

Taking Stock of the California Linked Learning District Initiative

Fifth-Year Evaluation Report
Executive Summary

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Introduction

Since 2006, The James Irvine Foundation has invested more than \$100 million in Linked Learning, a promising approach to transforming education in California.

In 2009, Irvine launched the California Linked Learning District Initiative to demonstrate this approach in nine districts. The multiyear evaluation for this large initiative has a two-fold purpose: to document the work, results and lessons from districts that are applying Linked Learning systemically; and to measure the effect of this comprehensive implementation on student outcomes.

About Linked Learning

Linked Learning integrates rigorous academics with real-world experiences. This approach aims to transform education into a personally relevant, wholly engaging experience — and open students to career and college opportunities they never imagined. Linked Learning builds on more than four decades of experience gained by California schools that combine academic and technical content to raise student achievement. It seeks to improve high school graduation rates and increase successful transitions to a full range of postsecondary education opportunities, particularly for low-income and disadvantaged youth.

Linked Learning is delivered through career pathways, comprehensive programs of study that connect learning in the classroom with real-world applications outside of school. Students select a pathway of their choice.

This approach is gaining momentum among K–12 and postsecondary educators, policymakers, and business leaders. In early 2013, 63 districts and county offices of education were selected to participate in the California Linked Learning Pilot Program, which serves as a test of how Linked Learning can be expanded across the state. In June 2014, 39 partnerships received a total of \$250 million through the California Career Pathways Trust, a competitive grant designed to develop work-based learning infrastructure, create regional partnerships, and improve and expand career pathway programs statewide. In 2015, a second round of grants will provide an additional \$250 million to district and community college partnerships across the state.

A meaningful difference

Compared with similar peers, students participating in certified Linked Learning pathways:

- Earn more credits in the first three years of high school
- Report greater confidence in their life and career skills
- Say they are experiencing more rigorous, integrated, and relevant instruction
- Are more likely to stay in their school district through high school

Core Components of the Approach

Linked Learning combines four elements designed to advance student success:



Rigorous academics. An academic core that includes college preparatory English, mathematics, science, history, and foreign language courses for all students.



Career-based learning in the classroom. A challenging career-based component of three or more courses to help students gain the knowledge and skills that can give them a head start on a successful career.



Work-based learning in real-world workplaces. A series of work-based learning opportunities that begin with mentoring and job shadowing and evolve into intensive internships, school-based enterprises, or virtual apprenticeships.



Integrated student supports. Services including counseling and supplemental instruction in reading, writing, and mathematics that help students master academic and technical learning.

About the District Initiative

Through the California Linked Learning District Initiative, Irvine is supporting nine districts in developing systems of career pathways that are available to all high school students.

Each of these districts focuses on developing pathways to college and career that meet criteria for quality certification. A total of 37 pathways are certified across the nine participating districts as of July 2014. Certification is provided through a set of Linked Learning partners led by ConnectEd: The California Center for College and Career.

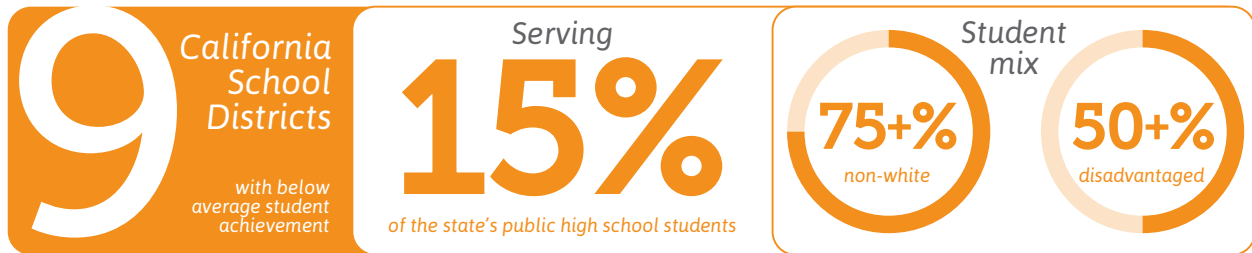
The District Initiative is a vehicle for enhancing the Linked Learning approach, determining what makes it successful at a systemic level, and demonstrating its viability as a comprehensive approach for high school reform. The lessons learned from these nine districts can inform other districts that are beginning to implement Linked Learning.

