

Opportunity Pathways

BACKGROUND PAPER

A STARTING FRAMEWORK TO REIMAGINE PATHWAYS
BETWEEN EDUCATION AND EMPLOYMENT

We believe in a future where there are no dead ends for young people graduating from high school. The Opportunity Pathways network is supporting a process to reengineer the relationship between education and work in order to achieve that end—creating pathways that support economic mobility and stability for all Americans.

Introduction

In the past 30 years, foundations have poured billions into remaking our K–12 and higher education systems in order to help more students succeed. States and the federal government have spent billions more on reforms, from the Race to the Top grant competition to the massive implementation of new accountability frameworks from No Child Left Behind and now the Every Student Succeeds Act.

Policymakers, philanthropists, and practitioners keep trying to transform American performance on metrics we all agree matter: closing the achievement gap, raising college readiness, expanding college access, and boosting completion. And those measures do matter. But increasingly, those deeply involved in the work of education reform are beginning to ask if we are solving for particular pain points in a disjointed system, rather than focusing efforts on the ultimate goal: creating pathways for economic mobility and life stability for individual Americans.

This rethinking is driven by several macro trends. Chief among them is the fact that economic mobility in the United States has been declining for decades. The American Dream centers on the idea that each generation will do better than the one that came before it—but that is no longer happening as it once did. Ninety percent of children born in the 1940s went on to out-earn their parents at age 30, but only 50 percent of those born in the 1980s did.¹ Income gains are more unevenly distributed than in the past, and the chances of moving up in economic class

remain slim—a child born in the bottom fifth of the income distribution only has a 9 percent chance of reaching the top fifth.²

The changing nature of work is providing both the fastest job growth and income gains to those with higher levels of skills and education. The average income difference between those who have a college degree and those who do not has never been larger.³ Americans with a four-year college degrees made 98 percent more an hour on average than people without a degree—up from 64 percent in the early 1980s.



1. https://opportunityinsights.org/national_trends/

2. https://inequality.stanford.edu/sites/default/files/SOTU_2015_economic-mobility.pdf

3. <https://www.nytimes.com/2014/05/27/upshot/is-college-worth-it-clearly-new-data-say.html?mcubz=0>

A high school diploma is rarely an on-ramp to a good career, yet the majority of low-income learners do not achieve anything else. Jobs, companies, and entire industries are changing at a rapid pace, requiring even well-educated workers to continually upgrade their skills. Education can no longer just happen on the front end of someone's life, but instead must occur episodically over the course of a lifetime.

Entangled Solutions is working with the Walton Family Foundation and the Strada Education Network to bring together leaders from across the K-12, higher education, and workforce fields to “learn in the open” about the highest-leverage ways to help more Americans achieve economic mobility. The Opportunity Pathways project aims to elevate this discussion and accelerate the adoption of transformative approaches for improving education-to-career pathways.

We are at the beginning of a process aiming to reengineer the questions that matter—and discover solutions that can only emerge when we look at the problem from different angles. This background paper, based on an extensive review of the literature and interviews with three dozen experts in both education and industry, reflects early insights about the challenges before us—and the potential for innovation.

Our end goal is not college-readiness or college completion on their own rights. Rather, our goal is economic mobility and stability for more Americans. The levers for change are, of course, complex—but what matters is actually pretty straightforward: No American who graduates from high school should hit a dead end.



The Landscape

Americans hear over and over that the key to economic mobility is to “get an education”—but nobody provides them with the information they need to answer key questions, such as “In what?” and “How much?” and “What for?”

It’s clear that the majority of today’s opportunity seekers will need some postsecondary education. While two-thirds of entry-level jobs in the industrial economy demanded a high school diploma or less, now two-thirds of jobs demand at least some education or training beyond high school.⁴ But too often, we’re funneling people into pathways that require time

and financial investment, but lead nowhere. Even as high school completion, including diplomas and GEDs, and college attainment have increased significantly in the past three decades, economic mobility has stalled. Other countries—and the demands of our own economy—have sped ahead, and our education and workforce systems have not kept pace. Both systems are adaptable, but they aren’t designed to move as quickly as globalization, automation, and other industry shifts now demand. Entire job categories are rapidly disappearing, and, just as quickly, entirely new ones—requiring more training and new skills—are emerging.



85 PERCENT OF THE JOBS THAT WILL EXIST IN 2030 HAVE YET TO BE INVENTED

4. <https://lgyhoq479ufd3yna29x7ubjn-wpengine.netdna-ssl.com/wp-content/uploads/3ways-FR.pdf>

SOCIETY HAS TRANSITIONED TO A KNOWLEDGE ECONOMY, AND EDUCATION AND WORKFORCE SYSTEMS HAVE NOT KEPT PACE.



More than three-quarters of the jobs lost during the Great Recession were held by workers with only a high school education, while **99 percent** of those added during the recovery went to people with at least some college education.⁵

By some estimates, as many as **85 percent** of the jobs that will exist in 2030 have yet to be invented.⁶

As a result of the rapid technological innovation, the half-life of learned skills is five years and decreasing, meaning **workers must upskill more and more frequently.**

Ninety-five percent of eighth graders say they plan to go to college, but four years later, only **37 percent** will graduate actually prepared to succeed in college.⁷

Access to higher education in the United States has expanded substantially—about **70 percent of high school graduates** now enter college immediately⁸—but graduation rates have stagnated in the past 30 years, with more than half of attendees dropping out.

For those who manage to complete, **40 percent of recent graduates** are underemployed, working in jobs that do not require their level of training.

