



SHIFT HAPPENS

The Entrepreneurs, Wonks, and Investors Revolutionizing the Learning-to-Employment Landscape

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PRODUCED BY



We are in a **KNOWLEDGE ECONOMY**
and a **GLOBAL MARKETPLACE**
where what you **KNOW** and what
you **CONTINUALLY LEARN** will
make the **DIFFERENCE** for how
an individual, company and even
country **SUCCEEDS**. The Degree, which
historically was the currency that
was exchanged for **OPPORTUNITY**,
is going to be augmented by a
variety of ways people will be able to
represent their capabilities enabled
by **POWERFUL SOFTWARE**. It's about
KNOWLEDGE not **COLLEGE** and
Knowledge becomes **THE CURRENCY**.

Michael Moe, Chairman, Chairman, CEO + Chief Investment Officer
GSV Capital

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SHIFT HAPPENS

A LETTER FROM JAMAI

The shift to competency-based learning and hiring is here to stay. And it has been inevitable for some time. About a year ago, Whiteboard Advisors and Innovate+Educate started talking about how to frame this shift. We thought about what it really means to employers, job seekers, and historic pathways from education to employment. And we wrestled with how to map the landscape of the many players involved.

With the shift, new companies, new technologies, new pathways, and new players are rapidly entering the market in ways that reflect a familiar pattern in which big, complex challenges threaten old systems and demand an entirely new way of doing things. New categories are emerging. Old categories are converging. Competency-based learning is moving us closer toward a vision of competency-based hiring as new assessments and business models transform both the supply and demand side of the talent pipeline. And we believe the market of “employment technologies” has just begun.

The shift to competencies may soon render old concepts like classes and courses — or even subject matter — obsolete, as providers combine modules of learning into pathways that are cost-effective, agile, and adaptable to the changing labor market. In the not-too-distant future, competencies will become so inextricably linked with our education and employment practices that terms like competency-based learning or hiring will become obsolete. We will simply speak learning and hiring — and find it hard to imagine a time when we did it any other way.

Our thesis is simple: very few Americans have four years of time and four years of money at the same time. The number of Americans who can and should avail themselves of traditional education pathways is shrinking.

We believe that the shift is critical to creating pathways to employment for the many workers struggling or left behind in the current education-to-employment system. Assessments and valid training approaches are key to our work, and we highlight training and thought partners in this paper.

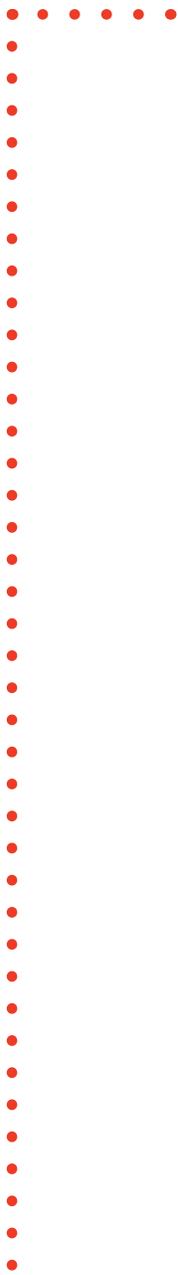
Finally, we are grateful for the thoughtful leadership and partnership of Whiteboard Advisors in bringing this paper to fruition and to Ryan Craig of University Ventures, who penned our foreword, helped us to map the shift, and continues to help lead on this critical issue with his writing and investments.

Jamai Blivin



FOREWORD

RYAN CRAIG



Americans are dissatisfied, feel dispossessed, and they're not going to take it anymore. Large numbers of Americans have not earned the *sine qua non* of today's labor market (i.e., college degrees), do not work in knowledge-intensive sectors of the economy, and do not live in the fastest-growing regions.

And it could get a lot worse for them before it gets better. Studies project anywhere from 10 to 47 percent of current jobs are at risk of being eliminated by technology.^{1,2} It's not science fiction to fear that America could begin to look more like Brazil and other emerging markets, with urban "favelas" housing dislocated workers seeking to scrape by.

It is now clear that leaving the economy prostrate to global forces without powerful advances in how we retrain, reskill, and perhaps even relocate workers who have been left behind is not a sustainable approach. This is particularly true given the private sector's gradual disinvestment in training and skill development over the past two generations. Peter Capelli of Wharton correctly notes the "Home Depot" hiring approach of employers, where filling an open position has become "akin to replacing a part in a washing machine." The store now either has the part, or it doesn't. And if it doesn't, the employer waits.

So when Americans (on both sides of the aisle) believe the system is rigged, what they're really saying is that no matter what they do, they're unable to get ahead and, in fact, are falling behind. And while globalization or immigration often draw attention as the root cause, their actual effect is minimal (or exacerbated) by the rigged twin quasars of higher education and hiring.

Over the past half century, American higher education has expanded from an elite audience to the mass market. Unfortunately, expansion in market size has

**AMERICANS ARE DISSATISFIED, FEEL DISPOSSESSED, AND
THEY'RE NOT GOING TO TAKE IT ANYMORE.**

not been accompanied by a concomitant expansion in product diversity. Our isomorphic system³ of higher education has swelled under the false belief that a monoculture of bachelor's degrees – a product originally developed to serve the sons of merchant elites – would serve all hungry students. But just as any sustained monoculture eventually harms the environment, higher education's monoculture leaves aspiring workers feeling like the system is rigged. While America has among the highest rates of matriculation in higher education, it has the lowest rate of completion. Nearly half of all students who undertake bachelor's degree programs fail to complete four-year programs⁴, which means their investment of time and out-of-pocket dollars and student loans is for naught: they leave without any credential of value.



Employers and hiring managers are equally responsible. Blessed with millions of new applicants with bachelor's degrees, the bachelor's degree has been added as a requirement to virtually every job description in growing sectors of the economy – whether or not the position in question actually requires one. Many jobs that previously required bachelor's degrees now demand master's degrees. And with the advent of online job postings (now about 85 percent of all positions) that typically yield hundreds of applicants per position, employers are forced to rely on applicant tracking systems, which utilize keyword-based filters to winnow the candidate pool to a manageable number. As a result, candidates without degrees aren't even reviewed by human hiring managers.

EMPLOYERS AND HIRING MANAGERS ARE EQUALLY RESPONSIBLE. BLESSED WITH MILLIONS OF NEW APPLICANTS WITH BACHELOR'S DEGREES, THE BACHELOR'S DEGREE HAS BEEN ADDED AS A REQUIREMENT TO VIRTUALLY EVERY JOB DESCRIPTION IN GROWING SECTORS OF THE ECONOMY – WHETHER OR NOT THE POSITION IN QUESTION ACTUALLY REQUIRES ONE.

While credential inflation may be a good career advancement strategy for hiring managers — no one gets fired for hiring a candidate with a bachelor's degree — it has been career Armageddon for applicants without bachelor's degrees. This goes equally for 20-somethings stuck in front-line service jobs seeking to obtain a first job with career prospects, and for 40- and 50-something displaced workers.

In *College Disrupted: The Great Unbundling of Higher Education*, I described the coming unbundling of degrees into shorter, less expensive pathways to employment through the emergence of competency profiles and competency marketplaces that allow employers to shift from pedigree- and degree-based hiring to competency-based hiring. And, despite the focused efforts of community colleges to shift to meet the growing demand of employers, it is highly unlikely that the solutions will be solved solely by community colleges. Much of the innovation will come from outside of the traditional system.

Closing the skills gap by ending the monoculture of degrees, ending pedigree- and degree-based hiring, and growing a diversity of faster, less expensive, and respected pathways to high-value employment is the calling of our time. Let's hope we get the job done, and do it well. Our future depends on it.



RYAN CRAIG is Managing Director of University Ventures, a fund that invests in entrepreneurs and institutions that are reimagining the path from higher education to a stronger economic future for students, universities, and employers.

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Ryan Craig, Managing Director of University Ventures

ABOUT THE ORGANIZATIONS



INNOVATE+EDUCATE

Innovate+Educate is a national nonprofit working across the U.S. to create new pathways to training and employment based on competencies and skills. Innovate+Educate works with communities, foundations, venture capitalists, and workforce thought leaders to implement research-based, demand-led strategies that will lead to the national adoption of competency-based hiring and training by employers. They also are the producer of the annual Close It Summit. (2017 to be held in Chicago September 25-28, 2017.)



WHITEBOARD ADVISORS

Whiteboard Advisors advises the most transformative businesses and organizations in education, health, and wellness. Our team of policy wonks, geeks, and storytellers brings an unmatched understanding of the political and policy landscape to bear on strategy. With offices in Washington, DC and Silicon Valley, we help our clients navigate complex regulatory matters, conduct policy and market research, and implement creative communications strategies.



ABOUT THE AUTHORS





JAMAI BLIVIN is Founder and CEO of Innovate+Educate, a nonprofit she started in 2009 in Santa Fe, NM with a vision for an industry-led board focused on education and workforce strategies to address the significant gaps between supply and demand in education and workforce. With multiple programs being implemented nationally, Jamai is one of few people in the country working as both a thought leader and on-the-ground implementer.

Jamai serves on multiple national boards including The Future at Work Coalition, the Urban Research Park CDE, and the K12 Career Readiness Initiative. She is also very involved in her work in NM, sitting on the City of Albuquerque Learning Council, Mayor Javier Gonzales Children's Cabinet, and ACT State Leadership Board (NM). She resides in Santa Fe, NM. She and her husband David have seven children, all on their own journey from education to employment.



