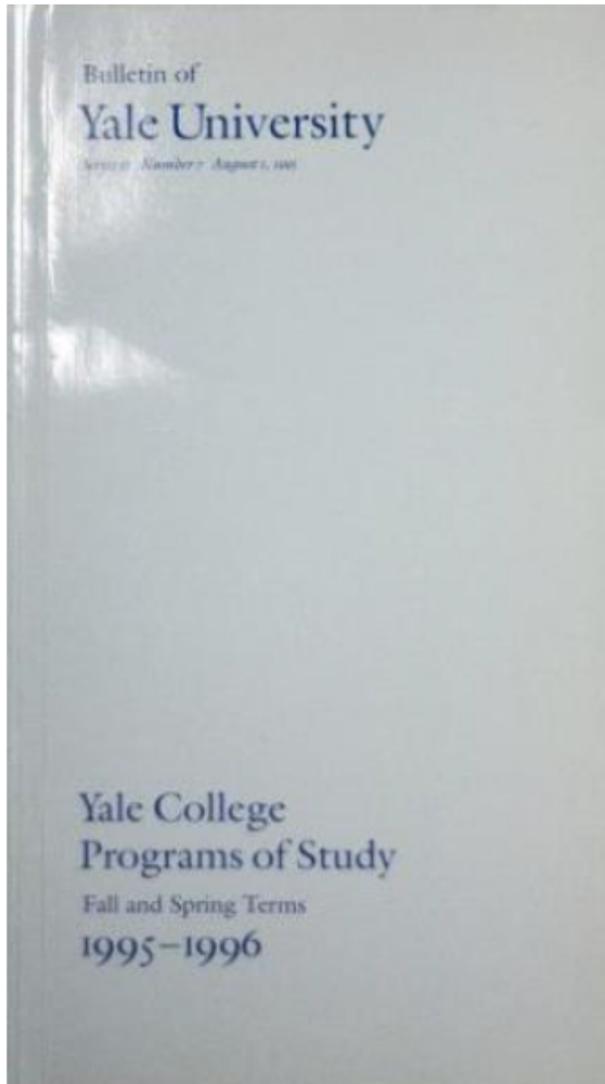


Higher Education and Economic Mobility

Polytechnics Canada
May 2019



University: What's Not to Love?



A college education should “cultivate a broadly informed, highly disciplined intellect... [and provide] a phase of exploration, a place for the exercise of curiosity, and an opportunity for the discovery of new interests and abilities.”

Depth = Major

Breadth = Distributional requirements

- 1) Humanities and arts
- 2) Science
- 3) Social science
- 4) Foreign languages
- 5) Quantitative reasoning
- 6) Writing

INSIDE HIGHER ED

Planned Obsolescence

Most colleges and universities rarely kill academic programs for underperforming. They (and their students) would be better off if they regularly culled programs that aren't giving graduates the skills they need, Ryan Craig writes.

By [Ryan Craig](#) // March 23, 2018

67 COMMENTS 

67 Comments

Inside Higher Ed

 Recommend

 Tweet

 Share

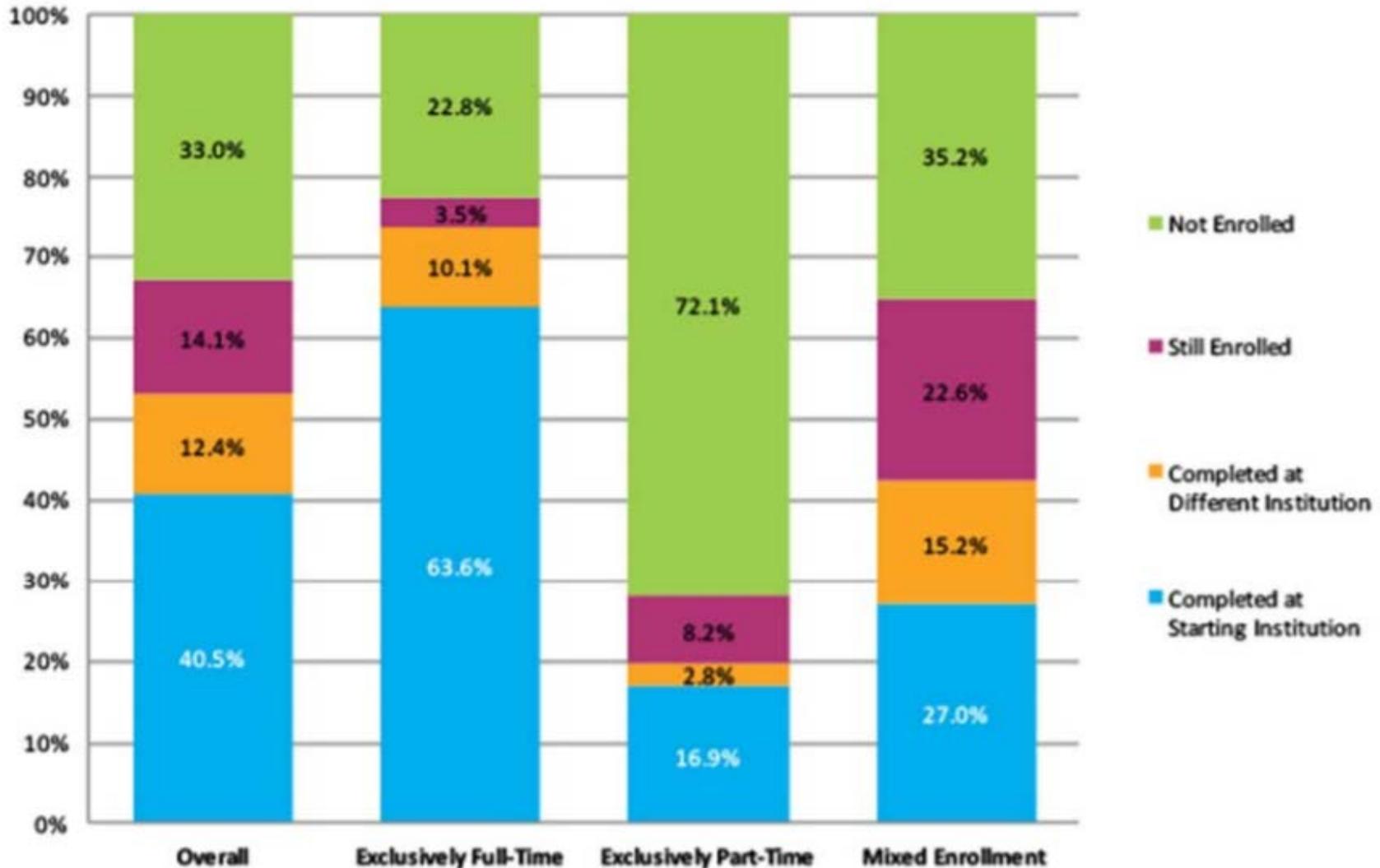
 unoso

“What you imagine to be your jaunty style is just the snowballing record of your ignorance.”

Which Would be Fine if Students Graduated...

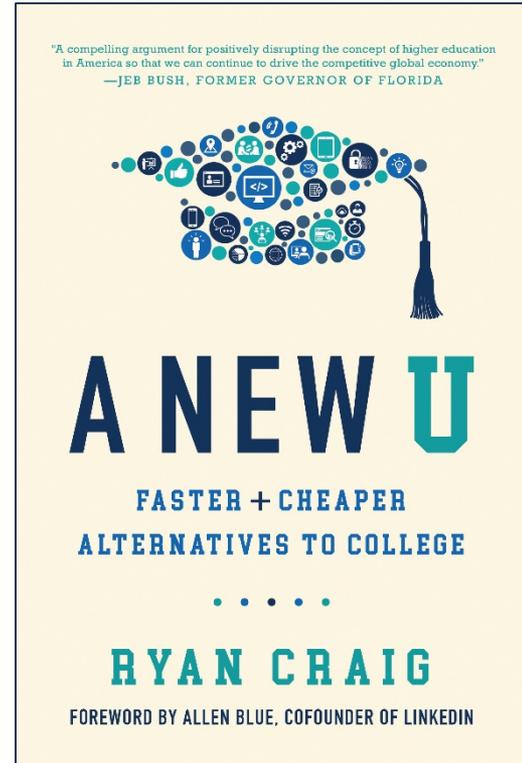


Six Years After Enrolling

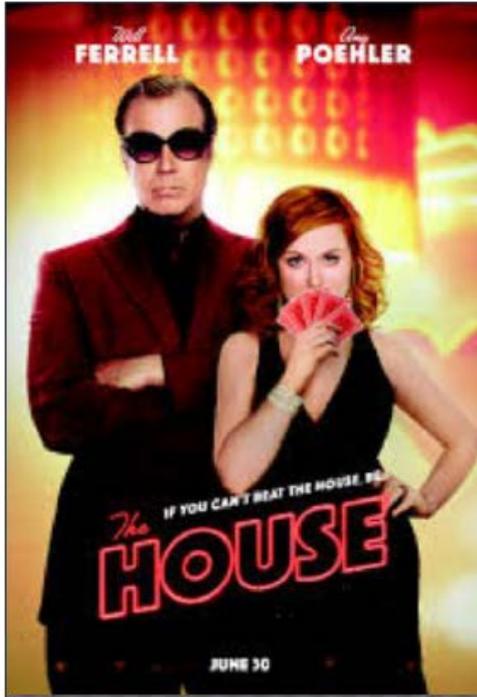


Profile of Dropouts

- **Simon Kim**
 - Completed two years of CC, then transferred to UC Merced
 - Dropped out when found some credits didn't transfer
- **Mark Anthony Robles**
 - Accepted to UCLA, but family health issue resulted in enrollment at local CC
 - Did not complete
- **Antony Pegues**
 - Did not get into desired program at CC, dropped out
- **Justin Marsh**
 - Enrolled at University of Illinois for computer science
 - Dropped out and made money playing poker online
- **Quinton Bolt**
 - Dropped out of computer science program at NW Mississippi CC



Still Fine if it Didn't Cost So Much



The New York Times

YOUR MONEY

Does God Want You to Spend \$300,000 for College?