There are more job openings today (**7.1 million**⁹) than there are unemployed Americans (**6 million**).¹⁰

The vast majority (**89 percent**) of employers say they have a very or somewhat difficult time finding people with the requisite skills, and 58 percent say candidates' lack of soft skills is limiting their company's productivity.¹¹

5. <https://gyhoq479ufd3yna29x7ubjn-wpengine.netdna-ssl.com/wp-content/uploads/Americas-Divided-Recovery-web.pdf>

6. https://www.delltechnologies.com/content/dam/delltechnologies/assets/perspectives/2030/pdf/SR1940_IFTFforDellTechnologies_Human-Machine_070517_readerhigh-res.pdf

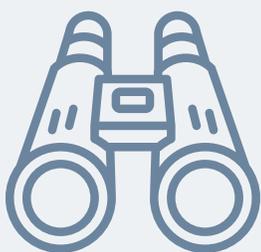
7. <https://web.stanford.edu/group/bridgeproject/betrayingthecollegedream.pdf>

8. <https://www.bls.gov/opub/ted/2017/69-point-7-percent-of-2016-high-school-graduates-enrolled-in-college-in-october-2016.htm>

9. <https://www.bls.gov/news.release/jolts.nr0.htm>

10. <https://www.bls.gov/web/empsit/cpseea03.htm>

11. <https://www.wsj.com/articles/employers-find-soft-skills-like-critical-thinking-in-short-supply-1472549400>



WHO ARE “OPPORTUNITY SEEKERS”?

Our evolving knowledge economy requires a seamless and integrated experience of opportunity seeking. Thus, we call people seeking upwardly mobile opportunities “opportunity seekers,” rather than “students,” “job seekers,” or “workers,” as they have been referred to in the past.



There is a profound disconnect between our education and employment structures, and economists, educators, employers, and policymakers can't agree on exactly what is amiss. Many see a clear gap between the skills Americans have acquired and the ones our economy demands. They see our education system as failing to teach students the skills they actually need for work today—a sign that we need both more training and a shift in what we're teaching. Others don't think there is a “skills gap” at all, but rather a broken system in which employers are not clearly signaling which specific skills are required for jobs and instead are hiring based on proxies, such as a college degree.

We believe the answer is clear: This is a broken market on both the supply and demand side. We can't just reform our K–12 and postsecondary systems, without supporting needed changes in how people are hired and promoted. As Byron Auguste, CEO and Co-Founder of Opportunity@Work, writes: “Most policies that aim to improve employment outcomes focus on the ‘supply side’—education and job training. These efforts are important, but they can't ‘close the skills gap’ without demand-side reforms.”¹²

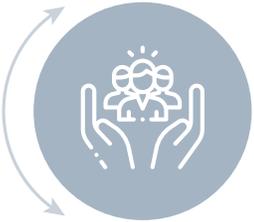
12. <https://context.newamerica.org/we-need-to-re-wire-e2ea173d6b31>

Three Shifts to Enable Opportunity Pathways

The challenge we face defies single sector solutions—and addressing it is crucial if we want education to truly serve as a mechanism for economic mobility. We believe that is possible. We believe in a future where there are no dead ends for young people graduating from high school. Where all educational paths lead to a good job, and where a collection of good jobs become careers. Where opportunity seekers are empowered to create and dynamically navigate their journeys—weaving together education and work throughout their lives to fit their individual needs and provide a family-sustaining wage.

To enable this, we need connected systems that enable robust education-and-career pathways. We need systems that cultivate learner-empowered, industry-aligned, permeable pathways for education that are accessible, provide a clear return on investment, and support economic mobility and stability across one's lifetime. This requires three major shifts:





SHIFT 1: LEARNER-EMPOWERED

Provide opportunity seekers with the information and supports they need to create and dynamically navigate their education and career journey. Today, they are in the dark without a compass or a map, expected to make high stakes and complex decisions.

Data, tools, and programs to help opportunity seekers make decisions about education and work are limited. Career exposure in the K–12 system typically occurs too late and is limited to one-off experiences with no connection to the curriculum. College advising rarely includes robust career advising. If opportunity seekers turn to the internet, they are faced with a barrage of low quality information on career options, the education and training programs that enable them, and the earnings potential for each. How can opportunity seekers pursue pathways to mobility without proper information and decision-making tools? Providing the necessary data, navigation, and guidance—through self-service tools on the internet and through high quality advisors—is key to creating opportunity pathways for all.

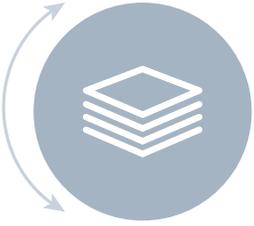


SHIFT 2: INDUSTRY-ALIGNED

Align systems of education and systems of work around skills and competencies—using the hiring process as a mechanism for employers to signal to individuals and the education system precisely what capabilities are needed for in-demand jobs. Today, the hiring process largely is a wasted opportunity for employers to provide clear signals.

Rather than clearly signaling what competencies are required, employers use credentials—increasingly, the bachelor’s degree—to filter job candidates, even if the job does not require them. Engagement between educational institutions and employers often happens piecemeal and at a surface level through advisory councils, or it doesn't happen at all. This leaves education institutions, from high schools to colleges to workforce training programs, with little insight around what competencies are actually needed, how to articulate them in terms employers understand, and how to change their curriculum to match industry needs. To change this, we need policies, funding mechanisms, and other incentives that encourage educational institutions to be truly responsive to the skill needs of employers, and we need employers to more accurately and precisely signal their needs by shifting hiring practices away from pedigree and toward competency.