Participating School Districts

- Antioch Unified
- Long Beach Unified
- Los Angeles Unified
- Montebello Unified
- Oakland Unified
- Pasadena Unified
- Porterville Unified
- Sacramento City Unified
- West Contra Costa Unified

About the Districts

The nine districts participating in the California Linked Learning District Initiative vary in size, and include rural and urban geographies. High school enrollment in these districts ranges from more than 5,000 to nearly 200,000 students. Collectively, they serve approximately 286,000 of the roughly 2 million high school students enrolled in California public schools.



About this Evaluation

The California Linked Learning District Initiative has been evaluated in each year of its implementation by SRI International, an independent nonprofit research institute.

Previous evaluation reports have focused on the development of district systems and structures to support new and existing Linked Learning pathways. As we close out the fifth year of our evaluation, we turn our primary attention to the students who participate in these pathways. This report offers updated findings on student engagement and achievement outcomes from the nine districts participating in the initiative. Additionally, for the first time, our report takes an in-depth look at the issue of student equity and access to pathways through an analysis of student enrollment patterns across pathway career themes and of pathway retention among student subgroup populations. Finally, it assesses pathway students' experiences with academic and technical curriculum and work-based learning, their perceptions of the skills they are gaining as a result of their pathway experiences, and their plans for the future.

Lessons from the experiences of the nine initiative districts are highly instructive for those that are just beginning to engage with or scale up Linked Learning. As context for understanding students' experiences in pathways and their outcomes, the full report provides an update on efforts to develop and improve systems and structures to support Linked Learning and initial plans to use new funding sources and regional partnerships to sustain Linked Learning.

Read the [full report](#) based on fifth-year evaluation of the California Linked Learning District Initiative.

Student Equity and Access

A central goal of the initiative is to provide all students with equitable access and opportunities for full participation in a variety of high-quality career-themed pathways. Evidence of such choice and access includes the percentage of students participating in pathways, as well as the range of students served (in terms of prior achievement, socioeconomic status, gender, race/ethnicity, etc.), the absence of “tracking by pathway” (clustering students with low prior achievement in one set of pathways and students with high prior achievement in others), and retention in pathways, particularly for students with special learning needs, such as special education students and English learners.

In the nine districts, district- and site-level leaders have been working to increase the numbers and variety of open-access pathways available to students. Through efforts to communicate information about pathway options to students and their parents, as well as targeted recruitment and outreach, district leaders have made progress in opening access to pathways to all students, including English learners, special education students, and students with low prior academic achievement. However, some districts have had more success than others in making pathways accessible to all student subgroups. Our findings suggest that:

Through communication and outreach, district leaders have made progress in opening access to pathways to all students, including English learners, special education students, and students with low prior academic achievement.

- Patterns of student subgroup enrollment in certified pathways vary from district to district and by career theme. The only consistent patterns are disproportionately low female enrollment in certified pathways with an engineering career theme and disproportionately high female enrollment in certified pathways with a health sciences career theme.
- Within any given certified pathway, course-taking patterns can differ greatly from student to student. Through an in-depth analysis of course-taking in two pathways, we found that diminishing percentages of students enroll in the same core pathway classes in each successive year of the pathway. Students in the same pathway tend to take different math and science courses, especially in the upper grades.
- Nearly 80 percent of students who start out in a certified pathway in its lowest grade level were still in the same pathway by the time they reached 11th grade, but students with special learning needs have lower than average rates of retention in certified pathways.

