Apprenticeships: Helping Youth Develop the Skills Needed by Today’s Employers

Wisconsin’s 34th Family Impact Seminar
Training Today’s Youth for Tomorrow’s Jobs

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Urban Institute and IZA
Growth and Opportunity

How can we stimulate both?

Widespread evidence for the major role of skills in generating economic growth
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Many youth not achieving rewarding careers
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Key argument: Expanding apprenticeship is a mechanism to widen routes to rewarding careers while improving skills, productivity
Reports of Shortages by Companies

News articles report employer concerns over skill shortages, especially in construction, manufacturing, and health care.

The German Embassy started a “Skills Initiative” in response to problems of German firms in the US finding well-trained workers.

Manufacturers are especially outspoken.
Expanding the Concept of Skills

Policymakers, commentators, many economists guided by limited measures of skill, test scores and school completion.

Generally the skills learned at school

Leads to an emphasis on expanding the role of formal education.
U.S. downplays two key sets of workplace skills

Employability Skills—teamwork, problem-solving, communication, teaching others, timeliness, allocating time/resources
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Employability Skills—teamwork, problem-solving, communication, teaching others, timeliness, allocating time/resources

Occupational Skills—mastery of an occupation takes years of experience as well as academic learning
Structure of Jobs Is Not Fixed

Mix of jobs is not independent of the system for developing the work force

In fact, the job distribution depends at least partly on the education and training system
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Mix of jobs is not independent of the system for developing the work force.

In fact, the job distribution depends at least partly on the education and training system.

When the emerging skills are weak, firms develop positions with limited skills, productivity, and wages.

High skills can encourage existing & more foreign firms to offer jobs requiring skills.
Investments not Undertaken

Can have no shortages with existing companies while failing to use U.S. comparative advantages to attract foreign companies because of skill shortfalls

Could be creating more good jobs
Jobs Can Embody Many Skills

Occupations not requiring a BA can require work-based learning, experience, other talents (salesmanship, creativity)

Many sub-BA occupations can generate high wages at top quality and productivity
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Think about a chef vs. a cook, and even different levels of chef

The best slitter operator or maintenance worker vs. mediocre ones
Skill systems and jobs

Germany and Switzerland offer examples of countries that strongly emphasize occupational skills, for production, maintenance, transport.

Skill building system well linked to the emerging demands.
Figure 1: Germany & Switzerland Outpace the U.S. in Manufacturing Jobs: 2014
Wisconsin's Employment Share in Construction & Manufacturing

- **Men**
- **All**
- **Women**

[Graph showing the employment share in construction & manufacturing for Men, All, and Women from 1990 to 2014.]
% of Wisconsin Jobs in Goods Production and Transportation

- Men
- Total
- Women

Urban Institute
What is apprenticeship?

A combined program of:
Intensive learning at the workplace,
Production of real value, and
Related academic instruction leading to a valued occupational credential.
Covers wide range of occupations.

www.innovativeapprenticeship.org
Apprenticeship characteristics

A skills strategy that affects the supply of skills and the demand for skills

Develops highly relevant skills at low government costs
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A skills strategy that affects the supply of skills and the demand for skills

Develops highly relevant skills at low government costs

Workers earn while they learn, apply what they learn

A convenient mechanism for firms to raise skills, lower turnover, while adding value
What Apprenticeship Is Not

Not standard Vocational Education or Career & Technical Education which lacks work-based learning, real output

Not on-the-job training, which lacks depth, standards, credentials, and more broadly, occupational mastery
Types of Apprenticeship in the U.S.

Registered apprenticeship—sponsors register with 26 state agencies or with the federal office of apprenticeship

Unregistered apprenticeship—some solid programs but numbers unclear

Youth apprenticeship in a few states
Youth Apprenticeship

Embedded in late high school
Counseling in sophomore year, apply for apprenticeship as juniors, seniors
Work-based learning with related courses financed by high schools
Should save money but not always
Generates Student Engagement

Apprenticeships provide youth a sense of joining and contributing to a tradition, embodied in a discipline or civic sphere. Apprentices work and learn in the setting in which a craft, trade or discipline is practiced. The knowledge and skills young people need are used throughout the setting. Adults and youth share responsibility for the work and the products created. Adult mentors share his or her disciplinary knowledge and skills with youth. Youth are responsible for working hard to begin to become proficient at something specific, and for contributing…” Robert Halpern, The Means to Grow Up
Learning for Careers

“Young people are learning what it takes—and how hard it is—to get good at something. They are beginning to learn how adults construct careers. They are assuming specific identities, even if temporarily. They are having adult-like conversations, feelings, and relationships.”
Benefits & Costs to Apprenticeship

Micro evidence shows gains to workers, in European countries, also in U.S. and Canada.

Micro evidence shows returns to firms; they recoup costs during the apprenticeship with the apprentice’s productivity; savings in recruitment & training.

