



Multi-State Skillshed

A Tool for
Future Strategies

What is a Skillshed and why should I care?

- Identify the current skill and knowledge level of workforce within the region/state (supply)
- Identify the needs of the employers within the region (demand)
- Identify occupational clusters based on the work activities, knowledge, and skills
- Identify education/training needs to bridge the gap between the current workforce and the business needs

That's a Skillshed Analysis



How we got here...

- Iowa's Skillshed Analysis December 2008
 - Proprietary Laborshed and Workforce Needs Surveys
- How do we make the Skillshed replicable for other states?
 - Four state consortium with Institute for Work and the Economy and the Midwest Innovation Initiative (MI2)
 - What data is available to all state labor market bureaus
 - What additional data may be needed or wanted



Challenges to Multi-State Usage

- Sources of data – what do we all have?
- Which variables should we use to profile occupations (knowledge, skills, abilities)
- Employer expectations regarding skilled workers
- Identification and development of curriculum/training programs
- Identification of emerging industries and occupations



Preview

- Supply and Demand Estimation
 - Snapshot of worker skills (supply) and employer needs (demand)
- Occupational Grouping
 - Helps show the relationship between faster growing occupations
- Occupational Profiling
 - Helps describe and compare each occupation
- Gap Analysis
 - Job transitions, state skills advantages, workforce pool of skills

Supplemental Data



Goal of the Midwest Innovation Initiative (MI2)

- Identify data to be used
- Develop methodology which can be replicated
- Provide a model to states
 - Sources
 - Process
 - Outcome



Supply and Demand Estimation

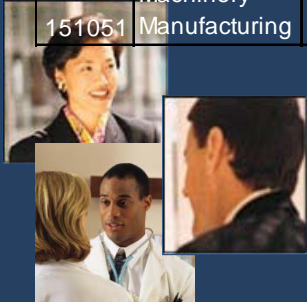
- Snapshot of the workforce in the region from the perspective of available workers and that of employers and the skills they need
- Available data sources
 - Micro-matrix for state
 - Labor Exchange
 - OES Wage data by occupation



Supply and Demand (continued)

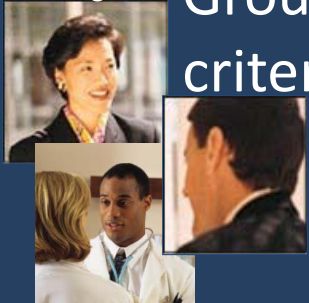
Occ Code	Ind Title	Occ Title	Est	Projection	Change (2 yrs)	Perchange	Median Wage	Labor Exchange Vacancies	Total Vacancies
514031	Machinery Manufacturing	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	929	793	-136	-14.64%	\$ 14.24	12	-56
512031	Machinery Manufacturing	Engine and Other Machine Assemblers	1,918	1,820	-98	-5.11%	\$ 16.42	1	-48
519121	Machinery Manufacturing	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	685	629	-56	-8.18%	\$ 14.95	1	-27
434151	Machinery Manufacturing	Order Clerks	109	67	-42	-38.53%	\$ 14.91	5	-16

Occ Code	Ind Title	Occ Title	Est	Projection	Change (2 yrs)	Perchange	Median Wage	Labor Exchange Vacancies	Total Vacancies
434051	Machinery Manufacturing	Customer Service Representatives	306	318	12	3.92%	\$ 13.90	760	766
533032	Machinery Manufacturing	Truck Drivers, Heavy and Tractor-Trailer	16	16	0	0.00%	\$ 17.67	712	712
291111	Machinery Manufacturing	Registered Nurses	4	4	0	0.00%	\$ 24.41	582	582
151051	Machinery Manufacturing	Computer Systems Analysts	53	55	2	3.77%	\$ 33.29	246	247



Occupational Grouping

- Helps to break down groups of occupations based on criteria and show relationships between emerging occupations and declining occupations
- Grouping can be done on basis of shared tasks, education, SOC, or the technology used in job
- Groups are built around three criteria
 - Projected annual job growth
 - Median wages
 - O*NET job zone
- Groups are scored from 0 to 3 depending on how many criteria are fulfilled



Occupational Grouping (continued)

- Annual job growth greater than 50 new jobs
- Median wage greater than \$15 per hour
- O*NET Job Zone 3 or greater

Occ Code	Ind Title	Occ Title	Median Wage	Total Vacancies	O*NET Job Zone	Grouping Score
514031	Machinery Manufacturing	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	\$ 14.24	-56	2	0
512031	Machinery Manufacturing	Engine and Other Machine Assemblers	\$ 16.42	-48	2	1
519121	Machinery Manufacturing	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	\$ 14.95	-27	2	0
434151	Machinery Manufacturing	Order Clerks	\$ 14.91	-16	2	0

Occ Code	Ind Title	Occ Title	Median Wage	Total Vacancies	O*NET Job Zone	Grouping Score
434051	Machinery Manufacturing	Customer Service Representatives	\$ 13.90	766	2	1
533032	Machinery Manufacturing	Truck Drivers, Heavy and Tractor-Trailer	\$ 17.67	712	2	2
291111	Machinery Manufacturing	Registered Nurses	\$ 24.41	582	3	3
151041	Machinery Manufacturing	Computer Support Specialists	\$ 20.83	483	3	3



Occupational Profiling

- Used as reference for Knowledge, Tasks, and Work Activities that describe the needs of an occupation
- Valuable for crosswalk between occupations (gap analysis)
 - What shared skills and activities will make transitioning easier?
 - Which skills and activities are not shared and in which additional training will be needed to transition a worker?



