Tiny but Magnified?
The Role of Micro-Credentials in Dynamic Labor Markets

A Center for Improving Research Evidence (CIRE) Forum

Washington, DC

June 29, 2017

Ann Person • Nan Maxwell • David Leaser • Brenda Perea
Roy Swift • Pamela Frugoli • Holly Zanville
Welcome

Ann Person, 
CIRE director
About CIRE

• The Center for Improving Research Evidence (CIRE):
  – Draws upon Mathematica’s 40+ years of experience using rigorous evaluation designs to assess the impact of social policy and programs
  – Uses qualitative and quantitative analysis to build a better understanding of what programs work best, where, and for whom
  – Works to bridge the gap between research and practice
  – Follow @MathPolResearch on Twitter to tweet us your questions and comments. Hashtag: #microcredentials
Today’s Presenters

Nan Maxwell, Mathematica

Brenda Perea, Colorado Community College System

David Leaser, IBM

Roy Swift, WorkCred
Today’s Discussants

Pam Frugoli, U.S. Department of Labor

Holly Zanville, Lumina Foundation for Education
Micro-credentials: Do they hold promise?

Presentation at the CIRE Forum

June 29, 2017

Nan L. Maxwell
What are micro-credentials?

A credential that shows a mastery of one or a few job competencies and is more specialized and focused than traditional academic degrees.

Micro-credentials include

– Certificates
– Certifications
– Badges
What has prompted their growth?

• Belief that degrees do not prepare individuals for work
• High cost of obtaining a bachelor’s degree
• Degree programs are not generally tied to labor markets
What are the key components?

**Players**
- Educational institutions
- Online platform companies
- Private online education companies
- Community-based organizations
- Industry associations
- Privately owned and operated companies
- Local governments

**Employer Involvement**
- Develop structure
- Validate content or credential
- Offer credential
- Provide instruction
- Provide labor market information

**Structures**
- Course of study
  - Program
  - Course
  - Material availability
- Mode of instruction
  - Online
  - In person
  - Hybrid

**Assessments**
- Examination
- One or more projects
- Examination and project
What are the opportunities and challenges?

Opportunities

• Responsive to labor market needs
• Build a wide range of skills
• Stacked for career mobility
• Low time and financial costs

Challenges

• Diffused information makes credential identification and selection difficult
• Credentials have uneven quality
• Established employer policies can be difficult to change
• Funding challenges can reduce access
• Limited skills and access can inhibit take-up
How can micro-credentials help?

Effective workforce development practices

• Provide a degree or industry-recognized credential related to jobs in demand
• Use flexible and innovative training
• Relate training closely to a real job or occupation
• Engage employer and industry
• Provide access to accurate and up-to-date labor market information
• Integrate education, training, and support services
Do micro-credentials hold promise?

• Maybe

• Future research might include exploring
  – Ways to increase knowledge needed about individual micro-credentials
  – Ways to validate quality in micro-credentials
  – Conditions that facilitate development of training leading to micro-credentials for low-skilled, entry-level workers
  – Impacts of micro-credentials on training and employment
Acknowledgements

Department of Labor

• Pam Frugoli
• Gloribel Nieves Cartagena

Both from the Employment and Training Administration

Project team

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  AEdwards@mathematica-mpr.com
Presenter

David Leaser, IBM
Signals are emerging that will dramatically change the way we develop and recognize skills.
At IBM, we put these signals together to create a solution

Agile Development requires “liquid skills”

Shadow IT decentralizes IT

Hybrid Jobs require “nano skills”

Rise of Teams require expertise location

Gig Economy requires a skills registry

New collar jobs require new credentials
CREDENTIALS NOW MUST BE

- TIMELY
- VERIFIABLE
- PORTABLE
- DISCOVERABLE
- DIFFERENTIATING
IBM Badges: Five unique emblems

Badging is how we will measure _resume-worthy_ IBM skills in the market

@david_leaser
The results for IBM have been substantial.
IBM Open Badges are creating employment

“I was having a tough time finding a job because my computer skills were considered 'out of date' and the IBM badges were the perfect way to show employers that I could easily get back up to speed and learn new skills.”