BEN WALLERSTEIN is Co-Founder of Whiteboard Advisors, a Washington, DC-based consulting firm and publisher of [Education Insider](#). For over a decade, he has advised the most successful, mission-oriented companies in education, health, and wellness. He is a frequent speaker and commentator on the intersection of policy and innovation. Whiteboard Advisors' analysis and writing has appeared in *The Washington Post*, *USA Today*, *TechCrunch*, *U.S. News*, *The Huffington Post*, *VentureBeat*, and *EdSurge*, among others.

Ben began his career as an aide to former Xerox CEO, David Kearns. The product of public schools in Norwalk, CT, Ben is committed to issues of equity and access in public education. He attended the University of Richmond and received his J.D., *cum laude*, from Georgetown University, where he was an editor of the Law Review. Ben and his wife, Sarah, have two young children and are attempting to split time between Washington, DC and San Francisco.

Executive Summary

A shift in the learning-to-employment landscape is beginning to challenge historic models of higher education, training, and hiring. The shift is giving rise to new companies, new models, and partnerships around formal, informal, and corporate learning, as well as new education and workforce strategies and policies. It has aligned the interests of civil rights leaders and corporate titans when it comes to identifying and cultivating talent. It holds the potential to address historic equity gaps — and to accelerate economic mobility.

This shift is rooted in the recognition that soft skills enable the choreography of teams poised for productivity, and that technical skills now outnumber cognitive and core skills in job descriptions in virtually every industry. It demands better matching between talent and jobs. It is accelerating the demise of the resume, as machine-readable credentials and evidence of competencies replace historic proxies for knowledge and experience. And it reinforces the need for a greater diversity of postsecondary education products and pathways.

At its heart, this shift is as much about when and where education happens as it is about producing — and using — data to discover and unlock the potential of talent. It is about shifting the model of postsecondary education from an enterprise software model — a one-time purchase — to what pioneers like General Assembly's Jake Schwartz or Ryan Craig have described as a SaaS-based⁵ model, where individuals and organizations purchase the education they need, when they need it. It is about scalable alternatives to systemic bias in a hiring process that all too often limits access and equity. It is also about radical transparency for workers who can, for the first time, plan career paths and invest in education based on a real-time understanding of employer demand.

The shift is also stimulating significant investment as entrepreneurs see opportunity in the inefficiencies that plague traditional education-to-employment pathways and tech giants like LinkedIn harness unprecedented insight into the labor market to pioneer entirely new approaches to learning.

Opportunity abounds, but the rapid pace of change also creates complexity for employers, job seekers, educators, and training providers. The trends and trajectory of the shift are, at times, masked by seemingly conflicting messages across a multiplicity of new providers, an explosion of digital credentials, and the evolution of entirely new fields and job types. It raises complex questions without easy answers: Which credentials matter? And will companies really recognize them? How can we cut through the noise to replace signals with data that are both predictive and useful? How will emerging ethical guideposts and policy considerations ensure that innovation creates opportunity for individuals who have been left out because they are unable to demonstrate their potential through traditional means?



This paper makes the case for a new, competency-based learning and employment ecosystem. It explores both the challenges that necessitate the shift, and the landscape of players that will fulfill its promise. Our goal was to answer some basic questions: Why now? What are the basic categories and providers that make up the new landscape? What is missing? Who are the change makers involved? What are the trends that will animate investment and stimulate change over time? What are the pitfalls to avoid?

We are grateful for the entrepreneurs, philanthropists, HR and business leaders, policymakers, investors, and institutions who shared their ideas, passions, and points of view. Many of those included in this piece are friends, clients, or investments of the authors. The paper is not without bias. It does not offer an exhaustive landscape of the field. Of course, there are many perspectives and people that would be worthy of consideration in a paper like this. We hope to spark discussion and hear from more of them through this work.

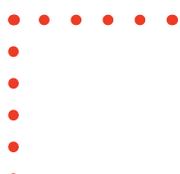
THIS PAPER MAKES THE CASE FOR A NEW, COMPETENCY-BASED LEARNING AND EMPLOYMENT ECOSYSTEM. IT EXPLORES BOTH THE CHALLENGES THAT NECESSITATE THE SHIFT, AND THE LANDSCAPE OF PLAYERS THAT WILL FULFILL ITS PROMISE.

The Challenge(s)

As our economy settles into new post-recession realities, it is clear that things have changed. Individuals are less confident in their economic position, with nearly half self-identifying as “lower” or “working” class — up from just 37 percent prior to the recession.⁵ The number of Americans who consider themselves “middle” or “upper middle” class has likewise fallen, down 10 percentage points, to 51 percent.⁶ “People who have gone through traditional education paths and have kept skills up-to-date may be doing well in the economy,” notes Jaime Fall, Director of the Aspen Institute’s UpSkill America, “But those who haven’t, or who haven’t had access to traditional paths, are being left behind.” Rhetoric on both sides of our recent presidential election reflected this dynamic.

These changes are exposing weakness in our traditional learning-to-employment pathways. According to a recent national survey, 59 percent of college graduates thought they were ready to apply their skills and knowledge to the real world, but only 23 percent of employers thought they were ready.⁷ Another survey found that 87 percent of recent graduates felt well-prepared for jobs and careers after earning their diplomas, but only half of hiring managers agreed with them.⁸ These surveys may, in part, reflect hyper-growth among a subset of lower-quality providers during a period when enrollment ballooned, and degree attainment stagnated. But they also signal a much more fundamental disconnect between employer demands and our system of higher education.

Notwithstanding its critics, the degree’s fading signal hasn’t stopped employers from making the degree a prerequisite for jobs that never required one. Sixty-five percent of all jobs will require postsecondary education and training by 2020, but only about 33 percent of people in the U.S. have a bachelor’s



SIXTY-FIVE PERCENT OF ALL JOBS WILL REQUIRE POSTSECONDARY EDUCATION AND TRAINING BY 2020, BUT ONLY ABOUT 33 PERCENT OF PEOPLE IN THE U.S. HAVE A BACHELOR’S DEGREE OR MORE.

WE HAVE A COMPLETE AND UTTER MISMATCH. PEOPLE ARE GETTING TRAINING FOR JOBS THAT DON'T EXIST OR AREN'T OPEN, AND SKILLED JOBS ARE SITTING UNFILLED.

Governor John Engler, President of the Business Roundtable

degree or more.^{9,10} “Part of the challenge is that employers don’t really know what skills they’re looking for, which is why you see employers using the 4-year degree as a proxy for other skills for a job that doesn’t actually require a one,” notes Sarah Steinberg, Vice President of Global Philanthropy at JPMorgan Chase. The social and economic implications of that reliance are not benign. Innovate+Educate’s own research shows that while only 1 percent of disconnected, high-risk young adults aged 16-24 could qualify for a job based on a degree requirement, almost 33 percent of those same young adults have the skills and cognitive abilities equivalent to college graduates.

The upcredentialing phenomenon is, we believe, contributing to a demographic shift in postsecondary education. The National Center for Education Statistics projects that by 2020, 42 percent of all college students will be 25 years of age or older.^{11,12} US Undersecretary of Education Ted Mitchell recently described this wave of adult degree seekers as the “new normal.”

But are “new normal” adult learners destined to miss the (economic) boat? “There wouldn’t be 4 to 5 million unfilled jobs today if degrees worked,” according to Governor John Engler, President of the Business Roundtable. “We have a complete and utter mismatch. People are getting training for jobs that don’t exist or aren’t open, and skilled jobs are sitting unfilled.”¹³ More and more people seem to agree. According to a 2016 Public Agenda survey on higher education, just 42 percent of Americans say college is necessary for workforce success. This is a 13 percent drop from 2009, when 52 percent of people thought that a degree was necessary.¹⁴

And even well-intentioned federal policies can exacerbate reliance on credentials to the detriment of candidates from underrepresented backgrounds. Equal Employment Opportunity (EEO) laws, created to prevent discrimination,

can actually make it harder for companies to take a chance on a candidate with a non-traditional education or career pathway. “Compliance and EEO laws have a big impact on how employers recruit and screen candidates,” argues HiredScore founder Athena Karp. If a job posting lists a college degree as necessary, for example, companies may find themselves unable to hire a promising candidate without a degree in order to comply with the law.

Of course, the perceived or real limitations of the degree are just one facet of a much larger problem. In today’s job market, the shelf-life of in-demand skills is estimated to be less than five years, and many of today’s fastest growing job categories didn’t even exist five years ago. That means that providers (degree and non-degree education and work training programs) have to adapt quickly to the needs of local employers and industries. It means that even with a degree, individuals must be prepared to reskill or upskill to meet market needs.

We can no longer expect that the world of work begins where education leaves off. Fewer and fewer people have four years of time and four years of money at the same time. “Working adults are in desperate need of educational experiences and credentials that can translate into better jobs and economic opportunity, but we can’t put the burden of navigating the world of work and world of education on the individual,” according to Rachel Carlson, Founder of Guild Education, which is pioneering a new model of education as a benefit with companies like Chipotle. “Educational credentials, including degrees, are the coin of the realm in our economy – but employers are going to have to help employees make better decisions about when, what, and how to pursue educational experiences that will enable them to move up the economic ladder.”



While a college degree will – and should – remain necessary for certain types of positions, employers should challenge themselves to consider whether other positions really require a degree, or if a skill-based credential would be sufficient.

