Executive Summary

The intent of this scan was to discover what's working to increase pathways to college and career at the micro, mezzo and macro levels in educational and community settings. It is one of the steps in informing the Alliance and our partners as we develop our strategic work to increase pathways to college and career. This scan blends a literature review, interviews with subject matter experts, and an exploration of some of the career pathway models used in the United States.

The term “career pathway program” can refer to any series of connected education and training programs, and support services that enable people to get jobs in high-growth industries or sectors important to local economies. Career pathway programs offer a clear sequence, or pathway, of education coursework and/or industry-recognized credentials aligned with employer-validated work readiness standards and competencies. For this paper, we are only considering career pathway programs that address workforce development in high school.

Findings

1. Positive results were achieved in high school level outcomes such as increase in attendance, grades, and graduation rates, and program level outcomes in targeted student participation, implementation of design, and quality.
2. However, any outcomes related to post-secondary credentials earned or sustainable wage employment were inconclusive or non-existent.

In addition to these key findings we learned:

- Tennessee, Delaware, and California have implemented state-wide career pathway programs.
- The business community plays an important role helping to build a sequence of work-based learning experiences, providing input on curricula and pathways development, and making available awareness and exposure opportunities. However, employers oftentimes had difficulty identifying industry specific competencies they were looking for.
• Career pathways strategies focus on systemic reform, by aligning occupational curricula across high schools and colleges in partnership with private sector employers. Some programs have induced other systems changes such as redesigning high schools, linking K-12, colleges, and employers, and changing expectations for youth.
• More career pathways programs are giving back control, influence, and power to students and families, instead of schools making placement decisions, often based on biased notions of who was college bound.
• Career pathways offers opportunities for systems change in our workforce and education systems to close achievement gaps and advance racial equity, especially if they are explicitly designed to support the needs of communities of color.

Next Steps

• Share this report with staff, youth, Alliance members, and the community.
• Explore how to strengthen these programs to better align with the Alliance’s College and Career Readiness Framework developed from national best practices.
• Use this report and other data and best practices to further assess what’s needed to accomplish our shared mission to increase pathways to college and career.

Overview

The Alliance seeks to discover what’s working to increase pathways to college and career. First, we need to define WHAT outcomes are correlative to completing college and beginning a career. Secondly, we believe that there are interventions, models or programs that work at the micro, mezzo and macro level and in educational and community settings. As we begin our review we will look for best practices and promising models that address micro, mezzo and macro factors both in educational and community settings or intersections.

In 2011, the Harvard Graduate School of Education released a report titled Pathways to Prosperity: Meeting the Challenge of Preparing Young Americans for the 21st Century that painted a picture of our current education system as only focusing on pushing high school students to pursue a 4-year college degree after graduation, while neglecting community and technical college, and vocational training options. The authors brought attention to building career pathways in high-growth, high-demand occupational fields that span high school and college and can provide young people with skills and credentials valued in the labor market.

In the follow-up report The Pathways to Prosperity Network: A State Progress Report, 2012-2014, the authors define the problem as employers not investing money in creating a pipeline of young professionals, schools not having the time or capacity to modify their class schedules to include career technical education (CTE) or develop work-based learning, and the government lacking policies to address youth unemployment. CTE classes in high schools have improved graduation rates by 21 points (Pearlstein, 2017), in additional to increasing student exposure to industrial technology careers available to them.
Literature Review / Best Practice Scan / Models that Work

We reviewed literature on the topic of career pathways, engaged subject matter experts, and explored models that work for reaching outcomes typically related to increasing pathways to college and career.

What works for reaching the following outcomes?

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Highschool</th>
<th>Summer/Community/OST</th>
<th>College/Post-Secondary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td># of career exploration opportunities</td>
<td># of career exploration opportunities</td>
<td>Enroll in 2 year, 4 year degree or customized training program</td>
</tr>
<tr>
<td></td>
<td>Retain students in CTE classes</td>
<td>Social and emotional skills</td>
<td>Social and emotional skills</td>
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<td></td>
<td>Graduate high school</td>
<td>Academic preparation</td>
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<td>Navigation Skills</td>
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Focus Questions

*What is a common definition of pathways to college and career?*

The term “career pathway” can refer to any series of connected education and training programs, and support services that enable people to get jobs in high-growth industries or sectors important to local economies. Career pathway programs offer a clear sequence, or *pathway*, of education coursework and/or industry-recognized credentials aligned with employer-validated work readiness standards and competencies. However, career pathways are not one-size-fits-all: the specific form and content of a career pathway will depend on the particular industries targeted, the requirements of employment and advancement in the target sectors, and existing programs and resources for preparing workers for employment in those sectors.

