

How the Shortage in Qualified Workers is Impacting Credentialing

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Some Questions for You

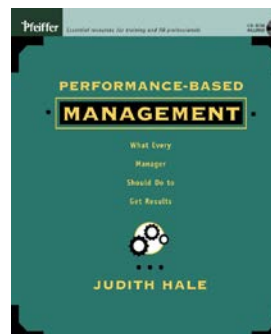
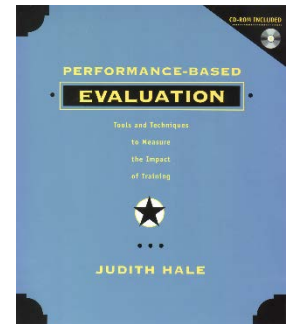
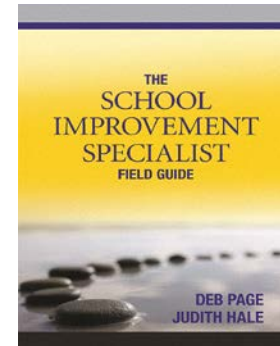
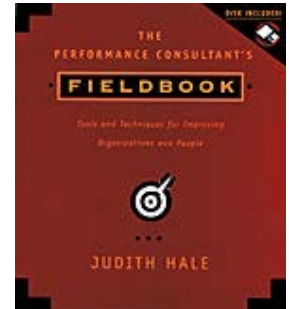


Objectives

1. Describe what organizations are doing to address the shortage of qualified workers
2. Discuss how these practices might affect established credentialing practices.

Who Am I? I write books

- Author of award winning and practical books
- Filled with job-aids, common missteps, best practices



I Build Certifications

Architectural
Lighting

IALD



NRCA Roofing

Facilities



Performance
Improvement

Credentialing



Instructional
Design



Cyber Security

Google:

Assoc. Android
Developer
Cloud Architect
Data Engineer



Serious Learning
Games



Learning Solutions



Center for International Credentials, LLC

Performance-based Credentials

- Certified Assessment & Credentialing Professional, CACP
- Certified Instructional Designer Developer, CIDD
- Certified Facilitator of Training, CFT

Live & Online Workshops

- Foundations of Credentialing
- Job, Task, Practice, & Cognitive Analysis
- Designing Tests & Assessments
- Practical Psychometrics

Some Clients

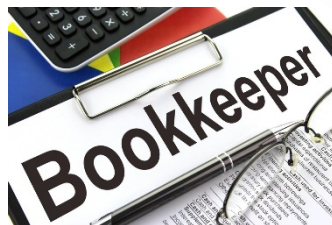
Industries

- Education
- Energy
- Entertainment
- Facilities
- Finance
- Healthcare
- Hospitality
- Human Resources
- Insurance
- Manufacturing
- Technology
- Trades
- Transportation

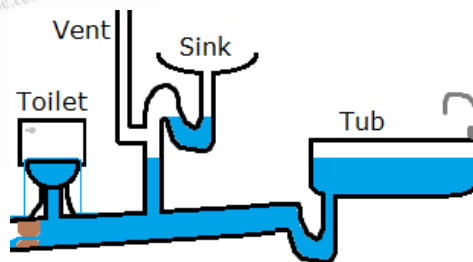
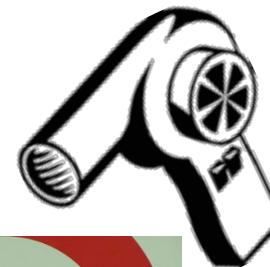
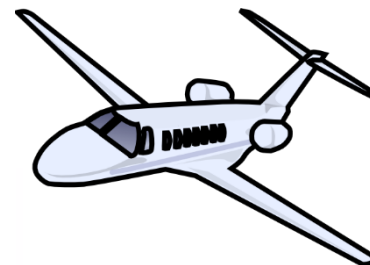


