Putting Feet on Research: Applying Skill Pathway Analysis to Workforce Development

You’ve invented the better mousetrap, discovered the cure for the common cold, or developed a different approach to analyzing occupations based on the importance of skills. Now what? One of the challenges researchers face after discovery or development is what to do with the new information or insight. How does it apply to real people?

A new model for career exploration developed by the Indiana Department of Workforce Development (DWD) groups occupations based on required skills and emphasizes the transferability of those skills across seemingly unrelated occupations.

This newly developed model depicts four skill pathways (see Table 1), which are profiled in the recently released “Moving Toward Tomorrow’s Jobs: Indiana’s New Skill Pathways and Guides.” The career guide can help counselors and job-seekers identify viable career paths and point them to the right education, training and/or work experience.

Another practical application of this new model are reports that identify the skill sets of workers in transition based on their current occupations and then identify other occupations that value similar skills. This approach allows us to suggest other occupations that are growing in a region for which the workers may qualify without additional training or experience.

One Step Up

DWD regional market analysts produce a quarterly report of Frequently Listed Jobs. These reports highlight job openings and associated wages from all 11 Indiana economic growth regions. These job listings represent actual demand for occupations as requested by area employers using DWD’s CS3 job matching tool. Historically, these reports have been dominated by entry-level positions with high turnover—occupations that employers regularly need to fill in large quantities.

DWD’s vision is to focus attention on occupations that will pay higher wages and help Hoosiers achieve a better quality of life. To meet employer demand and fill these occupations, we need to encourage education, raise Indiana workers up one level and continue to increase
their skills. New job listing reports
will continue to include the entry-
level positions frequently posted with
the job-matching system for each
area, but will now include examples
of occupations that can take a worker
“one step up” in wages with a small
amount of additional education,
training, skill development or work
experience. To assist workers facing
layoff situations, custom reports will
be developed to highlight a possible
career ladder for the dislocated worker.
The declining occupation will be
matched to occupations that are in
demand regionally. A dislocated or
underemployed electronic equipment
assembler, for example, has developed
skills such as equipment selection,
troubleshooting and repairing. These
are some of the same skills that are
vital to a successful career as a plumber
or pipefitter. With some on-the-job
training or perhaps an apprenticeship,
the worker may develop installation
and complex problem solving skills
to increase their salary by more than
$15,000 (based on state median wages).

These “one step up” occupations
are chosen only when they have been
defined as in demand for Indiana
and/or the region in which the layoff
is occurring. For an occupation to
be considered in demand, it must be
projected to show employment growth
at or above 10 percent over the next
decade, and/or rank high in terms of
total job openings (new job growth and
replacements) over the next decade.
Occupations were limited to those
paying greater than $22,038, a salary
based on Indiana’s Self Sufficiency
Standard.3

These occupational mappings
are being provided to workers at
Rapid Response events and job fairs
organized by DWD and employers
involved in pending layoffs. Rapid
Response events are designed to
provide early intervention and job
services for dislocated workers
through collaboration between the
State, WorkOne centers, and local
workforce boards.4 The first “one step
up” report was recently distributed in
conjunction with an upcoming layoff
in the automotive sector. Based on an
industry-specific staffing pattern, the
occupations common to the industry
facing the layoff were compared
against the frequently listed job
postings in that region. The next step
involved a review of the skill sets of
the auto manufacturing occupations
followed by identification of higher
wage jobs requiring a similar set of
skills. The worker could potentially
qualify for these jobs with a small
amount of additional training or
experience. Obviously, there are many
possible matches based on common
skill sets plus additional training
and/or experience. The “one step
up” occupations shown in Table 2
are designed to serve as examples to
courage a more thorough exploration
of the possibilities inherent in the
transferability of the worker’s existing
skills and an assessment of those skills.

The response at these events has
been overwhelmingly positive. The new
career guide and “one step up” reports
are in high demand throughout Indiana.
DWD is getting requests from career
centers, schools and for use at other
dislocation events. Hundreds of guides
and reports were distributed at the first
informational event and job fair, and
thousands more have been ordered for
distribution throughout the spring. This
information has been placed directly
into the hands of workers facing
dislocation. Each report is customized
by DWD’s regional analysts with
local information on jobs in demand,
required skills and average wages for
the featured jobs.

Next Steps
A quarterly “one step up” report will
soon be available for each of Indiana’s
economic growth regions. When
appropriate, and as the information
is available, DWD analysts will work
with local WorkOne centers and Rapid
Response teams to provide up-to-date
and industry-specific information for
workers.

The next stage in development of
programs and tools around the skill
pathway model will need to include
performance measures and analysis of
the possible economic impact. If we are
able to move 20 dislocated workers up
one level from the job listings shown

### Skill Sets with Associated Skills

- **People**: coordination, instructing, negotiation, persuasion, service orientation, social perceptiveness and time management
- **Things**: equipment maintenance, equipment selection, installation, operation and control, operation monitoring, repairing and troubleshooting
- **Systems**: judgment and decision making, management of financial resources, management of material resources, management of personnel resources, systems analysis and systems evaluation
- **Information**: complex problem solving, operations analysis, programming and technology design
industries can begin to develop the basic skills that have been proven to be vital across a variety of occupations. For more information, contact the DWD regional analyst in your area. Each regional analyst is listed on the Hoosiers by the Numbers website at www.hoosierdata.in.gov via the “contact us” link.

Notes
2. For more information on the new guide check out the Hoosiers by the Numbers website at: www.in.gov/dwd/careerguides/index.html
4. The Workforce Investment Act (WIA) designates funds specifically for dislocated workers, and Rapid Response funding is used to provide emergency on-site core services and pre-layoff services as soon as possible. These events typically occur as soon as a Worker Adjustment and Retraining Notification (WARN) notice is issued announcing a mass dislocation or plant closure.

