

2019-20

# Evaluation of Career and Technical Education

DEPARTMENT OF EVALUATION AND ASSESSMENT

*Michael Hinojosa, Ed. D.*  
*Superintendent of Schools*



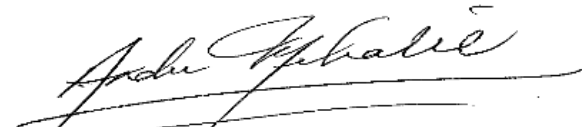
2019-20

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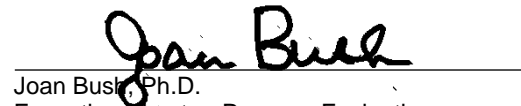
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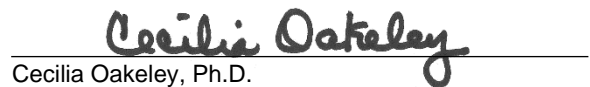
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## ACRONYMS AND ABBREVIATIONS

CCMR	College, Career, and Military Readiness
CI	Career Institutes
CTE	Career and Technical Education
ECHS	Early College High School
<i>EOC</i>	<i>End-of-Course</i>
FTE	Full-Time Equivalent
HB22	Texas House Bill 22
HB5	Texas House Bill 5
HS	High school
IDEA	Innovation, Design and Entrepreneurship Academy
ISD	Independent School District
NAF	National Academy Foundations
NSC	National Student Clearinghouse
PBMAS	Performance-Based Monitoring Analysis System
PD	Professional development
PLTW	Project Lead The Way
P-TECH	Pathways to Technology
SPED	Special education
<i>STAAR</i>	<i>State of Texas Assessments of Academic Readiness</i>
STEM	Science, Technology, Engineering, and Mathematics
TAG	Talented and Gifted
TEA	Texas Education Agency

# Evaluation of Career and Technical Education

## DEPARTMENT OF EVALUATION AND ASSESSMENT

### EXECUTIVE SUMMARY

The primary purpose of the Career and Technical Education (CTE) program is to prepare students for college and career success by providing them with the skills necessary to be competitive in a global economy. To meet this goal, the Dallas Independent School District (ISD) offers courses across 135 comprehensive CTE pathways to students in grades six through 12. Courses can be taken as electives, as a coherent sequence of courses, or as dual credit courses at participating middle and high schools. Students can also participate in CTE by taking courses through the National Academy Foundation (NAF), Career Institutes (CI), or the early college high school (ECHS) program. Through participation in CTE, students can earn diploma endorsements, industry certifications, educational certificates, and college credit hours. In addition, students can participate in paid internships. The CTE program is coordinated by the CTE Department under Teaching and Learning. Program activities are partially funded through both state CTE funds and a grant established by the Carl D. Perkins Career and Technical Education Act of 2006 (Perkins IV). In 2019-20, the total Dallas ISD CTE budget was \$38,589,277. Of these funds, the Dallas ISD CTE Department oversaw a budget of \$8,925,867 which included \$1,713,000 for Career Institutes. CTE program funding (\$7,212,867) increased by two percent from 2018-19 (\$7,079,587).

The purpose of this evaluation was to provide 1) context information related to key components of the program and 2) data for campus, program, and district leadership to examine the implementation and program outcomes of the CTE program.

### EVALUATION QUESTIONS/OUTCOMES

#### What were the components of the CTE program?

CTE course offerings are centered around three endorsements: Business and Industry; Public Service; and Science, Technology, Engineering and Mathematics (STEM). Within each of the endorsements, a student can select a career cluster, followed by a pathway.

For the 2019-20 school year, Perkins V redefined pathways, resulting in the merging of several previously offered pathways. In order to better align with the new programs of study created by the Texas Education Agency (TEA), the number of pathways offered dropped from 271 in 2018-19 to 135 comprehensive pathways in 2019-20. CTE courses

were offered as either a CTE-coherent sequence of courses or electives. The Department of Education defined a coherent sequence of courses as “a series of courses in which vocational and academic education are integrated, and which directly relates to, and leads to, both academic and occupational competencies.”

#### NAF Academies

In 2019-20, in cooperation with the NAF, the Dallas ISD operated 49 NAF academies at 20 high schools. NAF academies were designed to be small learning communities that operate based on a “school within a school” model within the existing high school systems. These academies are based around one of five high-growth career industries: Engineering; Finance; Health Sciences; Hospitality and Tourism; and Information Technologies. NAF academies provided students career-focused educational experiences within and outside the classroom. The NAF curricula incorporates industry standards and practices, literacy strategies, and STEM integration, while emphasizing project-based learning. Students can explore career interests and participate in career preparation activities, including mock interviews and paid internships. Students who successfully complete their academic courses, workplace projects, and internship can earn the NAFTrack Certification, indicating to post-secondary institutions and employers that the student is college- and career-ready. The NAFTrack Certified Hiring program is a commitment made by top American companies to consider these qualified students as eventual job applicants. All NAF academies have an open enrollment policy.

#### Career Institutes

Career Institutes provide high school students the opportunity to obtain relevant workforce readiness skills and post-secondary education in high-demand vocations to earn a living wage after graduating high school. Career Institutes function as a hub serving their surrounding high schools. By 2022-23, Dallas ISD plans to establish a total of four Career Institutes, one for each quadrant of the city (north, south, east, and west). CTE program documents indicated that “these state-of-the-art facilities will feature real-world learning spaces and industry standard equipment, providing students access to post-secondary education, training, and career pathways that may be inaccessible on their home

campus”.<sup>1</sup> Pathways offered at the Career Institutes are tuition free for all Dallas ISD students and have open enrollment. Students will take their first Career Institute pathway course during grade nine on their home campus. During grades 10 through 12, students will take Career Institute pathway courses for half a day, twice a week at dedicated Career Institute campuses. Transportation of students from and to their home campus is free of charge. According to the Dallas ISD Board Update presented by the Executive Director of STEM on March 7, 2019, structuring the Career Institutes as hubs has several advantages, including:

- Cost-effectiveness,
- Student choice,
- Student recapture and retention.

In preparation for the opening of the Career Institutes North and South (Fall 2020), grade nine students interested in construction-related pathways enrolled in Principles of Construction at their home campus in 2019-20.

### Early College High Schools

In 2019-20, the Dallas ISD operated 25 ECHSs, including seven traditional ECHSs and 18 Pathways in Technology Early College High Schools (P-TECH). Each P-TECH was paired with an institution of higher learning (IHE) and one or more industry partners. Students enrolled in a P-TECH can earn up to 60 tuition-free, dual-credit hours and graduate with an Associate's Degree of Applied Science in one of 32 fields. Out of the 60 dual-credit hours, students can take up to 18 credit hours of CTE related coursework. P-TECH students also have an opportunity to earn industry-based certifications and educational certificates in their selected career pathways that are attractive to employers and gain valuable workplace skills through one of the industry partners. The graduation of the first cohort of P-TECH students in 2019-20 marks an important milestone in the implementation of the program.

### Credentials

Certificates are types of credentials that are predominately awarded by two-year institutions of higher learning for the satisfactory completion of a workforce education program. Certifications are types of credentials that are usually granted by an organization, such as a trade association, validating that an individual possesses certain skills. An occupation may have multiple certifications with different levels of expertise. Unlike certificates, certifications are often time-limited credentials and need to be renewed periodically. Since 2017-18, school districts are required to report student-level data to TEA about industry-based certifications that meet TEA accountability requirements.

The 2019-20 list of approved industry-based certifications for the A-F Accountability System (March 2019) included 244 certifications within 14 primary career clusters.

### CTE Implementation in Middle and Elementary Schools

Thirty-five out of 42 middle schools (83%) offered one or more CTE courses in 2019-20. Of the 19 CTE courses offered, five were considered foundational courses and qualified for middle school credit, while 14 courses could be taken for high school credit. Five of the 14 courses utilized the Project Lead the Way (PLTW) Gateway curricula. CTE department leadership highly recommended all middle school students take the College and Career Readiness class, and one of the four Investigating Careers classes in grade eight to have a better understanding of CTE options in high school. Sixteen middle schools (38%) offered the College and Career Readiness class, and 22 middle schools (52%) offered one or more of the Investigating Careers classes.

Two elementary schools implemented the PLTW Launch engineering curriculum (STEM) in 2019-20. Implementing STEM-related curricula in elementary and middle schools exposes students to the various facets of CTE options and builds a pipeline for the CTE programs in high school. The Dallas ISD CTE Department provides support to those schools interested in opening CTE courses by facilitating curricula implementation, coordinating the training of teachers, and the purchasing of supplies. It is important to note that providing CTE services to elementary and middle school students does not increase the amount of funds the Dallas ISD receives from TEA for its CTE services.

### What were the enrollment characteristics of CTE students?

During the 2019-20 school year, a total of 38,075 students took CTE courses, including 9,702 middle school students and 28,373 high school students (Table E1). Overall, 75 percent of the 38,075 CTE students took CTE courses as electives ( $n=28,505$ ) while 25 percent of students enrolled in a coherent sequence of courses ( $n=9,570$ ).