Career pathways, as used in the research literature can be designed for all ages, from youth to adults. Many community colleges and adult-based education organizations operate career pathway programs. However, for the purposes of this paper, we are only considering career pathway programs that address workforce development beginning in high school.
Also, some career pathway programs are designed to target out-of-school and disconnected youth. They have certain important design elements: effective “on-ramps” for those without high school credentials, “bridge programs” that accelerate academic and work readiness, combining paid work with accelerated academic preparation, and industry-specific vocational training as a vehicle for opening options in postsecondary education and employment.

Most programs exist as part of high schools, but some are hosted on college campuses. Local examples of these types of programs would be the Destination: Diploma to Degree (D3) program which operates on the Minneapolis Community and Technical College (MCTC) campus, and STEP, which operates on the Anoka Technical College campus.

Below is the full definition of “career pathway”, taken directly from Workforce Innovation & Opportunity Act (WIOA) Sec. 3 (Def. 7)

CAREER PATHWAY.—The term “career pathway” means a combination of rigorous and high-quality education, training, and other services that—
(A) aligns with the skill needs of industries in the economy of the State or regional economy involved;
(B) prepares an individual to be successful in any of a full range of secondary or postsecondary education options, including apprenticeships;
(C) includes counseling to support an individual in achieving the individual’s education and career goals;
(D) includes, as appropriate, education offered concurrently with and in the same context as workforce preparation activities and training for a specific occupation or occupational cluster;
(E) organizes education, training, and other services to meet the particular needs of an individual in a manner that accelerates the educational and career advancement of the individual to the extent practicable;
(F) enables an individual to attain a secondary school diploma or its recognized equivalent, and at least 1 recognized postsecondary credential; and
(G) helps an individual enter or advance within a specific occupation or occupational cluster.

A review of definitions found in literature, including one created by The Pathways to Prosperity Network, an initiative of Jobs for the Future and the Harvard Graduate School of Education defines career pathways more succinctly (Jobs for the Future, 2014), can be summarized as:

A career pathway includes a collaboration between employers, high schools, and colleges to provide a seamless system that enables youth to get:
- Comprehensive counseling for career information, advising, and exposure
- A clear sequence of
  - Rigorous and relevant courses (advanced academics and CTE), including
    - Opportunities for students to earn at least 12 college credits while in high school, leading to
- Attainment of a high school degree and a post-secondary industry-recognized credential
  - Related work-based learning opportunities, including internships and apprenticeships
- A job in a high-growth, high-demand career field important to local economies OR the option to pursue further postsecondary training
- Wrap-around support services (particularly at points of transition) that allow the student to complete the pathway

A distinct category of career pathway programs is the Career Academy. Career Academies are distinguished by 3 features: (1) they are organized as small learning communities to create a more supportive, personalized learning environment (2) they combine academic and career and technical curricula around a career theme to enrich teaching and learning; and (3) they establish partnerships with local employers to provide career awareness and work-based learning opportunities for students.

Career pathway programs can also be:
- Wall to Wall (W2W) design: All students in the high school 9th-12th grade explore career pathways while participating in the traditional high school curricula
- Pocket design: Some students elect to enroll in pathway courses while participating in the traditional high school curricula

Which states are leading in pathways and Career Technical Education (CTE)?
(PPN=Pathways to Prosperity Network)
- California (PPN)
- Tennessee (PPN)
- Delaware (PPN)
- Georgia (PPN)
- Illinois (PPN)
- Massachusetts (PPN)
- Missouri (PPN)
- New York (PPN)
- Ohio (PPN)
- Arizona (PPN)
- Washington
- Virginia

In Minnesota, there are many Career Pathway or Career Academy programs, including:
- Alexandria
- Anoka County
- Burnsville
The SME’s interviewed pointed to Tennessee, Delaware, and California as states leading in pathways and Career Technical Education.

**Delaware**

The governor of Delaware pledged to increase the proportion of Delaware residents with postsecondary degrees or credentials to 65% (up from 40%) by 2025, and to enroll half of Delaware high school students (20,000) in career pathways by 2019. A draft plan in 2016 included these five broad areas of work overseen by a state steering committee:

- **Build a comprehensive system of career preparation that aligns with the state and regional economies for grades 7-14**
- **Integrate education and workforce development efforts and data systems**
- **Coordinate financial support for Delaware Pathways**
- **Scale and sustain meaningful work-based learning experiences for students in grades 7-14 via a statewide intermediary**
- **Engage employers, educators, and service providers to support Delaware Pathways**

One outcome of this collaborative effort is the integration of Delaware Pathways into a number of state programs. The Workforce Development Board has made Pathways a key element in its strategy, for example.