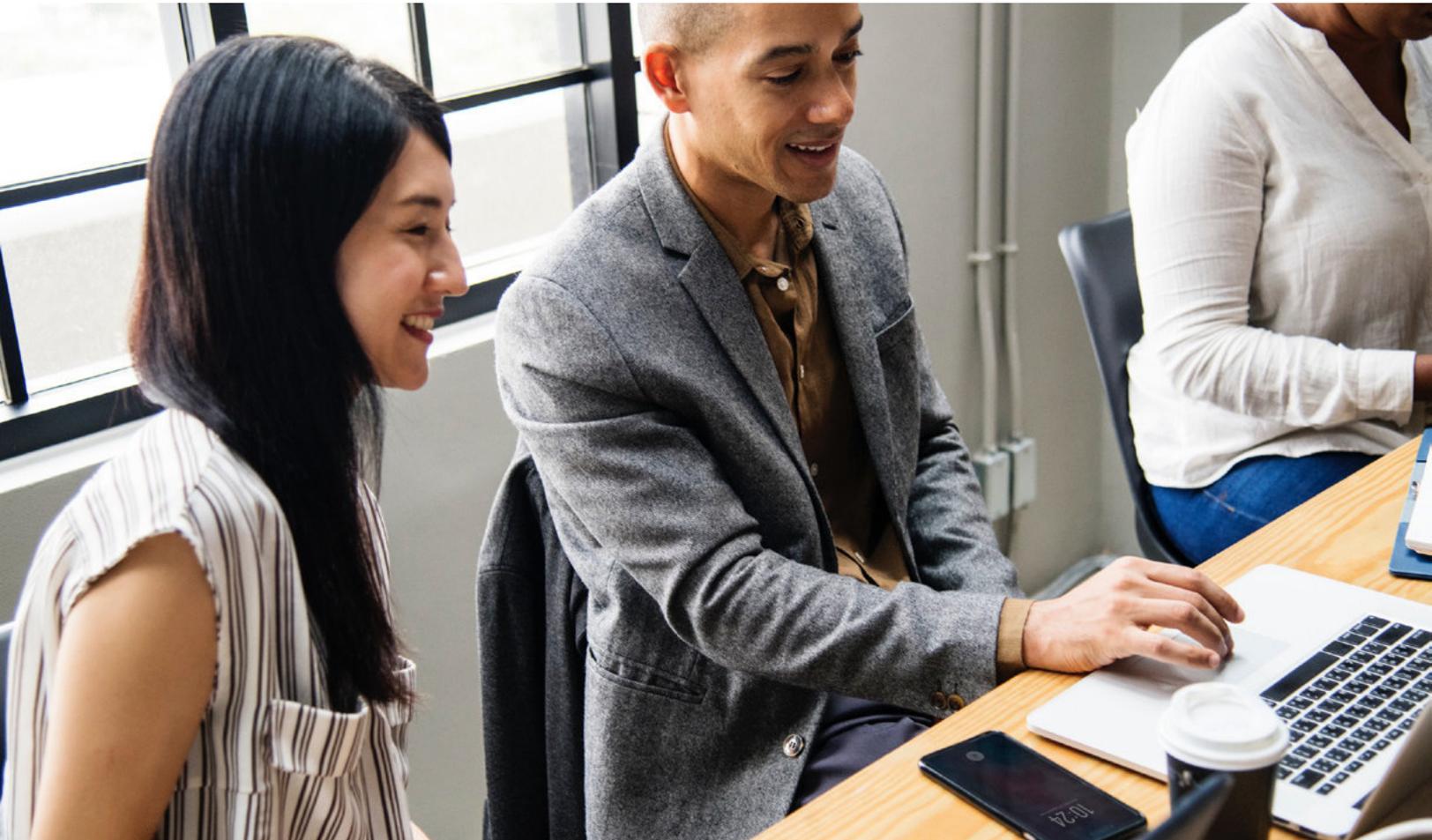
**ENGAGEMENT
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HAPPEN AT ALL**



SHIFT 3: PERMEABLE

Create pathways that allow opportunity seekers to weave together education and work throughout their lives in ways that fit their individual needs while providing a family-sustaining wage. Today, our education system—including policies, financing mechanisms, and quality assurance frameworks—are designed around a monolithic education experience at the front end of life.

Most paths today involve a linear journey, starting with working toward a diploma or degree and ending with graduation, and, ideally, a job. Opportunity seekers incur heavy costs upfront, which they hope to recoup through employment. But there is little direct connection between educational paths and the employment process. Permeable systems would better connect the two and create a range of on- and off-ramps that allow opportunity seekers to seamlessly move between, and even combine, education and work as they seek advancement. Such systems would reduce upfront costs and risk by allowing opportunity seekers to earn money while pursuing an education. Placing less burden on opportunity seekers would allow them to remain flexible, coming back to education as needed to retool or advance, as they create their career pathway.



These shifts to a learner-empowered, industry-aligned, and permeable approach are critical to taking us from a program mindset—where we focus on getting people through a set path and into a job—to a pathway mindset, which recognizes that there are no set paths and that, while a first good job is critical, it's not the end point of education. Right now, much of the work on “pathways” is focused on mapping specific steps individuals need to take to get through a given program. That's important work. But in today's dynamic environment, we can't stop there. Maps for a single program are no longer enough—individuals need navigation and guidance systems that enable them to seamlessly move between education and career and back again, so they can create and adjust their pathways in real time. We don't just envision pathways through education, but rather pathways through life.

Advancements in data analysis, technological innovations, and market opportunity are already driving some of these shifts. Online networking platforms, such as LinkedIn, are creating new ways for workers to signal competencies and for employers to hire. The market of intermediaries between higher education institutions and employers is growing, with an explosion of bootcamps and other “last-mile” providers that layer tightly job-focused skills, such as coding, onto the broader education provided by a college degree. The options opportunity seekers have for retooling or enhancing skills at a more advanced stages of their careers also are proliferating, with brand name higher education institutions like the University of Pennsylvania and Georgia Institute of Technology now offering short-burst training, such as micromaster's degrees, or low-cost, fully online master's degrees in high demand fields.

INDIVIDUALS NEED NAVIGATION AND GUIDANCE SYSTEMS THAT ENABLE THEM TO SEAMLESSLY MOVE BETWEEN EDUCATION AND CAREER AND BACK AGAIN



All of these advancements, however, are focused on the segment of the population that is already highly educated and comfortably middle class or better. There are, by our calculation, fewer than 100 on-ramp programs in the entire country designed to serve working class Americans without college degrees. Without intentional work to expand emerging models for education, training, and career navigation to people in the bottom half of the income distribution, progress will serve to widen, not narrow the gaps between the haves and the have nots. Creating true opportunity pathways will require a fundamental shift in our thinking, in our systems, and in our funding. We need a connected approach that truly enables learner-empowered, industry-aligned, and permeable pathways for all Americans. The future of education, work, and economic mobility demands nothing less.

Opportunity Areas

Learner-Empowered

Shift 1: Provide opportunity seekers with the information and supports they need to create and dynamically navigate their education and career journey. Today, they are in the dark without a compass or a map, expected to make high stakes and complex decisions.

John enrolled at the local community college immediately after graduating from high school in 2012. His family was not affluent, and it seemed like the most affordable option. John loved making music, but felt pursuing his art wasn't practical. So, he took general education courses while he figured out a major. Then, he added in a smattering of automotive, computer programming, and music courses—even taking classes at another community college nearby. That continued for about four years.

