Promising Practices to Support the Development of K–12 Manufacturing Programs: Spotlight on Vinal Technical 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 Vinal Technical High School's manufacturing program.

Vinal Technical High School Manufacturing Program Data

The current summary of Vinal Technical 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 2017-2018 and 2020-21 academic years. Manufacturing program students are defined as students who finished all manufacturing program courses. Manufacturing students are included in the overall school population.

Table 1: Student Demographics, Academic Year 2020-2021

Student Characteristics	Overall School Population (n = 395)	
	n	%
American Indian or Alaska Native	*	*
Asian	*	*
Black or African American	27	7%
Hispanic/Latino of any race	75	19%
Native Hawaiian or Other Pacific Islander	*	*
Two or More Races	23	6%
White	269	68%
Female	101	26%
English Language Learners	7	2%
Students with Disabilities	73	18%
Free/Reduced Lunch Eligible	154	39%

Note: Cells with five or fewer students are noted with an asterisk and are restricted from reporting.
* There was not enough data to report the demographic characteristics for manufacturing cohort students (n=6); each of the subgroups were less than five students.

It was not possible to report manufacturing cohort student demographics because of the small number of students enrolled in the program in the academic year 2020-21 at Vinal Technical High School. As for the overall population, 68% of students in the school were White, 19% were Hispanic/Latino representatives of any race, 7% were Black or African American, and another 6% were students of two or more races. Female students at Vinal Technical High School comprised only 26%.

Table 2: Student Demographics, Academic Years 2017-2018 & 2020-2021

Student Characteristics	Manufacturing Program Students (n = 11)		Overall School Population (n = 751)	
	n	%	n	%
American Indian or Alaska Native	*	*	*	*
Asian	*	*	6	1%
Black or African American	*	*	62	8%
Hispanic/Latino of any race	*	*	127	17%
Native Hawaiian or Other Pacific Islander	*	*	*	*
Two or More Races	*	*	43	6%
White	7	64%	511	68%
Female	*	*	208	28%
English Language Learners	*	*	17	2%
Students with Disabilities	*	*	123	16%
Free/Reduced Lunch Eligible	6	54%	317	42%

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

For the academic years 2017-18 and 2020-21, there were 11 students enrolled in the manufacturing program, and 64% of them were White. The figures for other race/ethnic groups in the cohort were too small to report. In the overall school population, 68% of students in the school were White, 17% were Hispanic/Latino representatives of any race, 8% were Black or African American, and another 6% were students of two or more races. Female students at Vinal Technical High School for both academic years comprised only 28%.

Table 3: Academic Characteristics, Academic Years 2017-2018 & 2020-2021

Metric	Manufacturing Program Students (n = 11)					Overall School Population (n = 824)				
	Mean	Median	SD	High	Low	Mean	Median	SD	High	Low
Attendance	165.5	172	22	179	102	168.6	173	15	182	44

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

Manufacturing students across cohorts (2017-18 and 2020-21) attended school on average 165.5 days (SD 22). This figure is slightly lower the average overall school attendance, which was 168.6 days (SD 15).

Table 4: Standardized Assessment, Academic Years 2017-2018 & 2020-2021

Metric	Manufacturing Program Students (n = 5)					Overall School Population (n = 394)				
	Mean	Median	SD	High	Low	Mean	Median	SD	High	Low
English SAT	492	490	19.2	520	470	453.8	450	80.8	720	240
Math SAT	486	500	44.5	540	440	434.5	430	71.8	700	260

Five manufacturing program students took the SAT tests; their average scores were 492 (SD 19.2) on the English section and 486 (SD 44.2) on the math section. The sample size for manufacturing program students' English and math scores was too small to compare with the overall school population averages.

Table 5: Secondary Graduation Rate, Academic Years 2017-2018 & 2020-2021

Metric	Manufacturing Program Students		Overall School Population	
	n=11	%	n=505	%
Graduated	11	100%	475	94%

Across the manufacturing cohort students eligible for graduation in all four academic years (i.e., seniors), all members have graduated from high school. The graduation rate for the overall school population was 94%.

Table 6: Postsecondary Enrollment, Academic Years 2017-2018 & 2020-2021

	Manufacturing Students		Overall School Population	
	n=11	%	n=505	%
Enrolled in CT Postsecondary Program	0	0%	84	16.6%
Enrolled in Out of State Postsecondary Program	0	0%	20	4%
No Record of Postsecondary Enrollment	11	100%	401	79.4%

At the time of data collection, there were no records of postsecondary enrollment for the manufacturing cohort members from Vinal Technical High School. 17% from overall school population were enrolled in colleges at Connecticut and another 4% in out-of-state postsecondary programs.

Table 7: Postsecondary Enrollment, By Institution Type, Academic Years 2017-2018 & 2020-2021

Institution Type	Overall School Population	
	n=104	%
4-Year Institution	44	42%
2-Year Institution	60	58%
<2-Year Institution	0	0%

Note: There was not enough data to report postsecondary enrollment for manufacturing cohort students.

Most of the students from the overall school population who were enrolled in postsecondary programs studied in 2-year institutions (58%), with additional 42% enrolled in 4-year colleges.

Table 8: Postsecondary Persistence – Y1 – Y2, Academic Year 2017-2018

	School Population	
	n=104	%
Persistence	40	38.4%

Note: There was not enough data to calculate and report postsecondary persistence for manufacturing cohort students.

Persistence in postsecondary education was defined as an individual being enrolled in a postsecondary institution in the same year they graduated from high school and being enrolled in two consecutive fall terms in the institution. The persistence rate for overall school population was 38%.