Where I've Worked

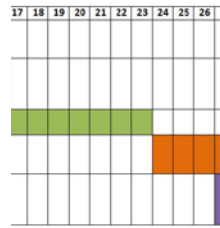
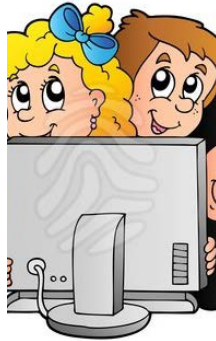
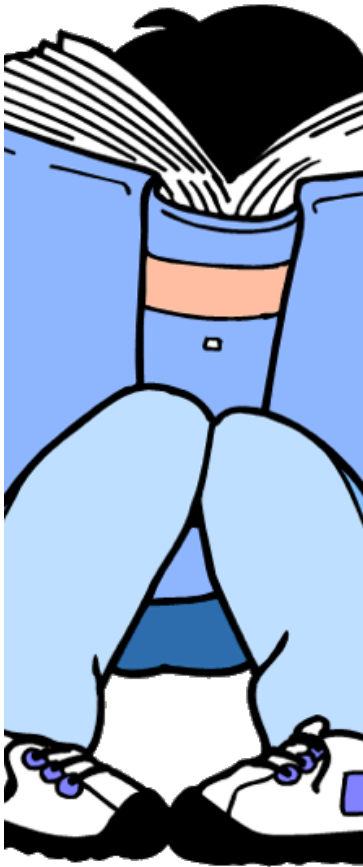




WORLD OF WORK



Work is More Complex



1-Proof of assets due the 18
:-Proof of assets and progre



- Ill-structured work - Know what we want, but multiple ways to get there
- Requires 21st century skills:
 - » Job literacy
 - » Digital literacy
 - » Critical problem solving
 - » Project management
 - » Collaboration
 - » Interpersonal skills
 - » Responsible risk taking

Why?

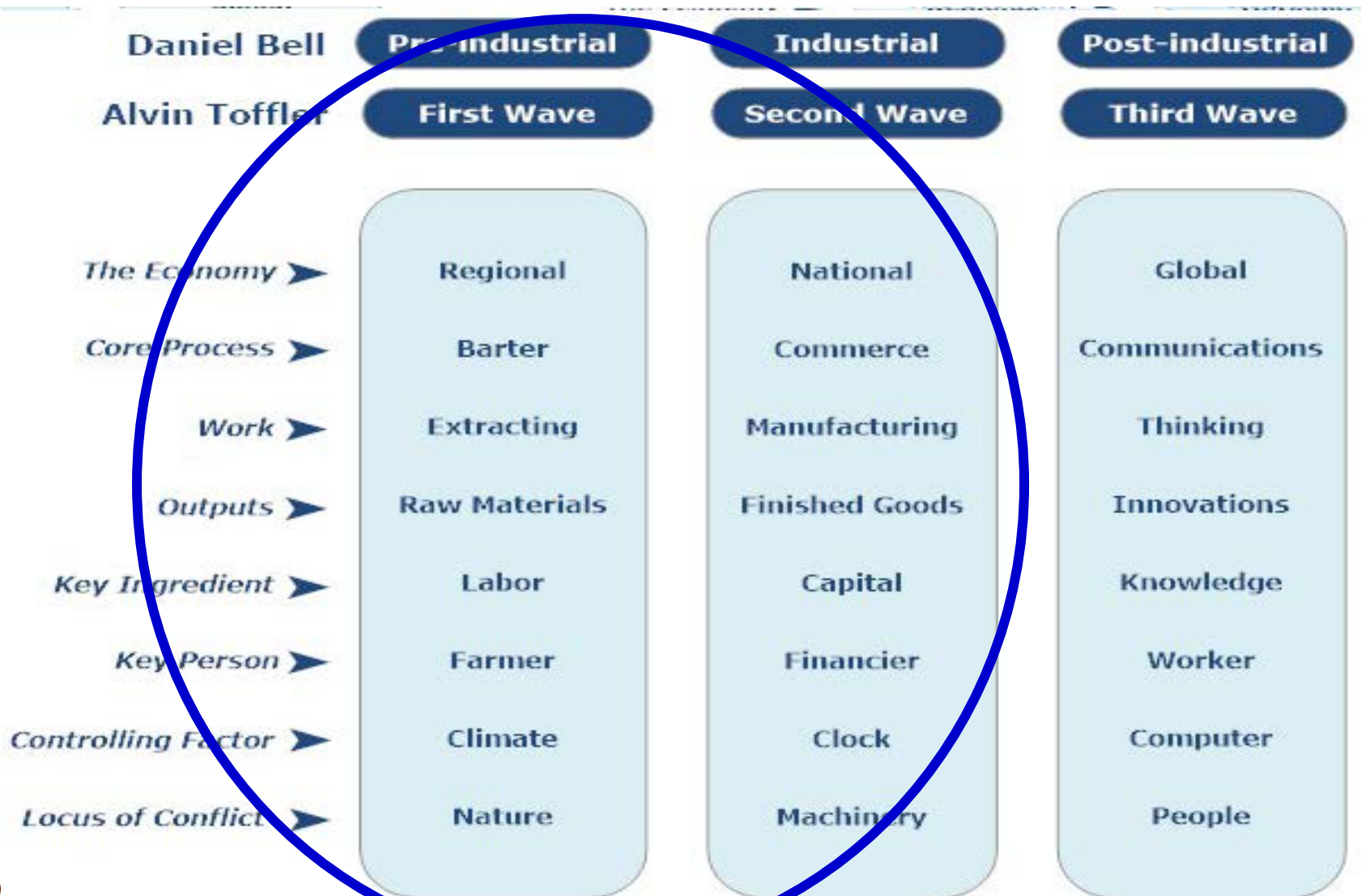
- Globalization
- Diversity
- Collaboration
- Multi/interdisciplinary skills
- Systems thinking
- Infusion of technology