Student Outcomes

For the third consecutive year, we examined indicators of pathway students' engagement in school, their progress toward high school graduation and college eligibility, and their gains in knowledge, statistically adjusting for their background characteristics and prior achievement.¹ These results are estimated across districts, rather than provided separately for each individual district, and compare outcomes for Linked Learning students to similar peers enrolled in traditional high school programs in each district.²

Our results reinforce the strongest and most consistent findings from our earlier reports: students in certified pathways are *more likely* than similar peers to remain in the district through the 12th grade and outperform their peers in credit accumulation in the 9th–11th grades.

Findings around completion of the suggested a–g college preparatory coursework by pathway students are also promising, though equivocal. Students in certified pathways are as likely as their peers to be on track to complete the a–g coursework even though these students also have the demands of completing a career technical course sequence in high school. Pathways students are more likely at the end of 10th grade to be on track to complete a–g coursework.

As in previous years, we did not find evidence that Linked Learning leads to higher scores on most standardized achievement tests. We did find, however, that student subgroups most frequently underserved by traditional schools—such as English learners, underachieving students, and African American and Latino students—who enrolled in certified pathways perform at least as well (if not better) on credit accumulation and test score outcomes compared with their peers in the same subgroup in traditional high school programs. Overall, the results from this year's analyses suggest that Linked Learning may be leading to greater student engagement and moderately greater success in school. We provide more detail on these student engagement and success outcomes on the following pages.

Students in certified pathways are more likely than similar peers to remain in the district through the 12th grade and outperform their peers in credit accumulation in the 9th–11th grades.

¹ Student outcomes findings are based on data available from eight of the nine districts involved in the initiative. One district did not have any certified pathways at the time of analysis.

² To examine student enrollment and retention patterns within pathways, as well as outcomes for students in certified pathways compared with similar peers in traditional high school programs, we used student-level demographic and achievement data from the districts. For the analysis of student outcomes, we assigned students their pathway status based on the academic program in which they enrolled in the 9th or 10th grade, whichever was the lowest grade level served by the pathway. This is in contrast to pathway outcomes reported from the student survey, which represent all 12th graders enrolled in certified pathways across the districts in spring 2014, regardless of the grade level in which the students first enrolled in the pathway.

Engagement in School

Because Linked Learning aims to make school more relevant for students, the core components of a pathway have the potential to increase students' engagement in school. We used two measures to assess student engagement: attendance and retention within the district (a proxy for dropout prevention). We found:

- In general, average attendance rates for pathway and non-pathway students were high. We did not find evidence that students enrolled in certified pathways had better attendance than similar peers in traditional high school programs.
- On average, students enrolled in certified pathways were 2.2 percentage points more likely to stay within their district from 9th to 10th grade, 4.6 percentage points more likely to stay through 11th grade, and 5.2 percentage points more likely to remain through 12th grade, compared with similar peers in traditional high school programs. These differences likely occur because students continue to attend school instead of dropping out before graduation.

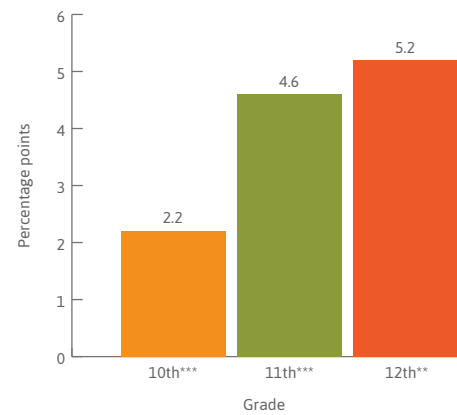
These findings indicate that students in certified pathways may be more engaged than similar peers such that they are motivated to remain in school.

