Workforce Learning Summit Innovation or Best Practice

Western Piedmont Community College

Addressing the Skills Gap: Advanced Manufacturing Maintenance Technicians

To address the industrial maintenance skills gap in advanced manufacturing, Western Piedmont Community College has worked closely with manufacturing companies and area economic development organizations to design and implement training focused on the businesses’ needs. In addition to the strong partnership, the initiative is innovative in how it offers training day and night to accommodate students’ timing needs, and how continuing education training is parlayed into curriculum credits to encourage students to overcome their fear of college and pursue further education.

DETAILS

In western North Carolina and nationally, a skills gap has emerged in industrial maintenance. There are many reasons for this gap, including retirements by an aging workforce, reluctance by some to work in manufacturing, and advances in technology that are raising the required skill levels. Area workforce and economic development leaders have become concerned that local manufacturers are getting to the point of saying, “If we can’t find the workforce here, we’ll have to leave.”

To respond to this threat, Western Piedmont Community College and area economic development/chamber partners began working more closely with industry partners to understand and deliver needed training for industrial maintenance. Employers determined learning outcomes; while it wasn’t possible to do one size fits all, multiple employers were involved and could help determine what was most important. Among participating employers, completion of the training is now considered as a preferential credential for hiring.

The industrial maintenance program is a 16 week course targeting incumbent workers who are junior maintenance workers, as well as laid-off workers. The class that was in session at the time of the Workforce Learning Summit (late February 2014) was about 50% incumbent workers (junior maintenance workers) and 50% Back to Work students.

The initiative was carried out by various partners:

Western Piedmont Community College
Provided instructional space, equipment, supplies and paid instruction

Burke Manufacturers Executive Council –
Led by business and supported by Western Piedmont Community College, Burke Development, Inc. and Burke County Chamber of Commerce
Served as catalyst for the focus group that developed the training
Valdese Weavers  
Provided assistance with instructors  
Assisted with curriculum development  
Provided employees

Caterpillar  
Assisted with curriculum development  
Provided employees

Leviton / Southern Devices  
Assisted with curriculum development  
Provided employees

Sypris Technologies  
Assisted with curriculum development  
Provided employees

Key aspects of the WPCC/partner approach:

• Authentic learning - actual lab exercises were based on real world problems the students will encounter with Burke County companies
• Focus group of maintenance professionals to lead the design of the curriculum
• Learning outcomes were defined by the industry partners
• Pre-selected employees
• Utilized strengths of a diverse group of instructors- practitioners and traditional faculty
• Team approach to instruction

Implementation began in September 2013.

Partner Type(s):
• Business/Industry (direct involvement)
• Economic Development

Impact/Outcomes
• 95% Success Rate (for a 16 week – 96 hour course)
• Both completers and companies reported a high level of satisfaction with the course.
• The partner companies requested the class be offered again in the Spring and Summer of 2014.
• Additional partners participated in the second round.
• At least one student has already entered an AAS curriculum program.

Initial success story: A young female single mother who had been in the class was learning programmable logic controls faster than the dean; she is now in the Mechanical Engineering curriculum program.

Business example: Valdese Weavers found the training to be beneficial and provided an instructor for the class. The maintenance/technical training provided by WPCC represented 1,664 of VW’s 8,705 non-on-the-job training hours outside of regular hours.

Funding Source(s)
• Customized Training
• Occupational Extension (Continuing Education)
• Back to Work (support for dislocated workers)
• Burke Development, Inc.
• Company investment (paying workers while attending classes)
Total costs for the three Maintenance courses offered so far, including the course scheduled to end in August 2014:

<table>
<thead>
<tr>
<th>Funding Source</th>
<th>Class Registration Fees</th>
<th>Tooling U Registration Fees</th>
<th>Instructional Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customized Training</td>
<td>n/a</td>
<td>$6,385</td>
<td>$10,496</td>
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<tr>
<td>Occ. Ext. (Con Ed)</td>
<td>$3,780</td>
<td>$3,675</td>
<td>$7,300</td>
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<tr>
<td>Back to Work</td>
<td>$1,260</td>
<td>$1,750</td>
<td>$7,005</td>
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<tr>
<td>Burke Development, Inc.</td>
<td>$3,240</td>
<td>$2,625</td>
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</tbody>
</table>

**REFLECTIONS**

**Innovation or Best Practice**
Aspects of this approach that are unique or innovative include the following:
- Curriculum was developed by a cross section of manufacturers who identified common skill gaps
- The class is structured as open enrollment to allow maximum flexibility for working adults
- Students attend either day or night classes as their schedules permit, with double offerings
- A blended learning approach is used:
  - Theory
  - Hands-on
  - On-line
- CE (Continuing Education) completion can articulate to CU (curriculum) credits - although the training is short-term, students are provided the opportunity to earn college curriculum credit via a curriculum course competency exam

Additional noteworthy features:
- WPCC could adapt the training on the fly (e.g., blueprint reading was changed based on feedback from industry people in the class).
- Continuing Education courses are less threatening than curriculum courses. (The thought process is, “you’re not going to college, you’re just taking a training class.” Then halfway through, WPCC faculty explain how students can get college credit for what they’ve learned. Overcoming the fear factor is important.
- There are multiple funding sources, which enable the training to reach both the unemployed and those employed who are looking to move up the career ladder.
- Mixing those already employed in industrial maintenance and those outside the field was beneficial, especially for those trying to break in. Social interaction even led to hiring of at least one student.

**Lessons Learned**
- A post-course debriefing meeting is important.
• Welcoming companies’ input (individual experiences and perceptions) is valuable. The training was revised to include specific topics that the company partners deemed important.
• The idea that providing maximum flexibility for working adult learners would result in a high success rate was supported by the outcomes.
• The social network of a mixed class was beneficial to both students and employers.

Scalability
• Partnering with business, one of the most important aspects of the practice, is relatively inexpensive and thus may be scalable.
• Economic development/business organizations can help gain business involvement.
• Providing services both day and night adds significantly to costs, but funding sources exist that can support the different customers with their different timing needs.

RESOURCES

Workforce Learning Summit Presenters

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Co-Chair, Burke Manufacturers Executive Council

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