Ironically, technology has in some ways made hiring harder, not easier. Approximately 70 percent of all jobs, including 80-90 percent of jobs that require at least a bachelor's degree, are now posted online.¹⁵ The average job generates hundreds of applications and resumes. Human hiring managers can't process the volume of applications they receive and many have stopped trying, in a field increasingly dependent on applicant tracking systems like Oracle's Taleo to filter applicants. The resume dates back to 1482, when a 30-year-old Leonardo da Vinci wanted to find work in the city of Milan as a designer of bridges, or as a boat builder, or a sculptor, or as a man who builds machines that take water out of trenches, or whatever else the city needed. So, he sent a letter to Ludovico Sforza, the Regent of Milan at the time, explaining his many skills. Today, resumes aren't nearly as personal as da Vinci's was — and resume filters used by employers are keyword-based, giving rise to the hilarious but sad phenomenon of resume spam, wherein candidates copy the job description in white font into their resume to ensure that they have a shot.

Because keyword-based applicant tracking system filters are not yet intelligent, semantic-based, or able to seek out and incorporate external competency data (other than that presented on the resume itself), the resulting candidate pools are imperfect, at best. Depending on the formatting of the resume, tracking systems may, for example, fail to recognize that multiple positions at the same employer are actually different jobs. The process is rife with false positives and false negatives.

The imperfection of job descriptions also creates challenges for employers. Athena Karp explains that “Job posts aren't always written by recruiters, and are sometimes more of a wish list by hiring managers of criteria that is intended to lead to the most qualified candidate. There's imperfection in the cycle of how job requirements get defined, by whom, who is responsible for screening and reviewing candidates, and how they can hire while abiding by legal requirements.” Few employers actually know what characteristics and competencies are predictive of success in a given position, so job descriptions remain largely haphazard — an art rather than a science.

534
YEARS
AGO

**LOOKING FOR
WORK IN MILAN,
LEONARDO DA
VINCI SENT
A LETTER TO
LUDOVICO SFORZA
EXPLAINING HIS
MANY SKILLS.**

Desperately Seeking Better Credentials and Hiring Technologies

There is a reason that the degree is so frequently used in hiring: identifying best-match candidates is hard, and in the absence of other, more relevant third-party validated credentials, degrees provide some information about skills and non-cognitive factors (like perseverance or attention to detail) that can be hard to glean from other parts of a resume or application. “Today, it’s largely pedigree measures like academic degree, or certain schools, or work experience that signal employers to hire,” observes Karan Chopra, Co-Founder and Executive Vice President at Opportunity@Work. “These proxies are all too crude.”

Increasingly, both colleges and non-traditional training programs are being asked to provide signals that are both meaningful — and convenient — for hiring. These may take the form of digital badges, credentials rooted in skills assessments, digital portfolios of work, or other real-world demonstrations of skill. Institutions of higher education, workforce training centers, and private organizations increasingly offer shorter, more targeted programs that result in non-degree certifications, licenses, or certificates. “Over the last decade, there has been a proliferation of credentials beyond the academic degree,” says Mary Alice McCarthy, Director of the Center on Education and Skills at New America. Ellen Wagner, Vice President of Research at Hobsons, agrees: “The development and growth of new models of competency development and demonstration mean that today’s learners have more choices of educational experiences and credentials than ever before.”

TODAY, IT’S LARGELY PEDIGREE MEASURES LIKE ACADEMIC DEGREE, OR CERTAIN SCHOOLS, OR WORK EXPERIENCE THAT SIGNAL EMPLOYERS TO HIRE. THESE PROXIES ARE ALL TOO CRUDE.

Karan Chopra, Co-Founder & Executive Vice President at Opportunity@Work

In fact, there are over 11 million adults in the U.S. who do not have a degree, but do have a professional certification or license that produces real returns in the labor market.¹⁶ According to a recent Bureau of Labor Statistics report, workers 25 years of age and older with some college or an associate's degree had median earnings that were 11 percent higher when they held a professional certification or license, compared to the same group without these non-degree credentials.¹⁷

An explosion of new credentials and badges can also create complexity for both employers and individuals. "There has to be more attention to career and path navigation," says Mary Alice McCarthy. "This has all become far too complicated and confusing for people." But entrepreneurs are working to simplify the process. "We're beginning to see a really exciting interplay between the analytics capabilities of employers, and the sophistication of digital credentials," says Jonathan Finkelstein, Founder of Credly. "Digital credentials can be used to represent a wide variety of accomplishments, and as they take a data-rich and machine-readable format, employers can better discover right-fitting candidates and filter those candidates more accurately and efficiently. This shift enables employers to transparently articulate the skillsets they target in hiring and, in turn, empowers job seekers to more thoughtfully curate educational experiences appropriate to their personal and professional goals."

Reliance on applicant tracking systems has also grown. Experts estimate that 90 percent of large companies now utilize applicant tracking systems¹⁸, and these systems are becoming more prevalent with small- and mid-size employers as well. As reliance on applicant tracking systems has grown, providers of people analytic technologies are, in turn, helping employers track the performance of new hires and existing employees, and feed back that performance data in order to improve the relevance and accuracy of job descriptions.

Smart employers like JPMorgan Chase are investing in the ecosystem. Their foundation's New Skills At Work program is investing \$250 million in training for adults, and their New Skills for Youth program will invest \$75 million on solutions for the youth unemployment crisis. "Our approach looks at both sides of the labor market," notes Sarah Steinberg, Vice President of Global Philanthropy at JPMorgan Chase. "We can't just invest in good schools and training; the skills gap is just as much a challenge on the demand side as



supply side. We work with employers to identify and articulate what their needs are: what are the skills they require, how would a person get those skills, and what kind of credentials would a job seeker have to make them feel confident that they possess those skills.”

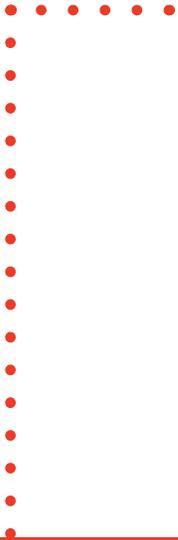
Other smart foundations are doing the same. For decades, philanthropy has focused their resources on the “supply” side of the employment ecosystem, namely education and training. While this is a critical piece of the ecosystem, there has been a recent shift to more emphasis on the “demand” side of the equation (e.g., employers, and their hiring and retention needs). The Rockefeller Foundation’s focus on youth employment has spurred investments in organizations like Innovate+Educate, that design their workforce programs with employers’ needs and priorities in mind.

“While these efforts are a great start, competency-based hiring and other demand-driven programs are far from being the norm in the youth employment space. We need to ensure that America’s youth have an opportunity to be seen for both their skills and traditional credentials, which requires reassessing what it means to be qualified for a particular job. We are seeing a willingness among more and more companies to rethink their traditional hiring practices, and an understanding that expanding their candidate pool to include more opportunity youth can actually yield better hires,” said Abigail Carlton, Managing Director of the Rockefeller Foundation’s U.S. portfolio.

Walmart and the Walmart Foundation are also working to connect employment needs with education. In 2015, the Foundation announced a five-year, \$100 million initiative to create career maps, training approaches, and alignment among employers and training providers. In developing these tools and practices, the Foundation will support programs that directly help 50,000 people, including 30,000 workers move from entry-level to middle-skills jobs.

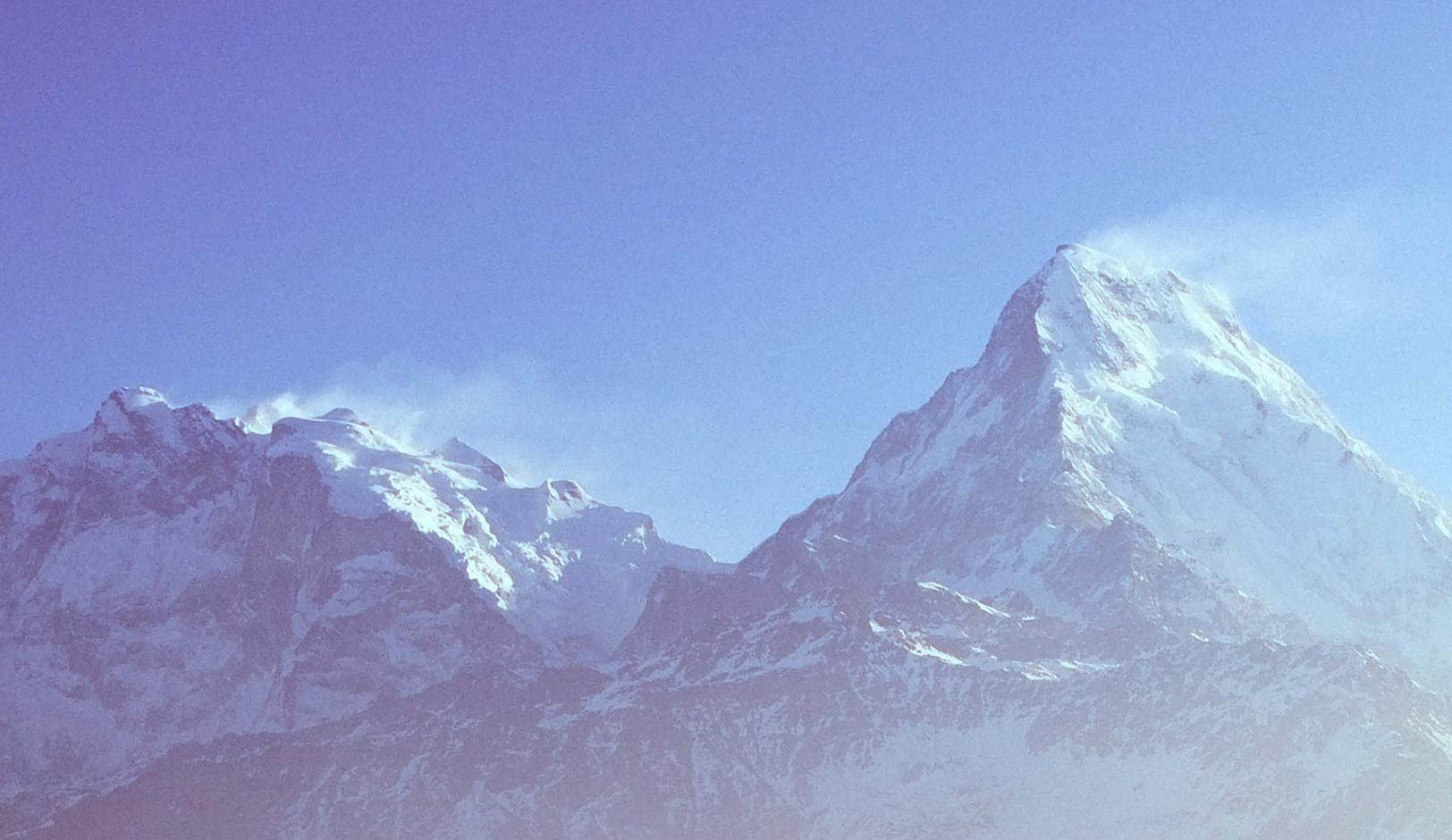
“We are excited to partner with foundations, employers, training providers, government bodies, and nonprofit organizations to improve career pathways for people in retail and adjacent sectors,” said Kathleen McLaughlin, President of the Walmart Foundation and Senior Vice President of Corporate Affairs.