Success in School

Even students who regularly attend school cannot progress toward college or career without successfully completing the necessary coursework. We examined students' progress toward high school graduation, as measured by credits accumulated and course failures. We also assessed students' progress toward college eligibility, as measured by completion of the coursework necessary to enter the California State University system. For the first time, we examined Algebra II completion by the end of the 11th grade; research suggests that students who take advanced mathematics courses during high school have better odds of attaining a bachelor's degree.³ We found that students in certified pathways are accumulating more credits in the 9th–11th grades than similar peers:

- On average, 9th-grade pathway students earned 7.3 more credits than similar peers in traditional high school programs, while 10th-grade pathway students earned 6.9 more credits and 11th-grade pathway students earned 3.3 more credits.

Pathway Students More Likely to Remain in the Same District

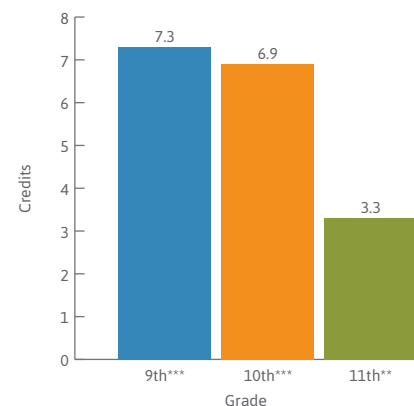


Source: District-provided student data.

**Statistically significant at $p < .01$.

***Statistically significant at $p < .001$.

Pathway Students Earned More Credits



Source: District-provided student data.

**Statistically significant at $p < .01$.

***Statistically significant at $p < .001$.

These differences are meaningful because the average student in each district accumulated about 55 credits (roughly 25% of the credits needed to graduate) in each of these grades. Extra credits in these early grades may provide pathway students with a buffer against later failures. The pathway and non-pathway student groups did not differ on course failures.

In prior evaluation reports, we found that students in the majority of initiative districts were more likely than similar peers to be on track to complete the suggested a–g college preparatory coursework at the end of the 9th and 10th grades. In estimating a single, cross-district effect of Linked Learning this year, we found this result in the 10th grade only. Although the results point in the right direction in grades 9 and 11, the differences are not statistically significant in these grades.⁴ More specifically, we found:

- On average, students in certified pathways were 7.9 percentage points more likely to be on track to complete the suggested a–g requirements at the end of 10th grade than similar peers in traditional high school programs.

The weaker findings for the 9th and 11th grades may be due in part to our use of an a–g on-track indicator rather than number of a–g credits earned. The on-track indicator does not capture incremental differences

in the number of a–g courses taken unless these differences move students from not being on track to complete a–g to being on track. In future years, we will look at the cumulative a–g credits earned by pathway students and similar peers by the end of 12th grade to assess whether pathways students complete more college preparatory requirements throughout high school.

In addition to analyzing course credits, course failures, and progress toward a–g completion, we examined, for the first time, whether pathway students were more likely to complete Algebra II by the end of 11th grade. This would allow them to take more advanced mathematics while still in high school, a critical determinant of postsecondary preparation and success. However, we found no statistically significant difference between pathway students and similar peers in traditional high school programs in their likelihood of taking Algebra II by the end of 11th grade.

Collectively, our analyses find limited but promising evidence that pathway students are more successful in high school than their peers: pathway students earn a full semester-long course's worth of credits or more above what their peers earn in grades 9 and 10, and pathway students were more likely than similar peers to be on track to complete the a–g coursework at the end of their 10th grade year.

Students in certified pathways are

+7.9 percentage points

more likely to be on track to complete the suggested a–g requirements at the end of 10th grade.

