Upskilling: Three Approaches to Increasing the Workforce Pipeline

Jill Thiede, Associate Dean of Engineering Technologies
Jill.Thiede@nwtc.edu
NEW (Northeast Wisconsin) Approach to Building a Workforce Pipeline

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Overview

The Situation:
Why the need to do something different?

Three Strategies to Upskilling

Next Steps...
Manufacturing is facing a staffing crisis

The U.S. had a shortage of over 600,000 skilled manufacturing workers

- Wisconsin Manufacturing & Commerce, President and CEO Kurt Bauer pre-pandemic
The Situation

- The manufacturing skills gap in the U.S. could result in **2.1 million unfilled jobs** by 2030.
- The cost of those missing jobs could potentially total $1 trillion in 2030 alone.

Study by Deloitte and The Manufacturing Institute, the workforce development and education partner of the NAM.
The Situation

• Manufacturers surveyed reported that finding the right talent is now 36% harder than it was in 2018, even though the unemployment rate has nearly doubled the supply of available workers.

• Executives reported they cannot even fill higher paying entry-level production positions, let alone find and retain skilled workers for specialized roles.

• A long-term challenge: 77% of manufacturers say they will have ongoing difficulties in attracting and retaining workers in 2021 and beyond.
The Situation

Northeast Wisconsin Manufacturers Survey 2021

• “91% of manufacturers are concerned that they will not find the workforce they need in the new year”
  • Ann Franz, NEWMA executive director

• In 2011, the first year of the study, only 29% reported a hiring concern

• Companies have a high need for:
  • Computer Numerical Control (CNC) machinists
  • industrial maintenance/electro-mechanical technicians
  • general labor/production workers
  • operators
  • engineers
  • welders
  • assemblers
  • Machinists/machine operator positions were noted as hardest positions to fill.
Low Unemployment

Total nonfarm payroll employment rose by 372,000 in June 2022, and the unemployment rate remained at 3.6 percent, the U.S. Bureau of Labor Statistics reported.
Retirements

• **Early retirement** is having a huge impact on the labor market

• Data show that retiring boomers, far more than “lazy” millennials, are the biggest force behind the labor shortage

• People have left the workforce for myriad reasons in the past two years; but, **the vast majority are older Americans who accelerated their retirement**

• Last month, there were 3.6 million more Americans who had left the labor force and said they didn’t want a job compared with November 2019 - a whopping 90% of them were over 55
Lower Birthrates

Chart and table of the U.S. birth rate from 1950 to 2022. United Nations projections are also included.

Data Source: United Nations - World Population Prospects
Why Upskilling?

Still need to invest in K-12 STEM efforts

Considering all these factors:
Need to reach out to “underemployed” & disenfranchised populations to consider Manufacturing and Technology NOW!
What is Upskilling?

Providing education for people 19-40+ to develop new skills for new employment opportunities.
Three Strategies

- Corporate Outreach
- Focus Area Certificates
- Bilingual Cohort
Corporate Outreach

• Initial approach – events at corporate sites and reach out to workers

• Limited success
  • In a recent survey by Northeast Wisconsin Manufacturing Association, Millennials rated tuition reimbursement LAST in desirable benefits
  • Many workers need to see immediate impact of upskilling efforts

• Need to engage the companies
  • Not HR. Need Corporate leaders and Maintenance Managers on board
Corporate Outreach

Hired retired sales executive from technical equipment manufacturer to reach out to companies

Share the message of “Upskilling” path, not just recruiting graduates

Takes multiple engagements to get to the right decision makers and leaders
Corporate Outreach

Companies who developed fundamental training and lost “champion” of the training, found that program fell apart.

Companies agreed that the college AAS courses provide an excellent FUNDAMENTAL background.

Companies best provide training on specific process or equipment training, not fundamentals.
Corporate Outreach

- Millennials also see training as part of their work.
- Expectation for the training to take place on company time.
- Okay with agreements to stay based on company time/pay.
Two Models for Corporate Programs

• Lecture videos at work and Lab at College

• Both lecture videos and lab at work
Corporate Outreach

Program allows for inclusion of “mobile modular” labs with the “all at work” model
Corporate Outreach

- Focus on keeping all classes same as classes taught on campus
- Final exams proctored & graded by College Instructor
- Classes ladder into Associate Degree credential
Focus Area Certificates

Students today need quicker results

Opportunity to “fill in gaps” with targeted skills certificates

Upskilling can be very targeted
• Electro-Mech Associate Degree requires 65 credits:
  • 13 are non-focus area
    • employability skills, English Composition, Diversity, Psychology
  • 52 are program related
    • Tech skills, math, physics, tech reporting
• AAS requires 16-17 credits per semester (4 semesters)
Focus Area Certificates

• Offered Industrial Maintenance Certificate
• 15 credits
• Overview of skills needed in Maintenance
• Typically used to move into a basic maintenance position
Most students are part-time. Many are working jobs full-time.

