

Linked Learning and Postsecondary Transitions

*A Report on the Early Postsecondary Education
Outcomes of Linked Learning Students*

SRI Education™

Introduction

Linked Learning strives to transform high schools through career-themed pathways that integrate college preparatory academics, rigorous technical training, work-based learning, and supports to help students stay on track. Rejecting the outmoded and usually inequitable separation of students into vocational and academic tracks, the approach is designed to prepare all students for college, career, and life. This research brief presents findings on Linked Learning’s impact on students’ early postsecondary educational outcomes from SRI’s evaluation of the California Linked Learning District Initiative. With funding from The James Irvine Foundation, SRI conducted a rigorous, multimethod evaluation of the initiative in nine school districts over the course of 8 years.

In this brief, we provide estimates of the effect of Linked Learning participation on students’ likelihood of enrolling in college and persisting into a second year, with particular attention to outcomes for specific student groups: students with low prior academic achievement; those with high prior achievement; English learners; and African-American, Latino, and female students. Because the Linked Learning approach is designed to combine rigorous academics with a career technical education sequence, these outcomes are crucial to gauging Linked Learning’s efficacy in preparing students for college as well as career. For this analysis, we rely on data from the National Student Clearinghouse, which captures enrollment in approximately 97% of all 2-year and 4-year postsecondary institutions (National Student Clearinghouse, 2017).

ABOUT LINKED LEARNING

Linked Learning pathways are organized around industry sector themes and can take the form of stand-alone small schools or academies within larger comprehensive high schools. Ideally, pathway cohorts of students in every grade have their own course section for each of their classes—math, English, social studies, and a career technical education course—so that teachers can implement integrated cross-discipline projects.

Linked Learning pathways integrate four core components: **rigorous academics** that prepare students to succeed in college; **career technical education** courses in sequence, emphasizing real-world applications of academic learning; **work-based learning** that provides exposure to real-world workplaces and teaches the professional skills needed to thrive in a career; and **comprehensive support services** to address the individual needs of all students, ensuring equity of access, opportunity, and success.

Linked Learning pathways can become certified by undergoing an external review process based on established pathway quality standards. Certification indicates that a pathway has attained a certain level of fidelity to the four core Linked Learning components.¹

THE LINKED LEARNING DISTRICT INITIATIVE

In 2009, recognizing the challenges for individual schools or pathways trying to redesign the high school experience, The James Irvine Foundation launched the California Linked Learning District Initiative. This demonstration project, implemented in nine California districts, focused on the establishment of district systems to support and sustain multiple Linked Learning pathways. The initiative was a vehicle for enhancing Linked Learning, determining what makes it successful at a systemic level, and demonstrating its viability as a comprehensive approach for high school reform.

The nine districts participating in the Linked Learning District Initiative varied in size, from slightly over 5,000 high school students to over 185,000 high school students, and represented a variety of geographic regions across California. All had a high proportion of disadvantaged students and below-average student achievement. More than three-quarters of the high school students in each district were nonwhite, and more than half were socioeconomically disadvantaged.

PARTICIPATING DISTRICTS

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

Evaluation of the California Linked Learning District Initiative

SRI’s evaluation documented the development of district systems to support Linked Learning through interviews conducted with district administrators, partners, stakeholders, pathway teachers, and students. An earlier brief, [What It Takes to Create Linked Learning](#), draws on these interviews to distill a set of key strategies that promote successful implementation of Linked Learning by both school districts and individual pathways.

The evaluation also examined Linked Learning’s impact on students by comparing end-of-high-school and early postsecondary outcomes of pathway students with those of similar peers in traditional high schools. A central goal of the initiative was to increase student engagement; develop the knowledge, skills, and dispositions that would allow students to succeed in school and work; and ultimately improve high school academic outcomes, graduation rates, and successful transitions to a full range of postsecondary education opportunities, particularly for low-income and disadvantaged youth. To examine these outcomes, we administered surveys to students both in high school and 1 year after graduation, and collected administrative data on students’ high school academic outcomes and postsecondary enrollment and persistence.

The evaluation’s [comprehensive seventh-year report](#) summarized end-of-high-school outcomes and previewed initial postsecondary outcomes for certified pathway students (Warner et al., 2016). Our evaluation found that certified pathway students reported greater confidence in their career and life skills than similar peers. Further, we found that Linked Learning had a strong impact on credit accumulation and graduation. Compared with similar students in traditional high school programs, we found that students in certified pathways:

- Were 3.1 percentage points more likely to earn a high school diploma
- Earned 8.9 more credits—equivalent to nearly two more courses over the 4 years of high school

Notably, we found that the Linked Learning approach had a particularly strong, positive impact on the students who entered high school with poor academic skills. Pathway students who entered high school with low levels of academic preparation were 7.6 percentage points more likely to graduate to graduate and completed 15.4 more credits than similar peers in traditional high school programs.