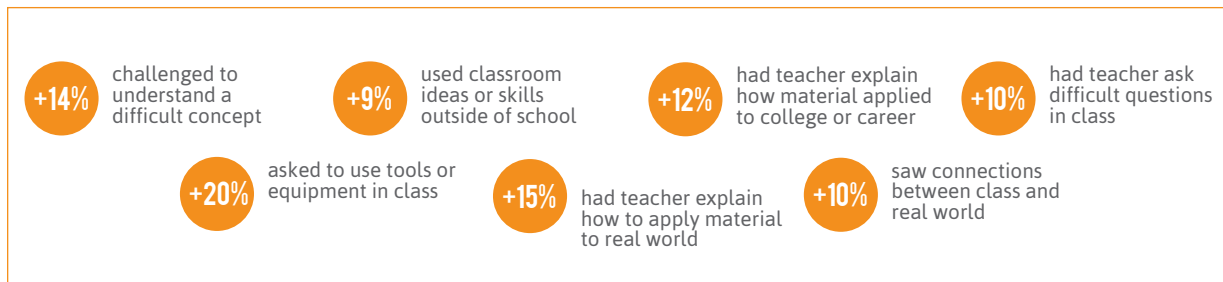


⁴ The results for a–g completion in the 9th and 11th grades have p-values of $p > .05$ and $p < .1$. We consider a p value of $< .05$ to be statistically significant.

Students' Experiences in Pathways

During the 2013–14 school year, districts' work around curriculum and instruction focused largely on implementing the Common Core State Standards; some districts were more successful than others in their efforts to align Linked Learning with the roll-out of these new standards. According to our survey of 12th grade students, early efforts to improve curriculum and instruction in pathways appear to be paying off, as a greater share of pathway students than comparison students reported experiencing rigorous, integrated, and relevant instruction in the following ways:

- **Challenging:** At least one teacher challenged them to understand a difficult topic (75% versus 61%), asked difficult questions in class (79% versus 69%), and asked difficult questions on tests (83% versus 74%) about once a month or more.
- **Applied:** A teacher discussed how to apply what they were learning in class to the real world (66% versus 51%), explained how what they learned in class could be applied to what they might do after finishing high school (70% versus 58%), and asked them to use tools or equipment (69% versus 49%) about once a month or more.
- **Connected:** Used ideas or skills learned in class outside of school (68% versus 59%) and saw connections between what they learn in class and the real world (70% versus 60%) about once a month or more.



In addition to offering a challenging academic program integrated with a demanding technical sequence of courses, Linked Learning pathways should provide all students with access to a continuum of high-quality work-based learning opportunities that help them connect classroom learning to the skills and knowledge needed in a particular industry sector. This integration of the academic and technical curricula with work-based learning makes the Linked Learning experience unique. All districts are making progress on expanding the number and variety of work-based learning opportunities at the career exploration level (job shadows and mentoring), but student access to work-based learning experiences at the career preparation (internships and practicum) and training (work experience and certification) levels remains limited.

Further, in all but a few pathways, leaders and teachers still have work to do to integrate work-based learning with classroom learning and pathway outcomes. On our survey of 12th grade students, we found:

- The vast majority of pathway students across all districts (ranging from 80% in Antioch to 93% in Oakland) reported participating in at least one work-based learning experience during the 2013–14 school year, with 87% of pathway students participating overall.
- Across the range of experiences, pathway students most frequently reported engaging in activities on the earlier end of the work-based learning continuum (career awareness and career exploration). Only 34% of pathway students reported participating in an internship during the 2013–14 school year.
- When asked to report how often students tie their work-based learning experiences back to the schoolwork, only 28% of pathway students reported doing so “most of the time” or “always.”

Early efforts to improve curriculum and instruction in pathways appear to be paying off, as a higher percentage of certified pathway students report that they experience rigorous, integrated, and relevant instruction.

One institutional barrier to developing more robust work-based learning systems is district staff capacity to generate and communicate opportunities for internships to students. Student-level barriers to participation in career preparation and training opportunities include competing demands on students’ time, limited transportation options, the need or desire to earn money (very few internships are paid), the need for credit recovery, and students’ lack of interest in the internship opportunities offered.