Throughout, counselors talked to him about financial aid, about the credits he would need to graduate, and about transferring to a four-year institution. But John didn't want to move. By the time he decided to transfer to the other college's music technology program—which he thought paired his passion for music with practical skills for the job market—his financial aid eligibility was running low. He paid for his last few classes out of pocket. John recently graduated only to learn that the jobs he was trained for aren't readily available in his area. He may have to move, after all.

FORTY PERCENT OF RECENT COLLEGE GRADUATES ARE UNDEREMPLOYED, WORKING IN JOBS THAT DO NOT REQUIRE THEIR LEVEL OF TRAINING



Nationally, millions of students every year wind their way through college—investing substantial time and money—toward an uncertain destination. Many never make it to graduation. Those who do, like John, far too often learn that the credential they just earned does not have the value in the job market that they expected it to. Forty percent of recent college graduates are underemployed, working in jobs that do not require their level of training.¹³ Career outcomes are, of course, far worse for students who stop their education after high school.

13. https://www.newyorkfed.org/research/college-labor-market/college-labor-market_underemployment_jobtypes.html

Many factors are in play, but one of the most fundamental is that we simply don't provide opportunity seekers with good information on career options and how those careers connect to education. People can't answer seemingly basic questions, such as: What jobs are available in my region? What skills and credentials do I need in order to get those jobs? Where can I go to get those skills and credentials? What can I expect to earn? John managed to get a college degree without ever figuring out the answers to those fundamental questions.

Our systems for informing opportunity seekers about their options, the skills necessary to access those opportunities, and the potential return on investment are insufficient, and often nonexistent. That's long been the case, but it is all the more problematic as our workforce and talent needs are evolving at an increasingly fast pace. And the opportunity seekers who

suffer the most from the lack of nuanced information about education and career are those who can least afford it—students from low-income families, first-generation college students, and working-class or working-poor adults.

High-income, high-information opportunity seekers are better able to leverage networks and social capital to “hack” together the data and guidance they need to navigate this shifting terrain. However, this approach is far from ideal, and they too also suffer from incomplete information and the tendency to interpret data based on “gut reactions.” Our current data and decision-making systems aren't working particularly well for anybody.

“Two-thirds of kids in elementary school now will be working in jobs that do not even exist yet,” says Kemi Jona, Associate Dean for Digital Innovation and Enterprise Learning at Northeastern University. “How are learners supposed to keep up with what's out there, what they're interested in, and what they're good at without some form of exposure to different career options? That's a nontrivial problem.”

In order to more equitably and effectively empower opportunity seekers, we need a **connected, open, and individual-centered data ecosystem** that provides high quality data on opportunity pathways and guides individuals as they acquire new skills and credentials, enabling them to increase their lifelong earnings and improve their overall quality of life. Our research has demonstrated that we need significant policy and infrastructure improvements to build this ecosystem—along with investment in programs and tools that provide individual-focused navigation and decision-making support.



In particular, we've identified an acute need for development and investment in early exposure to career, search and discovery, and personalized pathing.¹⁴ Taken together, investments in these three areas could super-charge opportunity seekers' ability to design and pursue meaningful, high value pathways that are able to evolve alongside a changing marketplace.



14. <https://docs.google.com/document/d/1iIVcInzImO6CWmn72YHytrMzc8z4vCc28iU8tAH0jRo/edit?pli=1#>

To build a connected, open, individual-centered data ecosystem that powers early exposure to career, search and discovery, and personalized pathing...



IMAGINE IF WE INVEST IN CONNECTING AND OPENING UP DATA TO SUPPORT NAVIGATION...

We could advocate for the creation of a connected data ecosystem designed to power economic mobility. We could support federal and state efforts to connect and open up data—such as through state-based data trusts—and remove policies that prevent the linking of data systems. This includes supporting the development of protocols and standardized competencies to more efficiently collect data; investing in the legal, governance, and technology infrastructure needed to integrate and open up data; and encouraging efforts to realign accountability systems for K–12 and postsecondary systems around shared quality assurance standards (e.g., learning outcomes, completion rates, employment and earnings, student satisfaction).



IMAGINE IF WE BUILT NEW PROGRAMS AND TOOLS TO HELP INFORM OPPORTUNITY SEEKERS...

To make the best use of connected, open data, we could fund efforts that transform the data into tools—such as a Google Flights for training programs or a Flipboard for career—that are useful to opportunity seekers. Google, for example, is piloting a pathways project in Virginia that would connect data from state workforce and education agencies, the community college system, and employers to create a job and training tool powered by Google search. Opportunity seekers need tools that give them a real sense of how education and career paths might work for “people like them” and that, ultimately, enable personalized pathing. Creating tools, however, isn’t enough. We need to ensure that people know about and use them—including by designing awareness campaigns that inform opportunity seekers, their families, and their teachers and mentors about how to use data-informed tools to make decisions about their future.



IMAGINE IF WE INCREASED CAREER EXPOSURE AND EXPLORATION IN MIDDLE AND HIGH SCHOOL...

We could build momentum behind high school redesign efforts that support greater integration of career exploration and exposure and accelerated pathways that include college credit, industry-recognized credential attainment, and work-based learning opportunities. The reauthorization of the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins V) presents an opportunity to drive state level alignment across career education and workforce programs.

“It’s about blending application and education, not about restrictive paths,” says Joe Saboe, Director of Strategy and Partnerships at DSST Public Schools in Denver. “If you want a large swath of society participating in [career education], you have to change the value proposition.”

Industry-Aligned

Shift 2: Align systems of education and systems of work around skills and competencies—using the hiring process as a mechanism for employers to signal to individuals, and the education system that has prepared them, precisely what capabilities are needed for in demand jobs. Today, the hiring process largely is a wasted opportunity.

When Van Ton-Quinlivan joined the California Community Colleges several years ago, the state’s 115 public two-year institutions were all competing with one another and their impact on economic mobility was unclear, at best.