“We believe progress requires collective action in the industry to align on the skills required for advancement and to develop more innovative, effective, and universally-used training and assessments that recognize on-the-job learning. Ultimately, we aim to increase economic mobility of the U.S. retail workforce as a whole.”



WE BELIEVE PROGRESS REQUIRES COLLECTIVE ACTION IN THE INDUSTRY TO ALIGN ON THE SKILLS REQUIRED FOR ADVANCEMENT AND TO DEVELOP MORE INNOVATIVE, EFFECTIVE, AND UNIVERSALLY-USED TRAINING AND ASSESSMENTS THAT RECOGNIZE ON-THE-JOB LEARNING. ULTIMATELY, WE AIM TO INCREASE ECONOMIC MOBILITY OF THE U.S. RETAIL WORKFORCE AS A WHOLE.

Kathleen McLaughlin, President of the Walmart Foundation and Senior Vice President of Corporate Affairs



The New Landscape

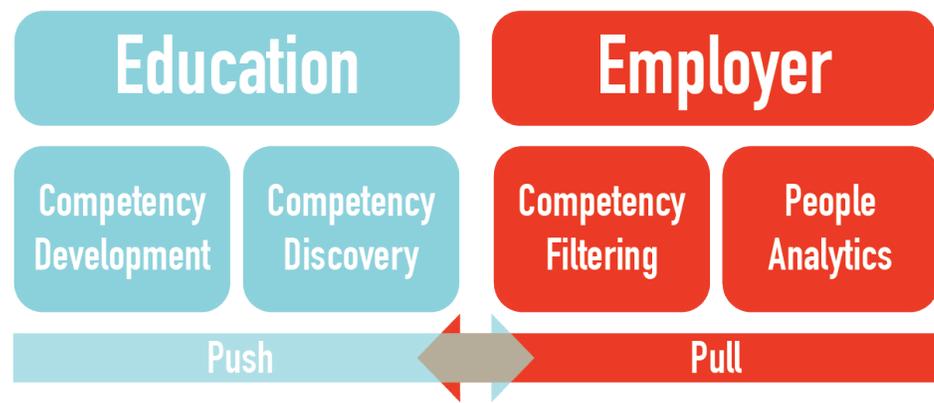
The disconnect between millions of individuals without a job and the employers eager to hire for tough-to-fill positions is not simply a question of training or education (though these are certainly significant components). And it won't be solved with better evidence of skills (through assessments, badges, and microcredentials) alone. It will require improved hiring processes, a common language between employers and talent, and support systems that help job seekers professionally and financially.

This section of the paper offers a descriptive framework that attempts to map the diverse (and at times, divergent) cadre of entrepreneurs, workers, donors, educators, and investors who are driving the shift through their efforts to solve for both individual needs and employer demand. Our goal is to highlight innovation at work, to translate their efforts into language that policymakers, journalists, and investors who can support the shift can understand.

Like any market, the players in this landscape generally form both a supply side (education) and demand side (employers).

The education or supply side is comprised of two subgroups: those focused on **competency development** (e.g., higher education institutions, bootcamps, or other non-traditional learning providers) and those who support **competency discovery** and communication (e.g., assessments, credential authentication or sharing, and social media platforms like LinkedIn).

The shift requires transformation on both sides. “Employment to work changes have to be driven by the employers. The currency of the new world has to be relevant to employers or it will not work,” observes Mike Buttry, Vice President for Corporate Communications at Capella University. On the demand side, we refer to the subcategory of systems that help employers sort through applicants as **competency filtering**, and the systems that provide employers with ongoing information about the types of individuals who succeed in particular roles as **people analytics**.



Of course, this paper could not possibly represent all of the individuals making this happen or the details of their work. We hope that the framework will be outdated nearly as quickly as it is published. There are, no doubt, trends that deserve more attention and individuals deserving of the spotlight. There is risk that new frameworks calcify our collective understanding and practice. That is why we invite you to [join the SHIFT conversation¹⁹](#), which will launch with this paper. We encourage you to comment, add materials, link to the site and be part of the SHIFT we all must own.

COMPETENCY DEVELOPMENT

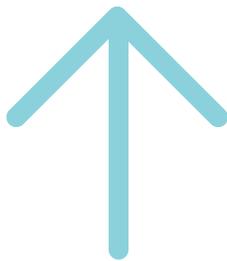
Individuals face a growing array of alternatives when it comes to where they develop competencies necessary for success in the workforce, as education providers think more strategically about how to align their programs with workforce needs. Colleges and universities are developing innovative partnerships with employers to ensure they are preparing students with the skills that are in high demand in the workforce. Employers are shifting their corporate training programs away from offsite classrooms, toward integrated, strategic, and social learning. Historic models of tuition reimbursement are being replaced by education as a strategic benefit. New players, like bootcamps and learning accelerators²⁰, now provide just-in-time skill development to help employees move into a new role, and allow individuals to upskill on their own. Employers are investing in incumbent training. And government upskilling programs, including workforce development boards, continue to support underserved populations with training and job search support.

Traditional two- and four-year institutions of higher education are innovating, like never before, to develop programs to better connect students to employers. This is being done on a variety of ways across all types of institutions. In western New York, for example, Monroe Community College (MCC) has created an Economic Development and Innovative Workforce Services division that is developing a new partnership between the school and Rochester's quickly changing businesses and organizations. (Rochester is the home of the newly restructured Eastman Kodak Company.) Through extensive research of local labor market data, MCC is beginning to identify the career areas that are in need of quality workers and then creating academic, career, and educational programming around those particular fields.

Capella University is expediting the connection between students and employers through its competency-based education programs and initiatives like RightSkills, which match real-time labor needs with competency-based education candidates and programs. "The unbundling of degrees into discrete skills and competencies, delivered at low cost and potentially less time of a traditional degree — that is unquestionably a mega trend reshaping higher education," observes Mike Buttry of Capella University. Just 10 years ago, there were only a handful of schools offering competency-based education

17,966
GRADUATES
IN 2016

**FROM 100
LEARNING
ACCELERATORS,
BOOTCAMPS, OR
SIMILAR**



2,178
GRADUATES
IN 2013

**FROM 33
LEARNING
ACCELERATORS,
BOOTCAMPS, OR
SIMILAR**

programs. Today, there are more than 600 institutions of higher education operating or in the design phase of some form of it, and a small handful that offer direct assessment programs with the potential to radically alter time to completion.²¹

The pace of change in higher education, in part, reflects competitive pressure from faster, lower cost educational options. This comes, in part, from the success of unbundled courses and content that compete less on quality, and more on cost and scale. Burck Smith, the CEO of Straighterline recognized the opportunity years ago. “There’s been a slow realization in the market that — if the traditional degree is 120 credits — it doesn’t need to be all from the same place and certainly not all the same price,” Burck notes. “We took this issue from a student’s perspective and realized that this is a way to provide more affordable paths, and more individualized paths.” This is an approach that is well suited to adult learners and the demands upon their time.

Newer models of education take this unbundling one step further, offering courses that do not typically ladder up to a degree. These learning accelerators offer immersive courses for in-demand skills and competencies, typically for high-tech, high-skill jobs. They are blurring the lines between employer training and individual attainment — some are even pioneering a new model of talent as a service.

In 2013 there were 33 learning accelerators, bootcamps, or similar organizations offering full-time courses with 2,178 graduates. That jumped to about 100 organizations with 17,966 graduates in 2016.²²

The potential of accelerated learning was recognized through the national TechHire initiative, which is creating pathways for more Americans to access well-paying tech jobs across the country. Key to these pathways are enabling employers to fill entry-level, career-path, skilled tech jobs, by hiring trained job seekers with the ability to do the job — but who are overlooked by typical hiring practices and/or underrepresented in the IT field. In its pilot year, TechHire has grown to include over 1,000 employers and 400 community and training partners, and has placed over 4,000 people into jobs.