Students' Perceptions of Skills Gained

Today's students need 21st-century skills to succeed in any postsecondary endeavor. The *Linked Learning College and Career Readiness Framework* (ConnectEd, 2012) defines these skills as “the range of cross-cutting cognitive processes and applications of knowledge needed to succeed in postsecondary education and future careers.” We asked 12th-graders to report on the extent to which they felt high school had helped them improve a range of skills and behaviors. In our student survey, pathway students were more likely than comparison students to report that high school has helped them develop the following skills:

- **Collaboration:** Develop the skills necessary to interact effectively with people from different backgrounds (59% versus 49%), with adults outside of their family (40% versus 29%), and in professional settings (54% versus 33%), as well as to collaborate in a group in order to achieve a shared goal (56% versus 36%).
- **Communication:** Improve their ability to present information to an audience, whether by making a public presentation or performing in front of a group (52% versus 30%), or by speaking in public (43% versus 27%).
- **Judgment:** Develop their ability to use information to make good decisions (55% versus 38%), conduct online searches to answer a question (52% versus 36%), summarize information from multiple sources (45% versus 32%), and judge whether they can trust the results of an online search (42% versus 25%).
- **Perseverance:** Improve their ability to accept responsibility for the quality of their work (63% versus 51%), to believe they can reach their goals through hard work (55% versus 45%), and to believe they can learn something really difficult if they try (44% versus 28%).
- **Organization:** Develop useful self-management skills such as setting goals for doing well in their classes (35% versus 27%), develop a system for organizing schoolwork (31% versus 25%), and manage their time in order to get all of their work done (25% versus 21%).



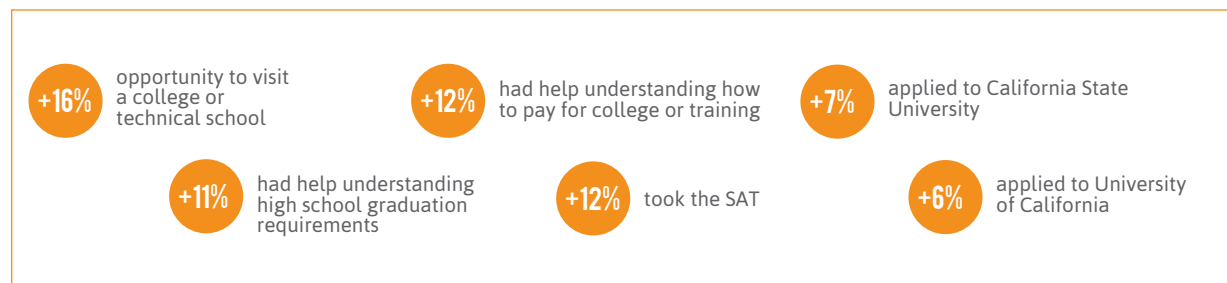
Students' Postsecondary Plans and Supports

Pathway students are developing productive dispositions and behaviors necessary for success in school and postsecondary endeavors. Ultimately, Linked Learning should foster students' awareness of and readiness for college and career, and support their successful transitions to future undertakings. Our findings suggest that pathway participation has helped students identify career interests and enhanced their understanding of the education and training necessary to prepare for postsecondary opportunities. Greater percentages of 12th-grade pathway students than of comparison students reported on our survey that they received:

- Opportunities to visit a college or technical school campus (75% versus 59%) and to speak with a college or trade school representative (74% versus 65%).
- A lot of help to understand high school graduation requirements (79% versus 68%), what they wanted to do after they graduate (47% versus 35%), the high school courses needed to get into college (64% versus 51%), how to choose a two- or four-year college (55% versus 44%), how to pay for college or training (49% versus 37%), what kind of education or training is needed to prepare for a possible career (44% versus 32%), and how to choose a career training or trade school (31% versus 23%).

Pathway students were somewhat more likely than comparison students to report that they plan to continue their education full time after graduation. They were also more likely to report taking steps to attend a four-year college after high school.

Pathway students were somewhat more likely than comparison students to report that they plan to continue their education full time (74% versus 68%) and work part time (66% versus 63%) after they graduate. Although the magnitude of these differences is small, the differences are statistically significant and unlikely due to chance. Similarly, pathway students were more likely than comparison students to report taking college entrance tests and submitting college applications, including taking the SAT (74% versus 62%) and PSAT (74% versus 66%), and submitting an application to a California State University campus (86% versus 79%) or a University of California campus (60% versus 54%).