Three Eras

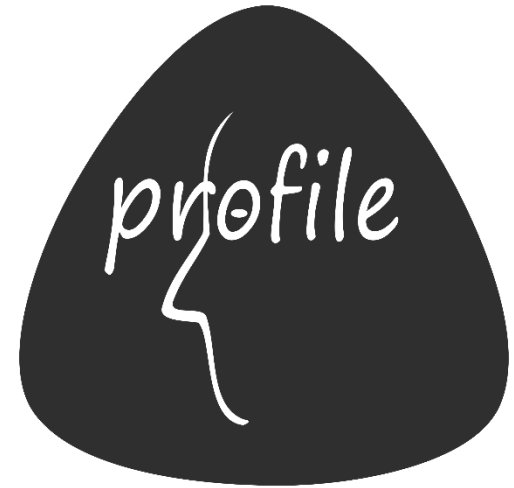
Daniel Bell	Pre-industrial	Industrial	Post-industrial
Alvin Toffler	First Wave	Second Wave	Third Wave
<i>The Economy</i> ➤	Regional	National	Global
<i>Core Process</i> ➤	Barter	Commerce	Communications
<i>Work</i> ➤	Extracting	Manufacturing	Thinking
<i>Outputs</i> ➤	Raw Materials	Finished Goods	Innovations
<i>Key Ingredient</i> ➤	Labor	Capital	Knowledge
<i>Key Person</i> ➤	Farmer	Financier	Worker
<i>Controlling Factor</i> ➤	Climate	Clock	Computer
<i>Locus of Conflict</i> ➤	Nature	Machinery	People

The Need for These Didn't Go Away



Changing Workforce Profile

- Workforce is less literate
- Unwilling to travel or relocate
- Only 20% in K-12 learn a foreign language, some states as low as 10%
- U.S. students place behind 31 other countries in math proficiency, and behind 16 other countries in reading
- Workforce doesn't understand:
 - Compound interest
 - Basic statistics
 - Total cost of ownership



Changing Workforce Profile?

- College Dropout rate about 40%
 - ...policies aimed at encouraging college enrollment are likely to be unproductive due to low academic preparedness
- 75% of young adults right now do not qualify for any of the armed services,
 - Because they're unhealthy or
 - They don't meet the educational requirements.



Changing Workforce Profile



- As Many Americans Have Criminal Records As College Diplomas
- Nearly one-third of the adult working age population has a criminal record – 70 million people
 - ... majority ...were never convicted of a serious crime; many were not even formally charged with one
- If all arrested Americans were a nation, they would be the world's 18th largest. Larger than Canada or France. Three times Australia.
- Regardless of race or gender, researchers estimate that by age 23 nearly one in three Americans will have been arrested.