Postsecondary Outcomes

Linked Learning seeks to make school more engaging and relevant by infusing an industry theme throughout students’ core academic courses and by including a career technical education course sequence as well as a college preparatory curriculum as part of students’ core program of study. Despite this explicit college preparatory focus, some districts implementing Linked Learning have faced skepticism from parents and students (particularly higher-achieving students) who are concerned that pathways are not a true college preparatory option (Warner et al., 2015). This skepticism traces its roots to the emergence of the vocational education movement in the early 1900s, which was accompanied by concerns about the creation of a second-tier educational track designed to prepare students for low-paying jobs (Lazerson & Grubb, 1974). Although vocational education has since evolved into career technical education, explicitly including preparation for careers that require a postsecondary degree, some career pathways are still plagued by the stigma of vocational education. This stigma underscores the need to examine college outcomes for Linked Learning students, including students with high prior achievement. In response, we examine the following two research questions:

1. What is the impact of certified Linked Learning pathway participation on students’ postsecondary education enrollment and persistence?
2. What is the impact of certified Linked Learning pathway participation on postsecondary education enrollment and persistence for students with low prior achievement; those with high prior achievement; English learners; and African-American, Latino, and female students?

This brief presents estimates of Linked Learning’s impact on early postsecondary outcomes—college enrollment and persistence—for students expected to graduate high school in 2013, 2014, and 2015.²

Students in the class of 2015 who enrolled in college the fall immediately following high school completion could enter their second year of college in fall 2016, the most recent term for which we have complete data. Thus, we were able to examine indicators of students’ initial college enrollment, both overall and by 2- or 4-year institution type, and their persistence into the spring term as well as the following fall.

We estimated the impact of Linked Learning on students’ postsecondary educational outcomes by comparing college enrollment and persistence rates for students who enrolled in certified Linked Learning pathways in high school (representing the eight participating districts with certified pathways) with similar students in traditional high school programs.³

We used multilevel modeling to compare pathway students’ outcomes with those of students in traditional high schools who had similar demographic characteristics and prior achievement within the same district. To examine Linked Learning’s impact for students in six subgroups—students with low prior achievement; those with high prior achievement; English learners; and African-American, Latino, and female students—we compared academic outcomes for Linked Learning students in each subgroup with those of similar peers from the same subgroup who attended traditional high school programs.

POSTSECONDARY OUTCOME MEASURES

Outcome	Description
Direct College Enrollment	Enrollment in any 2- or 4-year postsecondary institution the fall term following a student’s anticipated high school completion date
4-Year College Enrollment	Enrollment at a 4-year postsecondary institution the fall term following a student’s anticipated high school completion date, conditional on any college enrollment
1-Year Persistence	Continuous enrollment or degree attainment at any postsecondary institution through the spring term following a direct college enrollment
Persistence to Second Year	Continuous enrollment (excluding summer term) or degree attainment at any postsecondary institution through the fall following a direct college enrollment
<p><i>Note: In addition to direct college enrollment, we examined college enrollment any time in the first year following expected high school completion and found comparable outcomes.</i></p>	