Looking Ahead

Three years of student outcomes analysis points to the promise of the Linked Learning approach. This year's results reinforce previous findings that Linked Learning participation is related to student engagement and success in school. Students in certified pathways are more likely than similar peers to stay in their district, and they accumulate more credits, putting them on track to graduate from high school. They also are just as likely as their peers to be on track to complete a–g requirements at the end of 9th and 11th grades, and even more likely at the end of 10th grade.

Yet there is still work to be done. Even when students are more engaged in school and complete more course credits, these positive outcomes do not consistently translate into improved achievement outcomes, as measured by standardized test scores. As districts continue to develop and expand pathways, Linked Learning practitioners must be vigilant about improving the quality of instruction and providing all pathway students the supports necessary to ensure they succeed in their classes. Implementation of the Common Core provides a real opportunity for changes in classroom practice that may lead to improved student achievement results.

As we look ahead to the future of Linked Learning in California and in other states across the country, pathway expansion plans have raised some concerns among Linked Learning administrators and our research team regarding fidelity to the Linked Learning approach—that is, the extent to which a district can adapt the pathway approach before it is no longer appropriate to call the pathway a “Linked Learning pathway.” Within the nine districts, there is already a range of such approaches—from districts with academies that do not meet Linked Learning pathway criteria to districts that adhere closely to ConnectEd’s definition of a high-quality Linked Learning pathway, supported and sustained through strong centralized control of implementation by the district Linked Learning office.

This year’s results reinforce previous findings that Linked Learning participation is related to student engagement and success in school. However, real work remains as a whole new crop of Linked Learning districts emerges.

Beyond the districts in the initiative, a whole new crop of Linked Learning districts, through the California Linked Learning Pilot Program and the California Career Pathways Trust, will not receive the intense technical assistance or encouragement that the original districts received to adhere to the Linked Learning approach. If new Linked Learning pathways developed under these efforts fail to deliver, there is a danger that Linked Learning’s positive image could be damaged and, as one district administrator shared, “the whole brand will suffer.”

Additionally, the rapid growth of Linked Learning districts could test the scalability of the Linked Learning approach without extensive external supports. An essential element in district implementation of Linked Learning has been knowledge, expertise, prior experience, and other support from external partners. In particular, district leaders have found district-level coaching to be critical in supporting their ability to navigate initial planning and systems-building activities (e.g., support for district staff to understand and spread foundational knowledge of Linked Learning, getting key leaders on board, helping shift educators’ and other stakeholders’

mindsets to align priorities and supports with Linked Learning). New districts will have a much more limited support system, which could impact their approach to implementing Linked Learning pathways, specifically their focus on systems building.

Moving forward, Linked Learning funders, technical assistance providers, and the broader field will need to continue discussing this critical question of fidelity to the Linked Learning approach in terms of the essential elements of pathways and a district's system of support for Linked Learning implementation.

The evaluation of the initiative will continue for two more years. During this time, we will report on the progress of the nine districts as they transition to additional funding sources beyond The James Irvine Foundation and ConnectEd to support and sustain Linked Learning implementation (districts will receive one final round of grant funding from the Foundation through ConnectEd for the 2014–15 school year).

We will look into districts' plans for sustaining and scaling Linked Learning, including the use of funds from the Local Control Funding Formula, the California Career Pathways Trust, and other resources to support Linked Learning. We will also examine the role of new regional partnerships in expanding work-based learning opportunities. Most importantly, during the next two years of the evaluation, we will provide new data on how well Linked Learning graduates fare compared with similar peers as they transition to postsecondary endeavors.

Linked Learning funders, technical assistance providers, and the broader field will need to continue discussing the critical question of fidelity to the Linked Learning approach.



This study was commissioned by The James Irvine Foundation.

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