



## EDUCATIONAL REQUIREMENTS OF THE MANUFACTURING COMMUNITY AND HOW DOES CONNSTEP ADDRESS THEM

When we talk about preparing the workforce for manufacturing in Connecticut, there are really two questions implied—what education is required for a healthy manufacturing workforce, and how do we encourage young people to enter the manufacturing workforce. I am assuming today's discussion is confined to the former question, but the latter is certainly germane to any discussion about achieving a healthy manufacturing workforce.

To avoid any assumptions about what the scope of manufacturing really requires, I list the following as the areas that need consideration:

1. Operation of equipment-
2. Maintaining equipment
3. Specific craft skills like welding, other forms of joining, heat treating, testing, coating, plating, finishing, deposition
4. Programming process equipment
5. Engineering related to processing, facilities, equipment, materials, design, testing, quality standards and risk management, new product or process development
6. Support—accounting, human relations
7. Business management and development, sales and marketing
8. Sustainability—minimizing scrap, energy conservation, alternative energy; reduction of carbon footprint; minimize toxic materials, recycling materials, material replacement.

The first two categories—operation and maintenance of equipment—are taught on an introductory basis in the Vo-ed schools and complemented by education in the Community colleges sufficient for personnel to begin these tasks on the job and typically through experience and additional formal training become expert. Some of the craft skills are taught in the Vo-ed schools and Community colleges but more often they have been learned on the job and supplemented with courses through associations typically given on site. Teaching programming of process equipment has been offered by some of the Vo ed schools, and some of the Community Colleges have produced quality students ready to go on the floor and operate equipment and do programming. Asnuntuck and its protégé, the Middlesex CC program, and Platt have certainly developed quality programs producing job-ready students right out of the classroom. Some companies have been reluctant to use recent students to run equipment valued at 250 to 500,000 dollars, but there have been numerous successes reported with recent graduates of Community Colleges.

Nonetheless there is now in 2011 as in 2004, when the manufacturing economy is engaged, a deficiency of programming and operator talent and the same is true for welders and related crafts skills.

All of the positions/activities under items 5 through 8 have a range of technical skills required which are provided with varying degrees of success by the 4 year and the Community colleges. The engineering,