They were measuring for all kinds of outcomes—retention, degree completion, and transfer—but none that directly measured one of their most fundamental goals: positive workforce outcomes. Ton-Quinlivan, Executive Vice Chancellor for Workforce and Digital Futures, immediately set about changing that. It took more than two years and several legislative changes, but the community college system finally arrived at a place where it could measure a range of workforce outcomes, including whether completers broke the regional living wage, saw an increase in wages, and found a career in the field they studied. Creating a clearer picture of the current situation was a critical first step to better connecting the colleges and the workforce system. Ton-Quinlivan and her colleagues then overhauled the funding and incentive system to emphasize the centrality of workforce alignment. “We restructured every pot of money at every level to reflect these outcomes,” she says.



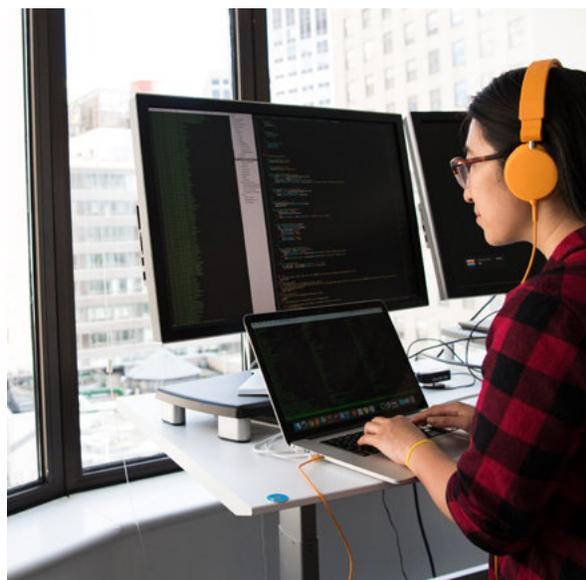
The system incentivized partnerships—with other colleges, K–12 schools, and employers—with real money. It completely upended its funding model by distributing money based on regional economies, often populated by a dozen or so colleges, rather than to individual colleges. To meet the metrics for funding, colleges have to work closely with one another, K–12 partners, workforce agencies, and employers to align their work with data on labor market need. Over a couple years, institutions within every region have formed far deeper partnerships than they had for decades before—the kinds of partnerships that ensure that education pathways are truly industry-aligned. Ton-Quinlivan championed new data tools that have begun to help colleges answer critical questions, such as whether a degree is required for a given position or whether short-term training will suffice. Colleges can use the tools to drill down on what skills really matter for what jobs and lookup which of their peer colleges do better on the metrics, leading to more sharing of lessons learned.

This new model for California's community colleges is showing promising results, and states like Indiana, which just launched a new initiative to develop and fund "21st Century Talent Regions," are piloting similar approaches to putting economic mobility front and center. But such a focus remains an outlier nationally. Across the country, education leaders—especially at public institutions—and employers talk about a laser focus on workforce demand, but both still use proxies for the competencies they ultimately desire. For example, only 54 percent of employers said that college degrees are "fairly reliable representations of a candidate's skills and knowledge" in a new nationally representative survey.¹⁵ At the same time, 44 percent said that, in the past five years, they had increased the required or preferred level of education for jobs that hadn't changed at all. In other words, employers are not sure what a degree tells them about a given candidate's skills, but they fall back on it as a better measure than nothing.

"We use a degree as a proxy for competence. Why? Because it's easy. There is pressure to hire quickly," says a senior HR leader from a Fortune 100 company. "Sitting down to think about the capabilities, and how to assess those capabilities, takes a lot of work. It takes collaboration with an experienced hiring or talent manager to help build that out. I don't know if we're patient enough to do that."

Almost every job opening is now posted online and job seekers can often apply with just a few clicks, which generates hundreds and sometimes thousands of applications per position. To narrow the pool to a manageable group, many employers fall back on degree and use stringent keyword searches that rule out anyone who doesn't list the right credentials. Employers also require credentials for jobs when they aren't necessary in order to reduce the risk of making a bad hire. While, on average, it costs a company \$4,000 to hire an employee, it costs \$30,000 or more to replace them. Employers revert to degree attainment, programs with established reputations, and employee referrals rather than risk "false positives."

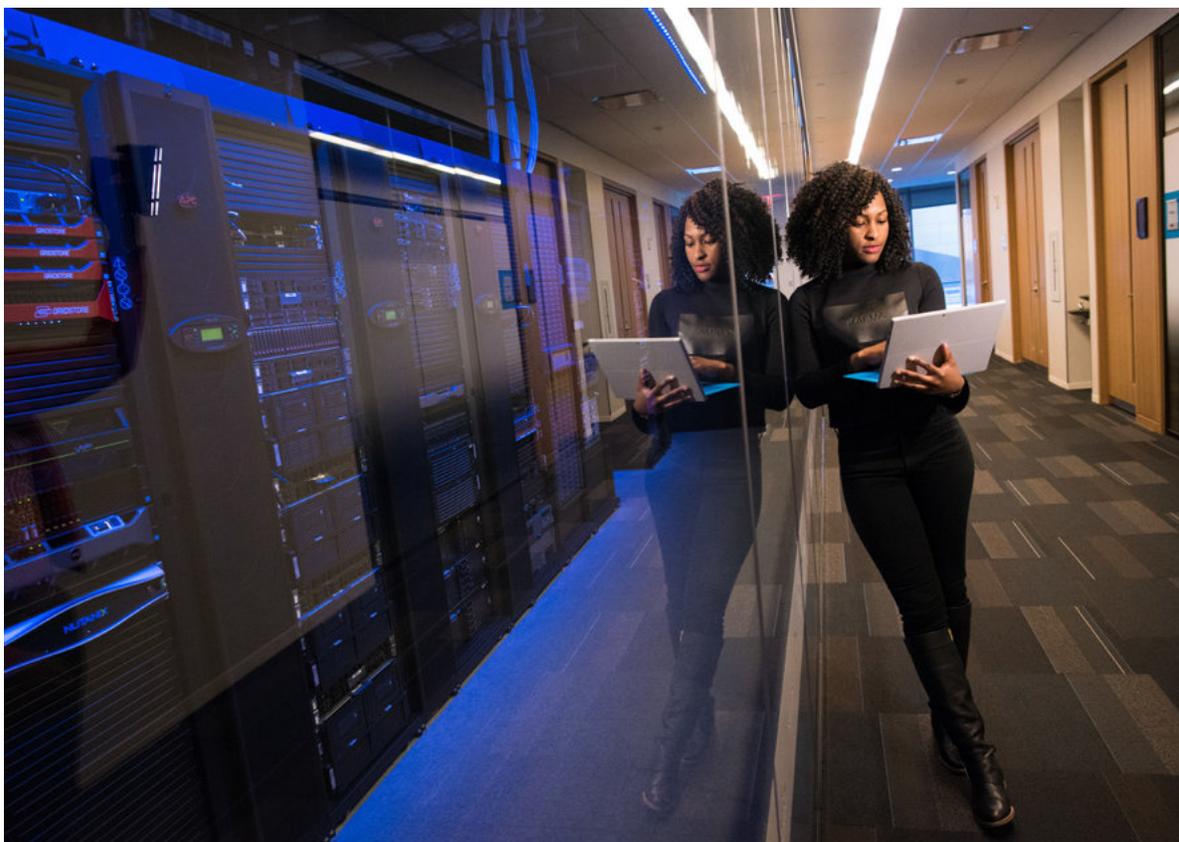
This creates missed opportunities for both employers and job seekers—and large inefficiencies in the credentialing market, as we require people to get a level of training they may not truly need. That's one reason why so many recent college graduates are underemployed by the Bureau of Labor Statistics' standards—their employers require a degree for the position they hold, but the government doesn't define the skills needed as college level. We're in a degree arms race that unnecessarily locks many opportunity seekers out of good jobs for which they would otherwise be qualified.



