

Building a Strong Manufacturing Workforce in Greater Cleveland:

Career-Technical Education as a Manufacturing Workforce Resource in Greater Cleveland

Executive Summary

Northeast Ohio's manufacturing sector is evolving into a new industrial era, and there are serious growing pains as a result. The digitization of production is transforming the way goods are produced as the manufacturing industry enhances already-computerized production systems with smart, autonomous, and interconnected systems driven by big data and advanced technology. However, this transformation is not uniform as many regional manufacturers still use traditional forms of production which require hands-on skills. Companies are puzzling through how best to bring these new technologies into their environments in order to compete, and one of the biggest issues is attracting and retaining the skilled workers prepared with both the new technical and traditional skills needed to succeed in this changing environment. Finding or training the workers that can thrive in these dynamic conditions has become a major pain point for regional businesses.

Recognizing the need to explore sources of talent throughout the region to meet the current and shifting needs of manufacturers, Manufacturing Works, with funding from The Fred A. Lennon Charitable Trust, commissioned a report to examine if additional manufacturing career-technical education (CTE) programming for the secondary students in the eastern neighborhoods in Cleveland and the adjacent inner-ring suburbs would bring a disconnected pool of potential workers into the manufacturing workforce. The project team expanded the study to identify opportunities to improve CTE programming throughout the region to address the challenges of the Northeast Ohio manufacturing employment marketplace. The analysis in this report focuses on both school-based and community-based manufacturing programs for public high school students. These programs are designed to prepare students for entry-level manufacturing opportunities which require some technical skills but not a college degree.

Based on the data gathered and numerous interviews with active participants and stakeholders, this report confirms that there is insufficient CTE programming in the targeted neighborhoods on the eastside of Cleveland and adjacent suburbs and adding capacity could meaningfully contribute to the manufacturing workforce. In addition, capacity constraints exist at facilities in far eastern and southeastern suburbs which could also justify further investment while the opportunities for the westside of Cleveland and southwest suburbs involve finding ways to fill the vacant seats at facilities which are currently under-utilized.

Highlights of this Report

Based on data and interviews, this study provides a regional analysis of:

1. The concentration of job opportunities
2. The availability and utilization of current CTE training capacity
3. Reasons for participation gaps in some existing programs
4. Factors generally limiting the availability of CTE training throughout the region
5. Challenges connecting students with training and job opportunities

This analysis shows:

1. While manufacturers throughout the region have unmet hiring needs, job availability for manufacturing workers is greatest in the eastern and southeast suburbs.
2. CTE training capacity for secondary school students is limited and the existing facilities are concentrated in the suburban school districts. The exception is Max S. Hayes High School, the Cleveland Municipal School District's career-tech school for manufacturing located on the near west-side of Cleveland. CTE programs in the eastern and southeastern suburbs where the job demand is greatest are at capacity in places and have opportunity for more enrollment in others, while the western suburban CTE capacity and the capacity at Max Hayes is under-utilized. There is little capacity in the eastern neighborhoods of Cleveland and adjacent suburbs.
3. The most often cited reason by educators and employers for low participation in some CTE programs is a lack of interest by parents and students. Most believe this disinterest is a result of an outdated mental model of manufacturing including a lack of awareness of career pathways available to students. Closer proximity to manufacturing jobs and deliberate efforts to increase manufacturing career awareness among parents and students are two factors seemingly related to higher levels of interest in CTE programs.
4. Overall, CTE capacity for the region is 811 total seats which cannot make a significant impact on the manufacturing employment gap. Each year approximately 300 students graduate. Recent studies suggest there are ~4,300 job openings annually for CTE-aligned employment. Adding capacity is difficult due to funding limitations, the need for small class size due to safety considerations given the equipment in use and finding qualified instructors and employment partners.
5. In addition to a lack of access to training facilities, students on the east-side of Cleveland and adjacent suburbs are disadvantaged by the lack of availability of transportation alternatives to access employer sites, especially in the regions of greatest job growth which are the eastern and southeastern suburbs.