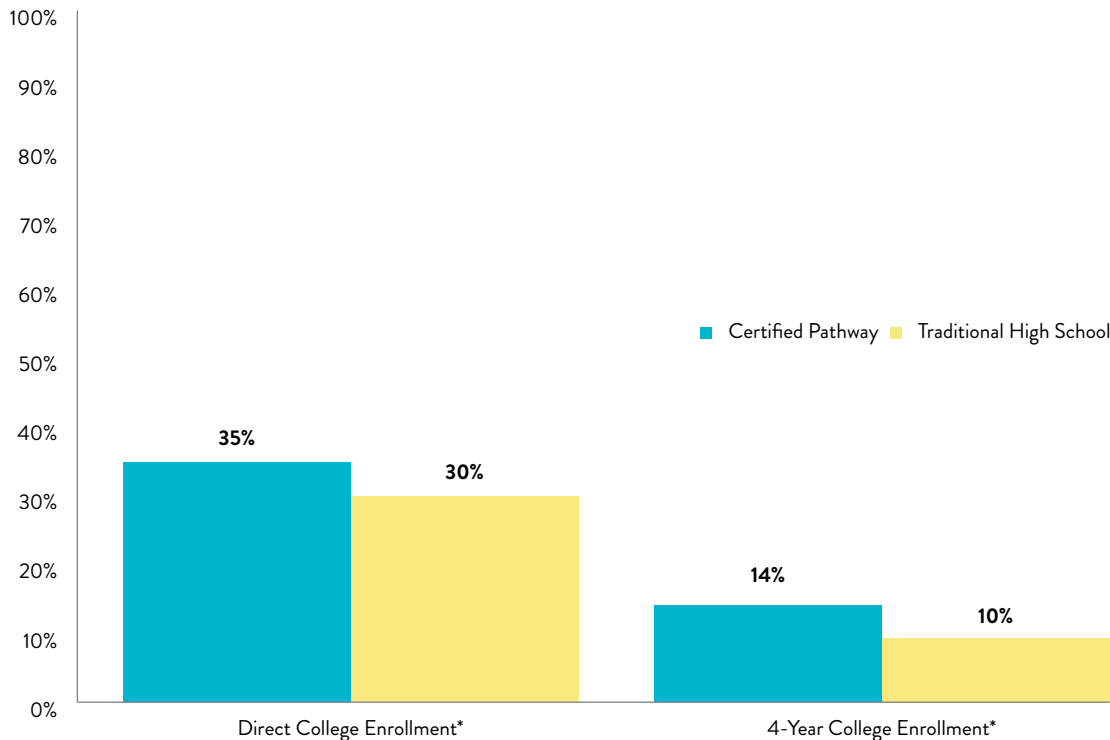
Postsecondary Findings

We found that Linked Learning students enrolled in college, remained through the first year, and persisted into a second year at similar rates as their traditional high school peers, both overall and for most of the subgroups examined. Further, Linked Learning had a positive effect on college enrollment for students who entered high school with low academic achievement, and a positive effect on 4-year college enrollment for African-American students. We found no negative effects of Linked Learning on postsecondary enrollment or persistence for any subgroup. Together, these findings suggest that Linked Learning pathways do not constitute a lower-caliber career-only educational track—they are just as successful in preparing students for college as traditional high school programs and may be more effective for African-American students and students with low prior achievement.

STUDENTS WITH LOW PRIOR ACHIEVEMENT

Linked Learning students who entered high school with low levels of academic preparation were 5.7 percentage points more likely to enroll in college directly after high school than similar peers who participated in traditional high school programs. This increase in college enrollment appears to be driven by enrollment in 4-year institutions. Among students with low prior achievement who enrolled in college, Linked Learning students were 4.1 percentage points more likely to enroll in a 4-year as opposed to a 2-year college. Linked Learning’s positive impact on postsecondary education outcomes for students who entered high school with poor academic skills is consistent with the thesis that pathways’ prescribed course of study may be particularly beneficial for disadvantaged students who otherwise might find themselves tracked into lower-level classes, and who may find the real-world relevance and smaller community provided by a certified pathway key to thriving in school.

COLLEGE ENROLLMENT RESULTS FOR STUDENTS WITH LOW PRIOR ACHIEVEMENT



*Statistically significant at the $p < .05$ level.