Your Money

By RON LIEBER JUNE 23, 2017



Sobering Numbers

- Avg. \$37k per graduate who takes out loans
- Now over \$1.5 trillion in total
- Grown over 800% per household since 1999.
- 12M borrowers in their 30s still owe avg. of \$34k.
- Nearly 1,500 colleges and universities where majority of students are making interest-only payments on their loans, or no payments at all.
- Only 57% current
- 8M of 44M in default
- 1M borrowers default for the first time each year.
- One third of borrowers graduating between '06 and '11 have defaulted.

“Stop Calling Millennials the Facebook Generation. They’re the Student Loan Generation.”

Unprecedented Unhappiness



Alumni

- Only half agree investment was good one (38% of younger alumni).
- 17% would have foregone college if they'd understood debt.
- Only 44% of currently enrolled students would attend same college again.
- 30% would sell an organ to get rid of debt.

Parents

- Only 21% say cost of college is justified.
- In 2005, majority of young adults in 35 states lived independently; now only true in 6 states.
- 76% of parents with adult kids at home say they'd pay \$24k to get them out.

Policy Makers

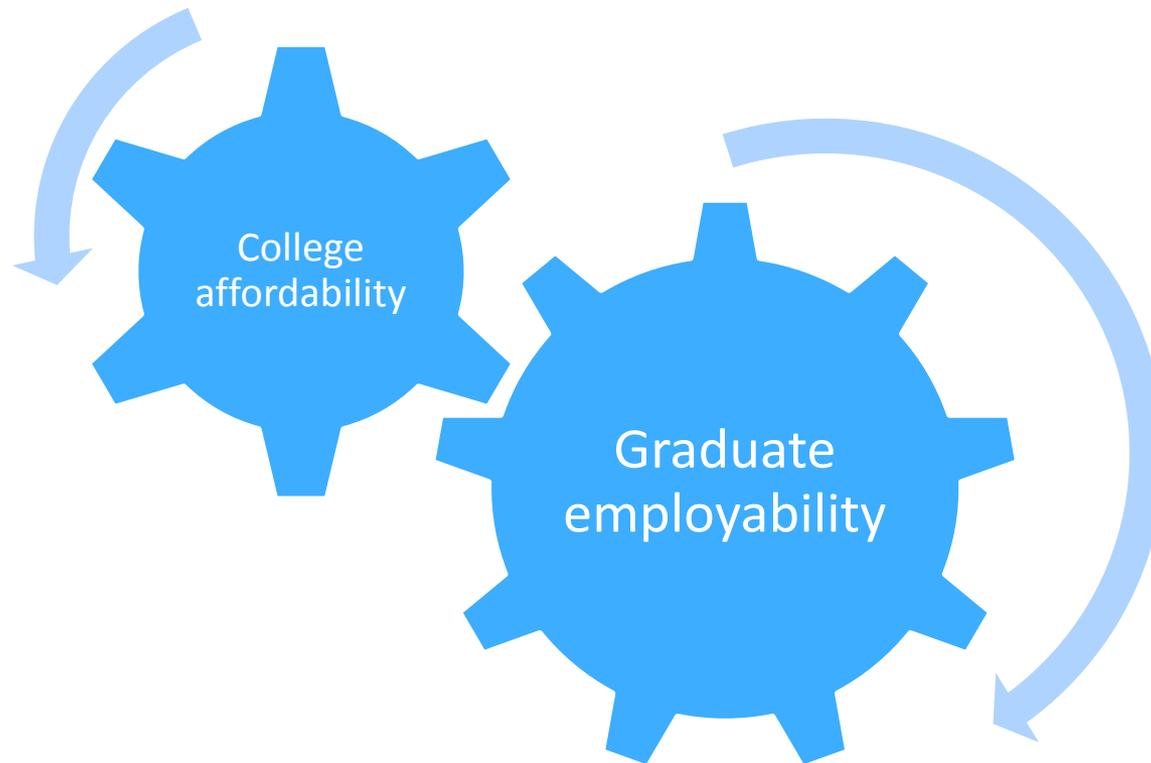
- “Too many Americans have come to believe that the pathway to a successful career lies solely on a college campus, and in a baccalaureate degree.” – Rep Virginia Foxx, Chairwoman of House Committee on Education and the Workforce.

Millennials: The Cursed Generation

- Wealth
- Income
- Housing
- New business creation



Twin Crises Lead to Poor Economic Outcomes



Career Services: A Poor Interface



“Career services must die”
- Andy Chan, VP Career Dev't at Wake Forest

Since the Recession, colleges and universities have cut spending on career services by 11.4%.

College Not Keeping Up With Digital Economy



THE CHRONICLE OF HIGHER EDUCATION

CURRICULUM



How to Revamp a Curriculum Quickly — but Not Too Quickly

Those conditions can pose a trap for well-meaning administrators and faculty members. Work-force demand can lead some institutions to teach students the skills needed for today's entry-level jobs. But those tools may well be obsolete five or 10 years from now



Sara Goldrick-Rab  @saragoldrickrab · Jun 5

Sorry, that isn't a shared goal. It is a questionable goal, in fact.

Ryan Craig @ryancraiguv

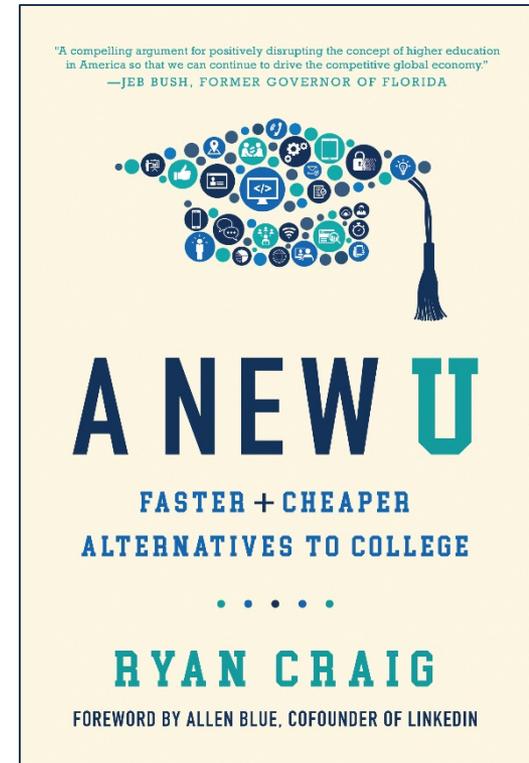
Replying to @djvanness

Thanks for your comment. How does faculty governance get us closer to the shared goal of better aligning curricula with labor market needs?



Graduated into Underemployment

- **Samantha Wolverton**
 - George Mason international relations with minor in software engineering; worked in restaurant for a year after graduating
- **Christina DiMartino**
 - Mediocre grades in high school, then worked as waitress
 - Enrolled in business program at community college, dropped out
 - Attended for-profit college, got low-paying job as medical assistant
- **Morgan Combs**
 - Degree in psychology, then worked in restaurant
- **Yasmine Sadid**
 - Kent State computer science; best job was as realtor's assistant
- **Wendy Pei**
 - Graduated from SF State, then worked in restaurants and retail for a decade
- **Jeffrey King**
 - Completed AA degree at CC, then worked as a waiter
 - Returned to UNLV to earn degree in actuarial sciences, still couldn't get a job



Crisis of Underemployment

- Not unemployment, as student loans causing graduates to take first job that allows them to make loan payments.
- But “underemployment”:
 - Federal Reserve Bank of NY estimate: 45% of new college grads are underemployed.
 - Nearly 5M working part-time, would like full-time
 - Underemployed earn \$10k less p.a.
 - Strada/Burning Glass finds pernicious persistence: 2/3 are still underemployed after 5 years, and 1/2 after 10 years.
 - Strada/Gallup survey: landing a job before graduation makes you 2.4x more likely to eventually exceed \$60k vs. waiting (which leads to underemployment).