<sup>1</sup> Career Institutes brochure Developing Leaders Building Futures and March 7, 2019 Dallas ISD Board Briefing on Career Institutes.

**Table E1: 2019-20 CTE Enrollment by Grade**

Grade	Elective <i>N</i>	Coherent Sequence <i>n</i>	Total <i>N</i>
Grade 6	1,208		1,208
Grade 7	3,799		3,799
Grade 8	4,695		4,695
Grade 9	7,266	446	7,712
Grade 10	6,013	1,419	7,432
Grade 11	2,678	3,839	6,517
Grade 12	2,846	3,866	6,712
<b>Overall</b>			
Overall Middle S.	9,702		9,702
Overall High S.	18,803	9,570	28,373
Overall	28,505	9,570	38,075

Source: May demographic file, 05/29/20 CTE course file, 10/8/20.  
Dallas ISD course file, 07/30/20.

Note: A grey box indicates that no students were enrolled in that grade level. S.=School

Districtwide, CTE students took the highest percentage of courses within the Business Management & Administration cluster (14%), followed by the STEM cluster (12%), and the Information Technology (12%).

High school students were able to participate in traditional CTE course offerings and enroll in specialized CTE programs such as Career Institutes, NAF Academies, and ECHSs. Of the 28,373 high school students who enrolled in CTE courses in 2019-20, 14,041 students enrolled in one or more of these specialized high school CTE programs. Although 96 percent of the 14,041 students enrolled in only one of these programs, four percent enrolled in two or three programs. Overall, 760 students enrolled in Career Institutes, 9,229 students enrolled in NAF Academies, and 4,624 students enrolled in ECHSs.

The ethnic composition of district CTE students was similar to middle and high school students not enrolled in the CTE program. There were more male than female students enrolled in CTE programs (52% vs 49%), a slightly higher percentage of CTE students were economically disadvantaged than for non-CTE students (84% vs 83%). More CTE students were at risk of dropping out than non-CTE students (77% vs 74%), a smaller percentage of CTE students received special education services compared to non-CTE students (8% vs 12%), and fewer CTE students were English learners compared to non-CTE students (39% vs 44%).

### What were the completion rates for CTE courses?

In 2019-20, CTE middle and high school students passed 93 percent of all CTE courses. Passing rate by career clusters ranged from 91 percent (Business Management & Administration) to 99 percent (Government & Public Administration). Coherent sequence students had a higher

passing rate than CTE elective students for all CTE students (95% vs 93%) and for CTE high school students (95% vs 92%). Of the 4,665 Dallas ISD students who took CTE dual credit courses, 43 percent were coherent sequence students ( $n=2,008$ ). In 2019-20, CTE students completed 90 percent ( $n=9,203$ ) of the 10,237 CTE dual credit courses they were enrolled in.

### How many credentials were earned by CTE high school students?

Overall, 2,971 Dallas ISD CTE students earned 4,206 credentials in 2019-20, including 3,331 industry-based certifications and 875 educational certificates. Certifications identified by TEA for the A to F accountability system accounted for 23 percent ( $n=770$ ) of all industry certifications earned.

### How many associate degrees were awarded to coherent sequence CTE students?

Of the 1,163 coherent sequence CTE students who graduated in 2019-20, 323 students (28%) earned an associate degree. Campuses with the highest number of graduates who earned an associate degree were Pinkston (20%), Conrad (19%), and Seagoville (16%). The number of CTE students that earned an associate degree increased by 39 percent from 232 in 2018-19 (Grimberg, 2019). Overall, more Associate of Applied Science degrees were awarded to coherent sequence CTE students ( $n=309$ , 96%) than Associate of Arts ( $n=8$ , 3%) or Associate of Science ( $n=6$ , 2%) degrees.

### What were the college enrollment rates for CTE students?

Overall, 7,718 grade 12 students graduated from a Dallas ISD high school in 2018-19 (including the summer semester). Of these, 6,151 students (80%) were CTE students and 1,567 students (20%) were non-CTE students. According to the 2019-20 National Student Clearinghouse data file, 52 percent of CTE graduates and 57 percent of non-CTE graduates enrolled in college within one year of graduation. Fifty-six percent ( $n=1,799$ ) of CTE students who enrolled in college joined a two-year college, and 44 percent enrolled at a four-year university ( $n=1,402$ ). In contrast, 68 percent ( $n=612$ ) of non-CTE students enrolled in a four-year university versus a two-year or less college ( $n=283$ , 32%). Although there was no difference in college enrollment percentage rates between CTE elective and coherent sequence students (52% each), a slightly higher percentage of elective student enrolled in a four-year university than coherent sequence students (47% vs 43%).

### How did the Dallas ISD perform on CTE related accountability measures?

Over the past three years, Dallas ISD students have continuously improved on eight of the 10 presented CCMR measures. The percentage of graduates who were College, Career or Military Ready increased by 15 percentage points from 46 percent in 2016-17 to 61 percent in 2018-19. On CTE related measures for the same timeframe, the percentage of graduates who earned an industry-based certification increased by one percentage point (1% vs 2%) and the percentage of graduates who completed CTE coherent sequence coursework aligned with industry-based certifications increased by nine percentage points (6% vs 15%). The percentage of graduates who completed Level I or Level II certificates increased by one percentage point from 2017-18 to 2018-19 (0% vs 1%). However, a lower percentage of graduates completed Individual Education Program and Workforce Readiness (3% vs 2%) and enrolled in the armed forces (1% vs 0%). Compared to other similar large urban districts in Texas, a lower percentage of Dallas ISD graduates were College, Career, or Military ready (61%) than graduates of Austin ISD (86%), El Paso ISD (74%), San Antonio ISD (73%), Houston ISD (71%), and Fort Worth ISD (63%).

### What were teacher perceptions of the CTE program?

The CTE department conducts an annual survey to collect programmatic feedback from teachers to assess program strengths and identify areas of improvement. Insights gained from the survey are meant to help with future program development and program evaluation. The 2019-20 survey was administered by CTE staff from May 11 through May 29, 2020, using Google Forms, an online survey-development tool. A total of 201 CTE teachers (40%) responded to the information request. Among the key-findings were that 96 percent of respondents agreed that the CTE program allows students to discover career opportunities they otherwise may not have considered. Seventy-eight percent of respondents agreed that the CTE program provides students with basic training to obtain a job. Furthermore, 68 percent of respondents agreed that the CTE program motivates students to complete high school who otherwise are at risk of dropping out. Overall, 96 percent of CTE teachers indicated that CTE learning activities were aligned with current practices in business, industry, and/or technology.

CTE teachers also provided feedback on the impact of COVID-19 and the resulting transition to at-home learning. Seventy-seven percent of respondents indicated that students seemed to be less motivated, 62 percent of respondents noted that the delivery of instructions was impacted by the inability to provide hands-on-training, and

56 percent of respondents indicated they encountered technical issues. Overall, 95 percent respondents reported that they attempted to contact students or their parents on a weekly basis. However, 41 percent of respondents noted that the lack of updated student contact information limited their ability to stay in touch with students and 35 percent of respondents noted that the lack of adequate resources was a major challenge for classroom teachers during the district closure.

## RECOMMENDATIONS

Based on the key findings, the following recommendations are offered for stakeholders.

**Continue to promote CTE students' completion of educational certificates and industry-based certifications.**

**Continue to support specialized CTE initiatives including Career Institutes and NAF Academies.**

**Continue to work with the IT Department on accurately tracking CTE participation.**

2019-20

# Evaluation of Career and Technical Education

## DEPARTMENT OF EVALUATION AND ASSESSMENT

### PROGRAM DESCRIPTION

The primary purpose of the Career and Technical Education (CTE) program is to prepare students for college and career success by providing the skills necessary to be competitive in a global economy. To meet this goal, the Dallas Independent School District (ISD) CTE department offers courses across 135 comprehensive CTE pathways to students in grades six through 12. Courses can be taken as electives, as a coherent sequence of courses, or dual credit courses at participating middle and high schools. Students can also participate in CTE by taking courses through National Academy Foundation (NAF), Career Institutes (CI), or Early College High School (ECHS) programs. Through participation in CTE, students can earn diploma endorsements, industry certifications, educational certificates, and college credit hours. In addition, students can participate in paid internships. The CTE program is coordinated by the CTE Department<sup>2</sup> under Teaching and Learning. Program activities are partially funded through state CTE funds and a grant established by the Carl D. Perkins Career and Technical Education Act of 2006. In 2019-20, 38,075 students participated in CTE.

The Carl D. Perkins Vocational and Technical Education Act was first authorized by the federal government in 1984 and was most recently reauthorized as the Strengthening Career and Technical Education for the 21st Century (Perkins V) Act in 2018. The purpose of the Perkins V Act was to increase learner access to high-quality career and technical education programs to prepare students for the needs of employers in a variety of occupations. The Texas Legislature passed House Bill 5 (HB 5) in 2013 encouraging high school students to complete foundation curriculum plus additional coursework under one of five diploma endorsements, three of which are CTE-related: 1) business and industry; 2) public service; and 3) Science, Technology, Engineering, and Mathematics (STEM). HB 5 required the Dallas ISD to make additional coursework available to high school students for offered endorsement areas resulting in rapid CTE coursework expansion in the years following its passage. Beginning in 2017-18, House Bill 22 (HB22) required the Texas Education Agency (TEA) to evaluate the academic performance of school districts with a rating of A through F based on three domains: 1) student achievement, 2) school progress, and 3) closing the gaps. College, Career, and Military Readiness (CCMR) indicators account for 40 percent of the weighted performance of high school campuses and school districts in the student achievement domain. CCMR indicators include dual-credit course completion, associate degrees earned, and industry-based certifications earned, among others.<sup>3</sup>

<sup>2</sup> For the context of the 2019-20 report, Career Institutes are included with the CTE Department. However, the Dallas ISD organizational hierarchy lists Career Institutes directly under Teaching and Learning, parallel to the CTE Department.

