THE FUTURE WON'T WAIT: THE NEED TO CREATE INTEGRATED EDUCATION AND WORKFORCE PATHWAYS - NOW.

Kyle Hartung | JFF

AEW NETWORK CONFERENCE | MAY 16, 2019
~90,000 HOURS
5. What comes next?
Building a Future That Works

Vision

A society in which economic advancement is attainable for all.

Mission

JFF is building a society in which everyone has access to the skills, resources, and credentials needed to achieve economic advancement.

To reach that goal, we accelerate the alignment, transformation, and reimagination of the American workforce and education systems.
JFF's Work Is More Important Than Ever

Preparing People for the Future of Work
Automation, outsourcing, and new contract arrangements require everyone to begin thinking and acting differently.

Ensuring Equity in Economic Advancement
Despite overall growth, economic opportunity through education and dignified work is limited for millions of Americans.

Meeting Employer Needs
Employers continue to struggle to find employees with the right skills. For America to thrive in the global economy, businesses need a steady supply of highly qualified workers.
A ROADMAP FOR TODAY’S CHIT-CHAT

THREE CONSIDERATIONS

THE CHANGING WORLD OF WORK

IMPLICATIONS FOR YOUNG PEOPLE

SYSTEMS CHANGE NEEDED
SOME CONTEXT

EDUCATION, THE ECONOMY, AND THE FUTURE OF WORK
2020 EMPLOYMENT PROJECTIONS

BY EDUCATION LEVEL

- BA or higher: 35%
- HS diploma or less: 35%
- AA or postsecondary certificate: 30%

Sources: Recovery 2020, Georgetown Center on Education and the Workforce, 2013; and Complete College America
EDUCATION LEVEL

25% Gap: We can and must do better!

U.S. LABOR FORCE, AGES 25-64

U.S. HIGH SCHOOL GRADUATION RATES

STILL LEAVING TOO MANY BEHIND!!

Six-year outcomes for all students who completed at their starting institution or at a different institution.
MORE APPALACHIANS ARE ATTAINING BACHELORS DEGREE

SHARE OF POPULATION >25 YEARS WITH A BA OR HIGHER


Source: Appalachian Regional Commission Analysis of Census Bureau and American Community Survey Data. Available at: https://www.arc.gov/data.
YET PERVERSIVE SUPPLY-DEMAND GAPS REMAIN

RELATIVE COLLEGE COMPLETION RATES IN APPALACHIA 2012–2016

Source: Appalachian Regional Commission. Retrieved 6/14/19 from:https://www.arc.gov/research/MapsofAppalachia.asp?MAP_ID=141&PRINT=Y
MORE LOW-WEALTH STUDENTS GO TO COLLEGE, BUT FEW GRADUATE

A (REALISTIC) HYPOTHETICAL SUBGROUP

IMPLICATIONS FOR COMPLETION

10 students enter high school

8 complete high school

4 students enroll in college

2 students complete college
MAJOR THEMES SHAPING THE FUTURE OF WORK

- Automation, Robotics, AI
- Employment Status
- Nature of Work
- Accelerating Change
THE ECONOMY IS CHANGING

A shift to a “learning” economy

Disruption is coming (is here?)

Job loss and change

Our institutions are poorly equipped to keep pace

U.S. EMPLOYMENT BY TYPE OF WORK

Sources: US Population Survey; Federal Reserve Bank of St. Louis
RESPONSES TO AUTOMATION

A CONTINUUM

Nightmares!
“Despite the appearance of many new human jobs, we might nevertheless witness the rise of a new useless class.”
— Yuval Noah Harari, 21 Lessons for the 21st Century

Roses!
“If we do it right, we might actually be able to evolve a form of work that taps into our uniquely human capabilities and restores our humanity.”
— John Hagel
ONE PERSPECTIVE

WE’RE ALL DOOMED!

“U.S. factories are not disappearing; they simply aren’t employing human workers.”

- Moshe Vardi, Director of Rice’s Ken Kennedy Institute for Information Technology
Technical feasibility, % of time spent on activities that can be automated by adapting currently demonstrated technology.

- Least susceptible: 9%, 18%
- Less susceptible: 20%, 25%
- Highly susceptible: 64%, 69%, 78%

Time spent in all US occupations, %

- Applying expertise: 7%, 14%
- Stakeholder interactions: 16%, 12%
- Unpredictable physical work: 17%, 16%
- Data processing: 18%
- Data collection: 17%
- Predictable physical work: 16%

Technical feasibility of automation, %

Predictable physical work

For example, welding and soldering on an assembly line, food preparation, or packaging objects

78%

Unpredictable physical work

For example, construction, forestry, or raising outdoor animals

25%

1% of time spent on activities that can be automated by adapting currently demonstrated technology.