—Allison Leeuw and Vicki Seegert, Research and Analysis, Advanced Economic and Market Analysis, Indiana Department of Workforce Development

TABLE 2: FREQUENT JOB OPENINGS AND POSSIBLE CAREER PATHS IN THE THINGS AND PEOPLE PATHWAYS

<table>
<thead>
<tr>
<th>Annual Median Wages</th>
<th>Occupation Title</th>
<th>Possible Career Path—One Step Up</th>
<th>Annual Median Wages</th>
<th>Education*</th>
</tr>
</thead>
<tbody>
<tr>
<td>THINGS</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$54,992</td>
<td>Millwrights</td>
<td>Industrial Engineers</td>
<td>$61,530</td>
<td>BA</td>
</tr>
<tr>
<td>$37,863</td>
<td>Industrial Machinery Mechanics</td>
<td>Aircraft Mechanics and Service Technicians</td>
<td>$51,569</td>
<td>PC</td>
</tr>
<tr>
<td>$26,052</td>
<td>Electrical and Electronic Equipment Assemblers</td>
<td>First-Line Supervisors/Managers of Mechanics, Installers</td>
<td>$49,763</td>
<td>WE</td>
</tr>
<tr>
<td>$39,125</td>
<td>Maintenance Workers, Machinery</td>
<td>Structural Iron and Steel Workers</td>
<td>$48,434</td>
<td>LT</td>
</tr>
<tr>
<td>$41,975</td>
<td>First-Line Supervisors/Managers of Production and Operation Workers</td>
<td>Brickmasons and Blockmasons</td>
<td>$48,122</td>
<td>LT</td>
</tr>
<tr>
<td>$28,773</td>
<td>Carpenters</td>
<td>Electricians</td>
<td>$47,942</td>
<td>AD</td>
</tr>
<tr>
<td>$46,884</td>
<td>Electricians</td>
<td>First-Line Supervisors/Managers of Transportation</td>
<td>$46,014</td>
<td>WE</td>
</tr>
<tr>
<td>$36,934</td>
<td>Mobile Heavy Equipment Mechanics, Except Engines</td>
<td>Engine and Other Machine Assemblers</td>
<td>$45,679</td>
<td>ST</td>
</tr>
<tr>
<td>$34,899</td>
<td>Machinists</td>
<td>Operating Engineers and Other Construction Equipment Operators</td>
<td>$40,363</td>
<td>MT</td>
</tr>
<tr>
<td>$36,406</td>
<td>Truck Drivers, Heavy and Tractor-TRailer</td>
<td>Heating, Air Conditioning, and Refrigeration Mechanics</td>
<td>$35,547</td>
<td>LT</td>
</tr>
<tr>
<td>$25,099</td>
<td>Outdoor Power Equipment and Other Engine Mechanics</td>
<td>Bus and Truck Mechanics and Diesel Engine Specialists</td>
<td>$35,523</td>
<td>PC</td>
</tr>
<tr>
<td>$32,345</td>
<td>Automotive Service Technicians and Mechanics</td>
<td>Machinists</td>
<td>$34,899</td>
<td>LT</td>
</tr>
<tr>
<td>$24,383</td>
<td>Team Assemblers</td>
<td>Machinists</td>
<td>$34,899</td>
<td>LT</td>
</tr>
<tr>
<td>$32,178</td>
<td>Multiple Machine Tool Setters, Operators, and Tenders</td>
<td>Recreational Vehicle Service Technicians</td>
<td>$31,601</td>
<td>LT</td>
</tr>
<tr>
<td>$25,045</td>
<td>Industrial Truck and Tractor Operators</td>
<td>Computer-Controlled Machine Tool Operators</td>
<td>$31,523</td>
<td>LT</td>
</tr>
<tr>
<td>$24,591</td>
<td>Inspectors, Testers, Sorters, Samplers, and Weighers</td>
<td>Structural Metal Fabricators and Fitters</td>
<td>$30,450</td>
<td>MT</td>
</tr>
<tr>
<td>$24,549</td>
<td>Production Workers, All Other</td>
<td>Transportation Inspectors</td>
<td>$49,576</td>
<td>WE</td>
</tr>
<tr>
<td>$24,712</td>
<td>Truck Drivers, Light or Delivery Services</td>
<td>Registered Nurses</td>
<td>$49,067</td>
<td>AD</td>
</tr>
<tr>
<td>$29,884</td>
<td>Licensed Practical and Licensed Vocational Nurses</td>
<td>Police and Sheriff’s Patrol Officers</td>
<td>$40,917</td>
<td>LT</td>
</tr>
<tr>
<td>$23,943</td>
<td>Correctional Officers and Jailers</td>
<td>Advertising Sales Agents</td>
<td>$40,156</td>
<td>MT</td>
</tr>
<tr>
<td>$21,130</td>
<td>First-Line Supervisors/Managers of Retail Sales Workers</td>
<td>Shipping, Receiving, and Traffic Clerks</td>
<td>$25,406</td>
<td>ST</td>
</tr>
<tr>
<td>$19,695</td>
<td>Stock Clerks and Order Fillers</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Bachelor’s Degree (BA); Associate’s Degree (AD); Postsecondary Certificate (PC); Work experience (WE); Long-term on-the-job training (LT); Moderate-term on-the-job training (MT); Short-term on-the-job training (ST)

Source: Research and Analysis Department, Indiana Department of Workforce and Development