The program includes:

- **Students as early as middle school would be able to learn about and explore career options**
- **High school sophomores and juniors would take courses related to careers and concurrently enroll in college for a 2 or 3-year career-related program; some schools have up to 24 pathways**
- **High school seniors would participate in a paid internship for 240 hours in their chosen field; an online platform helps to match students to internships**
- **Upon graduation, the student would have attained a high school diploma, 6-15 college credits, an industry-recognized credential and work experience, positioning them to continue with more education or training, or get a job**
Tennessee

Tennessee Pathways is a school initiative under Drive to 55, which is the state’s pledge to ensure at least 55% of students have a college degree or certificate by 2025. Tennessee Pathways has 3 key elements:

- High quality college and career advisement throughout K-12
- Rigorous early postsecondary and work-based learning opportunities in high school; and
- Seamless vertical alignment between K-12, postsecondary programs, and career opportunities as a result of effective partnerships among school districts, higher education institutions, employers, and community organizations

Regional coordinators operate in the nine economic regions of the state to lead the alignment of local education institutions and employers, acting as the “glue” between school districts, postsecondary institutions, employers, and community leaders and facilitating communication and collaboration.

High schools can become certified if they develop clear and guided pathways for their students that are built upon partnerships among the school, a college, and employers. Tennessee recognizes 16 career cluster categories that include a broad range of occupations, and is aligned with the US Department of Education’s structure of CTE.

Work-based learning programs include industry tours and classroom speakers, job shadows and industry-led project based learning, up to apprenticeships, internships, clinicals, and practicum experiences for credit. The State Board of Education has set standards to govern all WBL experiences to allow students to apply classroom theories to practical problems and to explore career options.

California

Although the SMEs we contacted suggested we look at California’s Career Pathways programs, we found that despite a large investment ($1B) this decade, the state has struggled to develop pathways that lead to students achieving careers in locally relevant, high-growth, high-demand industries. From 2014 to 2015, the CA Department of Education funded 79 programs through the California Career Pathways Trust initiative.

A research brief (Lundy-Wagner, 2016) finds that hiring CTE faculty was one of the biggest barriers to the design and implementation of Career Pathway programs. Three challenges are highlighted.

- Credentialing requirements for secondary schools and community colleges are discrete and disconnected
- There are few accelerated paths to building a CTE instructional staff pipeline
- There are few data publicly available for understanding and matching the supply of and demand for CTE pathways staff
Another report (McLaughlin, Groves, & Lundy-Wagner, 2018) highlighted the difficulty of sustainability as the grants ended. Some districts were able to incorporate funding of the programs into their budgets, but most programs had to cut staff responsible for brokering and supporting pathway relationships within and across sectors, which is at the heart of how the pathway programs work. Also, funding for student support services, such as transportation, was not sustainable after the grants ended.

In addition, there were also challenges to implementation of the career pathways program that weren’t solved during the three-year grant cycle. Dual enrollment and articulation agreements between school districts and community colleges remained incomplete, high school and community college student schedules created logistical issues for attendance, and CTE certification hurdles are some examples.

Many of the cross-sector partnerships initiated by the grant died out after the funding stream ended. The report indicated that it was very difficult for the community college partners to continue their involvement since they did not get much financially out of all the resources required to establish dual enrollment and other arrangements with K-12.

The report suggested that more efforts should have been focused on:

- Planning for sustainability at the outset: Sustainability of the program after the grant funding ends should be addressed with every action
- Coalition building: “it’s all about relationships”, make cross-sector connections transformational, not transactional
- Systems change: revise individual agendas to incorporate a collective approach to pathway work, commit to a shared career pathway agenda for youth in the region, and invest in systemic action to sustain it

**What is the role of the business community?**

As defined by the Pathways to Prosperity Network, the role of the business community is to engage with educators to build a sequence of work-based learning experiences for young people and to provide input and feedback on curricula and pathways development and improvement. Each industry and sector will need to develop their unique requirements for their career pathway, including industry-recognized credentials, work readiness standards, and competencies.

Many studies mentioned that the process of developing industry specific competencies was very difficult and time-consuming. Employers might want more workers, but they didn’t always know what skills they were looking for.