Taking advantage of non-traditional pathways requires an understanding of what competencies are required within a particular field. Organizations like Roadtrip Nation are working to support the aspirations of individuals by helping them understand the paths others have taken to excel in a particular industry or

position. “The traditional four-year degree is not possible for some people. It’s not providing the results for others. Students — especially older adults — are finding new education and training options,” says Mike Marriner, Co-Founder of Roadtrip Nation. “But people have a hard time seeing beyond the limited experience and capital of family and friends. That’s what we do. That’s the value of good storytelling. We help students understand what they can do with their future.”

This transition to better signals will require a mix of high and low tech. Organizations like Burning Glass, Career Builder, EMSI, and Geosolutions are scraping the Internet to make what exists today more accessible. Gallup is working with institutions of higher education and employers to manually identify and collect more accurate and timely data. All of this information is coming together to form more informed hiring and training networks.

Employers have played a role in competency development (consider McDonald’s 55-year-old HamburgerU) for more than half a century and will continue to serve as hubs of innovation. Innovation in corporate training, paired with competency-based hiring, holds the promise of playing a powerful role in closing equity gaps by enabling employers to recruit candidates with skills gaps, and then offer educational programs to close them. Skillsoft, Lynda.com, and Pluralsight offer an endless array of web-based courses, while platforms like CorpU help the Fortune 1000 to implement expert-led, social learning tools that tap the “collective genius” of workers in fast-changing areas like supply chain to solve problems through online “idea tournaments” or real-time analysis of strategy implementation.

Employers also recognize that education is a powerful lever for recruitment and retention. Earlier this year, LinkedIn announced the launch of LinkedIn Learning, which is geared toward training and retaining employees by providing personalized recommendations to advance within their field — or organization. “Combining Lynda.com’s content with LinkedIn’s professional data and network allows for highly personalized learning experiences. Companies and consumers alike value the ability to identify which skills are key for achieving career and business goals, and the opportunity to learn or teach those skills in a tailored, efficient, and measurable way,” according to Tanya Staples, Senior Director of Content and Production at LinkedIn.

Beyond training, savvy employers are also supporting broader education opportunities for their students. Doing so provides value for both employer and

employee: when Starbucks launched their partnership with ASU, their applicant pool increased dramatically.²³ New players like Guild Education now provide education-as-a-benefit services to employers, helping them navigate the higher education application process, and supporting employees throughout their studies.

In addition to private sector and higher education solutions, the public sector continues to invest in competency development for traditionally underserved populations. Workforce development boards, funded by the U.S. Department of Labor, are building on a long history of federal investment in workforce development activities to make jobs more accessible and hiring practices more equitable for low-income, unemployed, or disadvantaged job seekers. Their networks are comprised of workforce development boards (WDBs) that provide strategic oversight and American Job Centers (AJCs) that provide “boots on the ground” services and expertise to job seekers and learners.

This system is funded, in part, by the Workforce Innovation and Opportunity Act (WIOA) and is comprised of private employers and community representatives that provide strategic direction and input on workforce strategies within their communities. “The Workforce Innovation and Opportunity Act demonstrates the critical link between workforce development and our economic success as a country. It reflects a shift from social policy thinking to economic policy and recognizes the economic importance of a rightly skilled, talented national workforce,” says Ron Painter, CEO of the National Association of Workforce Boards. “Workforce boards are responsible for understanding how these shifts will impact their community and for bringing together key leaders across the public and private sector that can inform a more responsive workforce development system.”

Recent changes in the law encourage these networks to partner with innovative job training providers, including community colleges, nonprofits, for-profits, and more. “Innovation and communication are critical in addressing the shift in the workforce,” notes Laurie Larrea, President of the Dallas Workforce Development Board. “Job seekers and current workers are challenged by requirements for additional education and training necessary to thrive in the new environment.” With a long history and breadth of experience, the WDBs and AJCs are positioned to convene regional conversations and provide strategic consultation on the rapidly shifting education and training-to-employment landscape.

OFTEN, IT'S NOT THE OVERALL COST OF EDUCATION THAT IS PROHIBITIVE, IT'S THE LARGE LUMP SUMS REQUIRED UPFRONT. NEW MODELS NOT ONLY ADDRESS THIS PROBLEM, BUT ALSO TIE PAYMENT OBLIGATIONS TO STUDENT SUCCESS, BECAUSE EVERYONE IS BETTER OFF WHEN EDUCATION PROVIDERS HAVE ALIGNMENT WITH STUDENTS.

Tonio DeSorrento, Founder of Vemo Education



The diversity of competency development programs and providers is forcing new conversations about who pays, and how. Entirely new models of financing are restructuring the business of loans to learners, innovating repayment, and filling in the gaps that exist in the current student financing landscape. “Often, it’s not the overall cost of education that is prohibitive,” notes Vemo Education founder Tonio DeSorrento, “it’s the large lump sums required upfront. New models not only address this problem, but also tie payment obligations to student success, because everyone is better off when education providers have alignment with students.” Players like Vemo Education help educational programs develop financing models, including income share agreements, that enable learners to fund their education through contracts that require them to pay a percentage of their income once employed.

Employers can also receive tax breaks for tuition assistance to support the educational aspirations of their employees. Several sections of the tax code (primarily IRS section 127, though sections 117 and 132 can also be used) allow tax-advantaged ways for employers to offer tuition reimbursement, scholarships, or fringe benefits (which can include education). How and whether these programs support – or require reform to support – an array of non-traditional educational programs will be a hot topic in the coming years. Availability of federal student loans for students who pursue non-traditional programs is also becoming a front burner issue.

But public sector investments in non-traditional education programs haven’t always gone well. Any public investment in new models should be predicated



on a related investment in the development of new and rigorous frameworks for measuring the outcomes of educational programs. Earlier this year, General Assembly engaged a big four accounting firm to design an open source framework to track completion and job-placement rates for tech training programs. “At times, policymakers have been quick to support the expansion of new education models without an equal emphasis on measuring outcomes,” said Liz Simon, Vice President of Legal and External Affairs of General Assembly. “We need frameworks that policymakers can use to understand and quantify efficacy, and provide students with transparency into the likely return on their education investments.”

COMPETENCY DISCOVERY AND COMMUNICATION

In July, University Ventures published a market map²⁴ of over 50 companies in the area of competency discovery and communication. These are companies that are surfacing competencies beneath the level of the terminal credential and working to make these competencies visible to individuals and ultimately to employers.

Competency discovery and communication includes two connected problems: how to demonstrate skills and competencies in a way that is widely accepted as valid and reliable (and therefore more meaningful to both employers and

individuals), and how to share these credentials effectively using existing social media platforms like Facebook or LinkedIn and existing HR software.

While many employers recognize the value in expanding the pool of potential applicants by removing some hiring requirements (like a four-year degree), they need a replacement for these proxies that they can trust to be viable and provide ROI in their hiring. Next generation assessments provide valid and reliable metrics for quantifying both hard and soft skills. “Companies want relevant skills,” says Kieran Luke, head of General Assembly’s Credentialing Network. “And they want ways of determining if you have skills beyond the existing proxies of networks, degrees, and colleges.”

These assessments take many shapes — traditional surveys, portfolios, online quizzes, challenges, or other demonstrations of skill, and “authentic” assessments rooted in real-world scenarios. Portfolium provides students with the opportunity to create competency profiles by uploading their work product — papers, problem sets, and presentations. The system then derives competencies from their work, and matches candidates to employers. As a result, employers are able to identify candidates they never would have seen, at institutions they previously were unable to reach. Moreover, it allows employers to begin establishing a talent pipeline, perhaps engaging with strong matches as early as their sophomore year, suggesting relevant coursework or projects, or perhaps offering virtual internships.

Credly is approaching the competency discovery process through badging and micro-credentialing, allowing educational institutions and other credential “issuers” with the capabilities to break down their existing programs and credentials into competency-based micro-credentials that are meaningful and intelligible to employers.

One startup, GapJumpers, poses online “challenges” for job seekers, allowing them to demonstrate their skill before a hiring manager ever sees their resume or picture. Sokanu uses assessments to help match companies and candidates based on personality, organizational culture, likes, and dislikes. “By beginning with assessments, rather than resumes, we can have a system that bypasses many opportunities for unintentional discrimination. The more you take away personal bias, the more diversity you get,” notes Sokanu founder Spencer Thompson.

Social networks help individuals more effectively demonstrate and share what they know and can do by collecting, validating, organizing, and displaying credentials. As with any other market, the jobs market works most effectively with consistent, abundant, and accurate information to help players make the best decisions. “Learning takes place in many settings,” notes Parchment CEO Matt Pittinsky, “and when job seekers can verify their learning with transcript information, third party badges and credentials, or portfolios of work, and then easily share that with employers, both parties win.” Both LinkedIn and Facebook have the potential to facilitate networking and the exchange of machine-readable credentials, licenses, badges, and degrees, and directly connect to employers that are seeking those skills (and vice versa). “These platforms change the equation for headhunters and employers,” says Phil Blair, Executive Officer at Manpower San Diego. “That is the first place I now go to see how the person is investing in themselves and what skills and abilities they claim to have.”



COMPETENCY FILTERING

The rise of online job boards and online and mobile applications has allowed job seekers to identify and apply for jobs faster, at a fraction of the cost historically required, while also allowing employers to reach more prospective applicants. Digital transcripts, resumes, ePortfolios, assessments, and other artifacts of learning allow individuals to present more, richer information during the application process than ever before.