Macro evidence that high apprenticeship countries generally have low youth unemployment rates.
## Earnings Impacts in Washington State of Community College Professional/Technical and Apprenticeship Training

<table>
<thead>
<tr>
<th></th>
<th>First 2.5 Years After Leaving Training</th>
<th>All Work Years Through Age 65</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Participant</td>
<td>Public</td>
</tr>
<tr>
<td>Community College Profession-Technical Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benefits</td>
<td>$15,079</td>
<td>$4,177</td>
</tr>
<tr>
<td>Costs</td>
<td>-$8,560</td>
<td>-$11,293</td>
</tr>
<tr>
<td>Total (Net)</td>
<td>$6,519</td>
<td>-$7,116</td>
</tr>
<tr>
<td>Apprenticeship Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Benefits</td>
<td>$35,338</td>
<td>$8,786</td>
</tr>
<tr>
<td>Costs</td>
<td>$20,837</td>
<td>$2,526</td>
</tr>
<tr>
<td>Total (Net)</td>
<td>$56,176</td>
<td>$11,311</td>
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</tbody>
</table>
## Total Government Costs and Benefits

### Government Costs and Benefits Per Participant

<table>
<thead>
<tr>
<th></th>
<th>Total Costs</th>
<th>Tax Benefits</th>
<th>Tax Benefits per Dollar Invested</th>
<th>Total Benefits</th>
<th>Total Benefits per Dollar Invested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida</td>
<td>715</td>
<td>15,877</td>
<td>22.21</td>
<td>20,437</td>
<td>28.58</td>
</tr>
<tr>
<td>Georgia</td>
<td>767</td>
<td>17,747</td>
<td>23.14</td>
<td>20,999</td>
<td>27.38</td>
</tr>
<tr>
<td>Missouri</td>
<td>737</td>
<td>19,699</td>
<td>26.73</td>
<td>23,863</td>
<td>32.38</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>720</td>
<td>25,484</td>
<td>35.39</td>
<td>34,531</td>
<td>47.96</td>
</tr>
<tr>
<td>Texas</td>
<td>693</td>
<td>19,183</td>
<td>27.68</td>
<td>25,234</td>
<td>36.41</td>
</tr>
<tr>
<td><strong>AVERAGE</strong></td>
<td><strong>718</strong></td>
<td><strong>19,875</strong></td>
<td><strong>27.68</strong></td>
<td><strong>25,748</strong></td>
<td><strong>35.86</strong></td>
</tr>
</tbody>
</table>

Source: MPR study based on OA and SAA budget experts, RAPIDS, and UI wage records.
Why Persist in This Policy?

Misunderstanding of the concept of skill in the US and perhaps elsewhere

Skill measures in many places almost entirely based on academic outcomes

Misplaced notion of equality

\textbf{Sameness is not equality}
Apprenticeships in Wisconsin

Like other states, most apprenticeships in Wisconsin are in construction trades and most apprentices are in their mid-20s or older.

Like 25 states, Wisconsin’s program is governed by a state apprenticeship agency.

Includes a wide range of occupations but with modest numbers of apprentices; overall about 10,000 but not many graduates—about 0.3% of the work force—still a low %.
Youth Apprenticeship in Wisconsin

Begun in the early 1990s by Governor Tommy Thompson & Superintendent Herbert Grover

Era of interest of youth apprenticeship

National example & exception as a well-structured program with serious occupational standards and wide range of occupations

About 2,500 juniors and seniors participate; most gain certifications, stay with employer
Figure 1. Wisconsin’s Youth Apprenticeship programs fall under 10 career clusters with enrollments varying by wage, gender, and minority status.

<table>
<thead>
<tr>
<th>Program Area Name</th>
<th>Student Count</th>
<th>Average Wage</th>
<th>Female</th>
<th>Minority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture, Food, &amp; Natural Resources</td>
<td>442</td>
<td>9.74</td>
<td>30% Female</td>
<td>2% Minority</td>
</tr>
<tr>
<td>Architecture &amp; Construction</td>
<td>84</td>
<td>9.98</td>
<td>8% Female</td>
<td>21% Minority</td>
</tr>
<tr>
<td>Arts, A/V Technology, &amp; Communications</td>
<td>5</td>
<td>9.26</td>
<td>60% Female</td>
<td>40% Minority</td>
</tr>
<tr>
<td>Finance</td>
<td>183</td>
<td>9.44</td>
<td>64% Female</td>
<td>12% Minority</td>
</tr>
<tr>
<td>Health Services</td>
<td>395</td>
<td>10.34</td>
<td>90% Female</td>
<td>12% Minority</td>
</tr>
<tr>
<td>Hospitality, Lodging, &amp; Tourism</td>
<td>397</td>
<td>8.18</td>
<td>62% Female</td>
<td>9% Minority</td>
</tr>
<tr>
<td>Information Technology</td>
<td>74</td>
<td>9.06</td>
<td>12% Female</td>
<td>4% Minority</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>617</td>
<td>10.01</td>
<td>8% Female</td>
<td>8% Minority</td>
</tr>
<tr>
<td>Science, Technology, Engineering, &amp; Math (STEM)</td>
<td>95</td>
<td>9.23</td>
<td>25% Female</td>
<td>7% Minority</td>
</tr>
<tr>
<td>Transportation, Distribution, &amp; Logistics</td>
<td>257</td>
<td>11.44</td>
<td>6% Female</td>
<td>4% Minority</td>
</tr>
</tbody>
</table>