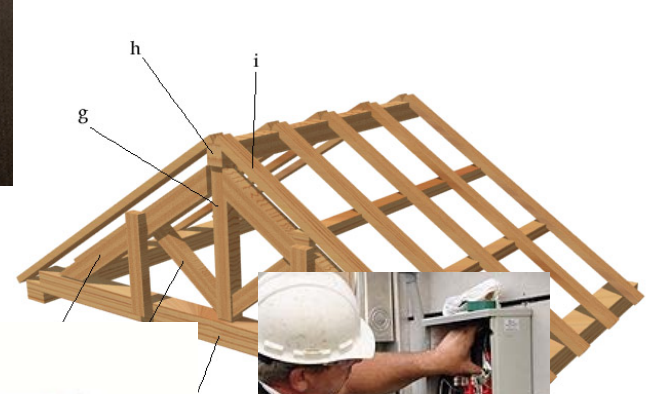
Changing Workforce Profile

- 6.5 Million with cognitive disabilities
- 3.5 Million are on Autism Spectrum
- To be employable organizations are:
 - Replacing words with pictures
 - Redesigning jobs
 - Training supervisors



So Where Are We

- 6 million jobs are vacant because of a lack of education and training for these jobs
- We have a severe shortage of skilled workers in the trades
- Shortage of digital literacy – Internet of things, Identify, Cybersecurity, etc.



So Where Are We: Shortage of Qualified Workers

- Trades
 - International Roofing Conference
 - Roofing Day in DC
- Long standing professions
 - Pilots
 - Healthcare
 - Finance
- Emerging professions
 - Hardware designers
 - Software coders
 - Patient advocates
 - Healthcare coaches

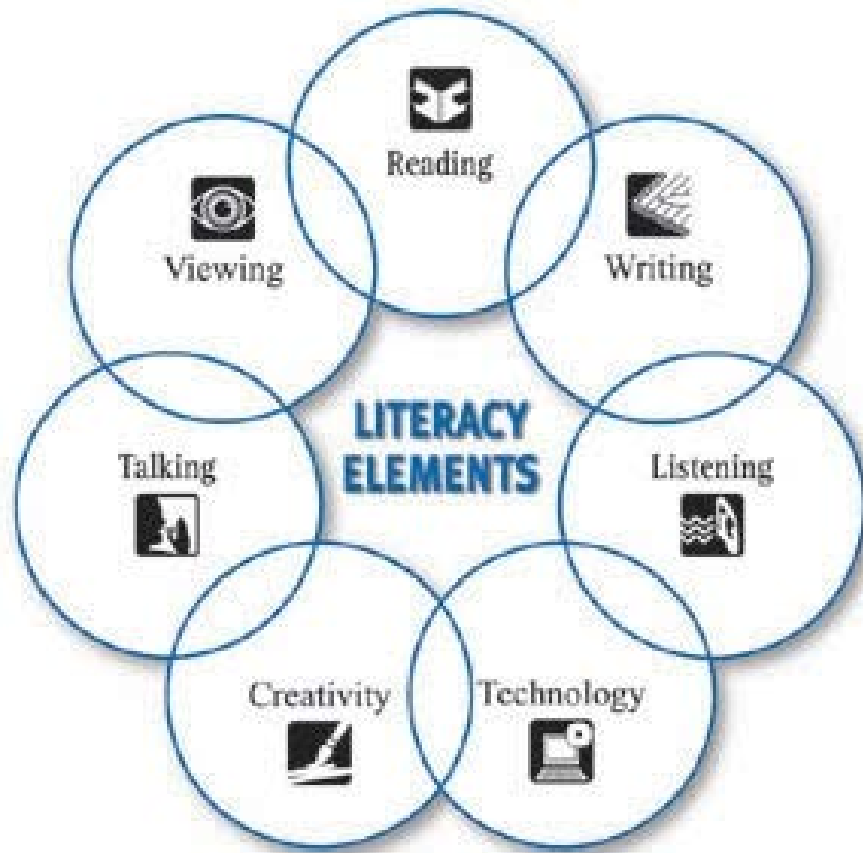
Why?