15. https://www.northeastern.edu/cfhets/wp-content/uploads/2018/12/Educational_Credentials_Come_of_Age_2018.pdf

There are signs that this may be changing, though. With the economy at full employment, companies are hungry for talent, and they generally recognize the need to diversify their talent pipelines, including both the demographics of the people who make it into the pipeline and the routes that get them there. The same survey that found widespread degree inflation, also found that employers are starting to change their ways. Almost a quarter said that they have formal efforts underway to de-emphasize degrees and hire based more on skills or competencies, and another 39 percent are actively exploring such a move. Indeed, a small but increasing number of employers—Google, IBM, Bank of America, Ernst & Young, and Penguin Random House—have already dropped a degree as a hard-and-fast requirement for some skilled roles.

Historically, the system has fallen back on credentialing because it struggles to define certain competencies, including so-called “soft” skills. Institutions can certify that a student met the requirements for a degree, but they still struggle with how to measure and articulate core competencies. In order to more effectively provide options to opportunity seekers, we could encourage the development of data and tools that allow us to better measure competencies, whether they are packaged into formal credentials or not. We also could rethink our education models so that they are aligned to defined industry competencies and are able to evolve with rapidly changing market needs. We must innovate on both the supply and demand side.



In order to build education models aligned to defined industry competencies and able to evolve with the market, and for designing employer hiring and upskilling practices that support mobility in pathways...

IMAGINE IF WE CREATED INCENTIVES FOR EDUCATION AND INDUSTRY COLLABORATION...

We have a tremendous opportunity—particularly at the community college level—to retool funding models and support other innovations that will ensure institutions are truly responsive to industry needs and collaborate with employers. Some states with performance-based funding models—such as Texas and Florida—already encourage industry alignment by tracking and rewarding positive workforce outcomes. The Texas State Technical Colleges, for example, receive funding almost entirely based on the salary premium students earn after leaving the colleges.¹⁶ We need additional research on the effectiveness of various performance metrics and funding structures, coupled with efforts to bring successful models to scale. We also could support efforts to build momentum in communities where collaboration among industry clusters and local education institutions is taking hold, such as with the California Cloud Workforce Consortia. Such collaboration can occur through traditional institutions, or through scalable intermediaries that bridge the divide between employers and education providers—particularly by defining competencies and organizing programs responsive to industry needs.



IMAGINE IF WE CREATED NEW LEARNING MODELS...

We could support education models—such as opportunity on-ramps—that provide meaningful training at the sub-baccalaureate level, leverage opportunity seekers' work experience, and provide sustainable incomes during training. Tech academies, apprenticeship programs, and other workforce on-ramps reduce hiring frictions—in part by providing outsourced services to companies that allow them to “test out” the talent without having to run their own apprenticeship or internship programs. In such a model, the learners are employed by the on-ramp provider, which then hires out their services for employer projects related to their training. This approach reduces both companies' upfront commitment and their risk upon hire, while also producing income for students.

16. <https://www.tstc.edu/about/funding>



IMAGINE IF WE MORE CLEARLY ARTICULATED COMPETENCIES AND BUILT TOOLS TO REDUCE BARRIERS TO HIRING BASED ON SKILL, RATHER THAN CREDENTIAL...

We could increase assessment around what types of industry-recognized certifications, badging, portfolios, and experiential transcripts carry real value in the workforce and also can translate into an academic environment. We could support tools and platforms that enable connections and scale the use of metadata. Such tools would allow opportunity seekers to clearly signal skills to employers and would enable hiring based on competencies and assessment, rather than simply degrees. We have an opportunity to seed and build momentum among employers to collaborate on codifying competency-based hiring and upskilling practices. This could include collaboration down a supply chain, by functional profession (e.g., mechatronics) or by sector (e.g., aerospace).

IMAGINE IF WE INVESTED IN BETTER UNDERSTANDING WHAT EDUCATION AND TRAINING PROGRAMS PROVIDE WORKFORCE ROI...

We could support data collection, integration, and assessment that will demonstrate program ROI to both opportunity seekers and employers. More robust information on outcomes, relative to costs, would allow opportunity seekers to make better investments. At the same time, better measures of program quality—and the specific competencies taught—would to hire graduates more confidently. This has the potential to change the value proposition on training for employers. For example, a 2017 McKinsey study found that if the ROI of learning programs can be demonstrated, employers are willing to pay up to 15 percent of the employee's annual salary, on average, for that training.¹⁷

17. <https://www.mckinsey.com/industries/social-sector/our-insights/closing-the-skills-gap-creating-workforce-development-programs-that-work-for-everyone>.

