Automation and Workforce Development: Do Robots Make Training Obsolete?

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Major Questions for States

• Will automation lead to surplus of labor and high unemployment over time?
• What are the implications of automation for economic development and workforce development?
• What other policies are needed to support workers and provide income during transition periods?
Fears of Automation and Jobs: Not New

• Luddites
• Automation Scare of 1950s and 1960s
• Offshoring Scare of Early 2000s
• But Automation Has Never Led to Long-Term Increases in Unemployment!
Economists’ Views: Labor Market Adjustments to Automation

• Automation: Higher Productivity, Lower Costs and Prices
• More Spending than Before: For the Good/Service in Question and Beyond
• Historical Examples: Henry Ford and the Model T; Personal Computers and Phones
• Workers: Complements and Substitutes – Incentives to Obtain Education or Training and Become the Former!
• Complements: Technical Work; Also Social, Communicative, Artistic, Non-Routine Analysis
• Costs for Workers who are Substitutes: Displacement (with Limited Recovery), Broader Loss of Earnings
Is This Time Different?

• Artificial Intelligence: Broader and Deeper Reach into Traditionally Human Tasks – Esp. those Routine and Crunching Data
• Result: Frequency and Breadth of Displacement will Overcome Adjustment Mechanism
• Potential Outcomes: Lack of Jobs, High Frequency of Displacement (Ryan Avent, Shift Commission, Thomas Friedman)
• Job Tasks That Will Remain Complementary: Technical, Social, Creative, Deeper Analytical (21st Century Skills)
• General Education, not Specific Training!
Some Skepticism

- Labor Productivity and Turnover: Lower than Ever
- Strong Returns to Specific Sub-BA Training – Occupational Associates Degrees, Technical Certificates, Sector-Based Training, Apprenticeship...Rigorous Evaluations
- Returns Persist in Medium Term (Elliott and Roder: Persistence of Quest Impacts for 6 years)
- Strong Demand in Several Sectors: Health Care, Advanced Mfg., IT, Construction, Transportation/Logistics, High End of Retail and Hospitality - Technical
- Baby Boomer Retirements Looming
- Some Evidence to Date on Automation: e-Commerce Creates Good Jobs! (Will They Survive with Autonomous Vehicles and Drones?)
Policy Implications of Automation

• Right Mix of General and Specific Training – Credentials along with Specific Training
• Workers: Lifelong Learning – Accounts, Access (Online)
• Employers: Assistance for OJT that Prevents Layoffs and Helps Incumbent Workers Adjust
• Other Supports: Unemployment and Wage Insurance; Health Insurance; Extended EITCE
Questions to Ponder

• State Labor Markets: Which High-Demand Occupations and Industries are Vulnerable to Automation?

• State Economic Development: Do/Should Concerns About Automation Change Your Strategies/Practices?

• State Workforce Policy: Mix of General and Specific Credentials? Support for Lifelong Learning? Wage Insurance?