The Permanent Detour



Most Significant Change in Higher Education



- Only ~50% of matriculating students reported that their primary or sole motivation for commencing postsecondary education was employment/income related.



- 90%+ report primary or sole motivation is employment/income related.

Other Reason for the Employment Imperative



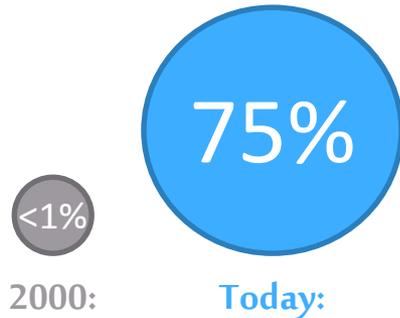
≡ COSMOPOLITAN

10 Reasons Why You Shouldn't Freak Out if You're Graduating Without a Job

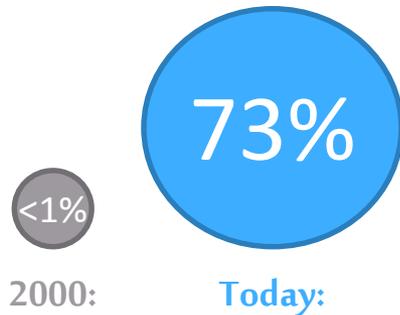
You are so not alone.

But Not Entirely Higher Education's Fault: Mechanics of Hiring Have Changed

Hiring managers that use ATS:



Companies that used social media to recruit:



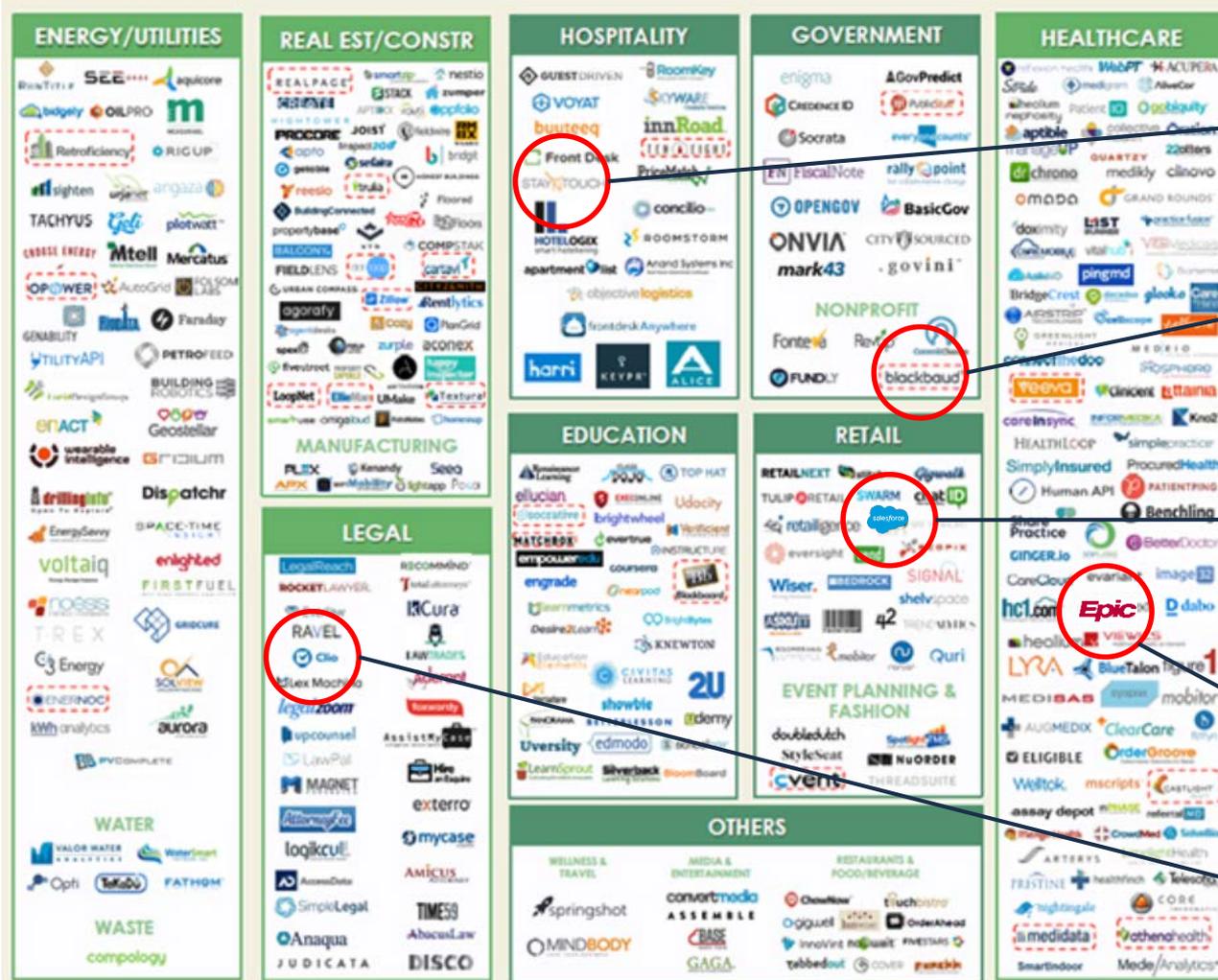
Most popular application mediums:



Why Are Employment Outcomes Worse? Proliferation of Technical Skills

Career Area	Technical Skills Specified	Cognitive and Soft Skills Specified
Information Technology	75%	25%
Healthcare	74%	26%
Engineering	71%	29%
Life/Physical Science and Math	68%	32%
Manufacturing and Production	68%	32%
Design, Media, and Writing	66%	34%
Research, Planning, and Analysis	65%	35%
Personal Care and Services	63%	37%
Finance	62%	38%
Marketing and Public Relations	62%	38%
Management and Operations	61%	39%
Education and Human Services	60%	40%
Hospitality, Food, and Tourism	59%	41%
Sales	59%	41%
Human Resources	57%	43%
Clerical and Administrative	57%	43%
Customer and Client Support	49%	51%

What Are These Technical Skills?

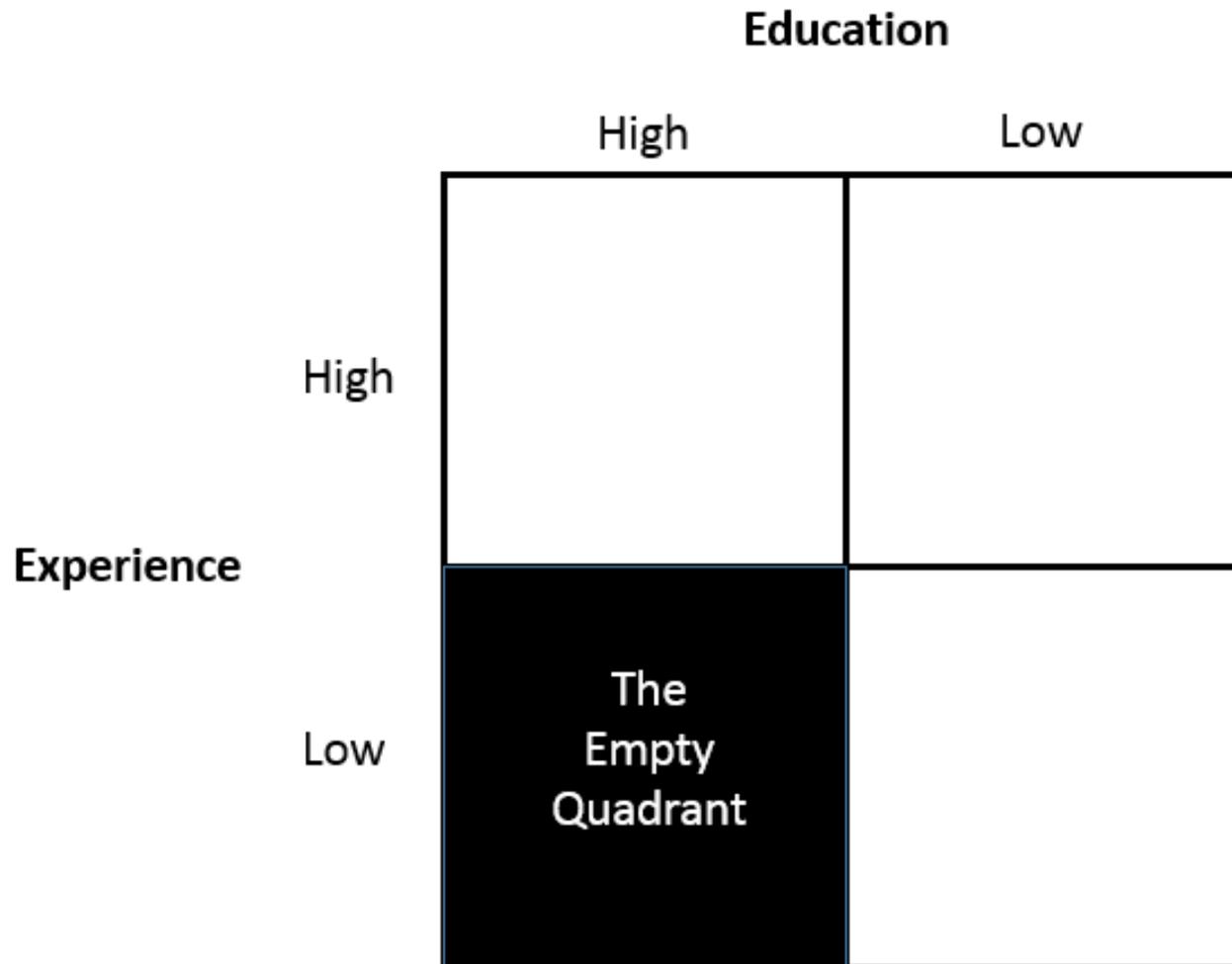


Myth of the Digital Native

“We don’t need to educate students on business software because they’re digital natives.”