<sup>3</sup> 2019 Accountability Manual can be accessed at <https://tea.texas.gov/2019accountabilitymanual.aspx>

## PURPOSE AND SCOPE OF THE EVALUATION

The purpose of this evaluation was to provide 1) context information related to key components of the program, and 2) data for campus, program, and district leadership to examine the implementation of the CTE program. On Friday, March 13, 2020, in alignment with federal recommendations, the Governor of Texas issued a disaster proclamation certifying that the novel coronavirus COVID-19 posed an imminent threat of disaster for all counties in the state of Texas. In response to the COVID-19 pandemic, Dallas ISD transitioned students to at-home learning on March 23 following Spring Break (March 16 – 20) until the end of the school year. Additionally, the Governor used his statutory authority under Texas Government Code, §418.016 to suspend annual academic assessment requirements for the remainder of the 2019-20 school year cancelling remaining planned administrations of *State of Texas Assessments of Academic Readiness End-of-Course (STAAR EOCs)*. Furthermore, national administration of college readiness tests, such as the *ACT* and *SAT*, were canceled. Due to these COVID-19 pandemic related changes, the scope of the evaluation was limited to available data. This report addressed the following questions:

- What were the sources and amount of funding for the program?
- What were the components of the CTE program?
- What were the CTE student enrollment and demographic characteristics?
- What were the completion rates for CTE courses?
- How many industry certifications and educational certificates were earned?
- How many associate degrees were awarded to coherent sequence CTE students?
- What were the college enrollment rates for the Dallas ISD coherent sequence CTE students?
- How did the Dallas ISD perform on accountability indicators?
- What were teacher perceptions of the CTE program?

## EVALUATION QUESTIONS AND RESULTS

### What were the sources and amount of funding for the program?

#### Methodology

Budget information for the 2019-20 school year was provided by the Dallas ISD Budget Services Department (for state and local funds) on January 30, 2020 and the Dallas ISD Department of Special Revenue on January 17, 2020. CTE department and Career Institutes internal budgets were provided by the CTE Department Director and the Director of CI North. CI does not have an individual department code; therefore, the CI budget was administrated through the CTE Department in 2019-20.

#### Results

TEA brochure (n.d.)<sup>4</sup> noted that “Under the Texas Education Code (TEC), §42.154, a school district is eligible to receive weighted funding for each eligible full-time equivalent (FTE) student in average daily

<sup>4</sup> Source: <https://capitol.texas.gov/tlodocs/84R/handouts/C4002016092909001/e19232c7-5a98-4919-a2b2-99677d0304c9.PDF>

attendance (ADA) in an approved CTE program. In addition to this weighted funding, a school district is also eligible to receive a flat amount of \$50 per FTE enrolled in certain advanced CTE courses or programs”.<sup>5</sup> In other words, districts receive 35 percent more funding for CTE students than other students. Weighted CTE and advanced course funding are calculated as follows:

$$\begin{aligned} \text{CTE weighted funding} &= \text{eligible CTE FTEs} \times \text{district's adjusted allotment (AA)} \times 1.35 \\ \text{CTE advanced course funding} &= \text{eligible CTE FTEs} \times \$50 \end{aligned}$$

In 2019-20, TEA allocated a total of \$66,869,343 in CTE funding to the Dallas ISD. Based on TEA requirements, 55 percent of CTE state funding had to be spent on the CTE program, and 45 percent could be allocated to the general operating fund. In general, CTE staff and teacher salaries, purchased curricula, equipment, and professional development were paid from the CTE portion, while some of the general operating funds were used to pay for operating costs of CTE classrooms, labs, and buildings. In addition, the district received \$2,584,115 from the Perkins V Grant and four high schools received a total of \$1,040,000 in Early College P-TECH and Industry Cluster Innovative Academies (ICIA) grants.<sup>6</sup> Of the TEA funds, the Dallas ISD allocated \$34,965,965 (52%) to the CTE program with 78 percent (\$27,233,181) covering payroll expenses (Table 1).

**Table 1: 2019-20 Dallas ISD CTE Budget**

Description	TEA Funds	Perkins Grant	P-TECH & ICIA Grant	Total
Payroll Costs	\$27,233,181	\$578,950	NA	\$27,812,131
Professional & Contracted Services	\$811,990	\$537,037	NA	\$1,349,027
Supplies and Materials	\$6,323,271	\$923,455	NA	\$7,246,726
Other Operational Costs	\$411,523	\$543,870	NA	\$955,393
Capital Outlay – Land/Buildings/Equipment	\$186,000		NA	\$186,000
P-TECH & ICIA Grant Total			\$1,040,000	\$1,040,000
Overall	\$34,965,965	\$2,583,312	\$1,040,000	\$38,589,277

Source: Dallas ISD Budget Services Department, 01/30/20. Dallas ISD Department of Special Revenue, 01/17/20.

Notes: Grey area indicates that no funds were attributed to this category. NA=P-TECH and ICIA Grant information was not provided by category.

Of the total Dallas ISD 2019-20 CTE budget (\$38,589,277), the Dallas ISD CTE Department oversaw a budget of \$8,925,867<sup>7</sup> which included \$1,713,000 for the Career Institutes and \$7,212,867 for CTE programs. Therefore, the funding for the CTE program increased by 2 percent from 2018-19 (\$7,079,587).

<sup>5</sup> The allotment applies to students grades nine through twelve enrolled in CTE program, and students with disabilities in grades seven through twelve enrolled in Career Technology for the Disabled (CTED) programs.

<sup>6</sup> Early College P-TECH and Industry Cluster Innovative Academies (ICIA) grants are administered by the awarded campuses including L.G. Pinkston High School, Seagoville High School, South Oak Cliff High School, and Wilmer-Hutchins High School

<sup>7</sup> Budget included \$6,342,555 in TEA funding and a \$2,583,312 Perkins Grant

## What were the components of the CTE program?

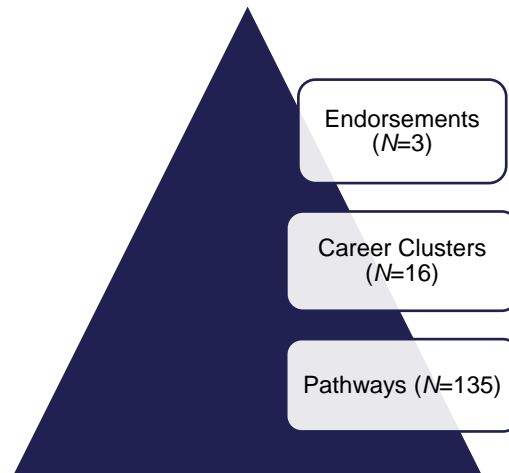
### Methodology

Program documentation was provided by CTE program staff members. Board briefings from June 2018 through September 2019 provided additional information regarding Career Institutes. Information about program components were supplemented through informal interviews. Examination of program documents and informal interviews focused on program components including comprehensive CTE career clusters and pathways, NAF academies, Career Institutes, and credentials as well as CTE program support provided to elementary and middle schools.

### Results

CTE course offerings were centered around three endorsements: Business and Industry, Public Service, and STEM. Within each of the endorsements, a student can select a career cluster, followed by a pathway (Figure 1).

**Figure 1: 2019-20 Organizational Chart of Career and Technical Education Offerings**



Source: CTE department program document, Fall 2019.

Ten career clusters are offered for Business and Industry, five career clusters for Public Service, and one career cluster for STEM, culminating in a total of 135 comprehensive CTE pathways (Figure 2). See also Appendix A for a full list of CTE pathways by campus.

**Figure 2: 2019-20 Number of Career and Technical Education Endorsements by Career Clusters and Pathways**

①	Business and Industry										Public Services				STEM	
②	Agriculture, Food & Natural Resources	Architecture & Construction	Arts, AV Technology & Communications	Business Management & Administration	Marketing	Finance	Hospitality & Tourism	Information Technology	Transportation, Distribution & Logistics	Manufacturing	Education & Training	Government & Public Administration	Health Science	Human Services	Law, Public Safety, Corrections & Security	Science, Technology, Engineering & Mathematics
③	3	6	9	18	10	14	11	17	5	3	4	2	9	3	6	15

Source: CTE department program document, Fall 2019.

Notes: 1) Endorsements, 2) Career Clusters, 3) Pathways. The CTE program offered a total of 135 pathways in 2019-20.