McKinsey&Company
SUSCEPTIBILITY TO AUTOMATION

Telemarketers: 99%
Cashiers: 97%
Delivery Drivers: 98%
Restaurant Cooks/Food Prep: 96%
Janitorial Staff: 94%
Hotel Clerks: 94%
Carpenters: 72%
Machinists: 64%
Clergy: 0.8%

APPALACHIA MUST RETHINK SKILLS AND THE FUTURE OF WORK

US RELATIVE AUTOMATION RISK TO EMPLOYMENT

Data source: Frey and Osborne (2017) & Ball State University authors' calculations
THE 1099 ECONOMY

A growing share of the economy
Goes beyond the Gig Economy
Growth rate is accelerating
ALTERNATIVE WORK ARRANGEMENTS

EMPLOYERS BENEFIT

On demand work
Lower costs
Easier to hire/fire
ALTERNATIVE WORK ARRANGEMENTS

EMPLOYEES DO NOT

Loss of pension
Loss of healthcare
Loss of unemployment insurance
Loss of retirement assistance
No overtime, holiday, or sick leave
Other lost benefits
WE'RE ALL DOOMED!

"U.S. factories are not disappearing; they simply aren't employing human workers."

- Moshe Vardi, Director of Rice's Ken Kennedy Institute for Information Technology
ANOTHER PERSPECTIVE

UTOPIA, HERE WE COME!
EXTENDING HUMAN CAPABILITY AND UNDERSTANDING

AUTOMATION’S RICH HISTORY

GUTENBERG’S PRESS
1436

FORD ASSEMBLY LINE
1913

THE CLAPPER
1985

GOOGLE TRAFFIC
2007
ROBOTS WON’T CAUSE UNEMPLOYMENT

Technology has always created more jobs than it has lost.

Only humans can do certain jobs – particularly ones requiring creativity and socialization, with changing and unexpected circumstances.

Social, legal and regulatory constraints will mitigate effects on the job market.

ARTIFICIAL INTELLIGENCE CAN EMPOWER US TO DO MORE, BETTER

Less drudgery and more leisure time expected in the future

Al has replaced work, but not workers, who are freed up for higher-level tasks

Choice in how we use technology; Apple, Starbucks, and Uber/Lyft as examples

AUTOMATION MAY BE HARDER THAN WE THINK

<table>
<thead>
<tr>
<th>Difficulty of Automation</th>
<th>Employment</th>
<th>Percentage of Total Employment</th>
<th>Weighted Average Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moderate</td>
<td>24,981,910</td>
<td>19%</td>
<td>$30,556</td>
</tr>
<tr>
<td>Difficult</td>
<td>66,829,550</td>
<td>51%</td>
<td>$40,602</td>
</tr>
<tr>
<td>Very Difficult</td>
<td>37,740,880</td>
<td>29%</td>
<td>$64,991</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>129,552,340</strong></td>
<td><strong>100%</strong></td>
<td><strong>$</strong></td>
</tr>
</tbody>
</table>

http://www.innovationfiles.org/automation-not-so-automatic/
WHAT WE DO KNOW
SKILLS FOR THE FUTURE
96% of college academic officers said they are confident in their institution’s ability to prepare students for the workforce, but only 11% of business leaders agree that today’s college graduates have the skills and competencies that their business needs.

EDUCATION AND BUSINESS MISMATCH

Gallup Poll of provosts and business leaders uncovers an enormous and concerning gap in perceptions of readiness.

Inside Higher Ed, 2014. Ready or Not
COLLEGE GRADS AND EMPLOYERS DISAGREE ON WORKFORCE PREPAREDNESS

Percentages represent the number of students/employers who think college grads are highly prepared in these skill areas upon entering the workforce.

IN-DEMAND SKILLS

Attributes employers seek¹

- 80% Leadership
- 79% Teamwork
- 70% Written communications
- 70% Problem solving
- 69% Verbal communications
- 69% Strong work ethic
- 66% Initiative
- 63% Analytical/Quantitative skills
- 61% Flexibility/Adaptability
- 60% Technical skills
- 58% Interpersonal skills
- 55% Computer skills
- 53% Detail-oriented
- 49% Organizational ability
- 35% Friendly/Outgoing
- 27% Strategic planning skills
- 24% Creativity
- 21% Tactfulness
- 19% Entrepreneurial skills/Risk-taker

¹National Association of Colleges and Employers, 2015
HOW WILL WORKPLACE SKILLS CHANGE BY 2030?

Total hours worked in Europe and United States, 2016 vs 2030 estimate, billion

- Physical and manual skills: 203 (2016), 174 (2030)
- Basic cognitive skills: 115 (2016), 97 (2030)
- Higher cognitive skills: 140 (2016), 151 (2030)
- Social and emotional skills: 119 (2016), 148 (2030)
- Technological skills: 73 (2016), 113 (2030)

Change in hours spent by 2030, %

- Physical and manual skills: -14%
- Basic cognitive skills: -15%
- Higher cognitive skills: 8%
- Social and emotional skills: 24%
- Technological skills: 55%

Source: McKinsey Global Institute Workforce Skills Model; McKinsey Global Institute analysis
THE IMPERATIVE OF WORK-BASED LEARNING AND CAREER ADVISING
WHAT DOES WORK-BASED LEARNING DO?