After sharing her badge to LinkedIn, Twitter and to her online portfolio, Coletta received a job offer after an employer verified her badge.
Presenter

Brenda Perea, Colorado Community College System
A Competency Marketplace Springs to Life in Colorado

Brenda Perea, Colorado Community College System
Digital Badges Bridge the Gap
CCCS Badges
In 10 Quarters with Digital Badges in 4 of the Quarters

Findings—Total MOOC Participants 4191

• Employers were still sending their employees to the MOOC and were asking the employees to show them the earned badges on www.cccs.credly.com

• Students completed specific micro-lessons specifically to earn digital badges

Statistics—With Badges

• 923 participants

• 727 or 70% completed at least one sub-topic to claim a badge

• AND.... Of the 727, 436 completed a Topic to earn a Mastery Badge:
Non-Credit Workforce Training
Ecosystem Building
Presentation for Mathematica on Micro-Credentials

June 29, 2017

Roy Swift, Executive Director, Workcred
Assumptions Regarding Micro-Credentials

- They are a component of or related to another type of credential
- They are “stackable” to other types of credentials
- They are “short-term” – earned in less than 6 months
- They are flexible and can adapt/change to a fast changing environment based on stakeholder input
MICRO-CREDENTIALS SHOULD BE HELD TO SPECIFIC STANDARDS/Criteria FOR QUALITY
Quality Criteria for Micro-Credentials

✓ Establishment of a micro-credential should be based on evidence to meet a market need
✓ Process for identifying validated competencies/learning outcomes should include input from appropriate stakeholders
✓ On-going systematic processes to continually evaluate the validity of the competencies/learning outcomes
✓ Alignment of the content, learning strategies, and assessments of learning
✓ Assessments measure what they are supposed to measure – validity and reliability
✓ Provide clarity/transparency of how the credential connects to other credentials, and how it may “fit” in a career pathway(s)
✓ Systematic program evaluation that leads to continuous quality improvement
for more information

Roy Swift, PhD
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Discussant

Currently available information on certifications

Pam Frugoli,
Employment and Training Administration
U.S. Department of Labor
frugoli.pam@dol.gov
Who has a certification or license?

Current population survey found:

- 17.8% of the population (16+) in 2015
- 25.5% of the employed
  - 22.4% with a license (possible certification)
  - 3.1% with a certification, no license

https://www.bls.gov/cps/certifications-and-licenses.htm
Who has a certification or license?

Certifications and licenses more common among workers with more education

<table>
<thead>
<tr>
<th>Education Level</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than a high school diploma</td>
<td>8.4</td>
</tr>
<tr>
<td>High school graduates, no college</td>
<td>16.3</td>
</tr>
<tr>
<td>Some college or associate degree</td>
<td>28.3</td>
</tr>
<tr>
<td>Bachelor's degree and higher</td>
<td>38.4</td>
</tr>
</tbody>
</table>

Note: Data are 2015 annual averages of the percent of employed people age 25 or older with a certification or license.
CareerOneStop Credentials Center

https://www.careeronestop.org/credentials/index.aspx

How can credentials help your career?
Learn how to plan, pay for, and achieve your education goals.

Start your journey to a better career.

Training Options
Afford Training
Find Your Path

Find Local Help

Toolkit
- Local Training Finder
- Certifications Finder
- Apprenticeship Finder
- License Finder
- Tools & Technology Finder
- Professional Association Finder
- Job Finder
- American Job Center

Sponsored by the U.S. Department of Labor. A proud partner of the American Job Center network.
Certification Finder

Find current certifications for your occupation or industry.

Search by Certification Name, Organization, Industry or Occupation

logistics

List of Occupations
List of Industries

Explore & Find | Our Sites | Help | News Center | Connect with Us
We found 59 certification(s) from 34 organization(s) for logistics.