For the 2019-20 school year, Perkins V redefined pathways, resulting in the merging of several previously offered pathways. In order to better align with the new programs of study created by TEA, the number of pathways offered dropped from 271 in 2018-19 to 135 comprehensive pathways in 2019-20. For 2020-21, the CTE department plans to further align their CTE program offerings by combining the Business Management, Marketing and Finance clusters into one dedicated Business, Marketing & Finance cluster, as well as combining the Government & Public Administration and the Law, Public Safety, Corrections & Security clusters into one cluster under the name Law & Public Services. CTE courses were offered as either a CTE coherent sequence of courses or electives. The Department of Education defined a coherent sequence of courses as “a series of courses in which vocational and academic education are integrated, and which directly relates to, and leads to, both academic and occupational competencies.”<sup>8</sup>

### **NAF Academies**

Historically, NAF started at the Dallas ISD in 1990s with Hospitality and Tourism themed academies. NAF academies were designed to be small learning communities that operate based on a “school within a school” model within the existing high school systems. Based around one of five high-growth career industries (Table 2), NAF academies provide students career-focused educational experiences within and outside the classroom to explore career interests and participate in career preparation activities including mock interviews and paid internships. The NAF curricula incorporates industry standards and practices, literacy strategies, and STEM integration, while emphasizing project-based learning. Students who successfully complete their academic courses, workplace projects, and internship can earn the NAFTrack Certification, indicating to post-secondary institutions and employers that the student is college- and career-ready. The NAFTrack Certified Hiring program is a commitment

<sup>8</sup> National Center of Educational Statistics at <https://nces.ed.gov/pubs/web/95024-2.asp>

made by top American companies to consider these qualified students as eventual job applicants. All NAF academies have an open enrollment policy.

In 2019-20, in cooperation with NAF, the Dallas ISD operated 49 NAF academies at 20 high schools. Of these 49 academies, 23 academies (47%) were honored by NAF as distinguished academies<sup>9</sup>. Each academy focuses on one of five themes: Engineering, Finance, Health Sciences, Hospitality and Tourism, and Information Technologies. The top three NAF academies by career themes were Engineering ( $N=12$ ), Information Technologies ( $N=12$ ), and Finance ( $N=11$ ). Most high schools ( $n=16$ , 80%) housing a NAF academy offered more than one career theme, with Conrad and Skyline high schools each hosting five academies (Table 2).

**Table 2: 2019-20 Number of NAF Academies by Career Theme and Campus**

Campus	Academy of Engineering	Academy of Finance	Academy of Health Sciences	Academy of Hospitality and Tourism	Academy of Information Technologies	Total Academies per Campus
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>N</i>
Adams	Y		Y		Y	3
Adamson		Y	Y			2
Carter		Y			Y	2
Conrad	Y	Y	Y	Y	Y	5
Hillcrest	Y		Y			2
IDEA		Y			Y	2
Jefferson	Y	Y		Y		3
Kimball	Y			Y		2
Lincoln	Y					1
Madison					Y	1
North Dallas	Y	Y			Y	3
Roosevelt			Y			1
Samuell					Y	1
Skyline	Y	Y	Y	Y	Y	5
South Oak Cliff	Y				Y	2
Spruce	Y	Y			Y	3
Sunset		Y	Y			2
White	Y		Y		Y	3
Wilmer-Hutchins		Y		Y	Y	3
Wilson	Y	Y		Y		3
Overall	12	11	8	6	12	49

Source: CTE department program document and Dallas ISD NAF website accessed on 01/18/20.

Notes: Y=NAF Academy offered. IDEA=Innovation, Design and Entrepreneurship Academy.

NAF provides curricula for four of the five career themes, while the Engineering curriculum is provided by Project Lead The Way (PLTW). To teach the NAF curricula, teachers have to be TEA CTE-certified. PLTW offered a two-week long teacher certification training to schools offering the engineering curriculum for the first time. PLTW further utilized the train the trainer model, allowing teachers who were trained by PLTW to train other teachers at their campuses. A total of 108 teachers taught NAF courses in 2019-20. The number of teachers per campus varied (from two to 14 teachers) based on the number of NAF academies offered and number of students enrolled. On average, two teachers were

<sup>9</sup> Distinguished academies have achieved NAF's highest level of achievement. A total of 138 academies in the NAF network have reached Distinguished level (NAF, 2020).

employed by each NAF academy. In preparation for the 2019-20 school year, four professional development (PD) sessions were held between June and August 2019. Topics included NAF review and updates and career-themed trainings. Participation ranged between 13 and 80 participants. On October 11, 2019, four additional PD sessions were held, including NAF updates and curriculum and software training. Attendance in these sessions ranged between seven and 42 participants.

In 2019-20, the Dallas ISD NAF coordinator held two parent meetings to inform parents about paid internship opportunities available to students for the 2020 summer break. A total of 83 parents participated in meetings held at Conrad High School on November 19, 2019, ( $n=28$ ) and at Kimball High School on December 3, 2019, ( $n=55$ ). Overall, the NAF coordinator reported that twenty companies offered internship opportunities to 109 NAF students. Thirteen of the 20 companies offered virtual internships, five companies offered hybrid internships, and two companies offered in-person internships.

### ***Career Institutes***

Career Institutes provide high school students the opportunity to obtain relevant workforce readiness skills and post-secondary education in high demand vocations to earn a living wage after graduating high school. Established in 2018, five campus-based Career Institutes operated during the 2018-19 school year (Grimberg, 2019). It was noted at a Board Briefing (June 7, 2018) the intention was to establish a Career Institute at every Dallas ISD high school, each serving an in-demand trade. Campus-based Career Institutes were either to utilize existing CTE programs and elevate them by formalizing relationships with industry partners and the Dallas College, formally known as the Dallas College District, or to establish new programs where no prior CTE program serving an in-demand trade existed.

In a strategic shift in 2019, Dallas ISD moved away from campus-based Career Institutes to a system of stand-alone Career Institutes. None of the original five campus-based Career Institutes were rolled into the new Career Institutes system, and henceforth operate as regular CTE programs. The newly established Career Institutes function as a hub serving their surrounding high schools. By 2022-23, Dallas ISD plans to establish a total of four Career Institutes (Figure 3), one for each quadrant of the city (north, south, east, and west).

**Figure 3: 2019-20 to 2022-23 Implementation Timeline for Career Institutes**

Source: Career Institutes program document provided for September 2019 Board briefing, 09/17/2019.

CTE program documents indicated that “these state-of-the-art facilities will feature real-world learning spaces and industry- standard equipment, providing students access to post-secondary education, training, and career pathways that may be inaccessible on their home campus”.<sup>10</sup> Pathways offered at Career Institutes are tuition free for all Dallas ISD students and have open enrollment. Students take their first Career Institute pathway course during grade nine on their home campus. During grades 10 through 12, students will take Career Institute pathway courses for half a day, twice a week at dedicated Career Institute campuses. Transportation of students from and to their home campus is provided free of charge. According to the Dallas ISD Board Update presented by the Executive Director of STEM on March 7, 2019, structuring the Career Institutes as hubs has several advantages, including:

- *Cost-effectiveness:* Centralizing specialized equipment reduces the number of hours equipment is idle, allows for easier maintenance, and increases the number of students who can attend each class.
- *Student choice:* Home campuses can now offer any pathway available at Career Institutes; therefore, students will have access to more pathways, career endorsements, and industry partners.
- *Student recapture and retention:* Because of the unique value that they bring, Career Institutes will help attract and retain students in the Dallas ISD.

In preparation for the opening of the Career Institutes North and South (Fall 2020), grade nine students interested in construction- related pathways took Principles of Construction at their home campus in 2019-20 (Table 3). Among construction-related pathways were construction and carpentry; interior design; plumbing and pipefitting; electrical and solar technology; and heating ventilation, air conditioning and refrigeration. Construction-related pathways were among the first pathways offered by Career Institutes because they share the same principle course. Furthermore, industry sources indicated that with a current

<sup>10</sup> Career Institutes brochure Developing Leaders Building Futures and March 7, 2019 Dallas ISD Board Briefing on Career Institutes.

shortage of up to 20,000 skilled workers, construction will be a vocation in high demand in the Dallas Metroplex until at least 2030.<sup>11</sup> Career Institute leadership has extended existing pathway offerings for 2020-21 school year by opening Aviation Flight, Mechatronics / Advanced Manufacturing, and Cybersecurity pathways. (See Appendix B for a full list of 2020-21 Career Institute Pathways.)

**Table 3: 2019-20 Feeder High Schools for Career Institutes North and South**

<b>Career Institute North</b>	<b>Career Institute South</b>
Conrad	Adamson
Hillcrest	Carter
Jefferson	Kimball
North Dallas	Molina
White	Pinkston (added for 2020-21)
	Roosevelt
	South Oak Cliff
	Sunset

Source: Career Institutes program document, Fall 2019.

In 2019-20, a total of eight teachers (four for each Career Institute North and South) taught the inaugural course of Principal of Constructions at the home campuses. During the second semester, Career Institute North added an aviation teacher to its roster. Hired teachers were masters of their trade and were required to be bilingual. Under House Bill 1842, as a District of Innovation, the Dallas ISD was exempt from requiring teachers at Career Institutes to have a valid TEA teaching certificate. In order to help teachers master pedagogy, Career Institute staff held three PD sessions on October 11, 2019, December 20, 2019, and January 6, 2020. Topics included classroom management skills, ESL strategies, and lesson planning, and also provided Career Institutes updates. Attendance at PD sessions ranged between 14 and 16 Career Institute teachers and staff. Staff from Career Institute South reported that five parent conferences were held during the 2019-20 school year.