But the resulting growth in applicant volume, coupled with high recruiter requisition loads, now means that most employers rely on a gauntlet of screening processes and software that utilize keyword-based or Boolean string matches to filter out candidates that don't meet the requirements listed in job descriptions. "Companies receive hundreds of applications for some of their jobs, including even for specialized roles," notes Athena Karp. "Today, most of the technology is limited to keyword searches and filtering processes that can lead to between 15 to 40 percent of resumes making it through to be read by a human for certain jobs."

While providing a necessary function as a record keeping system, applicant tracking systems and other tools are still imperfect when it comes to filtering competencies. "Resumes offer insight into how an individual describes themselves, and resume parsers preference those who know best how to write resumes. The resulting narrowing of a given pool of applicants is suboptimal, meaning many hiring managers spend time interviewing the wrong people," notes Credly founder Jonathan Finkelstein.

Improving these tools requires addressing the significant challenge of interoperability. Currently, applicant tracking systems only collect, assess, and filter competencies based on their limited understanding of the information provided to them. Standardization is necessary to improve the communication between the supply-side technologies noted in the previous section and the demand-side technologies being used to filter competencies, to ensure that how a competency is demonstrated on a resume is understood by software to be indicative of that competency.

Over time, these connected systems may begin to bear more resemblance to supply chains: information travels with the product through a series of interoperable systems, so the purchaser knows exactly what they're buying. "We need a greater level of standardization," Bob Sheets, Research Professor at George Washington University School of Public Policy points out. "The employer needs to know what you're saying. We need these new technologies to be interoperable with other systems, and to have semantic interoperability, to more accurately translate the data being received. These new technologies need to be able to discover and recognize the competencies of applicants compared to what the company requires."

In the not too distant future, applicant tracking systems might — with the permission of applicants — reach out to a bevy of providers of competency data, develop competency profiles of candidates, and semantically match them to job descriptions before they are filtered out and rendered invisible to hiring managers. In the meantime, these tools have the potential to allow employers to shift through a larger, more accurate set of data, and help companies make hiring decisions that are objectively better.

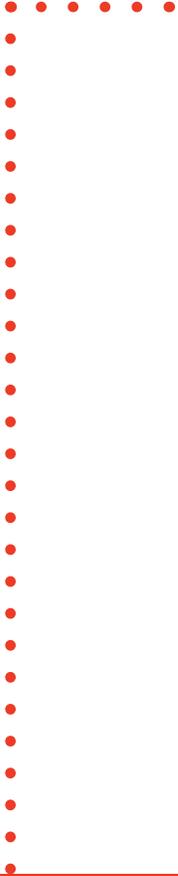
PEOPLE ANALYTICS

Even with improvements to the competency filtering process, employers will need tools to assess what makes an individual successful within a role, and improve their recruitment, hiring, and corporate training programs to better identify and cultivate that talent.

We refer to this process as people analytics. By monitoring who gets promoted over time, which competencies they had when hired, and which were developed on the job, companies can begin to identify potentially unexpected patterns. "Historically, hiring managers believed certain jobs or certain majors indicated certain competencies — but they often didn't," author Jeff Selingo notes. "As a result, people began trusting the degree less and less. Then employers began focusing on employee success over time — who survives and thrives. This focus on measurement and competencies, rather than degree or pedigree, allowed employers to more accurately identify how they get and develop their best employees."

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Jeff Selingo, author



The growth of people analytics is a result of the more developed applicant tracking systems. “As applicant tracking systems got smarter, companies realized they could screen based on GPA, university, or other relatively easy-to-find data,” Josh Bersin, Founder of Bersin by Deloitte observes. “However, once companies looked at the performance of these employees, they realized these were not always an indicator of success. Actual performance is often based on learning agility, drive, personal skills, people skills, or technical skills; where they went to college is a related but not causal factor.”

The field of people analytics may give rise to entirely new categories and services. “Traditional learning and development programs are just a piece of the puzzle – our most innovative employer partners are asking us for what we describe as ‘Talent Pipeline as a Service,’” according to General Assembly Founder and CEO Jake Schwartz. “This means starting with the talent gap, figuring out how to assess what skills are needed to close it– and then reverse-engineering educational experiences that are tightly coupled with employer demand.”

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Josh Bersin, Founder of Bersin by Deloitte

The use of people analytics has led some companies to re-assess how they hire, including where they source their candidates and how they draft job descriptions. Many find that those in charge of corporate training are uniquely positioned to support these efforts. “Not every company has a strategic learning and development (L&D) function, but for those that do, recruiting and L&D should be talking regularly,” says Josh Bersin. “Those that provide the internal training often have the best understanding of which competencies can be developed, and which are important to screen for in the hiring process.”

The sector is still in its infancy. “Use of people analytics is still lagging, because it looks easier than it is,” Josh Bersin points out. “There is an art and science to people analytics—it relies on a combination of data and anecdotes. About 15 percent of big companies have a reasonable focus on analytics, but an estimated 70 to 80 percent of companies are still in early stages of maturity.”

Pouring Fuel on the Fire

The shift is inspiring activists, philanthropists, and policymakers who understand its transformative potential, but are frustrated by the pace of change. It is also inspiring the average person on the elevator. Strike up a conversation about the need for a new learning and employment system, and we’d bet that 9 times out of 10 that person on the elevator will give you a “thumbs up.” “Traditional models of teaching and learning must change to meet the demands of today’s modern workplace. Supporting that shift has been a top priority for us, in K-12 education and beyond,” notes Carrie Morgridge, Chief Disruptor at the Morgridge Family Foundation.

Philanthropists are working to accelerate the shift through funding of research and programs that promote economic opportunity. They are advocating for policy changes, and seeding the development and application of new models for financial support and postsecondary credentialing.

“College completion is an economic and social imperative, but completion isn’t an end in itself. Much of our work centers on harnessing the potential of innovation to connect the dots between postsecondary education and training and meaningful work that enables individuals to contribute and fulfill their objectives,” according to former U.S. Deputy Secretary of Education and USA

Funds President and CEO Bill Hansen. “We’re focused on building a more purposeful path to and through education and on to rewarding careers and fulfilling lives.”

To support institutions of higher education that have been wrestling with the meaning of “quality” for new competency-based education programs, the Lumina Foundation researched and developed the Degree Qualifications Program (DQP), a framework that institutions can use to standardize their measures of quality for CBE programs. DQP is now being used by hundreds of institutions across the US.

Philanthropic support is critical to advance social and economic mobility with retail sectors as well as adjacent sectors. A survey done in early 2016 by the National Retail Federation found that most individuals at some point work in retail: 59 percent of those polled had worked in retail, including stores and restaurants. Of those surveyed, 32 percent found their first job in retail, at an average age of 16.²⁵

The Rockefeller Foundation is enabling many organizations to explore new ways to identify talent in opportunity youth, including new strategies to employment based on skills. And the W. K. Kellogg Foundation is exploring two-generation strategies, as the number of families in poverty with children aged 0-8 requires increased focus on the need for workforce and early childhood strategies to align more closely.

Investors are also providing resources to bring many new ideas to life. In 2014, over \$400 million in investments went to startups focused on hiring and recruiting, representing 120 venture rounds.²⁶

The market has gotten attention from both savvy, specialist VCs like University Ventures, New Markets Venture Partners, Learn Capital, Rethink Education, and SJF Ventures, as well as generalist funds like Maveron and Andreessen Horowitz. These investors provide much-needed startup capital for innovative businesses, and allow them to scale quickly to meet the growing demand for training, courses, and complementary services. According to Ryan Craig, “Private equity is uniquely positioned to engage with both the push and pull sides of the shift to competency-based education and hiring, and to make strategic bets on entrepreneurs and companies that have the potential to be major winners in what will become a multi-hundred billion dollar industry.” Tony Miller, former U.S. Deputy Secretary of Education and Partner at the



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Vistria Group, agrees: “The non-traditional adult student in particular, already very practical when pursuing additional education to improve their career prospects, is becoming increasingly discerning and demanding. Private equity investors recognize that these students need better options, and are investing in providers that provide value to students by partnering with employers to validate their content at the course and overall program level.”

In response, policy makers are clearing the way for new education-to-employment pathways. At the federal level, both Congress and the Administration are encouraging new public-private education and training partnerships. The 2015 Educational Quality through Innovative Partnerships (EQUIP) experiment illustrates the point. The program offers institutions of higher education flexibility to enable undergraduate students, or those seeking post-baccalaureate certificates, to receive federal financial aid when enrolled in programs created in partnership with unaccredited providers. Senators Marco Rubio (R-FL) and Michael Bennet (D-CO) partnered on the introduction of the Higher Education Innovation Act in 2015, to create an alternative accreditation process. That same year, Health, Education, Labor, and Pensions Chairman, Senator Lamar Alexander (R-TN), oversaw the release of a whitepaper²⁷ on the redesign of higher education accreditation. The Obama Administration also worked to create more flexibility for schools to develop competency-based education programs for adults (at least where they can within applicable laws).

At the state level, lawmakers are also trying to make adult learning and career training far less expensive and more accessible. In Ohio, a unique adult diploma program creates new opportunities for adults over the age of 22 to complete their diploma while also getting the skills training that local employers demand.²⁸

Finally, research organizations, institutions, policy advocates, and associations investigate, shape, and distribute transformative ideas and policies. Notable participants include the New America Foundation, the Business Roundtable, the Chamber of Commerce Foundation, the Aspen Institute, the National Association of Workforce Boards, the American Enterprise Institute, and the Center for American Progress, just to name a few. Their work ranges from insightful blog postings to programs that are designed by the best minds in the field and implemented with partner organizations on the ground. Coalitions like

the Aspen Institute's UpSkill America connect employers, training providers, and human resource organizations, sharing best practices and encouraging corporate investment in worker training and education.