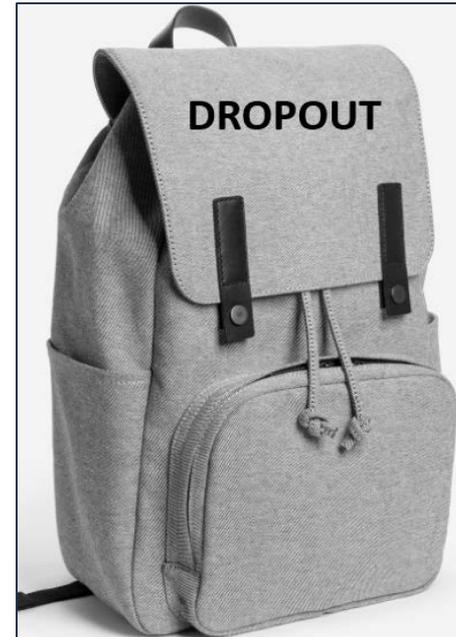
The Empty Quadrant



Reactions



(but not really)



INSIDE HIGHER ED The 2017 Survey of Admissions Directors: Pressure All Around

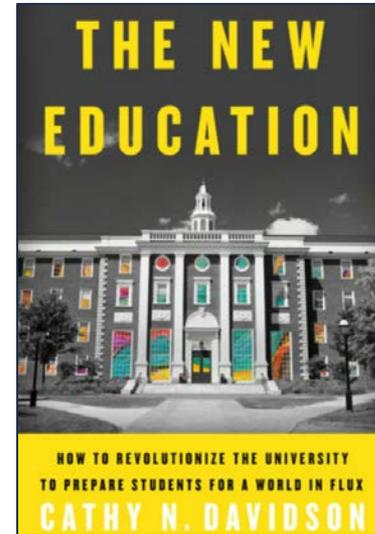
Only 34 percent of colleges met new student enrollment targets this year by May 1, the traditional date by which most institutions hope to have a class set.

That is a key finding of the [2017 Survey of College and University Admissions Directors](#), released today by *Inside Higher Ed*, in collaboration with Gallup.

The 34 percent figure is down from 37 percent [a year ago](#) and 42 percent two years ago.

How Not to React

“But the most relevant education in the world cannot change a labor market rigged against the middle class. This is a social problem, not a higher education problem.”

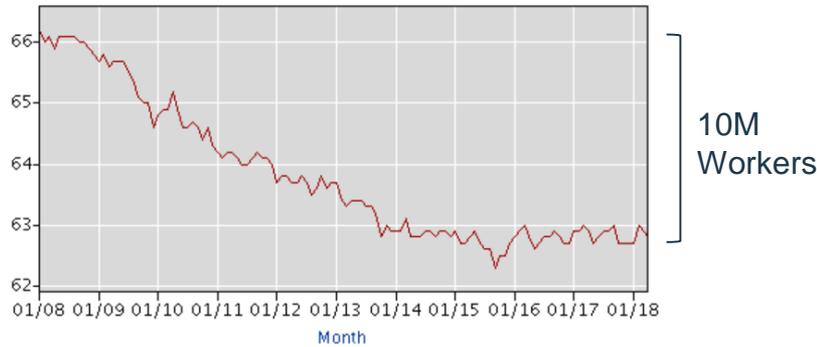


To paraphrase Donald Rumsfeld:
“You're sending young people out into the labor market you have, not the labor market you might want or wish to have at a later time.”

America's Skills Gap

Underemployment One of Many Problems

1. Decline in labor market participation



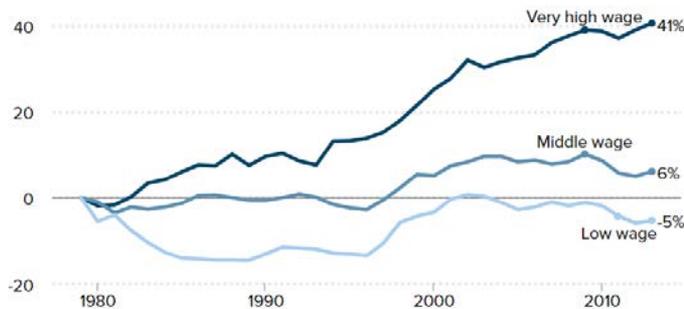
3. Employers unable to fill open jobs

6.7M job openings, nearly 3/4 middle or high skill



2. Wage stagnation

Cumulative change in real hourly wages of all workers, by wage percentile, 1979-2013



4. Diversity

- Top 75 tech firms: 2% African-American, 4% Latino, 30% women.
- Data science: 26% women

Skills Gap is Source of Major Challenges



1) "American Dream collapsing"

Rise in inequality, reduction in socioeconomic mobility.

2) "Democracy dying"

Sense that good jobs are out of reach leads to loss of hope, exacerbating opioid epidemic, rural/urban divide, and increasing political extremism.

3) "Falling behind China"

Diminished economic growth and competitiveness.



- **Millions of workers needed in growing sectors like IT and healthcare.**
- **Technology about to make problem worse (repetitive processes that can be automated, will be automated)**

Market Failure: Two Distinct Frictions



Education Friction:



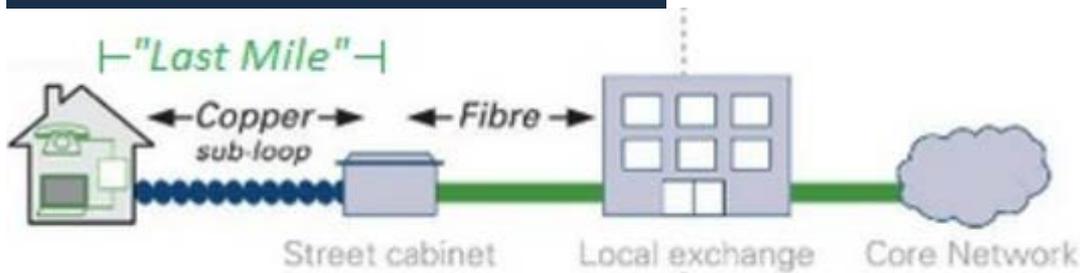
Hiring Friction:



salesforce

Last-Mile Training

Borrowed from Telephony



- Hardest + most expensive to build
- Therefore most valuable segment
- Basis for natural monopoly

Talent Market Correlation



1. Digital training

- Minimum: Ensures candidate no longer filtered out of ATS
- Maximum: Offers training and experience on exact SaaS platforms employers utilize



2. Soft-skills training

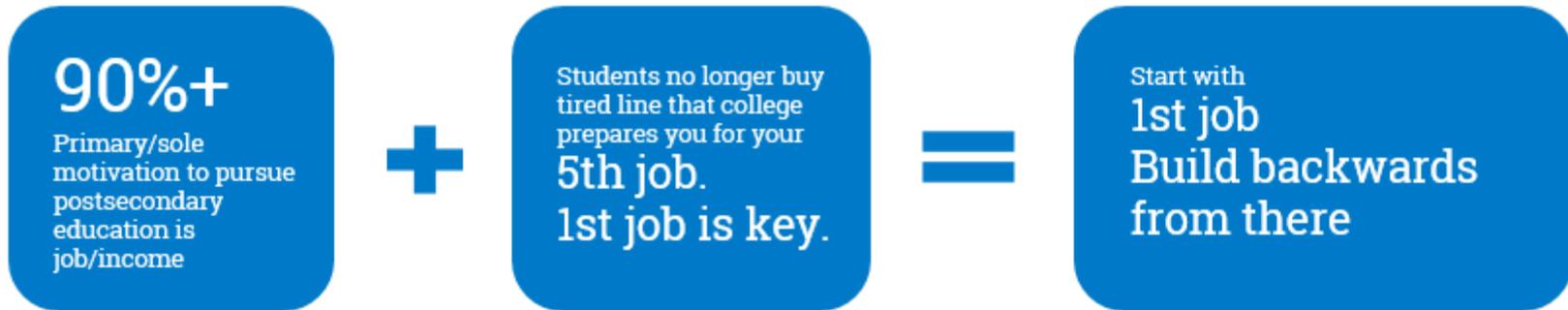
- Real project work in work-like setting furthers teamwork, communication, organization skills
- Interview preparation and training



