The responsibility to deliver college- and career-readiness education programs and services has evolved to include an array of organizational partnerships and alliances. Some act as intermediaries or hubs, aiming to coordinate communications, policy, and curriculum with state and local districts. Others seek to operate whole-school models within a school district. Linked Learning and NAF (formerly National Academy Foundation) are two such examples. Although each is unique, both exist with the explicit purpose of building long-term workforce opportunities by connecting education and industry.

**Linked Learning**

Linked Learning began as an initiative of the James Irvine Foundation “that integrates college-preparatory academics, rigorous technical training, work-based learning, and supports to help students stay on track.” Linked Learning pathways are organized around these four core components:

1. Rigorous academics that prepare students to succeed in college
2. Career and technical education courses in sequence, emphasizing real-world applications of academic learning
3. Work-based learning that provides exposure to real-world workplaces and teaches professional skills needed to thrive in a career
4. Comprehensive support services to address individual needs of all students, ensuring equity of access, opportunity, and success

Linked Learning pathways are designed around industry-sector themes such as engineering, health care, performing arts, and law and can take place in small, stand-alone schools or pathways within larger, more comprehensive high schools. Industry themes are intertwined to encourage collaboration between academic and career and technical education teachers to design interdisciplinary projects. Programming is delivered through a variety of models, including the California Partnership Academies, Career Academies, NAF academies (see next page), charter schools, and small-themed schools.

The Linked Learning initiative began in 2009 with a cohort of nine California school districts, known as the California Linked Learning District Initiative. Since then, Linked Learning has become available in more than 100 California school districts. To facilitate and coordinate implementation and expansion, the Linked Learning Alliance was formed; it consists of education, industry, and community organizations who partner with district, postsecondary, industry, and community partners to develop a range of communications, policy, curriculum, and technology resources to support Linked Learning pathways.

To date, Linked Learning has been subject to one robust quasi-experimental research evaluation. A longitudinal analysis of Linked Learning conducted by the Center for Education Policy at SRI International finds positive outcomes associated with district participation in Linked Learning. The evaluation consists of two parts: (1) a qualitative analysis of interviews, document and news reviews, and site visits to measure student perceptions, and (2) a quantitative analysis of secondary and postsecondary educational outcomes. The 25,892 students from the original Linked Learning District Initiative were compared to a non-random, traditional school control group of 21,646 students, matched for observable characteristics, during a seven-year period. The study’s key findings include the following:

- On average, Linked Learning–certified pathway students were less likely to drop out of school and more likely to graduate than their peers in traditional high schools.
- Compared to peers, Linked Learning students were more likely to report a counselor or other adult encouraging them to pursue postsecondary education opportunities.
- Linked Learning students reported higher job quality (i.e., employment with paid vacation and sick time and health insurance) than their traditional high school peers.
- Among African Americans who enrolled in a postsecondary institution, students who completed a certified Linked Learning pathway were more likely to enroll in a four-year college than their peers. This finding was statistically significant.
English language learners in certified Linked Learning pathways earned 11.7 more credits—equivalent to more than two courses—and one more college-prep requirement than their peers in traditional high school programs.

On average, students who entered certified Linked Learning pathways with low prior achievement were more likely to graduate from high school and enroll in a four-year institution than their peers in traditional high school programs.

NAF (formerly National Academy Foundation)

Similar to the Linked Learning Alliance, NAF is a national network of education, business, and community leaders working to bridge the growing “skills gap” between young adults and higher-skilled (and higher-wage) employment. NAF aims to achieve this through implementation of NAF academies, which are small learning communities within traditional high schools, closely resembling the Career Academies model. Each NAF academy features one of five “emerging” career clusters: finance, hospitality and tourism, information technology, engineering, and health sciences. NAF curricula is created in partnership with industry professionals and designed to help students acquire valuable workplace skills. Each career-themed curriculum meets industry-validated standards to ensure students are learning relevant skills. In addition, students are required to participate in internships as part of the work-based learning curriculum component. Since its inception in 1982, NAF has grown from one academy of finance in New York City to 675 academies in thirty-six states, as of School Year (SY) 2016–17.

Recently, NAF introduced “NAFTrack Certification,” which uses a multi-method approach to assess the college and career readiness of participating NAF students. Student performance is measured in three areas: career-related course work, performance on a qualifying internship, and high school graduation. Students who successfully complete NAFTrack Certification are prioritized in the hiring process among several major corporations.

NAF academies have been the subject of a recent robust evaluation, a quasi-experimental longitudinal analysis of student outcomes for NAF students across ten districts. Researchers at ICF International collected student and academy-level data for a four-year cohort, starting in SY 2011–12. Researchers used propensity scoring methods to match the group with similar students who did not participate in NAF academies. Researchers then compared the outcomes of the 7,367 students who participated in NAF academies to the outcomes of 14,679 students in the control group to determine the effectiveness of NAF on high school graduation rates. Highlights from the study reveal the following:

- Students in the NAF cohort were 2.9 percentage points more likely to graduate on time than non-NAF students.
- On-time high school graduation rates also were strong for NAF Latino students (4.2 percentage points higher) and NAF students who received free or reduced-price lunch (4.6 percentage points higher). On-time graduation rates among African American NAF students were 1.7 percentage points higher.
- NAF students at risk of not graduating at the end of grade 9, a critical marker for successful high school outcomes, were 4.7 percentage points more likely to graduate on time than non-NAF students.
- In terms of on-time high school graduation rates by career theme, finance students had the highest graduation rate (85.4 percent), followed by health sciences (83.5 percent), engineering (80.0 percent), information technology (77.7 percent), and hospitality and tourism (72.7 percent).

Evidence supporting NAF’s effects on high school graduation is strong, however, there are limitations. For one, baseline data for students was unavailable prior to ninth grade, thus students were matched on performance at the end of grade 9. Since this meant treatment students already received one year of NAF service, “comparisons between the NAF and non-NAF groups only describe the impact of NAF from the beginning of Grade 10.” Additionally, two of the ten NAF districts—New York City and Miami-Dade County—contained the majority of the sample populations. Thus, the results are driven largely by these two districts.

Guiding Questions

There is emergent evidence that prioritizing vocational training over general education may do more harm to students’ long-term workplace prospects. Additionally, managing the public perception and politics that may arise from restructuring the traditional four-year model of high school must be considered. Districts should consider the following questions to determine if an organizational partnership is right for their community:

- What does the school district hope to achieve with an organizational partnership?
- Does achieving the district’s goal require light-touch technical assistance to create a pathway or does it require full-scale reinvention of secondary education?
- How will the district balance rigorous academics with the acquisition of technical skills?
- Does the necessary political will (and capital) exist to implement such comprehensive initiatives?
our richly diverse nation, education must be driven and sustained by evidence about what works and what does not. To activate these evidences of research into a language that is accessible and useful to policy experts, principals, teachers, and parents; and that in policy must be informed both by real-world conditions and also by excellent research; that it is possible to translate the technical

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The Johns Hopkins Institute for Education Policy (the Institute) believes that building partnerships across different constituencies is necessary to advance excellence and equity for all of America’s children. The Institute operates on the understanding that education policy must be informed both by real-world conditions and also by excellent research; that it is possible to translate the technical vocabularies of research into a language that is accessible and useful to policy experts, principals, teachers, and parents; and that in our richly diverse nation, education must be driven and sustained by evidence about what works and what does not.
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