Permeable

Shift 3: Create pathways that allow opportunity seekers to weave together education and work throughout their lives in ways that fit their individual needs while providing a family-sustaining wage. Today, our education system—including the policies, financing mechanisms, and quality assurance frameworks—are designed around a monolithic education experience at the front end of life.

TJ's college career started out ideally. He received a scholarship to the University of Indiana, participated in a summer bridge program, and received specialized help on selecting a major. But during his first full semester, he switched his business major to informatics and felt like he was falling behind. Concerned about his lack of progress and accumulating debt—he decided to move back home after his first year and attend the local community college. Shortly thereafter, his grandfather shared an article with him from the *Indiana Business Journal* about Kenzie Academy, a non-credit design and coding academy that offers six-month and two-year programs. "For me, it was more of a clear path into the workforce and into a career," he says.

He applied, was admitted, and enrolled. He recently landed a job through Kenzie's new learn-and-earn program, in which students will work part-time with a partner employer, earning above minimum wage and honing their customer service and troubleshooting skills. "I don't know one college that offers an alternative for students to be able to still work and earn money, and keep up with their coursework and everything."

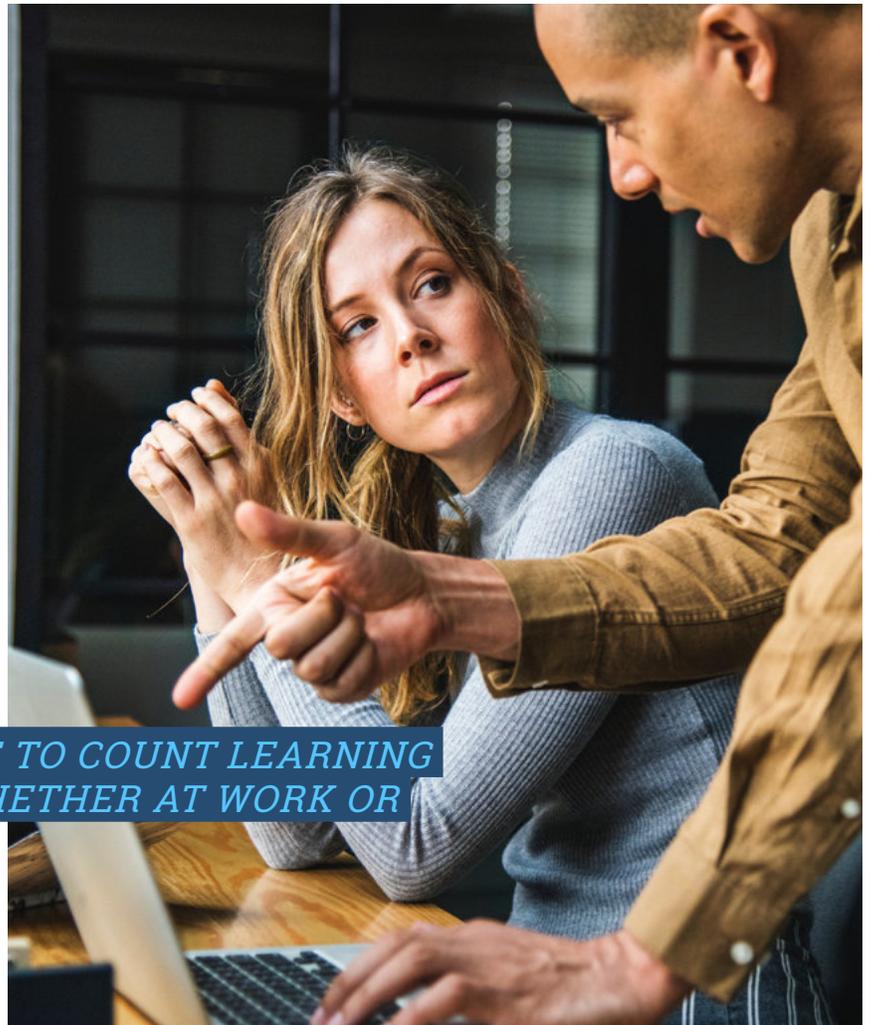
TJ's experience illustrates part of the promise of a system in which education and work are permeable across the continuum. His training is industry-aligned, and he is able to work and learn at the same time. Both are critical, but truly permeable systems would not only allow opportunity seekers to work and learn at the same time, but would also recognize learning wherever it happens—whether in the classroom or on the job—and allow individuals to stack credentials as they move through education and career. Imagine, for example, if TJ could transfer what he's learned at Kenzie seamlessly into an associate degree. And then if, as he advances in his career, he could use that two-year degree and formal recognition of on-the-job management experience to take him most of the way to a bachelor's degree, without losing momentum or credits along the way.



In our current systems, competencies are not articulated across academic and employment experiences, so the learning does not readily transfer from one domain to another. With the exception of a limited number of postsecondary providers that perform prior-learning assessment, skills learned on the job don't translate into academic credit. Likewise, academic credits, without a credential, don't count for much with employers. And those same credits still don't transfer easily between academic programs at different institutions, even after years of work on that issue. At the K-12 level, accountability measures and seat time requirements remain a barrier for earning transferable credits from alternative training providers and dual enrollment programs.

Credit articulation requires collaboration across multiple institutions, making it difficult for individual organizations to scale with bilateral articulation agreements. Kenzie Academy is, in fact, working to get its two-year program to count as an associate degree as an associate degree, which graduates can then apply toward a four-year degree down the road, if needed. But working out the arrangement is challenging and fraught with bureaucratic barriers that have nothing to do with ensuring quality.

The lack of system-wide articulation is particularly problematic for low-income opportunity seekers, who often must accumulate training more slowly across multiple institutions. Because of the opportunity cost of being out of the workforce, they often cannot enroll full-time in two- or four-year education programs. If they do enroll full-time, the high cost often results in intractable debt. We, instead, need permeable pathways that allow opportunity seekers to combine or move seamlessly between education and work. And workers need to be able to count learning wherever it happens, whether at work or in the classroom.