3. Absorbing frictions

- Absorb education frictions by eliminating upfront tuition and guaranteeing employment outcome
- Absorb hiring frictions by funding training + providing employers with opportunity to try before they hire

Design Thinking Cure for Labor Market Ailments



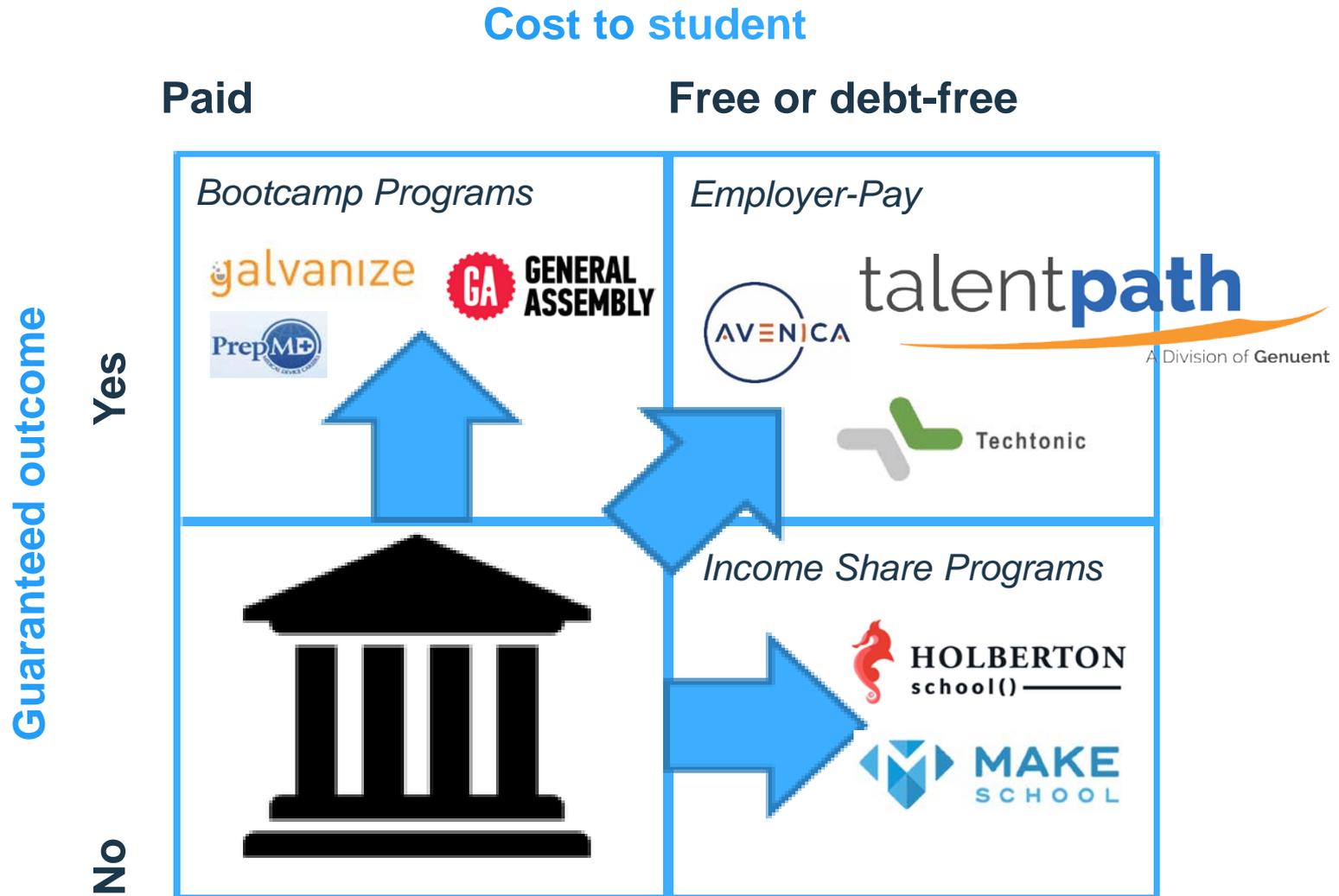
- **Historically, our approach to postsecondary education has been to build forward from K-12**
- **Design thinking requires that we begin building backwards from good first jobs in growing sectors of the economy**
- **Most critical for students who are at greatest socioeconomic risk**

Elements of Last-Mile Training

- Technical Skills +
- Intensity
- Demonstrate Competencies
- Strong Connections to Employers
- Clear Pathways
- The Credential is the Job



LMT Can Provide Better Value to Students



LMT Can Reduce Education Friction



Example: \$10,000 funding gap for senior engineering major



School advances tuition to student

vemo • Originates ISA
EDUCATION • Services ISA



Student obliged to repay after graduation with defined:

- Income share %
- Payment term (capped)
- Payment cap (\$)
- Rules for deferral (graduate school)
- Minimum income threshold

LMT Can Eliminate Both Frictions

talentpath

A Division of Genuent



Value Proposition to Clients



Recruit

We're selective about our technology talent, recruiting the top 1% from colleges and universities throughout the country.



Develop

Through our intensive coding immersion programs, we turn web developers into world-class software engineers.



Deploy

We deliver job-ready technology talent fast, cutting down onboarding time so you can focus on your project's success.

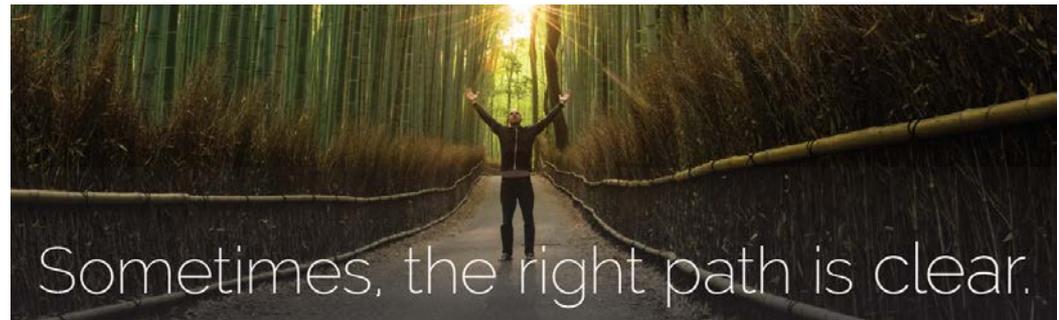


Hire

Our talent seamlessly integrates with existing technology teams so well that they end up being hired by clients.

Value Proposition to Students

Talent Path is a unique immersive training program that pays you while you learn. You'll become a full-time employee with benefits while you learn the most in-demand technologies today as well as develop a solid foundation in consulting and business communication. Our program provides you with extended immersive training with highly experienced technical professionals in both emerging and critical, hard to find skills such as Java, Blockchain, Data Visualization, Angular, and Technical Support.



Sometimes, the right path is clear.

- Free 12-week bootcamp program
- Hired from day 1, apprentice wage
- 2-year commitment, relocate to client site
- Pathway to first job, and probably second

LMT Produces Good Outcomes for Students



“Training on **technologies that are actually used** in entry-level development jobs. The software engineering minor in college taught me the basics of only one programming language. In this job, I get way more **experience and in-depth understanding** of the programs we use. Revature trained me on most of the skills and technologies I actually use in my job.”

**Samantha Wolverton,
George Mason '16, Revature '17**



“In university, **there was no talk of frameworks**. We learned how to write everything out from scratch. But at a job, there’s no need to do that because someone’s already done it. **Revature got me the job I wanted, because clearly my degree wasn’t enough.**”

**Yasmine Sadid,
Kent State '14, Revature '16**

- **Diversity in IT hiring also valuable to clients**
- **Revature has recruited and launched all-female cohorts and all-Puerto Rican cohorts**

LMT Means Renaissance of Apprenticeships in U.S.



Central European Model: Gov't-industry collaboration

- Clear link to funding
- But impossible to replicate in other countries



UK Model: Apprenticeship Service Providers



Making Apprenticeships Work BY RYAN CRAIG AND TOM BEWICK

- Intermediaries sell to employers + manage, "hiding the wiring" for apprentices and employers
- But doesn't solve the fact that few employers are excited to have large #s of apprentices hanging around



American Model: Outsourced Apprenticeships



Techtonic Group raises \$2 million to transform tech hiring through apprenticeships

- Service providers sell + manage
- They also host apprentices until employer-clients are ready to hire based on proven work
- Relevant to any skill gap area where services are outsourced

Techtonic: Dev Shop + Registered Apprenticeship



(Boulder County Workforce, Arapahoe County Workforce, Jefferson County Workforce, Colorado Technology Association, Denver Workforce, Technology Employment in Colorado Partnership, Colorado Department of Labor and Employment (CDLE) and various non-profits)



Recruit

- Recruit candidates for apprenticeship program based on potential, not pedigree or degree.
- Candidates come through CO WIBs (75 different contacts), but selective (500 applicants per cohort).



