

Promising Practices to Support the Development of K–12 Manufacturing Programs: Spotlight on Manchester High School’s Data

Background

The Manufacturing Skills for Connecticut (MSforCT) project, funded by the U.S. Department of Commerce National Institute for Standards and Technology, aimed to establish a menu of effective educational best practices that Manufacturing Extension Partnerships (MEPs) throughout the country, and manufacturers and school systems across CT and beyond, can use to establish and advance effective career pathways. [CONNSTEP](#), CT’s MEP representative, was the lead organization partnering with [ReadyCT](#), a statewide nonprofit focused on K–12 education and career-connected learning; [CBIA](#), CT’s largest business organization; the Connecticut Manufacturers’ Collaborative, a statewide, policy-focused collective composed of the nine major manufacturing associations within CT; and [WestEd](#), a non-partisan research, development, and service agency.

As part of the MSforCT project, WestEd executed a multistep process to identify 13 manufacturing programs with evidence of using promising practices intended to support high-quality programming. This process included developing a statewide survey; identifying all existing manufacturing programs across CT for survey administration; developing and using a rubric to rank manufacturing programs on their use of high-quality, high-impact practices; and considering site demographics and industry recommendations to choose the final 13 program sites. WestEd then conducted 13 program reviews which included interviews/focus groups with key program stakeholders and a review of student administrative data. Ultimately, the MSforCT project created numerous resources including [The MFG Skills-CT](#) website, a [Promising Practices guide](#), and [13 program-specific reports](#), including [Manchester High School’s manufacturing program](#).

Manchester High School Manufacturing Program Data

The current summary of Manchester High School's manufacturing program data supplements the site-specific report. This document summarizes data from CT's Statewide Longitudinal Data System (SLDS): the Preschool Through 20 Workforce Information Network (P20 WIN). The data included all students enrolled in the high school during the 2020-21 academic year.

Manufacturing program students are defined as students taking at least one manufacturing program course. Manufacturing students are included in the overall school population.

Table 1: Student Demographics, Academic Year 2020-2021

Student Characteristics	Manufacturing Program Students (n = 119)		Overall School Population (n = 1,611)	
	n	%	n	%
American Indian or Alaska Native	*	*	13	1%
Asian	13	11%	119	7%
Black or African American	24	20%	385	24%
Hispanic/Latino of any race	35	29%	474	29%
Native Hawaiian or Other Pacific Islander	*	*	*	*
Two or More Races	6	5%	65	4%
White	40	34%	553	34%
Female	13	11%	800	50%
English Language Learners	7	6%	97	6%
Students with Disabilities	17	14%	202	13%
Free/Reduced Lunch Eligible	59	50%	852	53%

Note: Cells with fewer than five students are restricted from reporting and noted with an asterisk.

In the 2020-2021 academic year, 119 students were enrolled in the manufacturing program at Manchester High School. Among these manufacturing cohort students, a third (34%) were White and another 29% represented Hispanic/Latino students of any race. Black or African American students made up 20% of the manufacturing cohort. These subgroups participated at comparable rates to their overall school enrollment. However, female students were an exception: while they made up half of the overall school population, they comprised only 11% in the manufacturing cohort.

Table 2: Academic Characteristics, Academic Year 2020-2021

Metric	Manufacturing Program Students (n = 119)					Overall School Population (n = 1,611)				
	Mean	Median	SD	High	Low	Mean	Median	SD	High	Low
Attendance	147.7	165.0	37.4	177	11	151.8	165.0	32.1	177	11

Note: Attendance is defined as the total number of days attended in a given school year.

During the 2020-21 academic year, the manufacturing program students attended school on average 148 days (SD 37.4). This figure is slightly smaller than the average attendance of the overall school population, where average attendance was 152 days (SD 32.1).

Table 3: Standardized Assessment, Academic Year 2020-2021

Metric	Manufacturing Program Students (n = 17)					Overall School Population (n = 342)				
	Mean	Median	SD	High	Low	Mean	Median	SD	High	Low
English SAT	431.8	430.0	74.4	560	270	476.0	470.0	91.1	730	270
Math SAT	445.9	450.0	74.5	590	280	462.4	450.0	85.1	720	280

Of the 17 manufacturing students who took the SAT tests, the average scores were 432 (SD 74.4) on the English section and 446 (SD 74.5) on math section. On average, the manufacturing program students' English and math scores were lower than the overall school population's average scores.

Table 4: Secondary Graduation Rate, Academic Year 2020-2021

Metric	Manufacturing Program Students (n = 19)		Overall School Population (n = 381)	
	n	%	n	%
Graduated	17	89.47%	343	90.03%

In 2020-21, almost 90% of seniors in the manufacturing program graduated from Manchester High School, nearly the same rate for the overall school population.