Higher Education
and American Economic Mobility

February 2019
Future of College?

• Critical topic not only for:
  • 4,000 institutions
  • 20M students
  • 4M faculty and staff

• But for future of our country, because in the past 50 years we decided that college was the sole pathway to active participation in the dynamic economy.
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

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

- 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.”
Millennials: Economic Underperformance

- Wealth
- Income
- Housing
- New business creation
Twin Crises Lead to Poor Economic Outcomes

College affordability

Graduate employability
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 @ryan craiguv
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?
Career Services: A Poor Interface

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

“Career services must die”
- Andy Chan, VP Career Dev’t at Wake Forest
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).
But Not Entirely Higher Education’s Fault: Mechanics of Hiring Have Changed

Hiring managers that use ATS:

2000: <1%
Today: 75%

Companies that used social media to recruit:

2000: <1%
Today: 73%

Most popular application mediums:

2000: Job FAIR
Today: ORACLE Taleo
Why Are Employment Outcomes Worse?  
Proliferation of Technical Skills

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

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

3. Employers unable to fill open jobs
6.7M job openings, nearly 3/4 middle or high skill

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)
Immigration Pressures Causing Gap to Grow

The H1B Visa Struggle: No Relief in Sight

Over the past 18 months, the Trump administration has struggled with the H1B visa system. There is no relief in the vicinity.

Trump administration reconfirms intent to rescind H4 rule on H1B visa spouses

The Trump administration has reconfirmed its intent to rescind the H-4 visa rule on employment authorization to certain spouses of H-1B visa holders, a proposal that could hit tens of thousands of Indian women in the US.

The Trump administration is currently reviewing the H-1B visa policy that it thinks is being misused by companies to replace American workers.

As per the notification published on Monday, the Department of Homeland Security is proposing to remove from its regulations certain H-4 spouses of H-1B nonimmigrants as a class of aliens eligible for employment authorization.

The H1B visa is a non-immigrant visa that allows US companies to employ foreign workers in specialty occupations. The work visa is popular among Indian IT professionals.
Market Failure: Two Distinct Frictions

Education Friction:

Hiring Friction:
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
LMT Can Provide Better Value to Students

Cost to student

Paid

Free or debt-free

Bootcamp Programs

Employer-Pay

Yes

Guaranteed outcome

No

Income Share Programs

- galvanize
- PrepMD
- GA
- GENERAL ASSEMBLY
- AIVENICA
- REVATURE
- Techtonic
- Holberton school
- Holberton school
- MAKE SCHOOL
LMT Can Reduce Education Friction

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

School advances tuition to student

vemo EDUCATION: Originates ISA 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

Value Proposition to Clients

Changing The Way The World Hires
Our proprietary talent development and delivery program takes the unpredictability out of securing the right people while eliminating wasted efforts, time and money in the process.

Recruit
We’re selective about our talent, hiring 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 as well that they end up being hired by clients.

Value Proposition to Students

Why Revature?
At Revature, it’s more than a job—we provide careers in technology. Our program gives you the next-gen skills needed to work at top companies, on projects that make a difference. Gaining the tools you need to be successful starts here.

1. Work with relevant technologies
   You work side-by-side with enterprise level technologies that are shaping the future of business.
2. Gain real-world experience
   Our program uses business practices and methodologies that are used today—well as new-gen and scale technologies that are shaping the future of business.
3. Learn from the best
   You’re guided and mentored by highly skilled professionals representing some of the top talent in technology, who not only teach, but also lead projects and lay the "soft skills" foundation for students.
4. Showcase your talents
   You develop a comprehensive resume portfolio that showcases your projects, skills, experience, certifications, academic coursework, and more, equipping you to excel in the business and technology worlds.
5. Start your technology career faster
   Our intensive program gives you the leading-edge, enterprise level technology skills business need in 6 to 12 months. Our software engineers are in demand across the country.
6. Work with top companies
   Become software engineers with some of the top companies in the country on projects that are making a difference.

- Free 10-12-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
Techtonic: Dev Shop + Registered Apprenticeship

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.
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
- 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
- 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

Making Apprenticeships Work
BY RYAN CRAIG AND TOM BEWICK

TechCrunch
Techtonic Group raises $2 million to transform tech hiring through apprenticeships
Education-Up vs. Employer-Down

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

- Deliver curriculum
- Develop curriculum
- Determine missing skills

Hope employers hire grads

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

- Staffing or business services company
  - Consult with clients on needed skills
  - Build LMT into model
  - Allow clients to try before they buy
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.
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.”
Welcome to Lifelong Learning
The Promised Land
But Will Need Much More Career Discovery in High Schools
Also Digital Credentials
Also Competency-based Assessments
Also Secondary and Tertiary Pathways