Wisconsin Bridges Case Study

CNC SKILLS INSTITUTE

Western Technical College

Key manufacturing employers in western Wisconsin have reported increasing need for workers that are skilled in computer numeric control (CNC) operation, setup, and programming. Despite this clear demand, Western has had difficulty attracting individuals to participate in CNC instruction. Until recently, Western only provided structured, one- and two-year technical diploma programs in this field. Unfortunately, these diplomas are out of reach for many individuals who could stand to benefit from such training. For example, La Crosse's large Hmong community has been mostly relegated to low-wage employment, due in part to language and cultural barriers as well as a lack of high school credentials.

In an effort to increase awareness of opportunities in CNC/Machine Tool occupations and to provide manufacturing skills to more English language learners, Western offered one-credit Basic Machining Skills classes to Hmong participants in 2007 and 2008. These classes were team-taught by a CNC/Machine Tool instructor and a Hmong interpreter who was a Machine Tool program graduate. The experience was positive for the participants and the instructors, laying a foundation for continued collaboration and learning between Instructional Support Services and Western's CNC/Machine Tool department.

Building on this experience, Western developed the CNC Skills Institute in 2009 to help meet area employer demand as well as the needs of lower-skilled learners. Although it was designed with the region's Hmong population in mind, Western discovered in the current economic downturn that the Institute provided a good option for many non-Hmong dislocated and underemployed workers, as well as incumbent workers. Two of the students who enrolled in the pilot Bridge in Summer 2009 were incumbent workers sent by their employer.

The CNC Skills Institute comprises three tiers of instruction along a career pathway: CNC Operator, CNC Set-Up, and CNC Programming. Each tier (a package of six one-credit courses) can stand alone as individual certificate courses of study, tier into higher levels of study, or be transferred into a one-year CNC/Machine Tool Operation technical diploma.

The first certificate level, which prepares participants for careers as CNC machine operators, provides foundational skills for many other manufacturing occupations in addition to machining. Western designed its CNC Skills Institute to integrate Adult Basic Education (ABE) into the delivery of the first tier's technical training. This design was based on extensive input from area employers regarding skills deficiencies in math and print reading for both incumbent and new workers. Manufacturing Math and Blueprint Reading are team-taught by an ABE instructor and a core technical CNC program instructor. In addition to the integration of basic skills instruction into key components of the curricula, Western has included the use of video training and computer simulations in the first and second tiers of the CNC Skills Institute to aid English Language Learning (ELL) students with visual conceptualization.

Outcomes from the initial pilot of the CNC Skills Institute (Tier 1, CNC Operation) held in Summer 2009 show great promise. Of the 13 students who participated, nine students successfully completed the course and received their certificate (two of the four students who left the program did so because they became employed in the field). All graduates of the first cohort took the Manufacturing Skills Standards Council (MSSC) Safety test and passed. Two of the graduates of CNC Operation enrolled in technical diploma programs at Western, and three others are interested in continuing their education in CNC/Machine Tool Technology, either by continuing with the next tier of the Skills Institute or by enrolling in a diploma program.

"The team-taught CNC operator certificate has not only benefitted students by giving access to training for those who might not have had it before, but it has also benefitted our staff by building new relationships between occupational faculty and basic skills faculty."
Chad Dull, Dean of Instructional Support Services, Western Technical College

"It is rewarding to know that we are providing highly demanded skills to top-notch dislocated workers during this economic downturn. Each week, I receive job postings from around the state requesting applicants with the skills we are teaching. The greatest reward is hearing that our skills institute graduates have been hired as a result of the training they received at Western!"
Pat Brice, CNC/Machine Tool Technologies Instructor, Western Technical College

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