- There's a widening skills gap between what schools are teaching and what kinds of jobs are available and needed
 - Ken Robinson, Ph.D., in a May 8, 2015 *Time*
- Schools have been focused on testing a narrow set of academic standards, not building skills.
 - Shop
 - Music
 - Home Economics
 - Language
 - Science
 - Math
 - Civics

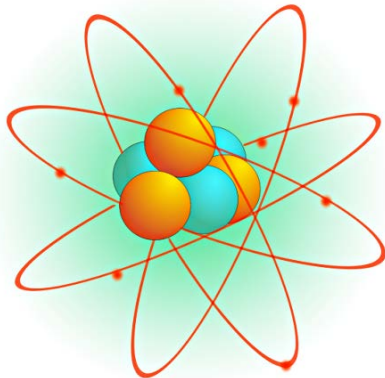


Why?

- USA ranks:
 - 7th in literacy
 - 22nd in science
 - 27th in math



- 41 states do not emphasize civics in education



Why?



Not accounted for are:





The Consequence

- 1.4 billion pounds of toxic metals, nutrients, and other harmful pollutants are dumped into our water resources every year.
- 4,000 miles of rivers and streams are so contaminated that they cannot be used for drinking water, and 6,000 miles are unsafe for children to fish in.
- 8 Billion tons of plastic dumped in our oceans each year
- 32% of the 78 million tons of plastic packaging produced annually is left to flow into our ocean

Response #1 Credentials



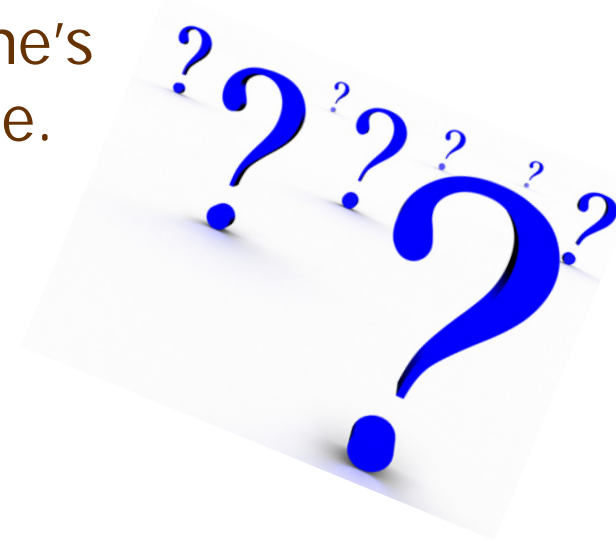
- Over 1 million certifications are awarded each year.
- Professional certifications are the second most common post-secondary award in the United States.
- One-third of certificate holders also have an associate, bachelor's or graduate degree.



- **Performance-based**
 - Portfolio
 - Demonstration
 - Simulations
 - Emulations
- Study by Georgetown U Center on Education & Workforce

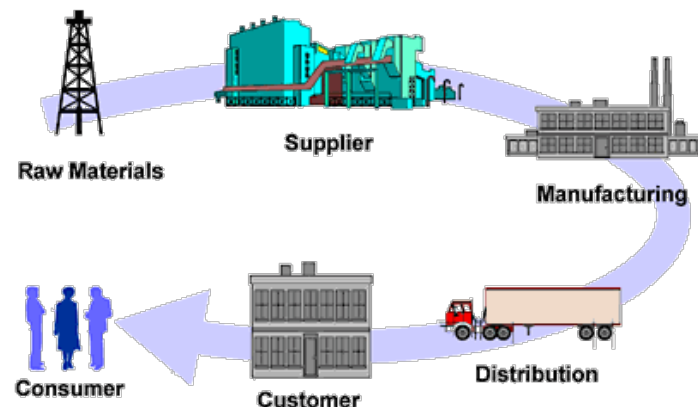
Why?