<table>
<thead>
<tr>
<th>Certification Name</th>
<th>Certifying Organization</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certified Logistic Professional</td>
<td>International Warehouse Logistics Association</td>
<td>Core</td>
</tr>
<tr>
<td>Global Logistics Associate</td>
<td>American Production and Inventory Control Society</td>
<td>Core</td>
</tr>
<tr>
<td>Certified Logistics Technician</td>
<td>Manufacturing Skill Standards Council</td>
<td>Core</td>
</tr>
<tr>
<td>Certified in Transportation and Logistics and Distribution</td>
<td>American Production and Inventory Control Society</td>
<td>Advanced</td>
</tr>
<tr>
<td>SAP Certified Application Professional - Logistics Execution &amp; Warehouse Mgmt, with SAP ERP 6.0 EHP4</td>
<td>SAP America, Inc.</td>
<td>Advanced</td>
</tr>
<tr>
<td>Certified International Trade Logistics Specialist</td>
<td>IIEI Certification</td>
<td>Specialty</td>
</tr>
<tr>
<td>Microsoft Dynamics AX 2012 Process Manufacturing Production and Logistics</td>
<td>Microsoft Corporation</td>
<td>Product/Equipment</td>
</tr>
<tr>
<td>SAP Certified Application Associate - Logistics Execution and Warehouse Management, with SAP ERP 6.0</td>
<td>SAP America, Inc.</td>
<td>Product/Equipment</td>
</tr>
<tr>
<td>Microsoft Dynamics AX 2012 Trade and Logistics</td>
<td>Microsoft Corporation</td>
<td>Product/Equipment</td>
</tr>
<tr>
<td>Certified Professional Logistician</td>
<td>International Society of Logistics</td>
<td>Core</td>
</tr>
</tbody>
</table>
Certification Search Results: Certification Information

Certified Logistics Technician (CLT)

Certification Description
This credential addresses the core competencies of higher skilled, front-line material handling workers (first line of supervision) across the supply chain: from factories, to warehouses, to distribution centers to transporters.

Certifying Organization
Manufacturing Skill Standards Council
http://www.msscusa.org/

Certification Details
- Education and Training Required? No
- Work Experience Required? No
- Oral or Written Exam Required? Yes
- Renewal Required? Every 5 Year(s)
- Renew through Continuing Educational Units (CEU)? No
- Renew through Re-Examination? Yes
- Renew through Continuing Professional Development (CPD)? No
- Does applicant have choice of at least two options from above for renewal (CEU, CPD, or exam)? No

More Certification Information
Certified Logistics Technician Website

Back to Results
Overview of Certification Icons

- **This certification is considered in demand.** CareerOneStop's analysis indicates the certification is frequently mentioned in online job postings.

- **This certification is accredited by ANSI.** The American National Standards Institute (ANSI)

- **This certification is accredited by NCCA.** The National Commission for Certifying Agencies

- **This certification is industry-endorsed.** Certifications marked as third-party endorsed are endorsed by a major industry association that is not itself the developer of the certification

- **This certification is related to Military Occupational Specialties.** These certifications were identified in Credentialing Opportunities On-Line (COOL) sites

- **This certification is related to the Job Corps training program.** Certifications marked with [J] are ones that have been selected by the industry groups that advise the Job Corps program on their training program offerings.

- **This certification is related to Career and Technical Education Career Clusters** Certifications marked with [C] are related to the knowledge and skills specified in one or more of the sixteen Career and Technical Education Programs of Study.
Discussant

Holly Zanville,
Lumina Foundation for Education
Panel Discussion

Nan Maxwell, Mathematica

Roy Swift, WorkCred

Brenda Perea, Colorado Community College System

David Leaser, IBM

Holly Zanville, Lumina Foundation for Education

Pam Frugoli, U.S. Department of Labor
Audience Questions?

• Webinar audience: Submit questions with your name and organization through the Q&A widget

• In-person audience: State your name and organization before asking your question
For More Information

• Mathematica’s Center for Improving Research Evidence
  – CIRE@mathematica-mpr.com
  – Ann Person: aperson@mathematica-mpr.com

Additional Resources:
✓ Nan Maxwell blog post: https://mathematica-mpr.com/commentary/conquering-the-job-market-without-a-college-degree
✓ Credential Engine: https://www.credentialengine.org/
✓ IBM Digital Badges: http://ibm.com/badging
✓ D. Leaser posts and blogs: https://www.linkedin.com/in/davidleaser/recent-activity/posts/
✓ Inside an IBM digital badge: http://ibm.biz/insideabadge
Networking Reception Starts Now
Mathematica Lobby, 12th Floor
4:30–5:30 p.m.