**WORKERS NEED TO BE ABLE TO COUNT LEARNING
WHEREVER IT HAPPENS, WHETHER AT WORK OR
IN THE CLASSROOM**

In order to build interoperable and stackable program models that recognize learning across education and work contexts, and create financing and incentives to support access to upwardly mobile pathways...



IMAGINE IF WE PILOTED NEW COMPETENCY-BASED MODELS, WHILE ADDRESSING POLICIES THAT PRIORITIZE SEAT TIME OVER LEARNING...

We could pilot new secondary and postsecondary competency-based education models, assess what existing models are already working, and address broader accountability policies that put seat time requirements in place. We could support initiatives meant to standardize and establish the credibility of data behind badging, portfolios, and other signaling mechanisms.



IMAGINE IF WE RETOOLED OUR INCENTIVE AND FINANCING SYSTEMS FOR K-12 EDUCATION AND POSTSECONDARY EDUCATION AND TRAINING...

We could provide technical assistance to regions—including school districts, colleges and universities, and employers—seeking to implement institutional collaboration models or shift funding to develop more programs that meet labor market needs. This represents a fundamental shift from financing models focused on institutions to ones that are focused on regional economic mobility. We also must rethink the way that individuals pay for education. We could encourage models that allow opportunity seekers to integrate work and education, providing them with income and reducing the upfront costs to education. Creative financing, such as income-share agreements, also can reduce upfront costs and barriers to entry. ISAs require no upfront tuition payment from students, and instead charge a fixed proportion of an individual's post-completion salary for a set number of years. Such a model is progressive—the less you earn, the less you pay.

Each of the possibilities outlined in this section would move us closer to the connected systems that we need to create education-and-career pathways that are learner-empowered, industry-aligned, and permeable. They would move us to a future where education pathways are accessible, provide a clear return on investment, and support economic mobility and stability across one's lifetime. To get there, we must fundamentally reengineer our ideas about education and career; we must ask new questions; and we must invest in the new possibilities that emerge.

Moving to Action

To build the future we imagine—one in which there are no dead ends for opportunity seekers, we must move from static paths to dynamic pathways. We need to reimagine systems to create **learner-empowered, industry-aligned, permeable pathways**. To build momentum around this work, Entangled—along with its partners at the Walton Family Foundation and Strada Education Network—spent several months scanning the current state and areas where energy and opportunity for change are building.

The next phase of work, from January through April, will move from identifying areas of opportunity to developing possible solutions. We are reengineering the questions we ask as part of that process—moving beyond a focus on traditional outcomes to the end result that really matters: economic mobility for more Americans. And, as we rethink the questions we ask, we open up opportunities for novel solutions.



We worked with our partners to select three questions that represent powerful leverage points for creating more equitable pathways between education and work. They do not represent the comprehensive needs of opportunity seekers—but they do represent areas of need that are critical in and of themselves, and also would undergird and open up a much broader range of possible solutions. Over the next few months, we will bring together teams from diverse sectors and perspectives to workshop these specific “how might we” questions:



DATA, NAVIGATION & GUIDANCE: How might we empower opportunity seekers with the data, navigation, and guidance they need to make dynamic, informed decisions about their journey—weaving together education and work throughout their lives in ways that work for them and provide family-sustaining wages?

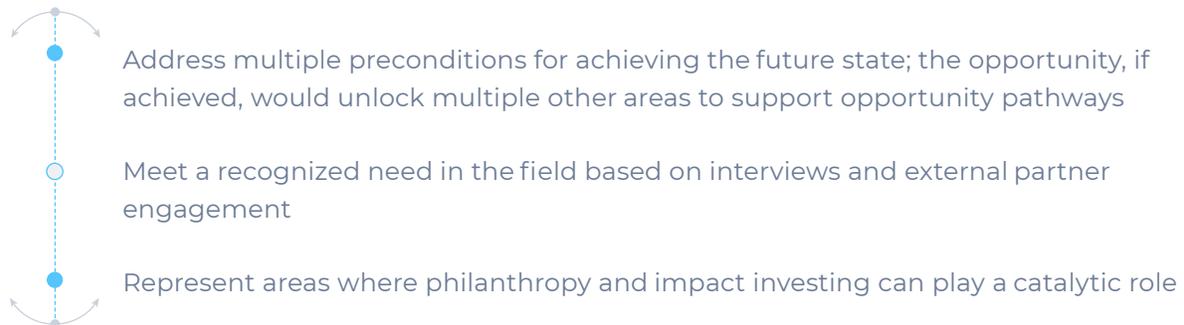


EMPLOYER HIRING & SIGNALING PRACTICES: How might we create changes in employer hiring and signaling practices that enable hiring based on competencies instead of pedigrees?



ENABLING CONDITIONS FOR BREAKTHROUGH PROGRAM MODELS: How might we create the necessary preconditions—more innovative policy, financing, and quality assurance mechanisms—for scaling breakthrough learning program models that more seamlessly connect education and work?

We selected these three focus areas because they met key criteria for this work. Specifically, they:



In short, they present an opportunity for substantial, relatively immediate impact. We invite people to share their perspectives and ideas with us by joining a working group. You can do so here: www.opportunitypathways.org. With creative solutions and thoughtful investment, we believe a focus on these three critical questions can move us much closer to a future where no learner hits a dead end.

WALTON FAMILY FOUNDATION

The Walton Family Foundation is a family-led foundation that creates access to opportunity for people and communities, working across three areas: improving K-12 education, protecting rivers and oceans and the communities they support, and investing in its home region of Northwest Arkansas and the Arkansas-Mississippi Delta. In 2017, the foundation awarded \$535 million in grants to further its mission.



Strada Education Network is a national nonprofit dedicated to improving lives by catalyzing more direct and promising pathways between education and employment. Strada engages partners across education, nonprofits, business, and government to focus on student success and address critical college to career challenges. Strada is focused on advancing the universal right to realized potential: Completion with a Purpose.

entangled.solutions

Entangled Solutions is an education innovation studio with the mission to support our society in equitably transitioning to a knowledge economy. Entangled incubates social impact ventures, orchestrates collective action initiatives, and directs multi-stakeholder projects. Entangled designs and builds dynamic solutions to the most pressing problems in education, in partnership with creative philanthropies, universities, and companies.