*Data provided on September 24, 2015 by the Wisconsin Youth Apprenticeship Program, Department of Workforce Development.*
Special relevance to minority youth

Segregation—lack of social capital, networks
Tacit knowledge—not learning in school
Respect and pride
Special impact on boys
Action must be cultural and structural
Relevance to family formation

Stagnating men’s earnings weaken marriage

In turn, declines in marriage contribute to worsening job outcomes, especially for men

Current education and training programs are not working well for many young men

Completing BA or AA lower among young men of all races, especially minorities
Need Engagement, Workplace Experience

Comprehensive high schools do not engage youth.

Researchers argue for a variety of high school options; provide significant experiences in workplace settings connecting school and workplace skills.

Employability skills among young workers are vital, include communication, problem-solving, listening, working in teams, and having a good attitude.
Apprenticeship promotes maturity

Integration into the workplace requires apprentices to learn self-discipline as well as communication, team-work, problem-solving and resource management skills.

Complementarities between employability and couple relationship skills are plausible.

Brings youth to an adult culture, includes a natural mentoring process and discipline.

Creates a sense of pride upon completion.
Two big questions about expansion

Will workers, young people take up apprenticeships?

Will companies, other employers be willing to offer apprenticeships?
Two big questions about expansion

Will workers, young people take up apprenticeships?
• Yes, so far good programs are oversubscribed

Will companies, other employers be willing to offer apprenticeships?
• Evidence from England & South Carolina shows firms can be convinced to do so
Apprenticeships Go Beyond the Traditional Apprenticeship Countries

Recent expansions in Australia, Britain, and a few places in the U.S. demonstrate that apprenticeships are not limited to traditional, highly regulated countries.

British increases are particularly impressive, rising from about 150,000 to over 850,000 over the last 6-7 years even in recessions.

South Carolina provides a good U.S. example.
What are the key lessons from the past and from more successful countries?

All provide funding for the academic instruction linked with apprenticeship work-based learning.

All provide extensive funding for branding and marketing the program.

All have oversight independent of the firm.
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All provide funding for the academic instruction linked with apprenticeship work-based learning

All provide extensive funding for branding and marketing the program

All have oversight independent of the firm

Few offer subsidies to employers for wages

US would reach 4 million if it achieved the average of the Australia, Canada, and England
Apprenticeships in England

National and retail marketing to reach employers, makes apprenticeships attractive

Government mainly subsidizes training costs

Subsidies empower an extensive array of private training providers and further education colleges to recruit employers to offer apprenticeships

Apprenticeship fits with national qualification regime

Both political parties strongly back apprenticeship
How Did South Carolina Expand?

Stimulated by state chamber, S.C. provides $1 million/year to sell apprenticeship and a tax credit of $1,000/year/apprentice to employers

Effort led to increases in firms that offer apprenticeship from 90 to over 700 since 2008

Effective team able to convert 8 out of 10 firms they reach to offer apprenticeships

All apprenticeships are registered with the U.S. Department of Labor

Moving to expand youth apprenticeship
Expansion at Low Cost is Feasible

Great potential benefits at low public costs, with governments largely playing a coordinating role, marketing and technical assistance.

Subsidies for apprenticeship can be offset by reduced spending on high school, college, and youth programs of weak effectiveness.

Research is critical to examine occupational standards but also to assess youth development, earnings and family impacts.
Critical Step is to Generate More Apprenticeship Offers by Employers

Why should employers invest?

If they do, won’t the skills be too specific and lead to immobility in the future?

Employers recoup investments quickly

Skills acquired in apprenticeship used over careers; offers employers more flexibility in using workers
Elements Required for Expansion

• Effective branding—Apprenticeship Carolina

• National activities promoting apprenticeship

• Certification body to research and oversee content of apprenticeships and issue credentials

• Incentives for “retail marketing”; possible to use existing training organizations

• Use individuals with business experience, sales ability to reach individual employers

• Make it simple for employers
American Apprenticeship Grants

U.S. Department of Labor has used H1B funds to provide $175 million over five years to 46 projects to stimulate apprenticeship

Wisconsin wins a competitive grant

New project to develop competency-based standards for U.S. apprenticeships
What Success Can Mean

A society with less income inequality and less need for government social transfers

A country with more workers achieving occupational mastery, pride, and identity

Potential for increases in marriage and stability

An improved business climate/productivity

Reduced frustration in the transition from the army and school to careers