Implications of this Analysis

1. It is important to note that CTE is only one part of the worker supply solution. However, CTE students represent an important component of the potential future workforce, particularly since the labor market is expected to remain tight with a current workforce that has a high proportion of participants approaching retirement age.
2. The economic development and manufacturing communities should explore the addition of new CTE training capacity in the eastern part of Cleveland and adjacent suburbs where there are concentrated pockets of young adults who do not have access to manufacturing-focused CTE opportunities. A recent commitment by Job Corps to add manufacturing equipment for training at their facility in East Cleveland is a positive step; however, there appears to be a much greater opportunity for investment in this region. High rates of utilization for the Mayfield Excel and Lake Shore Compact programs may indicate an opportunity for expanding CTE programming in the eastern and southeastern suburbs where job demand is higher.
3. To ensure the utilization of this proposed expanded capacity and to fill the under-utilized CTE capacity which already exists in certain institutions including Max Hayes, manufacturers and their supporters must do a better job of changing the perception of students, parents and their advisers to consider the attractiveness of choosing a career-path in manufacturing. Persistent education and awareness campaigns must be pursued to reach these students and their influencers, providing access to facilities and enabling current employees to tell their stories. Employers must institute explicit career-pathways including accredited pre-apprenticeship programs which lead to apprenticeship, learn & earn and college degree options.
4. Expanding CTE training opportunities will require additional qualified instructors. The Cleveland Foundation, through its Encore Initiative, is underwriting Manufacturing Works' Technical Corps Program which recruits, hires and trains manufacturing retirees to assist teachers in accredited programs. While this is an example of working to provide expanded instruction capacity, much more needs to be done going forward. In addition to more instructors, expanding CTE programming requires broadening the number of employment partners. Companies too small to independently support internships and pre-apprenticeships need assistance in creating and administering these programs for CTE students. For example, Manufacturing Works facilitates the development of programming leading to apprenticeships through an Apprenticeship Consortium model.
5. Students often lack access to transportation alternatives to be able to participate in work-based training experiences at companies' locations. This problem is especially acute for students in the targeted neighborhoods identified for this study. Companies and organizations, such as The Fund for Our Economic Future, are working on solutions to address this issue, but it is complex, needs to be creatively explored and will require resources.

Perhaps the most important piece of the puzzle – Employer Engagement

The challenges found through this analysis require creative and collective solutions. In order to address the changing workforce demands in manufacturing, employers must be engaged in a substantive way on an ongoing basis. A report commissioned by local partner Cuyahoga Community College found that when employers contribute essential knowledge and resources to improve education and training programs, and are consistently engaged, the programs produce better outcomes and are more sustainable. Employer-led organizations with strong leadership and clear goals are necessary for a successful partnership. The strength of employer-led interventions has been proven locally and nationwide.

Some of the innovative solutions suggested in this report could be implemented in the Greater Cleveland region to benefit both secondary students seeking career opportunities as well as the manufacturers needing the pool of skilled workers. These solutions include: companies providing dedicated space in their facilities for CTE instruction delivered by a certified teacher; students alternating weeks between school-based classroom instruction and work-based learning experiences delivered at the worksite in partnership with the school for which they are paid; pre-apprenticeship experiences leading to skill mastery and transitioning into an apprenticeship following graduation. Exploring ways to increase access to under-enrolled programs could benefit all regional stakeholders.

Building on proven strategies and local success, employers must be empowered to co-create unique solutions with education and community partners. Employers can provide oversight, give guidance on program content and design, assist in program delivery, provide facilities for program delivery, create internships, apprenticeships and other work-based learning opportunities available to students, and contribute financial or in-kind resources to a partnership dedicated to strengthening the region's career-technical education pipeline. Helping employers use a collective voice provides clarity, consistency, and weight to efforts and provides a way for smaller companies to engage in the process.

Manufacturing Works' proven ability to engage employers and channel their collective voice makes them well positioned to be a key partner and provide leadership in the work of organizing employers and connecting the educational systems to create collaborative strategies to improve the region's career-technical education talent pipeline. For next steps, the organization looks to do a deeper dive on program evaluation to better understand the relative performance of the region's various CTE initiatives. Factors such as region, program design and content, quality of instruction and local employer engagement will be considered. The objective will be to create a list of best practices to apply to initiatives to optimize and increase CTE program capacity in the region. Manufacturing Works will join with their partners to directly engage with Cleveland's east-side communities to apply these practices to improve the resources available to CTE students and other candidates for manufacturing employment in that area. As the region moves forward to create collaborative opportunities, this CTE study is just one example of the contributions Manufacturing Works stands ready to make.