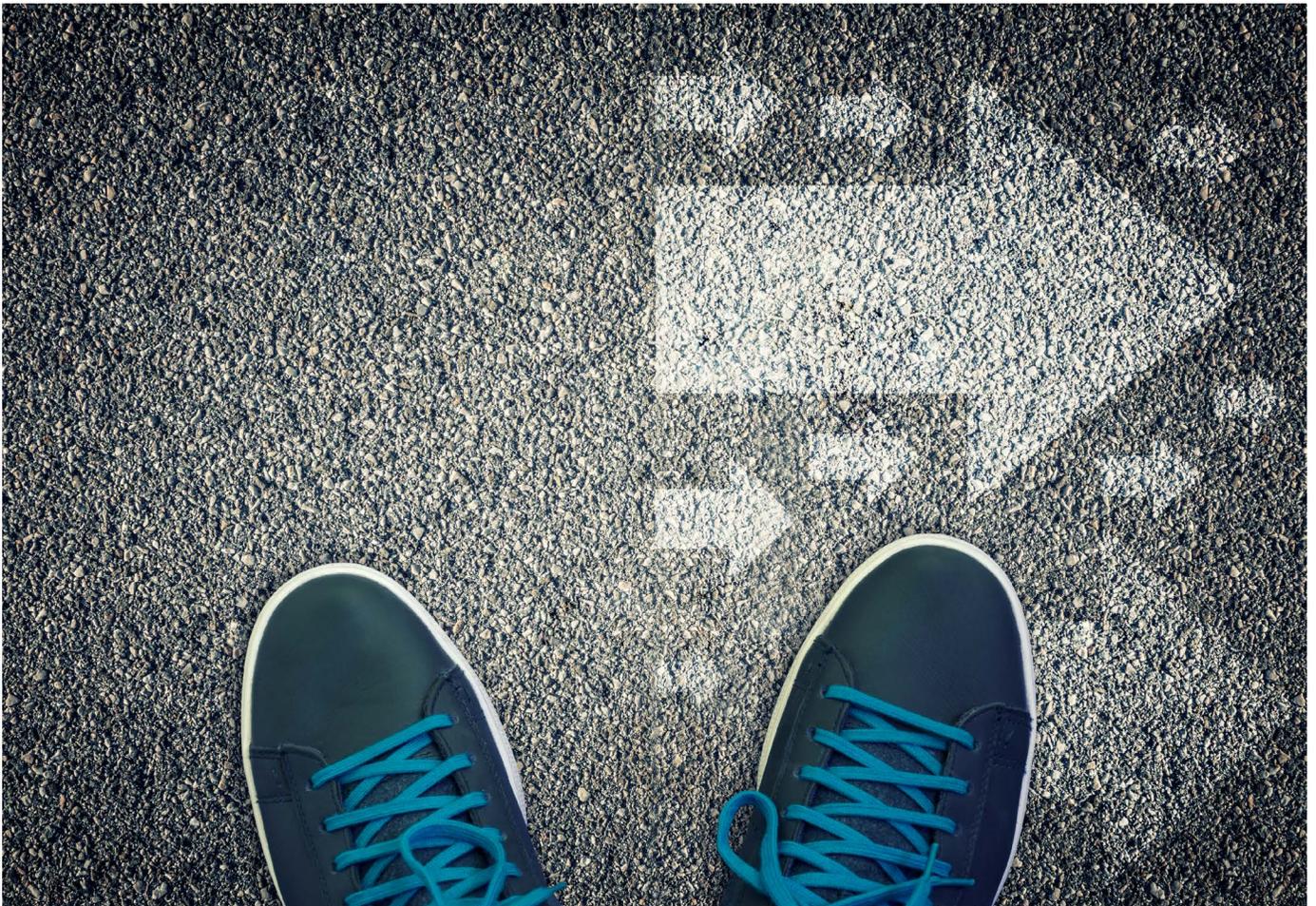
Equity and Access

All of the moving pieces and statistics about the shifts in learning to employment can sometimes distract us from why this really matters. New education and training pathways make meaningful changes in the lives of individuals and their families. The shift means that at Columbus State Community College, adults without high school diplomas can now take online courses to earn a diploma, college credit, and the Network+ certification required for their next job. In Washington, DC, underemployed and law school debt-burdened attorneys can enroll in web development boot camps to jump-start new careers. In upstate New York, migrant workers with limited English are taking language courses on their cell phones, via text message, while on the bus to and from work at all hours of the day and night. These individuals are following pathways that didn't exist just four years ago. Their lives and the trajectory for their families are improving. And there is a lot more to come. Every year there are more new program choices, new learning technologies, and new entrepreneurs enabling more possibilities.

Equity and community development issues are at stake at all levels of the economic ladder. At the top, there is a lack of diversity in the fast-growing information technology sector. According to a May 2016 report by the U.S. Equal Employment Opportunity Commission, 9 percent of graduates from top engineering schools are black and Latino, but their representation at tech firms is only about 5 percent.²⁹ There are likely subtle biases at play that skills-based hiring could mitigate. In a recent study, the use of a blind skill demonstration hiring process over the traditional interview yielded a 200 percent increase in the number of non-white, non-male, graduates that got a call back. (It went from a 20 percent call back to a 60 percent call back.)³⁰

The gap is particularly pernicious for low-income communities. Improving access to high-quality training is important, particularly for those groups who are underserved by the current landscape. The Congressional Budget Office (CBO) reports that the stagnant skill levels of less-educated young men is a

significant factor in their growing joblessness and incarceration. In 1980, 11 percent of all men aged 18–34 were jobless or imprisoned; in 2014, 16 percent were.³¹ Harvard political scientist Robert Putnam’s recent best seller, *Our Kids*, reveals just how wide the gaps between the rich and the poor, the educated and the uneducated have become in recent years. He represents them with “scissor charts” where the poor steadily do worse and the wealthy steadily do better. The lines are diverging, in part, because traditional education and training pathways are not connecting them to job opportunities.



What's Next?

The breadth and depth of change is becoming clear. There are millions of youth and adults ready to take the courses they need to improve their job prospects and position in life. Some are savvy enough to take advantage of what's available now, but too few people are aware of the opportunities. The signal is weak, and the path is unclear. What needs to be done to change that? For the sake of simplicity, we've outlined six issues that surfaced in the development of this paper. These are the issues and pitfalls that entrepreneurs, investors, policymakers, and practitioners should either prioritize, or work to avoid, in the coming years.

Making competency assessments accurate and reliable. The reliance on demonstrated skill and competencies as the currency of skills-based hiring requires the assessments that gauge mastery to be accurate and reliable. Paul LeBlanc, President of Southern New Hampshire University, frames it this way: “The importance of the assessment forces you to grapple with the question of ‘how do you know that your students can do what you claim they can do?’ I wouldn't claim for any of us that we're great at it yet. I like to think that we do a good job with this, but we are all working on this question, all the time.”

And while demonstrating skills and competencies from the supply side is critical, the key question remains: What will it take for employers to trust and adopt these credentials? What will it take to rely on industry-recognized assessments? “While many of these assessments are popping up in the marketplace, few have the ‘technical manual or validity report’ that IO psychologists and EEOC experts believe are critical for success in the market,” says industrial organizational expert Dr. Edan Jorgensen, of LDS Philanthropies. “Employers want to understand the ROI in changing their hiring practices, and this is critical for scaling assessments that matter and can support the shift to competencies.”

Standardizing the credential currency. There is no universal standard for the structure of a credential, and no simple way for employers to verify that a credential is meaningful. “There’s a huge amount of work to be done within these discrete components of the shift,” says Holly Zanville, Strategy Director at the Lumina Foundation. Others we spoke with, including Obama Administration officials, noted that while the concept of credentials is now widely accepted, the lack of industry-recognized credentials that are validated remains a challenge.

Improving on the use of existing education and employment data. Think tank researchers make this point time and time again — we need better data. Federal, state, and local agencies are making efforts to make education and employment information more accessible so that the public and private sectors can dig in, share, correlate, and even commoditize the data.

What is available can be used to tell better stories. “There is a shift in course and career pathways for universities, but most are not telling the stories about what’s possible. Where do students end up? What happens with their lives? We can dig into that data and tell a better story - giving students more visibility into what’s possible,” says Mike Marriner, Co-Founder of Roadtrip Nation.

Identifying better metrics and behaviors that are meaningful for students and employers. Earlier this year, USA Funds and Gallup announced their collaboration on a new research platform that will deliver never-before-seen insights from past, current, and future consumers of higher education. Key to better metrics is understanding how then to use these metrics to impact the real change required for higher education and career success. “At Gallup, we are helping schools and employers identify and use meaningful metrics. What higher education institutions currently collect (like graduation rates) is useful, but it does not tell us the more meaningful and nuanced story,” says Brandon Busted, Executive Director of Education & Workforce Development at Gallup. “We need to collect meaningful data around work readiness and encourage our institutions to adopt behaviors that advance those metrics. This hard work requires time and effort: Do schools host convenings for employers to discuss their needs? Do students have internships? What basic boots-on-the-ground work is happening?” Gallup and USA Funds will unveil more data findings in the first quarter of 2017 to continue exploring the metrics and behaviors that shift outcomes for both students and employers.