The business community also needs to provide awareness and exposure opportunities such as site visits and job shadowing. They need to partner with the career academies to provide work-based learning opportunities such as internships and apprenticeships. Many companies do not
know how to hire high school interns; they are more familiar with college-aged interns. Therefore, they need more support to create quality experiences and supervisors for the younger students.

However, although all the people we interviewed acknowledged the importance role of the business community as partners, some pushed back that career pathways should not be built to primarily meet the needs of businesses. Students will change their careers up to 10 times in their lifetimes, and a student-centered pathways program must allow them to choose which career they are interested while not being expected to start over at the bottom rung of each career ladder when they switch. To facilitate ease in lateral change, programs can offer basic classes that teach students foundational knowledge and skills which are relevant across multiple career fields.

**What models increase pathways to college and career?**

A 12-year longitudinal study of Career Academies (Kemple & Willner, 2008) found that participants gained statistically significant increases in earnings over an 8-year follow-up period with impacts concentrated mostly among young men. Participants gained 17% more ($25,678 annually versus the non-participant average of $21,947) than non-participants. However, they were no more likely to graduate from high school or go to college.

A Career Academy Support Network research paper lists some of the evaluation evidence of career academies (Stern, 2010) showing a positive impact on secondary outputs. Several studies found that for career academy participants, there was increased course credits earned, higher graduation rates, lower dropout rates, better attendance, higher average grades, and to be more likely to have positive developmental experiences. However, there was no effect for standardized test scores.

For post-secondary education, the results were mixed (3 studies showed positive effect, 2 showed no effect, and 1 showed negative effect) on whether career academy graduates attended a post-secondary institution at a higher rate than non-participants. For employment after high school, except for the study already mentioned above, the results were mixed on whether there was any statistical difference between students in career academies to other students in relation to employment status, wages, or hours worked.

These results reflected similar outcomes for other career pathway programs studied. Positive results were achieved in high school level outcomes such as increase in attendance, grades, and graduation rates, and program level outcomes in targeted student participation, implementation of design, and quality (although there was a stated lack of career planning and direct career guidance). However, any outcomes related to post-secondary credentials earned or sustainable wage employment were inconclusive or non-existent. One local high school pocket program told us that it was difficult to track outcomes for youth who had graduated from the program and left the school.
The report mentioned previously on the California Career Pathways Trust initiative (McLaughlin, Groves, & Lundy-Wagner, 2018) had this quote:

Most (programs) struggled to make an evidence-based case for pathway continuation or expansion in the absence of data to show the impact for students or the region of CCPT pathway investments. Missing longitudinal data and incompatible K-12 and postsecondary data systems meant inadequate evidence about student outcomes to make a persuasive case for pathway continuation, or inform pathway planning within and across sectors. As one consortium leader put it: “We can’t assess the impact or character of pathways without data.”

JFF lists 5 key levers for successful pathways as:
- Grades 9-14 College and Career Pathways
- Career Information and Advising Systems
- Intermediaries
- Effective Leadership and Enabling Policies
- Employer Engagement

Which models are focused on changing systems (process, policy, practice)?

Career pathways strategies focus on systemic reform, since they include aligning occupational curricula across high schools and colleges in partnership with private sector employers.

A JFF case study on Delaware’s Career Pathway programs highlights the systems changes their program has induced.

- **Redesigning high schools**: School districts have reorganized its high schools into “schools,” each of which includes one or more career pathways, which offer opportunities for students to take AP courses or dual enrollment options, and each provides work-based learning experiences with business and industry partners.

- **Linking schools, colleges, and employers**: Business leaders worked with the schools to develop the pathways curricula which includes competencies and skills needed for entry-level employment. Schools also worked with colleges to ensure that the coursework students took in high school was what they needed for college entry.

- **Changing expectations for youth**: Most of the rhetoric in education currently is to push four-year degrees at the expense of alternative options. “The Pathways work opened the door to rethinking how we think about careers and college. It could be a one- or two-year certificate program. Kids [who take that route] are doing just fine or better in terms of income and quality of life. For the 70 percent of people who didn’t finish college, their life choice was validated.”

Which models are focused on student needs (services, supports, resources)?

The following models were suggested by the subject matter experts we consulted as ones that focused on student needs:
• Texas
• Innovation Generation (Ohio)
• Delaware
• Colorado

The Career Pathway Systems model in Colorado identifies as one of its 6 goals to build a career pathway support team made up of workforce, education, and training partners, human services, vocational rehabilitation, and other community support partners. It is only one of the few career pathways programs that specifies in its goals the need to provide services, supports, and resources for students in this holistic manner.

