



Talent Gaps, Mismatches and Universities: Addressing 21st Century Education Options

Mark B. Rosenberg
President, Florida International University

DRAFT FOR PUBLIC COMMENT

**"I must study politics and war that my sons may have the liberty
to study mathematics and philosophy"**

John Adams

Letter to Abigail Adams, May 12, 1780



Higher Education Trends Suggest Major Changes Still on Horizon!

- **Growing gap in funding and endowments (private vs. public; Ivy League vs. the rest)**
- **Affordability is major issue for publics and privates**
- **Student indebtedness in seven of ten graduating seniors (2014)**
- **Alternative learning experiences (MOOCs, DIY U, online)**
- **Personalized education pathways are emerging**
- **Weak response to industry**
- **Quick-skills market is owned by for-profits**
- **New major drivers: automation, IOT (internet of things), virtual reality, machine learning**

SHIFT:

The Commission on Work, Workers and Technology

...is this generation of technological advances different from past ones?

...will automation and artificial intelligence result in a fundamental rethinking of our relationships to work and to one another?

**(“How do you occupy yourself?”
Not “what’s your job?”)**

Key Uncertainties about the Future

- **The Structure of Work:**
Will there be more tasks (day contracting, projects, the “gig” economy, etc.) or will work remain concentrated in traditionally structured jobs?
- **The Effect of Automation:**
Will technological changes result in more or less work to go around?

Digitization is a major driver of change!

- **Digitization of assets** — including infrastructure, connected machines, data, data platforms
- **Digitization of operations** — process, payments, and business models, customer and supply chain interactions
- **Digitization of the workforce** — increased remote workers using technology/floating offices; mobile connectivity to brick & mortar

How Employment Patterns are Changing

- **One third of new jobs in the U.S. in the last 25 years did not exist, or barely existed – in IT development, hardware manufacturing, IT systems management, and app creation**
- **Up to 30 percent of the working age populations in the United States and the European Union are engaged in independent work**

"Overwhelming consensus among employers is that too many graduates lack critical thinking skills and the ability to communicate effectively and solve problems creatively. But employees find that youth also lack technical or hard skills associated with specific jobs."

Closing the Skills Gap: The Economist Intelligence Unit, 2014



MIND THE SKILLS

GAP

Skills gap is real:

The Economist Intelligence Unit, 2014

- **Growing mismatch/needs of business and offerings of US education**
- **Manufacturing dominated by companies focused on variety and constant innovation**
- **Shift and transition to a service based economy**
- **Rise in necessity and demand for so-called soft skills**

How to explain the skills gap?

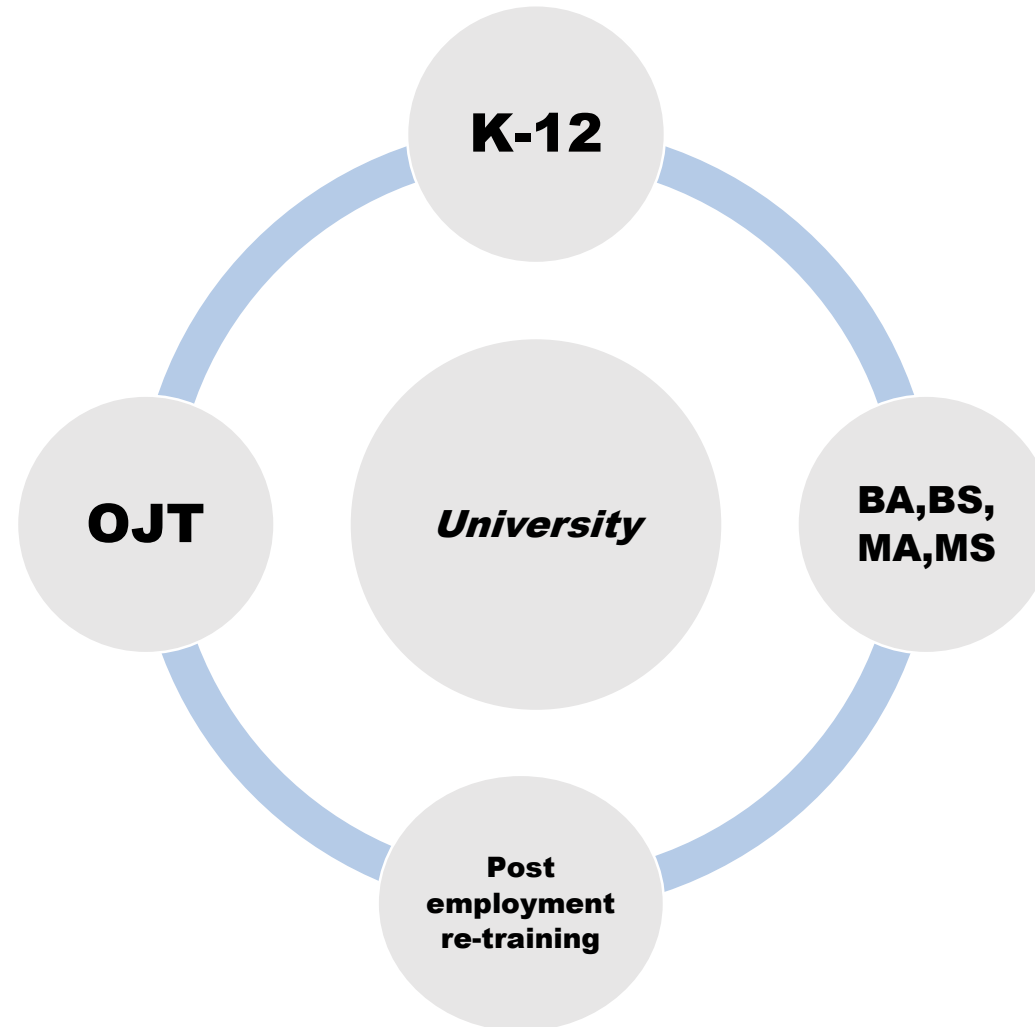
- **Undercompensation** – wages are too low to attract talent
- **Underselling** – workforce is ineffective at communicating skills to employers
- **Underpreparation** – on-the-job training and post-secondary education do not meet employer needs
- **Underutilization** – traditional sourcing efforts exclude inclusivity; global target markets require intercultural awareness