Train

- 12-week Academy.
- Classes + paired programming.
- WIBs fund up to \$10k per trainee (separate deals with eight CO WIBs).
- Apprentices paid \$15 per hour.
- \$500,000 grant from CDLE in 2017.



Deploy

- By week 5 or 6, working on project and billing hours.
- Billing based on work, but up to \$100 per hour.



Hire

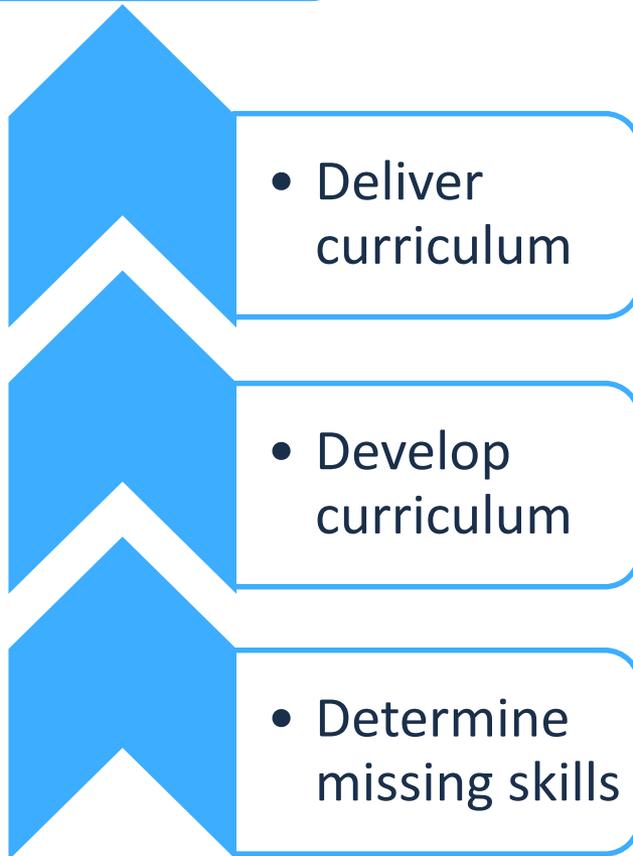
- After 1,000 hours, clients can hire apprentices at no additional cost.
- Apprentices have been working on teams with clients, thereby eliminating hiring friction.

Education-Up vs. Employer-Down



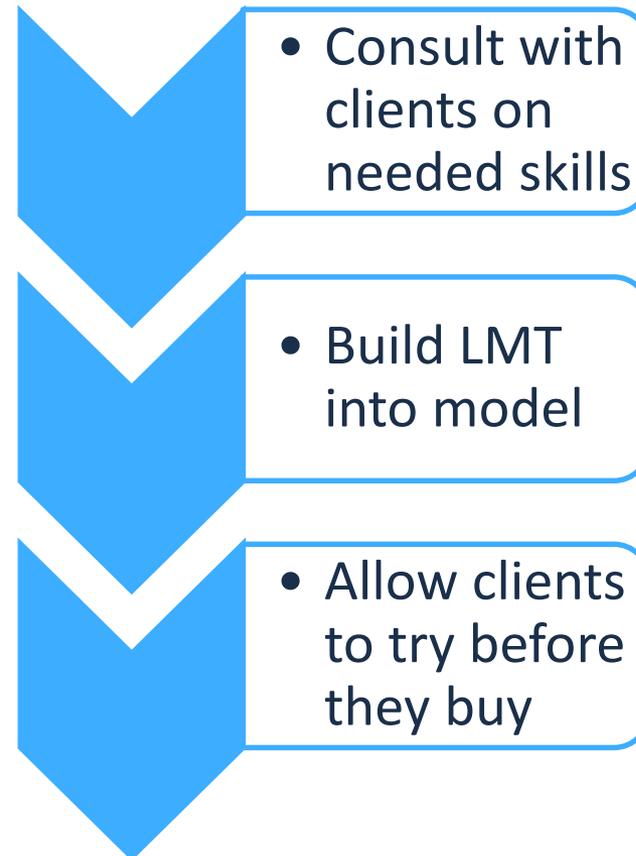
Until now, all efforts to close the skills gap have been “Education-Up”:

Hope employers hire grads

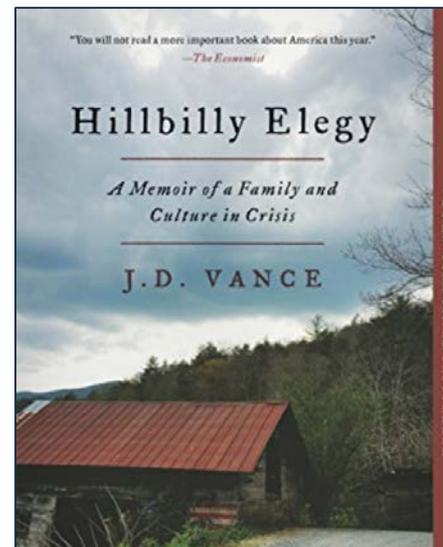
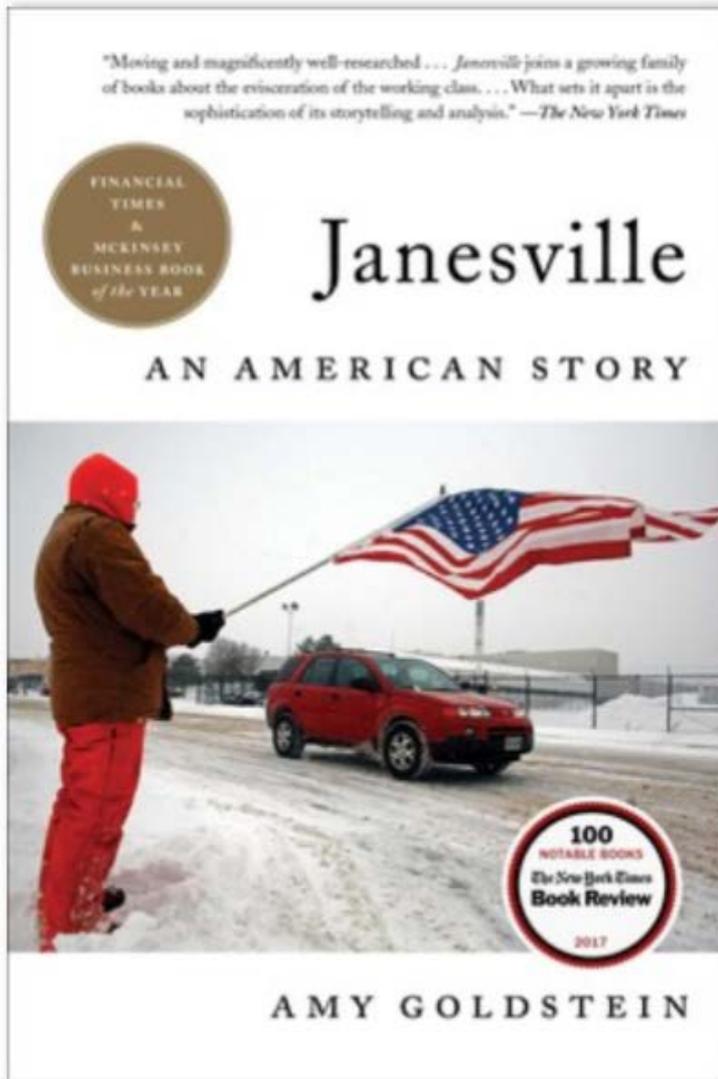


“Employer-Down” starts with intermediaries that already have relationships with dozens or hundreds of employers

Staffing or business services company



Should College Classrooms be the Only Path?



"It's like our politicians think college is the only way... For many, it's great. But a lot of our kids have no realistic shot of getting a college degree."

Employer-Down Pathways Should Foster Greater Geographic Mobility



Slate

Road to Nowhere

America has a moving crisis.