- ...certification is viable way to build one's expertise.... to gain a competitive edge.
- Emerging professions are seeking legitimacy
- Globalization demands proficiency to support new markets
- Employers want confidence in workforce, suppliers, and aftermarket-partners



Response #2: New Players Corporations

- High tech & high risk firms
 - Electronics
 - Telephony
 - Bio-tech
 - Hazardous materials
 - Financial analytics
 - Healthcare
- Who are they certifying:
 - Suppliers
 - Employees
 - Aftermarket partners
 - Customers



Response #: New Players Coalitions

- Industry based academies created by coalitions of employers, chambers of commerce, and schools to build talent pipelines - led by trade associations



BUSINESS

Why?

- Manage Risk
 - Product & professional liability
 - Complex product mix
- Customer confidence
- Brand protection
- Reduce cost of sales & service
- Reduce variability in workforce
- Build a competitive supply chain
- Share the cost of development & administration

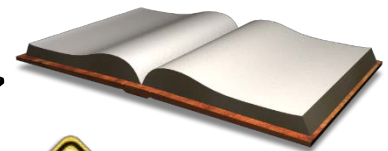
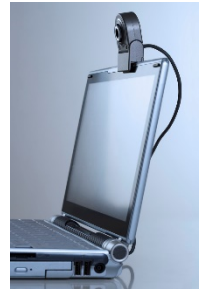


Response #4: Micro-Credentials

Typical Credentials:

- Micro-Credentials & Digital Badges

Certificate or
Micro-credential



Micro & Certifications in Roofing



- 50% have 3rd grade literacy
- 50% speak Polish or Spanish
- Certification is performance-based using mock-ups
- 250+ training & testing sites by manufacturers & distributors
- Training is online in short segments and hands on
- Coloring and comic books for 3rd graders

14 Certifications by roof type

Why?

- Better for talent management
- Makes achievement more feasible
- Can integrate the assessment with the training
- Avoids administrative costs associated with certifications
- Tied more directly to work



Response #5: More Voices To Set the Standard

- **Stakeholders** to set the standards, include:
 - Practitioners
 - Exemplars
 - Customers/employers
 - Suppliers/users
 - Academics
 - Vested parties

Why?

Corporations:

- Value the voice of stakeholders
- Want to know what people should do not just do
- Looking for continuous improvement



Response #6: Want Metrics that Prove Value

Traditional Measures

- Number applying
- Number passing
- Pass/Fail ratio
- Rater reliability
- Number recertifying
- Market penetration