"The lack of clarity or even vocabulary for discussing the relationship between education and work is not an accident. It reflects deep philosophical differences about the purpose of education and in particular the mission of institutions of higher education."

Mary Alice McCarthy



Skills gap must be addressed at four levels



The Future of Work

The Chronicle of Higher Education, 2017

“...more jobs will require recent college graduates to more fully merge their training in hard skills with soft skills”

***What does this
convergence look like?***

Future Work Skills

- There will be an ultimate *convergence* between career and technical and baccalaureate that is learner-centric and just-in-time to market
- Convergence will allow more intentional *merger* of critical thinking and “vocational” skills for the traditional learner and for just-in-time skill sets for the non-traditional learner
- Accelerated rate of technological and social change requires learners to be less focused on subject knowledge and more solutions-centric (design thinking?)

UNIVERSITY 1.5

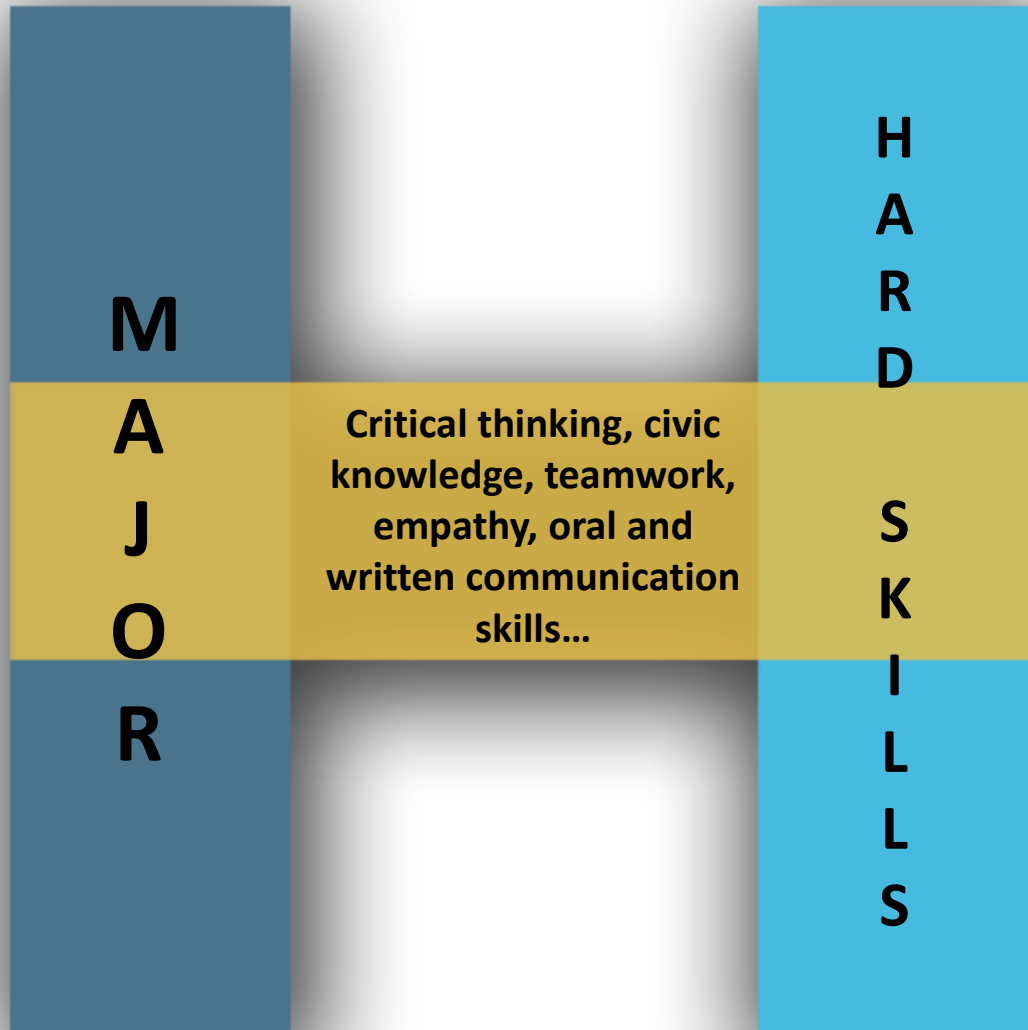
Critical thinking, civic knowledge,
teamwork, empathy, oral and written
communication skills...