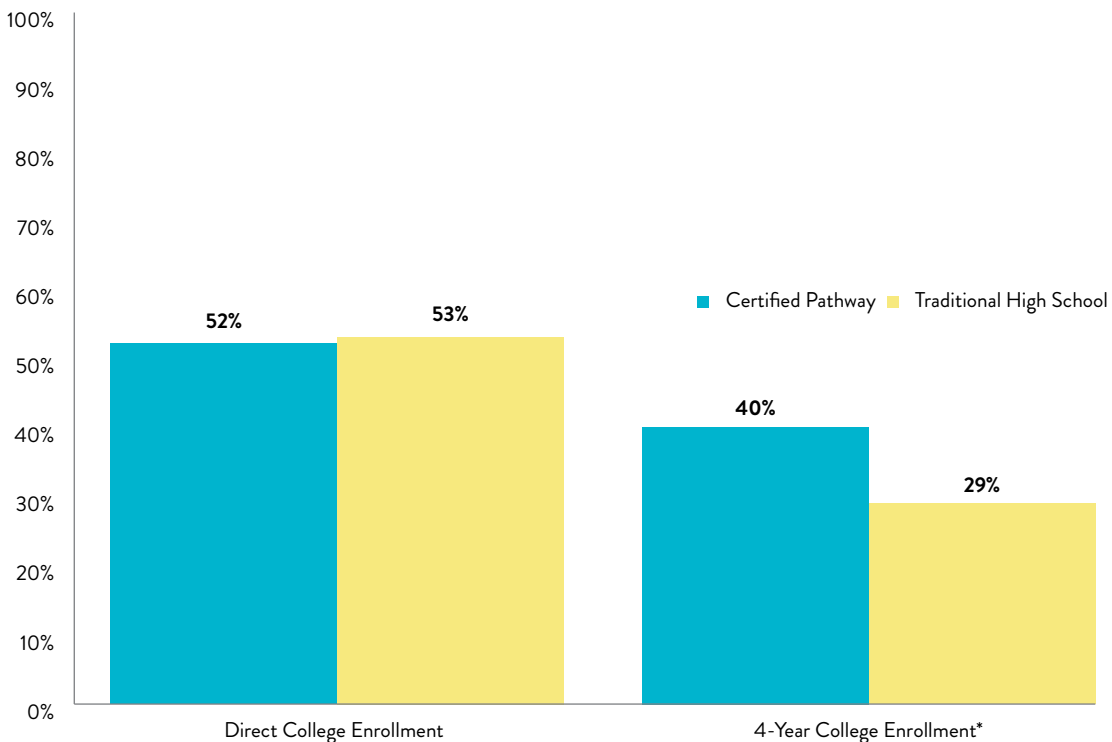
AFRICAN-AMERICAN STUDENTS

African-American Linked Learning students were equally likely to enroll in college as their traditional high school peers, but Linked Learning was more effective at supporting African-American students in realizing 4-year college aspirations: they were 11.6 percentage points more likely to enroll in a 4-year as opposed to a 2-year institution. Together with the findings for students with low prior achievement, these findings suggest that certified pathways may be particularly effective for traditionally underserved subgroups who, in a traditional high school program, would still have graduated and enrolled in a postsecondary institution, but who may not have had the knowledge or guidance needed to enroll in a 4-year college.

Evidence from the full evaluation supports the hypothesis that African-American students and those with low prior achievement—groups that are traditionally underrepresented in higher education—may have enrolled in 4-year colleges more frequently than their peers in traditional high schools because of the additional support offered by pathways’ small learning communities. In surveys, 12th-grade students in certified pathways reported receiving more guidance from school staff to understand issues that commonly inhibit 4-year college enrollment, such as how to choose a 2- or 4-year college, how to pay for college, and which high school courses are needed to get into college (Guha et al., 2014). Given the greater complexities and challenges of enrolling in a 4-year college as opposed to a 2-year college, the additional supports from teachers, guidance counselors, and pathway staff may be particularly beneficial to students who otherwise may opt for a 2-year institution.

These promising early postsecondary findings demonstrate that certified Linked Learning pathways support students to enroll in college as well as traditional high schools do. They also suggest that these pathways are more effective than traditional high school programs for students who enter high school academically poorly prepared and for African-American students. Further, we found no evidence that pathways achieve these gains at the expense of students with high prior achievement. We will not know for several more years whether these increases in enrollment translate into increased degree attainment.

COLLEGE ENROLLMENT RESULTS FOR AFRICAN-AMERICAN STUDENTS



*Statistically significant at the $p < .05$ level.

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Endnotes

- ¹ During implementation of the Linked Learning District Initiative, two organizations were certifying Linked Learning pathways—ConnectEd: The California Center for College and Career and NAF (formerly the National Academy Foundation).
- ² The evaluation followed three cohorts of students: the class of 2013 in four districts and the classes of 2014 and 2015 in all nine districts. The seventh-year evaluation report previewed early postsecondary outcomes; however, the results presented here are more complete for two reasons: (1) The seventh-year report estimated persistence based on students in the 2013 and 2014 cohorts only. With another year of data, this brief estimates persistence for all three evaluation cohorts. (2) This year we were able to obtain postsecondary enrollment and persistence data for the full sample of pathway and nonpathway students in the evaluation cohorts, not only the subset of these students who graduated from the initiative districts. This intent-to-treat approach is less vulnerable to potential bias from differential attrition than other approaches, allowing for a more rigorous causal inference of the impact of Linked Learning on student outcomes. For more information on the methodology used, see [Linked Learning and Postsecondary Transitions: Technical Report on the Early Postsecondary Education Outcomes of Linked Learning Students](#) (Caspary & Warner, 2017).
- ³ Montebello Unified School District did not have any certified Linked Learning pathways.

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