Occupational Profiling (continued)

Occupational Profile

Registered Nurse

29-1111

Current Employment (IA)	31,805
Projected Employment (IA 2016)	39,035
Projected Annual Growth	2.3%
Median Hourly Wage	\$23.80
Entry Hourly Wage	\$18.78
BLS Education/Training Level	Associate degree

Knowledge Requirements

Major Areas and Level of Completion

Medicine and Dentistry
Psychology
Education and Training
Therapy and Counseling

Work Activities

General Area

Assisting and Caring for Others
Documenting/Recording Information
Making Decisions and Solving Problems
Identifying Objects, Actions, and Events

Tasks

Core

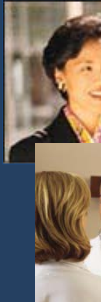
Maintain accurate, detailed reports and records.
Monitor all aspects of patient care, including diet and physical activity.
Prepare patients for, and assist with, examinations and treatments.

Supplemental

Observe nurses and visit patients to ensure proper nursing care.
Inform physician of patient's condition during anesthesia.
Administer local, inhalation, intravenous, and other anesthetics.

Related Occupations

Nursing Instructors and Teachers
Chiropractors
Surgeons
Podiatrists
Psychiatric Aides



Occupational Profiling (continued)

Occupational Profile

File Clerks

43-4071

Current Employment (IA)	1,190
Projected Employment (IA 2016)	720
Projected Annual Growth	-3.9%
Median Hourly Wage	\$10.88
Entry Hourly Wage	\$8.19
BLS Education/Training Level	Short-term on-the-job training

Knowledge Requirements

Major Areas and Level of Completion

Clerical
Customer and Personal Service
Computers and Electronics
Mathematics
Administration and Management

Work Activities

General Area and Years Experience

Documenting/Recording Information
Performing Administrative Activities
Interacting With Computers
Processing Information

Tasks

Core

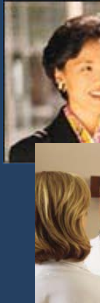
Keep records of materials filed or removed, using logbooks or computers.
Add new material to file records, and create new records as necessary.
Gather materials to be filed from departments and employees.
Find and retrieve information from files in response to requests from authorized users.

Supplemental

Operate mechanized files that rotate to bring needed records to a particular location.
Design forms related to filing systems.

Related Occupations

Marking Clerks
Order Fillers, Wholesale and Retail Sales
Medical Secretaries
Data Entry Keyers



Gap Analysis

- Different uses for different groups
 - Job Counselors and Job Seekers
 - Economic Developers
 - Prospective Employers
- What is the overlap in Knowledge, Skills, and Work Activities between jobs?
- Same job/different industry, different job/same industry, different job/different industry



Gap Analysis (continued)

- Registered Nurses (RN) and Certified Nurse Aides (CNA) share need for:
 - Knowledge
 - Customer and Personal Service
 - Therapy and Counseling
 - Work Activities
 - Assisting and Caring for Others
 - Communicating with Supervisors, Peers, or Subordinates
- Registered Nurses (RN) requirements not found in Certified Nurse Aides (CNA):
 - Knowledge
 - Medicine and Dentistry
 - Psychology
 - Work Activities
 - Documenting and Recording Information
 - Making Decisions and Problem Solving



Supplemental Data

- Help Wanted OnLine (HWOL)
- WorkKeys
- Job Vacancy Surveys
- Employer Expectations
 - Industry Sector Councils/Organizations
 - Employer Survey and Industry Focus Groups



Conclusion

- Basic methodology to allow replication with public data:
 - Estimate the supply and demand for occupations
 - Group occupations into those adding significant economic value
 - Profile occupations with the Knowledge, Tasks, and Activities necessary to perform
 - Compare the required skills across jobs and groups
- Future Plans include:
 - Incorporate feedback and suggestions into basic methodology
 - Develop a MS Excel macro to automate quantitative procedures



A Special Thanks To...

- City of Peoria, Illinois
 - Paula Nachtrieb
- Indiana Department of Workforce Development
 - Hope Clark and Allison Leeuw
- Institute for Work and the Economy
 - Peter Creticos and Robyn Souza
- Iowa Workforce Development
 - Joseph Hogue, Paula Nissen, and Cole Van Vark
- Missouri Economic Research and Information Center
 - Mary Bruton and Sonal Haté
- Nebraska Department of Labor
 - Phil Baker, Lindsay Burford, Allison Hatch, and Shannon Ramaeker



Contacts

Contact Information

Paula Nissen, Bureau Chief
Paula.Nissen@iwd.iowa.gov
515-281-4896

Peter Creticos
Creticos@workandeconomy.org
312-332-8508

This project was supported by the Midwest Innovation Initiative and with a grant by the Employment and Training Administration, U.S. Department of Labor; State of Minnesota Department Employment and Economic Development, fiscal agent; Institute for Work and the Economy, project management.

