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

New Britain High School Manufacturing Program Data

The current summary of New Britain 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 2018-2019 through 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.

During the data-cleaning process, there were 8 students identified from New Britain High School who, prior to the 2020-21 academic year, were listed as manufacturing cohort students, but whose status was reversed to non-manufacturing cohort members in 2020-21. The research team was unable to identify a clear reason for the status reversal. Table 1 below shows alternative demographic data that includes those students in the manufacturing cohort. In the rest of the summary tables, the data is a combination of all available academic years, which means that all manufacturing cohort members are included in calculations despite the status reversal.

Table 1: Student Demographics, Academic Year 2020-2021

Student Characteristics	Manufacturing Program Students (n = 66)		Manufacturing Program Students Alternative Count (n = 74)		Overall School Population (n = 2,197)	
	n	%	n	%	n	%
American Indian or Alaska Native	*	*	*	*	6	0.002%
Asian	5	8%	6	8%	63	3%
Black or African American	*	*	*	*	284	13%
Hispanic/Latino of any race	32	48%	35	47%	1366	62%
Native Hawaiian or Other Pacific Islander	*	*	*	*	*	
Two or More Races	*	*	*	*	60	3%
White	23	35%	25	34%	417	19%
Female	5	8%	8	11%	1051	48%
English Language Learners	6	9%	6	8%	378	17%
Students with Disabilities	10	15%	12	16%	501	23%
Free/Reduced Lunch Eligible	35	53%	40	54%	1608	73%

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

In the academic year 2020-2021 the manufacturing program enrolled 66 students at New Britain High School. Among those manufacturing program students, 48% were Hispanic/Latino students of any race, making them the largest demographic group in the cohort. However, their participation rate compared to their overall enrollment (62%) was lower. White students, on the other hand, had higher participation rates: they represented 35% of the cohort while making up 19% of the overall school population.

Table 2: Student Demographics, Academic Years 2018-2019 through 2020-2021

Student Characteristics	Manufacturing Program Students (n = 66)		Overall School Population (n = 3,633)	
	n	%	n	%
American Indian or Alaska Native	*	*	6	0%
Asian	5	8%	102	3%
Black or African American	*	*	495	14%
Hispanic/Latino of any race	32	48%	2,297	63%
Native Hawaiian or Other Pacific Islander	*	*	*	*
Two or More Races	*	*	94	3%
White	23	35%	638	18%
Female	5	8%	1,725	47%
English Language Learners	6	9%	667	18%
Students with Disabilities	10	15%	828	23%
Free/Reduced Lunch Eligible	35	53%	2,792	77%

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

There were 66 manufacturing program students in the academic years 2018-2019 through 2020-2021. Across the cohorts, 48% were Hispanic/Latino students of any race and another 35% were White. Their participation rates repeated the same trends as the 2020-2021 academic year data.

Table 3: Academic Characteristics, Academic Years 2018-2019 through 2020-2021

Metric	Manufacturing Program Students (n = 121)					Overall School Population (n = 6,499)				
	Mean	Median	SD	High	Low	Mean	Median	SD	High	Low
Attendance	142.6	153	32.2	180	11	133.2	141	39.7	180	0

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

Manufacturing students across cohorts (2018-19 through 2020-21) attended school on average 142.6 days (SD 32.2). This figure is higher than the average overall school attendance, which was 133.2 days (SD 39.7).

Table 4: Standardized Assessment, Academic Years 2018-2019 through 2020-2021

Metric	Manufacturing Program Students (n = 48)					Overall School Population (n = 2,280)				
	Mean	Median	SD	High	Low	Mean	Median	SD	High	Low
English SAT	417.7	415	60.9	630	310	437.9	420	85.5	750	200
Math SAT	417.5	420	69.5	580	310	419.9	410	82.4	780	200

Across 48 manufacturing program students who took the SAT tests, the average scores were 417.7 (SD 60.9) on the English section and 417.5 (SD 69.5) on the math section. On average, the manufacturing program students' English and math scores were lower than the overall school population's average scores.

Table 5: Secondary Graduation Rate, Academic Years 2018-2019 through 2020-2021

Metric	Overall School Population	
	n=2,830	%
Graduated	2,524	89%

Note: At the time of data collection there were no high school seniors eligible for graduation in the manufacturing cohort.

The graduation rate across the academic years 2018-19 through 2020-21 in overall school population was 89%.

Table 6: Postsecondary Enrollment, Academic Years 2018-2019 through 2020-2021

	Overall School Population	
	n=2,524	%
Enrolled in CT Postsecondary Program	598	24%
Enrolled in Out of State Postsecondary Program	83	3%
No Record of Postsecondary Enrollment	1,843	73%

Note: At the time of data collection there were no high school seniors eligible for enrollment in postsecondary institutions.

In the overall school population, 24% of students who had graduated from New Britain High School by 2021 attended postsecondary institutions in Connecticut. Another 3% were enrolled in out-of-state colleges.

Table 7: Postsecondary Enrollment, By Institution Type, Academic Years 2018-2019 through 2020-2021

Institution Type	Overall School Population	
	n=681	%
4-Year Institution	339	50%
2-Year Institution	342	50%
<2-Year Institution	0	0%

Note: At the time of data collection there were no high school seniors eligible for enrollment in postsecondary institutions.

Half of the students in postsecondary education from New Britain High School were enrolled in 4-year institutions and another half in 2-year programs.

Table 8: Postsecondary Persistence – Y1 – Y2, Academic Year 2018-2019 & 2019-2020

	School Population	
	n=681	%
Persistence	163	23.9%

Note: At the time of data collection there were no high school seniors eligible for enrollment in postsecondary institutions.

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. In the overall school population, the persistence rate was 24%.