Breaking down technical credits into smaller certificates allows students to COMPLETE credentials while working full time.

Certificates are from 2-6 credits.

All are applicable to AAS in Automation or Electro-Mech Degrees.
# Focus Area Certificates

## Engineering Certificates

**Fast, Flexible & In Demand**

Jump start your career in automation, electrical and mechanical fields with one of NWTC’s new fast, flexible certificates.

Our flexible Technology Center hours allow time for work, family and doing the things you enjoy.

Expect the following for EACH one-credit course (total time is 4 hours/week for 8 weeks):

- Watch the recorded lecture online (1 hour/week)
- Complete reading and homework (1 hour/week)
- Come anytime during lab-hours to complete your hands-on activities (7 hours)

All credits transfer into Automation Engineering or Electromechanical Technology!

**GET STARTED**

[www.nwtc.edu/apply](http://www.nwtc.edu/apply)

**CONTACT**

Sarah Schramms
Admissions Advisor
920-906-3168

[admit@nwtc.edu](mailto:admit@nwtc.edu)

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## Certificate Options

### Industrial Technician Fundamentals

<table>
<thead>
<tr>
<th>Catalog/Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>10000146</td>
<td>Introduction to A/C/DI</td>
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<tr>
<td>10064300</td>
<td>Automation &amp; Control Logic</td>
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<tr>
<td>10064400</td>
<td>Automation 2: Motor Control</td>
<td>1</td>
</tr>
<tr>
<td>10066000</td>
<td>Fluids 1: Basic Hydraulics</td>
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### Mechanical Technology Intro

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<td>Intro to Linear Actuators</td>
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<td>10020167</td>
<td>Intro to Pneumatic Actuators</td>
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</tr>
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<td>10020145</td>
<td>Robotics Systems 1</td>
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### Motors and Drives

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<td>Power Electronics 1: Motors</td>
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<td>10020162</td>
<td>Power Electronics 2: Motors</td>
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### Machine Safety

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<td>Safety Devices and App</td>
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### Fluid Power - Certificate

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<td>Fluids 1: Basic Hydraulics</td>
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<td>10000101</td>
<td>Fluids 2: Basic Hydraulics</td>
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<td>10000105</td>
<td>Fluids 1: Basic pneumatics</td>
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<tr>
<td>10000106</td>
<td>Fluids 2: Advanced pneumatics</td>
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### Automation Fundamentals

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**Open Lab Hours**

<table>
<thead>
<tr>
<th>Fall/Spring Monday-Thursday</th>
<th>8 am-8 pm</th>
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<tbody>
<tr>
<td>Friday</td>
<td>8 am-1 pm</td>
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<tr>
<td>Saturday</td>
<td>8 am-1 pm</td>
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**Open Lab Hours**

<table>
<thead>
<tr>
<th>Summer (June 7-July 28th)</th>
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<tbody>
<tr>
<td>Tue, Wed, and Thur 10am-8 pm</td>
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Bilingual Cohort

How to BROADEN the pool of people interested in maintenance training
Bilingual Cohort

Our corporate outreach executive heard from our local employers -

“Our Latino operators are some of our best workers. We have been encouraging them to go get their Industrial Maintenance Certificate, but they don’t feel their English is good enough. We think their English is pretty good, but college can be intimidating.”
• NWTC held focus group of Latino students and graduates to identify key factors in attracting, supporting, and graduating Latino students to the Electro-Mech and Automation Engineering programs

• One key factor was creating a connected network of students who can support each other through the classes. Successful graduates all recalled fellow students who banded together to study and support each other
Bilingual Cohort

- Created a special cohort for Spanish/English-speaking students
- Taught in English
- Meets Monday 4pm-8pm & Wednesday from 4pm-8pm. Expectation for 2-4 more hours of homework or lab work if needed
- Hired native Spanish speaking graduates from the program as coaches
Bilingual Cohort

• Classes meet for 15 weeks in the Fall, 15 weeks in the Spring, and 5 weeks in the Summer

• Covers all the materials in the Industrial Maintenance Certificate
Bilingual Cohort

• Started with 13 students
• One realized on the first night that his English was not advanced enough. Taking more ELL classes and hopes to try again
• One had family issues
• 11 graduated in June!
• Many already in Maintenance Jobs!
Next Steps

Continuing PILOTS with corporate partners and need to determine how to expand

Certificates are currently available for enrolling and working on marketing to employers

Recruiting for next Bilingual Cohort, starts August 15th!
Questions?

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NWTC.edu