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- ***Need to enhance understanding of the T-shaped student***

- ✓ Vertical is the disciplinary/multidisciplinary competency (a major, certificate, etc.)
- ✓ Horizontal are the skills – critical thinking, civic knowledge, teamwork, empathy, oral and written communication skills

UNIVERSITY 2.0



- ***Need to enhance understanding of the H-shaped student***
 - ✓ First vertical is the disciplinary/multidisciplinary competency (a major, certificate, etc.)
 - ✓ Horizontal line depicts the skills – critical thinking, civic knowledge, teamwork, empathy, oral and written communication
 - ✓ Second vertical line is a “hard skill” – coding, data analysis, spreadsheet construction, basic cybersecurity (i.e. last mile skills)

The University of Utah



- **1-2 month courses, “designed to maximize the value of your degree, broaden your skill set, and increase your competitiveness in the job market”**
- **Current courses include:**
 - Operations Analyst
 - Instructional Design Fundamentals
 - Data Analysis for Modern Workforce
 - Digital Communication Tools
 - Content Marketing and Management

Revature Academic Partnerships



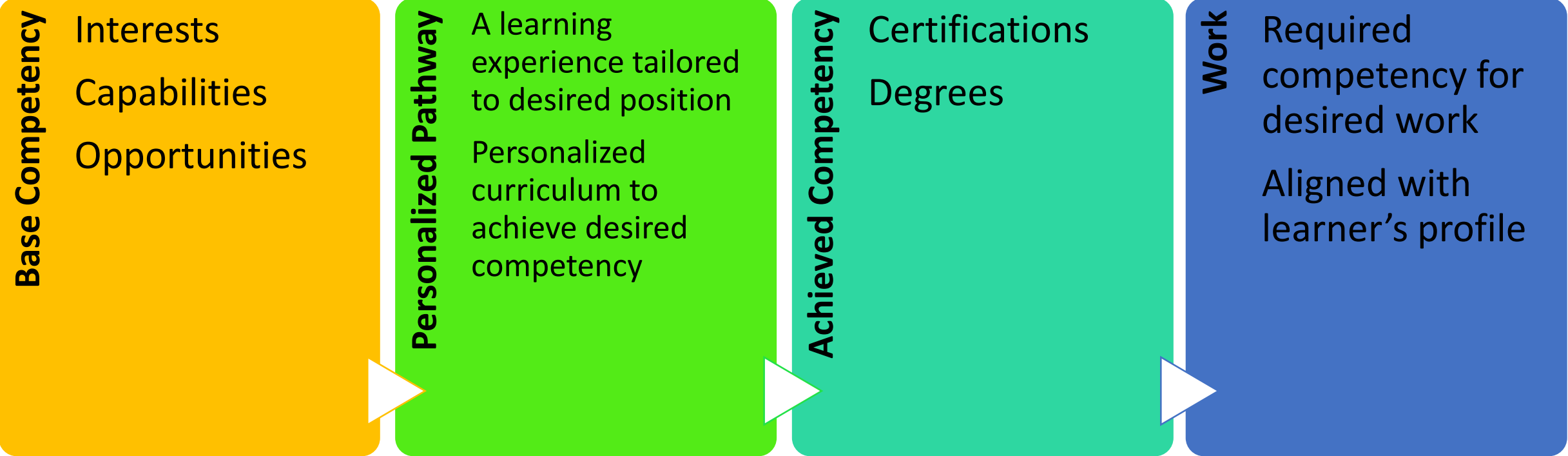
- **Online coding “bootcamps” provided at no charge to students and alumni from partner universities**
- **Students who successfully complete their program are hired as Revature Software Development Professionals**

UNIVERSITY 3.0

- **Intense experiential ecosystem + brand militancy**
- **Intrusive cognitive measures of knowledge and learning**
- **Automated matching of interests, capabilities and opportunities (i.e. aptitude tests + locational analysis)**
- **Personalized variable education pathways – traditional learners, just-in-time, do it yourself and/or curated learning**
- **Variable measures of competency and certification**

UNIVERSITY 3.0

Subject Matter "X"



"For many workers, the future is already here, for better or worse. So we should stop obsessing over predictions and start working to improve our society now. There is plenty of crisis and opportunity to go around. If we cannot predict, at least we can prepare to adapt."

The Commission on Work, Workers, and Technology



The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn.

— Alvin Toffler —



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