### ***Early College High Schools***

In 2019-20, the Dallas ISD operated 25 ECHSs, including seven traditional ECHSs and 18 Pathways in Technology Early College High Schools (P-TECH). Each P-TECH was paired with an institution of higher learning (IHE) and one or more industry partners. Students enrolled in a P-TECH can earn up to 60 tuition-free, dual-credit hours and graduate with an Associate Degree of Applied Science in one of 32 fields (see Appendix C). Out of the 60 dual-credit hours, students can take up to 18 credit hours of CTE related coursework. P-TECH students also have an opportunity to earn industry-based certifications and educational certificates in their selected career pathways that are attractive to employers and gain valuable workplace skills through one of the industry partners. The graduation of the first cohort of P-TECH students marks an important milestone in the implementation of the program. See Lorenz (2020) Evaluation of Early College High School Programs for additional information.

<sup>11</sup> September 2019 Dallas ISD Board Update on Career Institutes.

## **Credentials**

*Certificates* are types of credentials that are predominately awarded by two-year institutions of higher learning for the satisfactory completion of a workforce education program. TEA quoted a 2013 study by Georgetown University stated that certificates have the largest growth among college credentials over the past 30 years.<sup>12</sup> Several levels of certificates exist in Texas, including Enhanced Skills or Occupational Skills Certificates (between nine to 15 credit hours), Level I certificates (between 15 to 42 credit hours), Level II certificates (between 30 to 51 credit hours), and Advanced Technical Certificates (requiring a previously awarded associate or bachelor degree and 16 to 50 credit hours).

*Certifications* are types of credentials that are usually granted by an organization, such as a trade association, validating that an individual possesses certain skills. An occupation may have multiple certifications with different levels of expertise. Unlike certificates, certifications are often time-limited credentials and need to be renewed periodically. Since 2017-18, school districts are required to report student-level data to TEA about industry-based certifications that meet TEA accountability requirements. The 2019-20 list of approved industry-based certifications for the A-F accountability system (March 2019) included 244 certifications within 14 primary career clusters.

### **CTE Implementation in Middle and Elementary Schools**

Thirty-five out of 42 middle schools (83%) offered one or more CTE courses in 2019-20. Of the 19 CTE courses offered, five were considered foundational courses and qualified for middle school credit, while 14 courses could be taken for high school credit. Five of the 14 courses utilized PLTW Gateway curricula<sup>13</sup>. CTE department leadership highly recommended all middle school students take the College and Career Readiness class, and one of the four Investigating Careers classes in grade eight to have a better understanding of CTE options in high school. Sixteen middle schools (38%) offered the College and Career Readiness class and 22 middle schools (52%) offered one or more of the Investigating Careers classes.

Two elementary schools implemented the PLTW Launch engineering curriculum (STEM) in 2019-20 in grade four (Victor Hexter Elementary School) and grade five (Martha Turner Reilly Elementary School). Implementing STEM-related curricula in elementary and middle schools exposes students to the various facets of CTE options and builds a pipeline for the CTE programs in high school. The Dallas ISD CTE Department provides support to those elementary and middle schools interested in opening CTE courses by facilitating curricula implementation, coordinating the training of teachers and the purchase of supplies. It is important to note that providing CTE services to elementary and middle school students does not increase the amount of funds the Dallas ISD receives from TEA for its CTE services.

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<sup>12</sup> Understanding Credentials in Texas: Certificates & Certifications (2018).

<sup>13</sup> Project Lead The Way offers three types of curricula, PLTW Launch (Grades K-5), PLTW Gateway (Grades 6-8), and PLTW Programs (Grades 9-12).

## What were the enrollment characteristics of CTE students?

### Methodology

CTE students were identified by extracting student information numbers (IDs) from the Dallas ISD course enrollment file dated July 30, 2020 based on CTE course numbers provided by the CTE department (October 8, 2020). CTE student IDs were merged with the end-of-year demographic file dated May 29, 2020 to identify current enrollment status and demographic information. Frequency analyses were conducted to report CTE enrollment data based on demographic characteristics and grade-level enrollment by CTE programs, and grade-level enrollment by CTE status. In addition, frequency analyses were conducted to report CTE enrollment numbers by campus for NAF academies and Career Institutes. Prior year CTE enrollment numbers were taken from Grimberg (2019).

### Results

During the 2019-20 school year, 38,075 students participated in CTE, including 9,702 middle school students and 28,373 high school students (Table 4). Overall, 53 percent of all middle and high school students were enrolled in a CTE course. Thirty percent of middle school students were enrolled in a CTE course, an increase of six percentage points over 2018-19 (24%, Grimberg 2019). Middle school CTE enrollment percentage ranged from 11 percent in grade six to 46 percent in grade eight. High school CTE enrollment percentage ranged from 63 percent in grade 9 to 77 percent in grade 12. Overall, 71 percent of high school students were enrolled in CTE courses, indicating that CTE enrollment in high schools remained stable compared to 2018-19 (71%, Grimberg 2019).

**Table 4: 2019-20 Student Enrollment by Grade**

Grade	Non-CTE		CTE		Total N
	n	%	n	%	
<b>Middle School</b>					
Grade 6	9,816	89.0	1,208	11.0	11,024
Grade 7	7,135	65.3	3,799	34.7	10,934
Grade 8	5,629	54.5	4,695	45.5	10,324
<b>High School</b>					
Grade 9	4,475	36.7	7,712	63.3	12,187
Grade 10	2,857	27.8	7,432	72.2	10,289
Grade 11	2,022	23.7	6,517	76.3	8,539
Grade 12	2,051	23.4	6,712	76.6	8,763
<b>Overall</b>					
Overall Middle School	22,580	69.9	9,702	30.1	32,282
Overall High School	11,405	28.7	28,373	71.3	39,778
Overall	33,985	47.2	38,075	52.8	72,060

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Overall, 75 percent of the 38,075 CTE students took CTE courses as electives ( $n=28,505$ ) while 25 percent of students enrolled in a coherent sequence of courses ( $n=9,570$ , Table 5). Given that students cannot be classified as coherent sequence students until grade nine, all middle school students ( $n=9,702$ )

were classified as elective students, while 66 percent of high school students were identified as elective students ( $n=18,803$ ) and 34 percent as coherent sequence students ( $n=9,570$ ). More CTE students took elective courses than a coherent sequence of courses in grade nine (94% vs 6%) and grade 10 (81% vs 19%). However, more students were identified as coherent sequence students than elective students in grade 11 (59% vs 41%) and grade 12 (58% vs 42%).

**Table 5: 2019-20 CTE Student Enrollment by Status**

Grade	CTE Elective		CTE Coherent Sequence		Total N
	n	%	n	%	
<b>Middle School</b>					
Grade 6	1,208	100.0			1,208
Grade 7	3,799	100.0			3,799
Grade 8	4,695	100.0			4,695
<b>High School</b>					
Grade 9	7,266	94.2	446	5.8	7,712
Grade 10	6,013	80.9	1,419	19.1	7,432
Grade 11	2,678	41.1	3,839	58.9	6,517
Grade 12	2,846	42.4	3,866	57.6	6,712
<b>Overall</b>					
Overall Middle School	9,702	100.0			9,702
Overall High School	18,803	66.3	9,570	33.7	28,373
Overall	28,505	74.9	9,570	25.1	38,075

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: A grey box indicates that no students were enrolled in that grade level. Moreover, students cannot be classified as coherent sequence students until grade nine.

### ***Enrollment by Career Cluster***

In 2019-20, 38,075 middle and high school students enrolled in one to five career clusters (mean=1.4). Career clusters with the highest enrollment were Business Management & Administration (18%),<sup>14</sup> followed by Information Technology (16%), and Science, Technology, Engineering & Mathematics (15%, Table 6). Student enrollment data by school level and status can be found in Appendix C, Table 1.

<sup>14</sup> Career Technical Education Courses were not noted as it is not an actual career cluster but catch all category for courses that can serve more than one cluster.

**Table 6: 2019-20 CTE Student Enrollment by Career Cluster**

<b>Career Cluster</b>	<b>CTE Elective <i>n</i></b>	<b>CTE Coherent Sequence <i>n</i></b>	<b>Total CTE Enrollment <i>N</i></b>	<b>Enrollment by Cluster %</b>
Business Management & Administration	4,716	2,153	6,869	18.0
Career Technical Education Courses*	5,941	901	6,842	18.0
Information Technology	4,288	1,724	6,012	15.8
Science, Technology, Engineering & Mathematics	4,595	1,249	5,844	15.3
Arts, A/V Technology & Communications	4,015	1,125	5,140	13.5
Health Science	1,984	1,461	3,445	9.0
Finance	1,825	1,573	3,398	8.9
Human Services	2,065	782	2,847	7.5
Law, Public Safety, Corrections & Security	1,346	876	2,222	5.8
Hospitality & Tourism	1,330	763	2,093	5.5
Architecture & Construction	1,418	493	1,911	5.0
Marketing	1,064	712	1,776	4.7
Transportation, Distribution & Logistics	631	354	985	2.6
Education & Training	384	355	739	1.9
Agriculture, Food & Natural Resources	379	173	552	1.4
Manufacturing	206	187	393	1.0
Government & Public Administration	32	360	392	1.0

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: Total number of CTE students enrolled in 2019-20 was 38,075. Column percent does not sum to 100percent as student could enroll in more than one career cluster. \*Career Technical Education Courses is not a CTE cluster but serves as a holder for CTE courses that can serve more than one cluster.

