.

Work-based learning offers the opportunity for a successful transition from youth to adulthood. With strong stakeholder support, work-based learning programs have the potential to prepare all students to both be college and career ready.

Resources

California Linked Learning Initiative, District Leadership Series: SCOPE is working with district, school, industry, non-profit, and higher educational leaders in California to help build and advance the field of Linked Learning. One product of this work is a series of case studies and briefs, which can be accessed at: <http://edpolicy.stanford.edu/projects/193>.

For more specific information on the development of work-based learning programs, check out the work-based learning guide from the National Academy Foundation (http://naf.org/files/WorkBasedLearningGuide2012_sm.pdf) or the Linked Learning Programs (<http://linkedlearning.org/>).

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Starting a Work-Based Learning Program: Frequently Asked Questions

What kinds of work-based learning experiences do students have?

Schools vary in how they integrate work-based learning experiences. At Los Angeles Health Sciences Academy in Los Angeles, work-based learning experiences expand each year. In the freshman and sophomore years, undergraduate and graduate students majoring in health and medical fields mentor students through mini-research projects. In junior and senior years, students participate in job shadowing programs and internships. To qualify, students prepare in previous years through training within regular coursework. In 12th grade, qualified students participate in service internships in their field. The school employs a work-based learning coordinator who connects students and industry partners.

Who oversees work-based learning experiences?

Typically a teacher or coordinator supervises students' work experiences and connects work-based learning experiences to classroom learning. Teachers and/or coordinators who have time designated for this purpose work with industry partners to provide a connected experience for students. Districts can support these connections by providing time for teachers and coordinators to develop contacts with industry partners and supervise the students.

Where do the school staff find work-based learning sites for students?

Rob Atterbury, director for Professional Development and District Coordinator at ConnectEd, suggests that staff begin by connecting to a business community advisory board, such as a chamber of commerce or other business association. Other industry organizations that can be helpful include area chambers of commerce, workforce investment boards, economic development agencies, and trade and industry groups. For example, the Bar Association of San Francisco supports work-based learning programs through its Justice and Diversity Center.

How are industry partnerships set up?

In some districts and schools, a work-based learning coordinator sets up industry partnerships. Many schools with a specific industry theme create a partnership council of representatives from key councils, businesses, and guilds that works with the school over time. Several Linked Learning districts have employer outreach staff that will go out on behalf of the teachers and broker relationships with industry partners.

How do industry partners know the best ways to serve students?

It is up to the school staff to communicate the goals of the work-based learning program. A training agreement is set up between students, teachers, and employers.

How does work-based learning connect with the classroom?

At Life Academy in Oakland, students are required to participate in an internship during their senior year. An in-school seminar that accompanies the internship. Students design a research question to examine in relationship to their internship. At the end of the year, they present the findings. The defense is presented in front of students, teachers, and industry professionals who provide feedback. In an ideal world, work-based learning provides an opportunity for students to apply classroom learning to real-world problems.



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