America's declining mobility has millennials feeling stuck

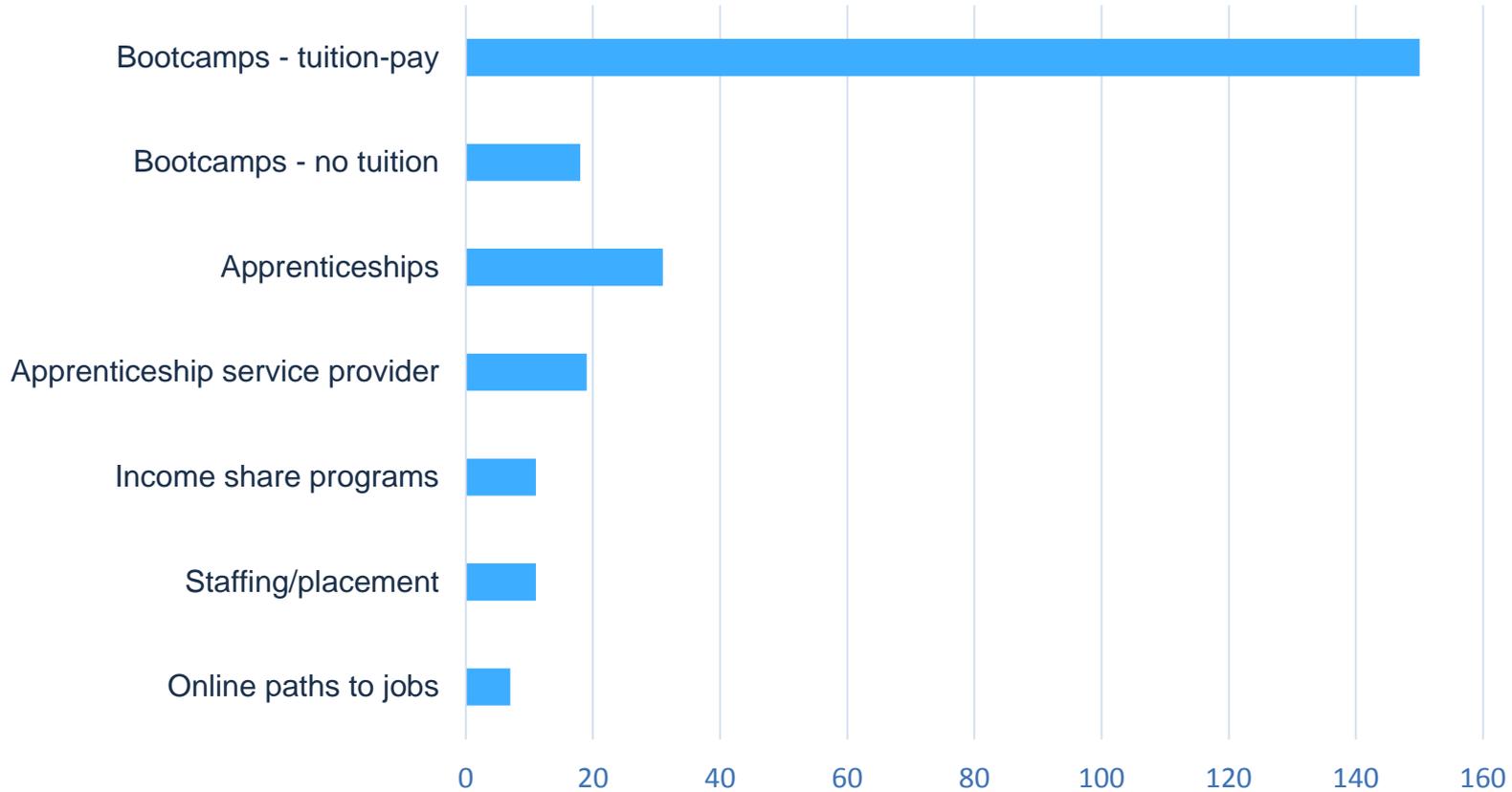
Why Americans are moving less, and why that's a big deal for housing and economic opportunity

Guaranteeing employment eliminates Education Friction and encourages mobility to more dynamic geographic regions.

Faster + Cheaper Directory



247 faster + cheaper pathways to digital/new economy jobs



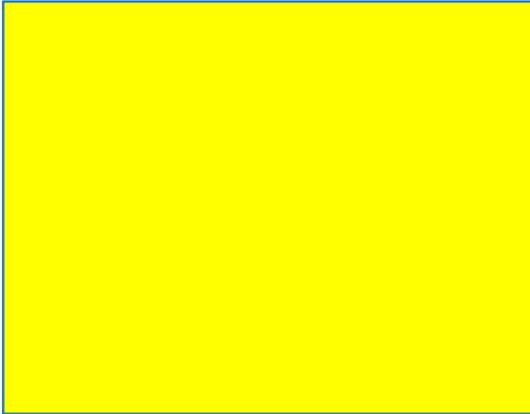
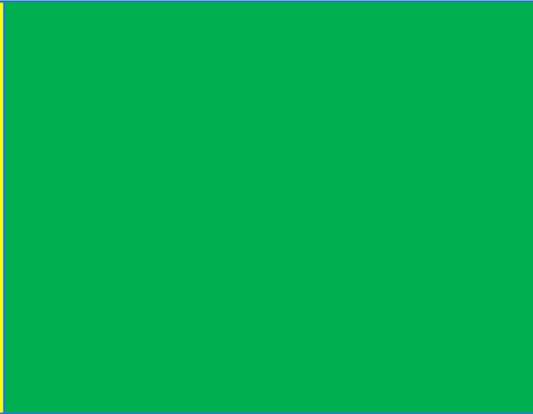
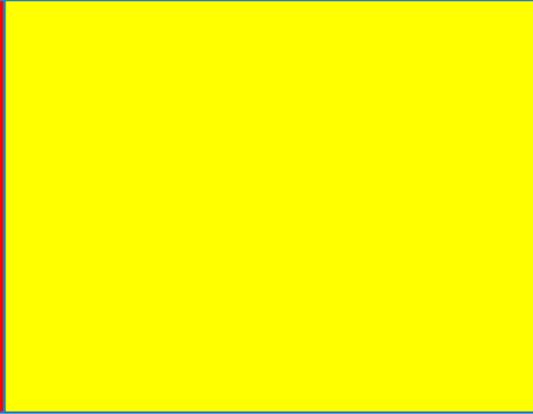
The Problem With Welders



As Supply of Faster + Cheaper
Pathways Grows...

Finally, a Real Choice



	Non-selective college	Selective college
Affordable		
Unaffordable		

Rule of 10 Becomes Operative Rule



Lumina[™]
FOUNDATION

A Benchmark for Making College Affordable

The Rule of 10

Students should pay no more for college than the savings their families have generated through 10 percent of discretionary income for the past 10 years, plus the earnings from working 10 hours a week while in school.

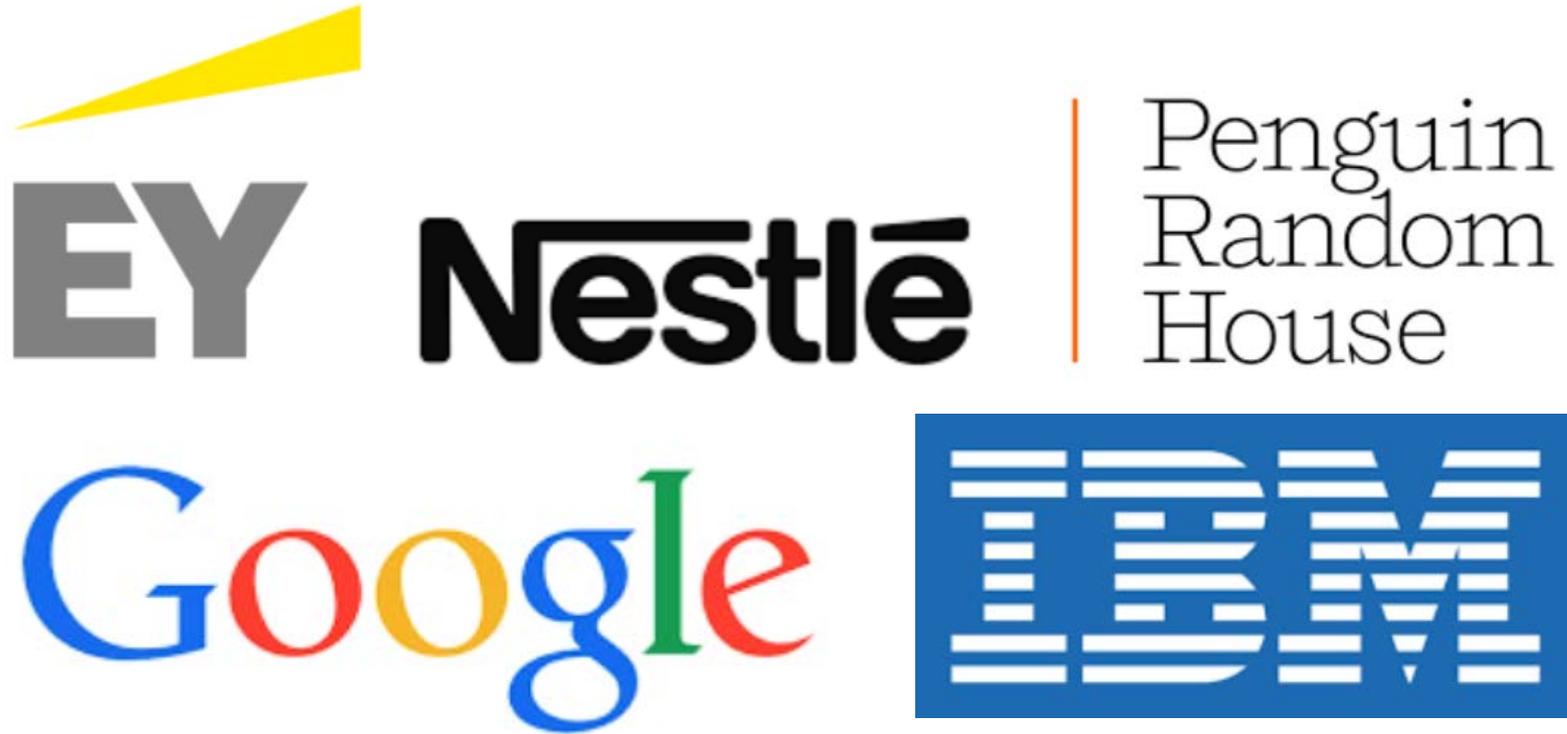
Example #1

- Household income of \$100k
- Save \$429/month for a decade, or \$51,500
- \$3,625 annually for working 10 hours per week
- Total contribution (incl. loans) < \$65k.