Districtwide, CTE students took the highest percentage of courses within the Business Management & Administration cluster (14%),<sup>14</sup> followed by the Science, Technology, Engineering & Mathematics cluster (12%), and the Information Technology (12%, Table 7). The highest number of course enrollments for elective and coherent sequence high school CTE students occurred in the Business Management & Administration cluster (16% vs 15%, respectively). Additional CTE course enrollment data by school level and status can be found in Appendix C, Table 2.

**Table 7: 2019-20 CTE Course Enrollment by Career Cluster and CTE Status**

<b>Career Cluster</b>	<b>CTE Elective <i>n</i></b>	<b>CTE Coherent Sequence <i>n</i></b>	<b>Total CTE Enrollment <i>N</i></b>	<b>Enrollment by Cluster %</b>
Business Management & Administration	5,270	3,041	8,311	13.7
Career Technical Education Courses*	6,878	971	7,849	12.9
Science, Technology, Engineering & Mathematics	5,432	1,700	7,132	11.7
Information Technology	4,618	2,445	7,063	11.6
Arts, A/V Technology & Communications	4,159	1,633	5,792	9.5
Health Science	2,019	2,462	4,481	7.4
Finance	1,920	1,990	3,910	6.4
Human Services	2,267	990	3,257	5.4
Law, Public Safety, Corrections & Security	1,449	1,203	2,652	4.4
Hospitality & Tourism	1,344	894	2,238	3.7
Architecture & Construction	1,525	676	2,201	3.6
Marketing	1,246	862	2,108	3.5
Transportation, Distribution & Logistics	635	379	1,014	1.7
Education & Training	421	429	850	1.4
Agriculture, Food & Natural Resources	417	255	672	1.1
Government & Public Administration	32	622	654	1.1
Manufacturing	226	298	524	0.9
<b>Overall</b>	<b>39,858</b>	<b>20,850</b>	<b>60,708</b>	<b>100.0</b>

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: Student could enroll in more than one career cluster. \*Career Technical Education Courses is not a CTE cluster but serves as a holder for CTE courses that can serve more than one cluster.

### **NAF Academies Enrollment**

Overall 9,229 students enrolled in 49 NAF Academies in 2019-20 (Table 8). Analyses indicated that five percent of NAF participants ( $n=497$ ) enrolled in more than one academy (max academies enrolled=3). The academies with the highest enrollment numbers for 2019-20 were Academy of Information Technologies ( $n=2,777$ ), followed by Academy of Finance ( $n=2,690$ ), and Academy of Engineering ( $n=1,823$ ).

The top three schools with NAF enrollment in 2019-20 were Skyline ( $n=1,240$ ), Wilson ( $n=854$ ), and Spruce ( $n=800$ ). Wilson had the largest enrollment of any Academy of Engineering ( $n=327$ ) and Academy of Finance ( $n=425$ ). The school with the largest enrollment of any Academy of Health Sciences was Adams ( $n=220$ ), of any Academy of Hospitality and Tourism was Jefferson ( $n=252$ ), and of any Academy of Information Technologies was Skyline ( $n=438$ ).

**Table 8: 2019-20 Dallas ISD NAF Student Enrollment**

NAF Academy	AOE	AOF	AOHS	AOHT	AOIT	Overall	
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>N*</i>	$\bar{x}$
Skyline	197	236	214	195	438	1,240	1.0
Wilson	327	425		182		854	1.1
Spruce	142	318			378	800	1.0
North Dallas	115	281			279	608	1.1
Jefferson	138	210		252		569	1.1
Conrad	180	141	106	102	74	554	1.1
Adams	219		220		105	519	1.0
Sunset		274	208			478	1.0
White	116		186		201	461	1.1
Wilmer-Hutchins		181		146	180	435	1.2
Samuell					428	428	1.0
South Oak Cliff	72				337	398	1.0
Adamson		225	184			392	1.0
Kimball	119			218		335	1.0
Carter		165			136	291	1.0
Hillcrest	173	0	81			247	1.0
IDEA		234			23	243	1.1
Madison					198	198	1.0
Roosevelt			154			154	1.0
Lincoln	25					25	1.0
<b>Overall</b>	<b>1,823</b>	<b>2,690</b>	<b>1,353</b>	<b>1,095</b>	<b>2,777</b>	<b>9,229</b>	<b>1.1</b>

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: Student could enroll in more than one career cluster. \*Unique student enrollment. A grey box indicates that no career cluster was offered. AOE=Academy of Engineering, AOF=Academy of Finance, AOHS=Academy of Health Sciences, AOHT=Academy of Hospitality and Tourism, AOIT=Academy of Information Technologies. IDEA=Innovation, Design and Entrepreneurship Academy

### Career Institutes Enrollment

In 2019-20, 760 students enrolled in the Principles of Construction class offered by the Career Institutes at feeder campuses (Table 9). Enrollment ranged from 23 students (Molina in CI South) to 212 students (North Dallas in CI North). As a foundational course for construction-related pathways (see Appendix B), the course was geared towards grade nine students. However, counselors enrolled a total of 210 students in grades 10 through 12, meaning 28 percent of students were in a grade level higher than grade 9.

**Table 9: 2019-20 Career Institute Enrollment by Feeder High Schools**

Career Institute North <i>N</i> =403		Career Institute South <i>N</i> =357	
Home Campus	<i>N</i>	Home Campus	<i>n</i>
Conrad	38	Adamson	43
Hillcrest	49	Carter	44
Jefferson	57	Kimball	51
North Dallas	212	Molina	23
White	47	Roosevelt	47
		South Oak Cliff	70
		Sunset	79

Source: May demographic file, 5/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

## Student Characteristics

The ethnic composition of district CTE students was similar to middle and high school students not enrolled in the CTE program; 73 percent of CTE students were Hispanic and 21 percent were African American (71% and 20%, respectively, for non-CTE students). Overall, there were more male students (52%) enrolled in CTE programs than female students (49%), unlike non-CTE students (50% male and 50% female). A smaller percentage of CTE students received special education services (8%) compared to non-CTE students (12%). Thirty-nine percent of CTE students were English learners compared to 44 percent of non-CTE students and 17 percent of CTE students were or Talented and Gifted (TAG) eligible compared to 19 percent of non-CTE students. In contrast, more CTE students (77%) were at risk of dropping out than non-CTE students (74%). There were slightly more economically disadvantaged CTE students (84%) than non-CTE students (83%).

**Table 10: 2019-20 Student Characteristics**

	MS CTE (n=9,702)		HS CTE (n=28,373)		District All CTE (N=38,075)		District Non-CTE (N= 33,985)	
	N	%	N	%	N	%	N	%
<b>Grade</b>								
Grade 6	1,208	12.5			1,208	3.2	9,816	28.9
Grade 7	3,799	39.2			3,799	10.0	7,135	21.0
Grade 8	4,695	48.4			4,695	12.3	5,629	16.6
Grade 9			7,712	27.2	7,712	20.3	4,475	13.2
Grade 10			7,432	26.2	7,432	19.5	2,857	8.4
Grade 11			6,517	23.0	6,517	17.1	2,022	5.9
Grade 12			6,712	23.7	6,712	17.6	2,051	6.0
<b>Gender</b>								
Female	4,722	48.7	13,747	48.5	18,469	48.5	17,126	50.4
Male	4,980	51.3	14,626	51.5	19,606	51.5	16,859	49.6
<b>Race / Ethnicity</b>								
Asian	64	0.7	228	0.8	292	0.8	399	1.2
African American	1,977	20.4	5,950	21.0	7,927	20.8	6,948	20.4
Hispanic	7,079	73.0	20,787	73.3	27,866	73.2	24,097	70.9
White	433	4.5	906	3.2	1,339	3.5	1,919	5.6
Other	149	1.5	502	1.8	651	1.7	622	1.8
<b>Student Characteristics</b>								
At Risk Status	7,588	78.2	21,728	76.6	29,316	77.0	25,154	74.0
Eco Dis Status	8,478	87.4	23,411	82.5	31,889	83.8	28,200	83.0
English Learner	4,528	46.7	10,115	35.7	14,643	38.5	14,817	43.6
Special Education	840	8.7	2,132	7.5	2,972	7.8	4,000	11.8
TAG Eligible	1,914	19.7	4,561	16.1	6,475	17.0	6,282	18.5

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: A grey box indicates that no students were enrolled in that grade level. MS=middle school, HS=high school, Eco Dis=economically disadvantaged. Column percentages may not sum to 100 due to rounding.