Expanding opportunities to more disadvantaged populations. Those working with disadvantaged populations make the point that there is a bias in product development and investment in favor of higher performing adults. “Much of today’s educational technology is modeled on the traditional learner, on traditional courses – but adult learners need something radically different. They need services that are built for the adult learner, with all of their particular needs,” says Jessica Rothenberg-Aalami, Co-Founder and CEO of Cell-ED. Shlomy Kattan, Senior Director at XPrize, observed that only a few companies are investing in a broad set of skills for their employees: “They are the outliers, the companies that are thinking more broadly about the education needs of their employees and how that benefits the company.”

Avoiding unintended consequences of false precision. Providers and consumers of skill assessments and non-cognitive/behavioral competency assessments must be vigilant to avoid over-reliance on numbers to quantify complex interpersonal skills or workforce competencies. Additionally, all players in the space must be careful to avoid permanent labels that stigmatize job seekers and create new barriers to employment, particularly for disadvantaged populations. “Our responsibility is to ensure that as these new models start being accepted by employers and educational institutions, that they don’t create new barriers but rather open new doors,” cautions Matthew Muench, Senior Program Officer at the Joyce Foundation.

“We must find solutions to ‘filter in,’ not ‘filter out,’ says Kimberly Admire, Chief Human Resources Officer and Founding Chairman of the Innovate+Educate board of directors. “That is why Innovate+Educate exists. Shift Happens. And we must all play a role in this inevitable change in history. It requires thought leaders from across the globe, and I hope this paper will fuel a continued conversation for economic prosperity for all.”

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Matthew Muench, Senior Program Officer at the Joyce Foundation

ENDNOTES

- ¹Frey, C.B., & Osborn, M. (2013). The Future of Employment: How susceptible are jobs to computerization? Retrieved from <http://www.oxfordmartin.ox.ac.uk/publications/view/1314>
- ²Arntz, M., Gregory, T., & Zierahn, U. (2016). The Risk of Automation for Jobs in OECD Countries: A Comparative Analysis. OECD Social, Employment and Migration Working Papers.
- ³Craig, R., & Williams, A. (2015, August 17). Data, Technology, and the Great Unbundling of Higher Education. *EDUCAUSE Review*. Retrieved from <http://er.educause.edu/articles/2015/8/data-technology-and-the-great-unbundling-of-higher-education>
- ⁴National Center for Education Statistics. (2016). Table 326.10. Graduation from first institution attended for first-time, full-time bachelor's degree-seeking students at 4-year postsecondary institutions, by race/ethnicity, time to completion, sex, control of institution, and acceptance rate: Selected cohort entry years, 1996 through 2008. Retrieved from https://nces.ed.gov/programs/digest/d15/tables/dt15_326.10.asp
- ⁵ Craig, R. (2014, May 11). Education-as-a-Service: 5 ways higher ed must adapt to a changing market. *VentureBeat*. Retrieved from <http://venturebeat.com/2014/05/11/education-as-a-service-5-ways-higher-ed-must-adapt-to-a-changing-market/>
- ⁶Newport, F. (2015, April 28). Fewer Americans Identify as Middle Class in Recent Years. Gallup. Retrieved from <http://www.gallup.com/poll/182918/fewer-americans-identify-middle-class-recent-years.aspx>
- ⁷Clifton, J. (2016, September 20). The Invisible American. Gallup. Retrieved from http://www.gallup.com/opinion/chairman/195680/invisible-american.aspx?g_source=OPINION&g_medium=topic&g_campaign=tiles
- ⁸Hart Research Associates. (2015). Falling Short? College Learning and Career Success. Retrieved from <https://www.aacu.org/sites/default/files/files/LEAP/2015employerstudentsurvey.pdf>
- ⁹PayScale. (2016). 2016 Workforce-Skills Preparedness Report. Retrieved from <http://www.payscale.com/data-packages/job-skills>
- ¹⁰Georgetown Center on Education and the Workforce. (2013). Recovery: Job Growth and Education Requirements Through 2020. Retrieved from https://cew.georgetown.edu/wp-content/uploads/2014/11/Recovery2020.FR_Web_.pdf
- ¹¹Ryan, C. L., & Bauman, K. (2016). Educational Attainment in the United States: 2015. Retrieved from <http://www.census.gov/content/dam/Census/library/publications/2016/demo/p20-578.pdf>
- ¹²Hussar, W.J., & Bailey, T.M. (2011) Projections of Education Statistics to 2020. National Center for Education Statistics. Retrieved from <http://nces.ed.gov/pubs2011/2011026.pdf>
- ¹³Prescott, B.T., & Bransberger, P. (2012). Knocking at the College Door: Projections of High School Graduates, 8th ed. Retrieved from <http://www.wiche.edu/info/publications/knocking-8th/knocking-8th.pdf>
- ¹⁴(2016). Connecting Credentials. Retrieved September 15, 2016. Retrieved from <http://connectingcredentials.org/wp-content/uploads/2016/04/Summit-Synthesis-Paper.pdf>
- ¹⁵Public Agenda. (2016). New Survey Suggests Public Confidence in Higher Ed Waning. Retrieved from <http://www.publicagenda.org/press-releases/new-survey-suggests-public-confidence-in-higher-ed-waning>
- ¹⁶Carnavale, A, Jayasundera, T. & Repnikov, D. Understanding Online Job Ads Data: 2014. Georgetown University Center on Education and the Workforce. Retrieved from https://cew.georgetown.edu/wp-content/uploads/2014/11/OCLM.Tech_Web_.pdf

- ¹⁶Ewert, S., & Kominski, R. (2014). Measuring Alternative Educational Credentials: 2012. U.S. Census Bureau. Retrieved from <http://www.census.gov/prod/2014pubs/p70-138.pdf>
- ¹⁷Bureau of Labor Statistics. (2016, April 15). Why This Counts: New Timely Data on Professional Certifications and Licenses. Retrieved from <http://beta.bls.gov/labs/blogs/2016/04/15/why-this-counts-new-timely-data-on-professional-certifications-and-licenses/>
- ¹⁸Weber, L. Your Resume vs. Oblivion: 2012. *The Wall Street Journal*. Retrieved from <http://www.wsj.com/articles/SB10001424052970204624204577178941034941330>
- ¹⁹<https://shiftblog.info/>
- ²⁰Kelly, A.P., & DeSchryver, D.A. (2015). Beyond Bootcamps: Policy Considerations for Accelerated Learning. *General Assembly*. Retrieved from https://ga-core.s3.amazonaws.com/cms/files/files/000/002/750/original/General_Assembly_Beyond_Bootcamps_Policy_Report.pdf
- ²¹Fain, P. (2015, September 10). Keeping Up With Competency. *Inside Higher Ed*. Retrieved from <https://www.insidehighered.com/news/2015/09/10/amid-competency-based-education-boom-meeting-help-colleges-do-it-right>
- ²²Course Report. (2016). Coding Bootcamp Market Sizing Report. Retrieved from <https://www.coursereport.com/reports/2016-coding-bootcamp-market-size-research>
- ²³Berfield, S. (2014, October 7). Starbucks Is – Mostly – Paying for 1,000 Employees to Go to College. *Bloomberg*. Retrieved from <https://www.bloomberg.com/news/articles/2014-10-07/starbucks-is-mostly-paying-for-1-000-employees-to-go-to-college>
- ²⁴Mohr, C., & Craig, R. (2016, July 29). Who’s Playing Matchmaker Between Students and Employers. *EdSurge*. Retrieved from <https://www.edsurge.com/news/2016-07-29-who-s-playing-matchmaker-between-students-and-employers>
- ²⁵Shearman, J.C. (2016, January 8). Survey Shows Most Americans Have Worked in Retail. Retrieved from <https://nrf.com/news/survey-shows-most-americans-have-worked-retail>
- ²⁶Magee, C. (2014, November 21) Investors are Backing a Recruiting Revolution. *TechCrunch*. Retrieved from <https://techcrunch.com/2014/11/21/investors-are-backing-a-recruiting-revolution/>
- ²⁷Senate Committee on Health, Education, Labor, and Pensions. (2015). Higher Education Accreditation Concepts and Proposals. Retrieved from <https://www.help.senate.gov/imo/media/Accreditation.pdf>
- ²⁸Ohio Department of Education. (2016, August 1). 22+ Adult High School Diploma Program. Retrieved from <http://education.ohio.gov/Topics/Testing/Ohio-Options-for-Adult-Diploma/22-Adult-High-School-Diploma-Program>
- ²⁹U.S. Equal Employment Opportunity Commission. (2016). Diversity in High Tech. Retrieved from <https://www.eeoc.gov/eeoc/statistics/reports/hightech/>
- ³⁰Miller, C.C. (2016, February 25). Is Blind Hiring the Best Hiring? Retrieved from <http://www.nytimes.com/2016/02/28/magazine/is-blind-hiring-the-best-hiring.html>
- ³¹Congressional Budget Office. (2016). Trends in the Joblessness and Incarceration of Young Men. Retrieved from <https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/reports/51495-YoungMenReport.pdf>

For decades we've been telling people to get a **COLLEGE DEGREE**, and they'll be able to **COMPETE** for the growth jobs with higher incomes. But this sets up the **70%** of Americans who don't have a college degree to **FEEL LIKE FAILURES BY AGE 22**. Today, it's not necessary that this be the **SINGULAR PATH** that people take. Started in Colorado and Phoenix, Skillful is expanding opportunities for all Americans, including those without a college degree. Our **GOAL** is to help jobseekers access a variety of **CHOICES** to achieve **LASTING SUCCESS**; for employers to **FIND** the skilled talent they need to grow; and for educators to **TRAIN** people in the **SKILLS** required to compete in today's economy.

Zoë Baird, CEO and President, Markle Foundation





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