Another interesting model that might be a novel way to enhance a career pathways program, was co-founded by an assistant professor at the Department of Family Medicine and Community Health at the University of Minnesota is called The Ladder (https://theladdermn.org). The program pairs resident physicians with high school students who are interested in the medical field. It is an example of a “near-peer” or “cascading mentorship” model.

**Which models give students/families control, influence, power in deciding the pathways to college and career?**

This is an emerging trend. Locally, three schools (Alexandria, Hutchinson, and Burnsville) are modeled after each other, influenced by the academies of Nashville. The model includes clear pathways, course selection, and allows students to move between pathways while still in high school. There is a fine balance here between wanting the pathway to success clearly laid out with incentives (certificates or degrees) imbedded throughout the experience. But, there is also a concern to not lock a student into a complicated sequence of courses that only lead to something if they stay with it.

In general, this means that best practice would be for college credits to land in areas where they count for the largest number of options. This means in core liberal arts area (English, math, social studies, etc.). Locally, it means that transcripted courses on the MnTC are the gold standard.

Jobs for the Future (JFF) in a blog post (https://www.jff.org/points-of-view/10-equity-questions-ask-about-career-and-technical-education/) discusses equity implications for how CTE programs are run. The author, Nancy Hoffman, a senior advisor with JFF, specifically warns against the potential to use career pathway programs to track students “rather than offering choices from the widest range of possibilities. Historically schools, not families, made placement decisions for students, often based on biased notions of who was college bound and who couldn’t make the grade.”
Best practice for assessing high quality CTE programs:

1. Is the program's or school's message to all students that CTE is a pathway into college?
2. Does the CTE program prepare students for and offer a range of college credit-bearing dual enrollment and/or AP courses in science, computer science, math, and the like?
3. Are the CTE program offerings a mix of the old trades (which now require sophisticated math and computer literacy) and high-growth fields, such as cybersecurity, nursing, and engineering?
4. Is the CTE student body socioeconomically and racially diverse? Are the CTE teachers and employers racially and ethnically diverse?
5. Are CTE students’ aspirations based on well-informed decisions, not demographics, and do they reflect the full spectrum of postsecondary options, including apprenticeship, certifications, community college, four-year institutions, and beyond?
6. With which higher education institutions does the CTE program/school have partnerships?
7. Do CTE students complete all the foundational discipline courses required to enter a four-year college, should they wish to do so?
8. Does the CTE program provide high-quality work-based learning experiences supervised by employers and include time for learning from work?
9. Are students learning transferable skills that will serve them well in the innovation economy?
10. Are the outcomes of CTE measured according to appropriate criteria?

Which models are built with equity and assets as a central tenet?

The following models were suggested by the subject matter experts we consulted as ones that are built with equity and assets as a central tenet:

- CUNY (city university, NY)
- Hawaii: have diverse leadership in decision making roles
- Delaware: able to lift equity higher in their roles and systems because they gave clearly defined roles to their partners.
- Paul Quinn College (TX)

CLASP, a national, non-partisan, anti-poverty nonprofit advancing policy solutions for low-income people, published a series of briefs in 2018 on “Maximizing the Power of Pathways”, with one of them titled, “Advancing Racial Equity through Career Pathways.” The brief identified the root problem causing racial gaps in income, employment and education is due to systemic racism and historic public disinvestment in communities of color. Career pathways are a service-delivery model that offers opportunities for systems change in our workforce and education systems to close achievement gaps and advance racial equity. In order meet those goals, their recommendation is that “pathways should be explicitly designed to support the needs of communities of color.”
Although not a career pathways program for high school but similar, the Work College Consortium (https://workcolleges.org/) is a group of four-year, degree granting, liberal arts institutions that engage students in the purposeful integration of work, learning, and service. Work colleges require that all students participate in a comprehensive-work-learning service program for all four years of enrollment: all resident students have jobs. The work college model is student-centered and designed to enhance and enrich the educational experience. A student transitioning from a career pathways program into a college that uses the Work College model would be able to reduce the cost of education and continue to gain valuable work experience. Paul Quinn College, a private historically black Methodist college in Dallas, Texas is the nation's first urban work college. The college has reduced student tuition and fees and provides students with the ability to graduate with less than $10,000 of student loan debt.

BIBLIOGRAPHY