New Measures

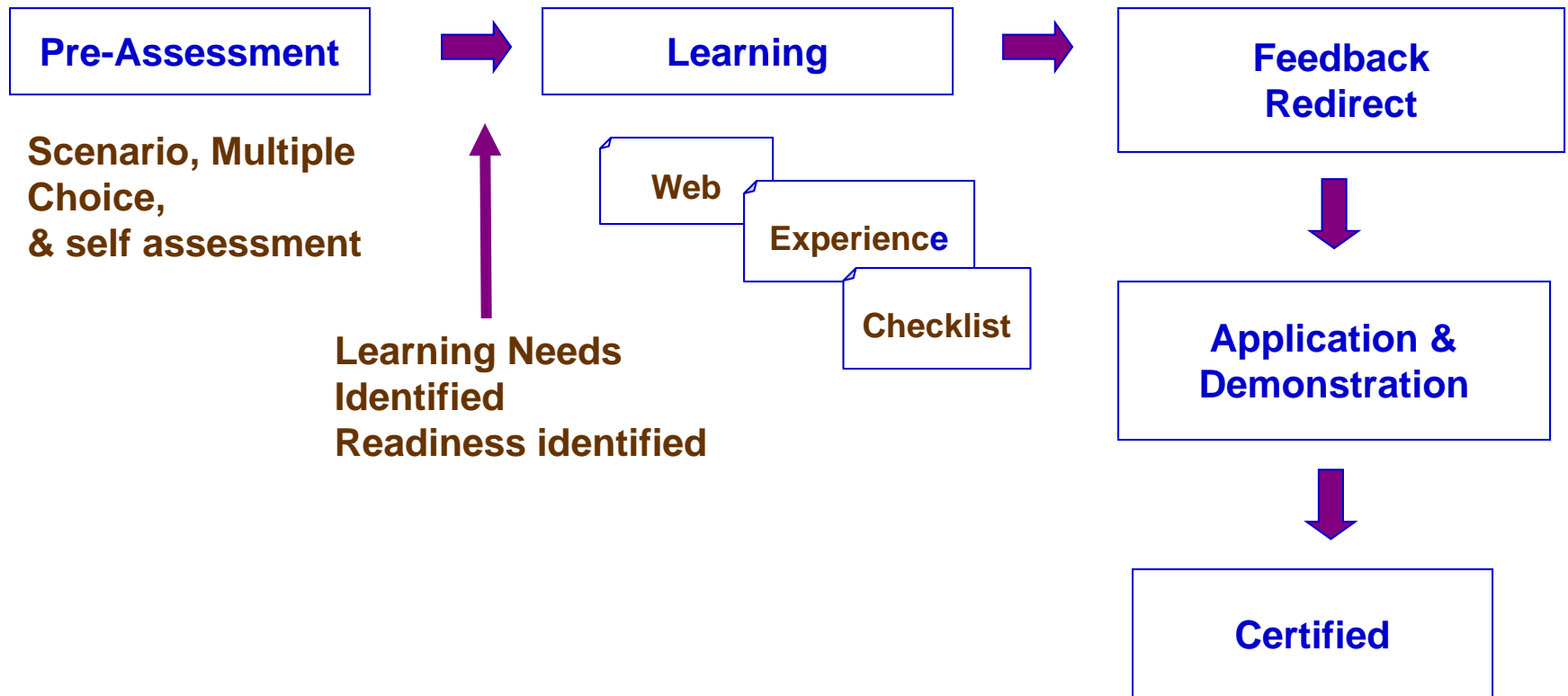
- Goal accomplishment
 - Work impact (jobs)
 - Workplace impact (safety)
 - Marketplace impact (competitiveness)
 - Social impact (stewardship)
- Cost feasibility

Why?

- To prove certification was worth the effort
- To sustain commitment overtime
- To build in accountability



Response #7: Integrating Training w Assessment



Why?

- To build competence
- To reinforce the expected behaviors
- To leverage formative assessment
- To promote continued competence
- To build and manage a pipeline of job candidates



Response #8: Using Higher Fidelity Assessments

- Assess Knowledge:
 - Ask questions to elicit recognition and recall of facts
- Assess Application:
 - Ask questions requiring classification, deduction, or comprehension
- Assess Performance:
 - Ask for demonstration of a procedure under controlled conditions
- Assess Proficiency (fluency):
 - Ask for artifacts that demonstrate the application of a rule or principle in non-controlled or real world environment

Response #9: New Types of Assessments

- Increased Use of Games & Simulations in Assessments
- Research studies to identify enabling attributes



Why?

- To increase the external validity of the certification
- To build and measure thinking, problem solving, higher level cognitive skills



Response #10: New Look at Oversight

- Instead of independent oversight, leveraging:
 - Human resources
 - Quality Assurance
 - Customer service
 - Marketing
 - Training & Development

Why?

- To leverage other groups in the organization
- To control costs
- To build in accountability



Response #11: Emerging Players in Accreditation

- New organizations are offering accreditation
- Their standards:
 - Require external validity – proof of worth
 - Require continuous improvement
 - Require collaboration
 - Allow for feedback and corrective action
- They allow for provisional accreditation and give detailed feedback on how to improve

Why?

- Traditional accreditors seen as administratively burdensome and standards are not relevant
- PMI Global Accreditation Institute
 - <https://www.pmi.org/global-accreditation-center>
- ISPI
 - <https://www.ISPI.org>



Integration Exercise

- Given what you have heard, what thoughts come to mind in terms of what impact corporate practices might affect the traditional certification practices?
- What are some specific takeaways and or actions you will consider?
- What questions do you have of me?



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- Judith is the author of the award winning *Performance-Based Certification: how to design a valid cost effective program*, 2nd Edition; the practical *Performance-Based Evaluation* that comes with 44 tools; the best selling *Performance Consultant's Fieldbook*, 2nd Edition; the popular *Performance-Based Management*; and *Outsourcing Training and Development*.
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