Example #2

- Household income of \$50k
- Save \$1,500 over a decade
- \$3,625 annually for working 10 hours per week
- Total contribution (incl. loans) < \$16k.

Leading Employers Already Open-Minded



71% of employers say they would consider hiring a candidate without a degree over someone with a degree.

A Decade from Now...



The fact that young people were encouraged to load up on debt just as they were starting their careers will seem bizarre and anachronistic – a practice that benefited providers of higher education more than the Millennials they aimed to serve.

In hindsight, given all the uncertainty around technological change and the future of work, it will seem incredible that Millennials risked taking on all that debt at one time, at such a young age.

What SaaS Has Done to Enterprise Software...



Adobe® Creative Cloud

SaaS MODEL

One-time purchase



Customer for life

In Faster + Cheaper World, Have We Passed “Peak Credential”

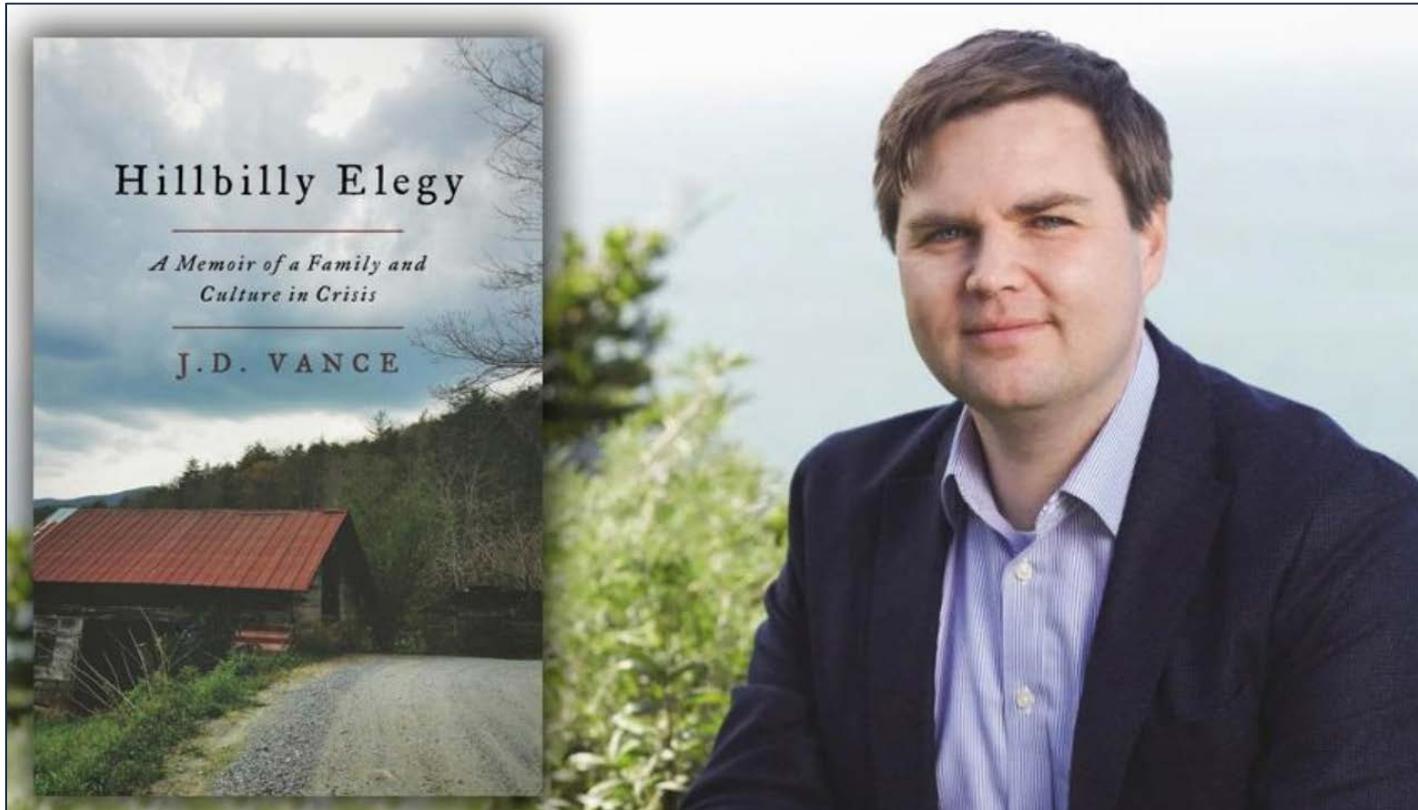


Second, third employers care more about first job and demonstrable achievements and competencies.

- More likely in world where achievements and competencies are archived and accessible digitally

The Social Importance of Faster + Cheaper

Why Faster + Cheaper?



“It’s like our politicians think college is the only way... For many, it’s great. But a lot of our kids have no realistic shot of getting a college degree.”

Reactions to Perceived Loss of Opportunity



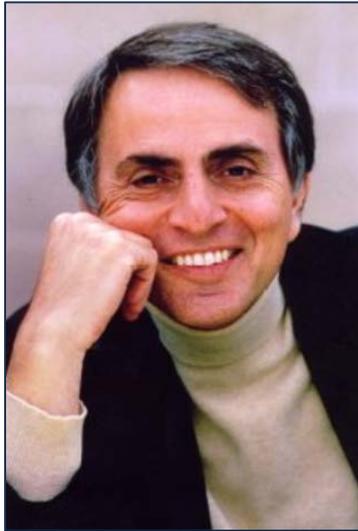
2016 Harvard poll:
51% of 18-29-year-olds
reject capitalism.

2017 poll of white working class
voters by a Democratic PAC:
57% say college degree “would result
in more debt and little likelihood of
landing a good-paying job.

What's at Risk?



- Colleges and their communities
- Discovery
- Fun
- Educated citizenry



"I have a foreboding of an America in my children's or grandchildren's time – when the United States is a service and information economy... when awesome technological powers are in the hands of a very few, and no one representing the public interest can even grasp the issues; when the people have lost the ability to set their own agendas or knowledgeably question those in authority; when... our critical faculties in decline, unable to distinguish between what feels good and what's true, we slide, almost without noticing, back into superstition and darkness."

- Carl Sagan, *The Demon-Haunted World* (1995)

- But probably not skills

Triage



Once we improve economic security, these other issues can be dealt with.

The Promised Land



What Can Polytechnics Do?

Reduce Hiring Friction



- Experiential education
- Apprenticeships

AND ALSO

- Establish employer of record for graduates to allow employers to “try before they buy”
- Recruit/build sales organization

OR

- Establish partnerships with intermediaries (staffing, business services companies)

Digital Credentialing



Credly



Work with High Schools on Career Discovery



Top 5 Reasons to Work in the Insurance Industry

A red rectangular banner with five white circular icons arranged horizontally. From left to right: a family of four, a money bag with a dollar sign, a bar chart with an upward arrow, a calendar, and a document with a red cover.A woman with dark hair, wearing a black headset with a microphone, smiling. She is wearing a dark blazer. The background is a solid teal color.

Why Everyone Should Work in
Customer Service

SHOULD YOU PURSUE A GRAPHIC DESIGN CAREER?

A dark red background with a hand holding a pen, poised to write on a document. The text is in white, bold, uppercase letters.

A close-up of two blue keyboard keys on a white keyboard. The top key is labeled 'Data' and the bottom key is labeled 'Scientist' in white text.

A simple white outline of a cloud.

Cloud Industry.

7 REASONS
why you should work
at Cloud Industry

A group of seven people (four men and three women) standing together in a modern office or tech environment. They are dressed in business casual attire. The background shows office equipment and a blue wall.

4 Reasons Why Women Should Pursue a Cybersecurity Career

A pink rectangular banner with a blurred background of a hand holding a pen. The text is in white, bold, uppercase letters.

Many Degrees Will Go Way Of Debutantes



- Expensive
- Elitist
- ROI?