- Exposes participants to the world of work
- Exposes participants to a career field
- Strengthens academic learning
- Enhances professional skills
- Provides a temporary or permanent job
HOW WE THINK ABOUT WORK-BASED LEARNING MATTERS

https://center4apprenticeship.jff.org/work-based-learning/what-work-based-learning/
WHY IS WORK-BASED LEARNING SO CRITICAL?

WIN:WIN SCENARIO
Participants and Employers see benefits

EQUITY AND ACCESS
Increased career prospects and economic mobility
Professional guidance and expertise

SENSE OF SELF IN RELATION TO CAREER
Not just about skills; not about job training

COGNITIVE SCIENCE
Has a lot to say about this…
THE TRADITIONAL MODEL OF LEARNING

learn about something

learn to be something
SITUATED LEARNING POSITS AN INVERSION

through learning *to be*  
we begin to learn *about*

(Thomas and Brown, 2009)
THE PROMISE OF WORK-BASED LEARNING

Work-Based Learning

Academic Skills

Technical Skills

Employability Skills

Skills

Knowledge

Identity

Values

Epistemology

(Shaffer, 2004)
FOCUS ON TRANSFORMATIVE OUTCOMES

Students
- Middle and high school success
- Postsecondary success
- Career and community success

Employers
- Skills gap/talent shortage addressed
- Pipeline of young professionals
- Increasing number of jobs

Economies
- State and regional economies thriving and growing in key industry sectors; providing upward mobility
IT TAKES A (NETWORKED) VILLAGE

Cross-sector approach to building pathways with clear value proposition for each partner

Aligning grades 9-14+ policy and practice, braiding funding, creating effective WFD systems, leveraging partnerships…
PATHWAYS TO PROSPERITY NETWORK

STRATEGIES FOR IMPLEMENTATION

- Work-based Learning
- Leadership and Policy
- Career Info and Advising Systems
- Education-Industry Partnerships
- Secondary – Postsecondary Alignment and Integration
ON- AND OFF-RAMPS AT MULTIPLE POINTS ALONG THE PATHWAY

SYSTEMS OF COLLEGE AND CAREER PATHWAYS

Pathways offer opportunities to pursue multiple career options
PATHWAYS ECOSYSTEM
DESIGN ELEMENTS

Co-designed with secondary, postsecondary, and industry/employers

Leverage state and regional policy

Regionally focused; Labor market aligned

Clear secondary-postsecondary programs of study

Stackable credentials

Multiple on- and off-ramps

Integrated and expanded work-based learning
Carroll County, GA

Cross-sector, regional approach

Partners

Carroll County School System

West Georgia Technical College; University of West Virginia

Carroll County Chamber of Commerce (serves as intermediary)

- Made it its mission to better understand laws and regulations pertaining to youth in manufacturing and health care to support this work
Joined forced to leverage public/private partnership to develop a regional mechatronics and industrial maintenance pathway in Rutherford County, TN

Partners

Rutherford County Schools

Tennessee College of Applied Technology; Middle Tennessee State University

Rutherford County Chamber of College (serves as intermediary)
Fortune 500 chemical company

Forged a public/private partnership to create the Regional Center for Advanced Manufacturing

Partners

Local school districts

Northeast TN State College

Kingsport Chamber of College (serves as intermediary)
BUILD ON CURRENT INNOVATIONS AND INITIATIVES

TechHire Eastern Kentucky (TEKY) - identifying and developing fast-track training and employment opportunities for workers in the digital economy

Hazard Community and Technical College’s Lineman Training Program

SOAR – Diversifying regional economies and supporting communities (e.g., Bitsource; Benham School House Inn; Addiction Recover Care)

West Virginia’s Simulated Workplace

“I think you should be more explicit here in step two”
SO WHAT’S IT ALL FOR?
PREPARING YOUTH TO BE FUTURE-READY

Most young people get little advice about pathways from education to careers, and career possibilities.

Few people talk about the critical role of productive work in human lives.

Few families understand the future labor market—or even the current one.

Teachers typically have little experience of contemporary high-growth industries and know little about labor market data and shifts in education and workforce.
LENSES ON THE FUTURE

Self

Security

Society
MASLOW’S HIERARCHY OF NEEDS

AND LET US NOT FORGET ABOUT HAPPINESS

- **Self-actualization**
  - desire to become the most that one can be

- **Esteem**
  - respect, self-esteem, status, recognition, strength, freedom

- **Love and belonging**
  - friendship, intimacy, family, sense of connection

- **Safety needs**
  - personal security, employment, resources, health, property

- **Physiological needs**
  - air, water, food, shelter, sleep, clothing, reproduction
NOT. JUST. FASTER. HORSES.
NOT. JUST. FASTER. HORSES.
THANK YOU!

www.jff.org | www.ptopnetwork.org

CONTACT

KYLE HARTUNG, EdD
Senior Director

Email     khartung@jff.org
Phone     617.728.4446