High school students were able to participate in traditional CTE course offerings and enroll in specialized CTE programs such as the Career Institutes, NAF Academies, and ECHSs. Of the 28,373 high

school students who enrolled in CTE courses in 2019-20, 14,041 students enrolled in one or more of these specialized high school CTE programs. Although 96 percent of the 14,041 students enrolled in only one of these programs, four percent enrolled in two or three programs. For example, nine students (0.1%) enrolled in courses through the Career Institutes, the NAF Academies, and the ECHSs (Table 11).

**Table 11: 2019-20 Students Enrolled in One or More CTE High School Program**

<b>Enrolled in</b>	<b>N</b>	<b>%</b>
One Program	13,478	96.0
Two Programs	554	3.9
Three Programs	9	0.1
<b>Overall</b>	<b>14,041</b>	<b>100.0</b>

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: CTE high school programs analyzed: Career Institutes, NAF Academies, and Early College High Schools.

A comparison of these specialized CTE high school programs found that more male students than female students enrolled in these programs, except for the ECHS program, where female students were in the majority (55%, Table 12). Among all high school CTE programs, Career Institutes had the highest percentage of at-risk students (89%) followed by NAF academies (81%), and the ECHS Program (70%). Moreover, CTE students enrolled in Career Institutes had the highest percentage of economically disadvantaged students (90%) and the highest percentage of English learners (54%), while having the lowest percentage of TAG-eligible students (6%). CTE students in the ECHS program had the lowest percentage of special education students (2%).

**Table 12: 2019-20 Student Characteristics by CTE Program**

Variable	Career Institutes (n=760)		NAF Academies (n=9,229)		ECHS Program (n=4,624)	
	n	%	N	%	N	%
<b>Grade Level</b>						
Grade 9	550	72.4	2,799	30.3	1,037	22.4
Grade 10	128	16.8	2,473	26.8	1,456	31.5
Grade 11	36	4.7	1,830	19.8	1,388	30.0
Grade 12	46	6.1	2,127	23.0	743	16.1
<b>Gender</b>						
Female	155	20.4	4,324	46.9	2,559	55.3
Male	605	79.6	4,905	53.1	2,065	44.7
<b>Race / Ethnicity</b>						
Asian	*	*	62	0.7	24	0.5
African American	166	21.8	2,164	23.4	963	20.8
Hispanic	575	75.7	6,496	70.4	3,487	75.4
White	8	1.1	328	3.6	61	1.3
Other	10	1.3	179	1.9	89	1.9
<b>Student Characteristics</b>						
At Risk Status	675	88.8	7,463	80.9	3,254	70.4
Eco Dis Status	680	89.5	7,698	83.4	3,979	86.1
English Learner	411	54.1	3,758	40.7	1,520	32.9
Special Education	102	13.4	754	8.2	105	2.3
TAG Eligible	49	6.4	998	10.8	1,058	22.9

Source: May demographic file, 5/29/20. CTE course file, 10/8/20. Dallas ISD course file, 7/30/20.

Note: Eco Dis=economically disadvantaged. \*Data was masked as five or fewer students belonged to these categories. Column percentages may not sum to 100 due to rounding.

## What were the completion rates for CTE courses?

### Methodology

CTE course enrollment and completion rates were calculated by merging the May CTE program enrollment data and district course file dated July 30, 2020. Courses were defined as complete if a student earned credit for the course. Frequency analyses were conducted to report the completion rates for all CTE courses by career cluster and CTE status, and for dual-credit course enrollment by campus and CTE status.

### Results

In 2019-20, CTE middle and high school students passed 93 percent of all CTE courses (Table 13). Passing rate by career clusters ranged from 91 percent (Business Management & Administration) to 99 percent (Government & Public Administration). Coherent sequence students had a higher passing rate than CTE elective students for all CTE students (95% vs 93%) and for CTE high school students only (95% vs 92%). Additional CTE course completion data by school level and status can be found in Appendix D.

**Table 13: 2019-20 CTE Course Enrollment and Completion Rates by Career Cluster and CTE Status**

Career Cluster	CTE Elective			CTE Coherent Sequence			Total CTE Enrollment		
	Enrolled	Passed		Enrolled	Passed		Enrolled	Passed	
	<i>N</i>	<i>n</i>	%	<i>N</i>	<i>n</i>	%	<i>N</i>	<i>n</i>	%
Government & Public Administration	32	31	96.9	622	619	99.5	654	650	99.4
Health Science	2,019	1,942	96.2	2,462	2,405	97.7	4,481	4,347	97.0
Transportation, Distribution & Logistics	635	604	95.1	379	373	98.4	1,014	977	96.4
Hospitality & Tourism	1,344	1,278	95.1	894	858	96.0	2,238	2,136	95.4
Manufacturing	226	220	97.3	298	278	93.3	524	498	95.0
Architecture & Construction	1,525	1,447	94.9	676	641	94.8	2,201	2,088	94.9
Education & Training	421	398	94.5	429	403	93.9	850	801	94.2
Science, Technology, Engineering & Mathematics	5,432	5,125	94.3	1,700	1,581	93.0	7,132	6,706	94.0
Arts, A/V Technology & Communications	4,159	3,874	93.1	1,633	1,550	94.9	5,792	5,424	93.6
Career Technical Education Courses*	6,878	6,397	93.0	971	928	95.6	7,849	7,325	93.3
Marketing	1,246	1,138	91.3	862	814	94.4	2,108	1,952	92.6
Agriculture, Food & Natural Resources	417	383	91.8	255	239	93.7	672	622	92.6
Law, Public Safety, Corrections & Security	1,449	1,317	90.9	1,203	1,137	94.5	2,652	2,454	92.5
Finance	1,920	1,736	90.4	1,990	1,867	93.8	3,910	3,603	92.1
Human Services	2,267	2,056	90.7	990	928	93.7	3,257	2,984	91.6
Information Technology	4,618	4,164	90.2	2,445	2,290	93.7	7,063	6,454	91.4
Business Management & Administration	5,270	4,769	90.5	3,041	2,821	92.8	8,311	7,590	91.3
<b>Overall</b>	<b>39,858</b>	<b>36,879</b>	<b>92.5</b>	<b>20,850</b>	<b>19,732</b>	<b>94.6</b>	<b>60,708</b>	<b>56,611</b>	<b>93.3</b>

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: Student could enroll in more than one career cluster. \*Career Technical Education Courses is not a CTE cluster but serves as a holder for CTE courses that can serve more than one cluster.

In 2019-20, 4,665 Dallas ISD students participated in 10,237 CTE dual credit courses. Forty-three percent of students who took dual credit courses were coherent sequence students ( $n = 2,008$ ).

The number of dual credit course taken by campus varied from 27 dual credit courses (North Lake) to 1,047 dual credit courses (Conrad, Table 14). Overall, 90 percent ( $n = 9,203$ ) of dual credit courses were completed. Dual credit completion rates ranged from 69 percent (Adamson) to 100 percent (at three campuses). CTE coherent sequence students completed dual credit course at a higher rate than CTE elective students (92% vs 87%). Although, CTE dual credit course enrollment has slightly decreased from 2018-19 school year where 4,980 CTE students enrolled in 10,475 CTE dual credit courses (Grimberg, 2019), completion rates have increased from 88 percent (2018-19) to 90 percent (2019-20).

**Table 14: 2019-20 CTE Dual Credit Course Enrollment and Completion Rates by Campus and CTE Status**

Campus	CTE Elective		Coherent Sequence		Overall	
	<i>n</i>	%	<i>n</i>	%	<i>N</i>	%
Adams, B	118	88.1	113	77.9	231	83.1
Adamson	246	57.3	173	85.0	419	68.7
Carter	273	82.1	186	77.4	459	80.2
Conrad	372	93.3	675	97.6	1,047	96.1
Garza	220	95.5	7	100.0	227	95.6
Gilliam	150	94.0			150	94.0
Hillcrest	51	88.2	326	86.5	377	86.7
IDEA	33	78.8	33	90.9	66	84.8
Jefferson	244	78.3	545	86.2	789	83.8
Kimball	93	95.7	169	98.2	262	97.3
Lassiter	167	94.0			167	94.0
Lincoln	67	64.2	18	94.4	85	70.6
Madison	73	87.7	294	96.9	367	95.1
Molina	211	91.5	129	91.5	340	91.5
North Dallas	134	88.8	88	95.5	222	91.4
North Lake EC	27	100.0			27	100.0
Pinkston	123	84.6	587	92.5	710	91.1
Roosevelt	121	66.1	235	93.6	356	84.3
Samuell	186	92.5			186	92.5
Seagoville HS	224	94.2	540	92.6	764	93.1
Skyline	15	80.0	57	94.7	72	91.7
South Oak Cliff	334	76.3	321	78.8	655	77.6
Spruce	313	94.2	143	92.3	456	93.6
Sunset	106	90.6	6	100.0	112	91.1
Townview Business	*	*	172	98.8	176	98.9
Townview Health	102	98.0	500	98.4	602	98.3
Townview TAG	32	100.0	*	*	35	100.0
Washington	53	100.0	8	100.0	61	100.0
White	224	96.0	289	98.3	513	97.3
Wilmer-Hutchins HS	118	96.6	186	95.2	304	95.7
Overall	4,434	87.1	5,803	92.0	10,237	89.9

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: A grey box indicates that no students were enrolled. \*Data was masked as five or fewer students belonged to these categories.

## What were the academic outcomes of CTE students on STAAR EOC exams?

### Methodology

Due to the novel coronavirus COVID-19, the Governor of Texas used his statutory authority under Texas Government Code, §418.016 to suspend annual academic assessment requirements for the remainder of the 2019-20 school year, thereby cancelling remaining planned administrations of STAAR. Therefore, no STAAR EOC results are being reported in the 2019-20 report. For 2018-19 STAAR EOC results please review Figures 1 and 2 and Table 14 on pages 19-21 of the 2018-19 Evaluation of Career and Technical Education report available at <https://www.dallasisd.org/Page/62222>.

## How many credentials were earned by CTE high school students?

### Methodology

CTE students had the opportunity to earn industry-based certifications and educational certificates in their career pathways. CTE department staff provided on September 9, 2020 a comprehensive list of all attempted and earned industry-based certifications while the Postsecondary Success department staff provided a cumulative record of educational Level I or Level II certificates attained by grade 11 and 12 students on October 7, 2020. Industry-based certifications were reported to the CTE department by district teachers while Level I and Level II certificates were reported by the Dallas College. The number of certifications earned were compared overall and by school.

### Results

Overall, 2,971 Dallas ISD CTE students earned 4,206 credentials in 2019-20 (Table 15), including 3,331 industry-based certifications and 875 educational certificates. The campus with the highest number of CTE students who completed one or more credentials was Skyline ( $n=679$ ) followed by Seagoville ( $n=189$ ). Skyline and Seagoville also had the highest number of credentials earned (1,013 vs 274, respectively).

Certifications identified by TEA for the A to F accountability system accounted for 23 percent ( $n=770$ ) of all industry certifications earned. Although the total number of industry-based certifications decreased from 4,652 in 2018-19 (Grimberg, 2019) to 3,331 in 2019-20, the number of A-F certifications earned increased during the same time from 214 to 770. The Director of the CTE Program noted that these changes were primarily due to the programs' shift to emphasize the completion of A-F certifications and the lack of appropriate computer hardware (i.e. most industry certifications cannot be taken on a Chromebook, the computer hardware provided by the District for at-home learning due to COVID-19) which reduced the number of certification tests students could take.

**Table 15: 2019-20 CTE Credentials Earned by Campus and CTE Status**

Campus	Industry-Based Certification						Educational Certificates	All Credentials
	All Certifications			Certifications in A-F				
	N	n	%	N	n	%		
Adams	142	125	88.0	17	10	58.8		125
Adamson	69	63	91.3	1	1	100.0		63
Carter	23	18	78.3				21	39
CityLab	1	1	100.0					1
Conrad	231	187	81.0	98	63	64.3	47	234
Hillcrest	65	65	100.0	1	1	100.0		65
IDEA	54	36	66.7	20	2	10.0		36
Jefferson	111	105	94.6	22	22	100.0	34	139
Kimball	261	234	89.7	75	53	70.7	1	235
Lassiter	2	2	100.0					2
Lincoln	55	50	90.9	9	9	100.0		50
Madison	20	20	100.0	5	5	100.0	123	143
Molina	75	75	100.0	25	25	100.0		75
North Dallas	103	65	63.1	52	14	26.9	18	83
North Lake	1	1	100.0	1	1	100.0		1
Pinkston	32	30	93.8	17	17	100.0	194	224
Rangel	161	134	83.2	68	45	66.2		134
Roosevelt	30	29	96.7	2	2	100.0	114	143
Samuell	34	34	100.0					34
Seagoville	135	134	99.3	63	63	100.0	140	274
Skyline	1,228	1,011	82.3	318	179	56.3	2	1,013
South Oak Cliff	100	82	82.0	21	15	71.4	84	166
Spruce	58	54	93.1				64	118
Sunset	250	212	84.8	57	32	56.1		212
Townview Business	122	99	81.1	121	99	81.8	33	132
Townview Education	159	157	98.7	40	40	100.0		157
Townview Health	122	115	94.3	36	31	86.1		115
Townview SEM	1	1	100.0					1
White	38	38	100.0	1	1	100.0		38
Wilmer-Hutchins	112	89	79.5	62	40	64.5		89
Wilson	65	65	100.0					65
<b>Overall</b>								
CTE Elective	1,675	1,390	83.0	621	419	67.5	84	1,474
CTE Coherent Seq.	2,185	1,941	88.8	511	351	68.7	791	2,732
Overall	3,860	3,331	86.3	1,132	770	68.0	875	4,206

Source: May demographic file, 05/29/20. Industry-based certification data, 09/09/20. Educational Certificate data, 10/7/20.

Note: N=Courses attempted, n=courses passed. SEM= Science and Engineering. Grey area=no credentials earned.

## How many associate degrees were awarded to coherent sequence CTE students?

### Methodology

ECHS students had the opportunity to earn an associate degree by the time of their high school graduation. Associate degree plan data for graduating grade 12 ECHS students were provided by the Postsecondary Success Department on October 7, 2020 and merged with the end-of-year demographic file dated May 29, 2020, to identify graduates who were CTE coherent sequence student in 2019-20. Frequency analyses were conducted to report the percentage of these graduates who earned an associate degree by campus, and by associate degree plan. While attainment of an associate degree is not a stated

goal of the CTE program, data are presented to provide a comprehensive analysis of CTE students' achievements.

## Results

Of the 1,163 coherent sequence CTE students who graduated in 2019-20, 323 students (28%) earned an associate degree (Table 16). Campuses with the highest number of graduates who earned an associate degree were Pinkston (20%), Conrad (19%), and Seagoville (16%). The number of CTE students that earned an associate degree increased by 39 percent from 232 in 2018-19 (Grimberg, 2019) to 323 in 2019-20.

**Table 16: 2019-20 Number of Associate Degrees Awarded to CTE Coherent Sequence Students by Campus**

Campus	2019-20		
	Graduated	Awarded	
	N	n	%
Carter	90	20	22.2
Conrad	238	61	25.6
Garza	4	4	100.0
Jefferson	131	16	12.2
Madison	77	26	33.8
Pinkston	109	63	57.8
Roosevelt	65	36	55.4
Seagoville	151	53	35.1
South Oak Cliff	110	29	26.4
Spruce	188	15	8.0
Overall	1,163	323	27.8

Source: May demographic file, 05/29/20. Graduation file, 10/14/20. Associate Degree data, 10/7/20.

In 2019-20, more Associate of Applied Science degrees were awarded to coherent sequence CTE students ( $n=309$ , 96%) than Associate of Arts ( $n=8$ , 3%) or Associate of Science ( $n=6$ , 2%) degrees (Table 17). In 2018-19, only nine percent ( $n=20$ ) of CTE associate degree recipients were awarded an Associate of Applied Science. The increase in the number and percentage of students that graduated with an Associate of Applied Science from 2018-19 to 2019-20 can be associated with the graduation of the first cohort of P-TECH students ( $n=293$ ).

**Table 17: 2019-20 Associate Degrees Awarded to CTE Coherent Sequence Students by Degree Plan**

Degree Plan	Degree	N	%
Associate of Science	AS	6	1.9
Associate of Arts	AA	8	2.5
Associate of Applied Science	AAS	309	95.7
All Degrees		323	100.1

Source: Associate Degree data, 10/7/20.

Note: Percentages do not sum to 100 due to rounding.

## What were the college enrollment rates for CTE students?

### Methodology

To determine the percentage of 2018-19 Dallas ISD graduates who enrolled in college within one year of graduating high school, the 2018-19 CTE student identification file dated February 25, 2019 was merged with the Dallas ISD graduation file dated September 19, 2019 and the 2019-20 National Student Clearinghouse (NSC) college enrollment file dated May 1, 2020. College enrollment is not a stated goal of the CTE program. However, data are presented to provide a comprehensive analysis of CTE students' achievements.

### Results

Overall, 7,718 grade 12 students graduated from a Dallas ISD high school in 2018-19 (including the summer semester). Of these, 6,151 students (80%) were CTE students and 1,567 students (20%) were non-CTE students (Table 18). According to the 2019-20 NSC data file, 52 percent of CTE graduates and 57 percent of non-CTE graduates enrolled in college within one year of graduation. Fifty-six percent (n=1,799) of CTE students who enrolled in college joined a two-year college, and 44 percent who enrolled went to a four-year university (n=1,402). In contrast, 68 percent (n=612) of non-CTE students enrolled in a four-year university versus a two-year or less college (n=283, 32%). Although there was no difference in the college enrollment percentage rates between CTE elective and coherent sequence students (52% each), a slightly higher percentage of elective student enrolled in a four-year university than coherent sequence students (47% vs 43%).

**Table 18: 2019-20 College Enrollment Rates for 2018-19 Dallas ISD Graduates**

Enrollment Status	CTE Coherent Sequence Graduates			CTE Elective Graduates			Total CTE Graduates			Non-CTE Graduates		
	Grad N	Enrolled n	%	Grad N	Enrolled n	%	Grad N	Enrolled n	%	Grad N	Enrolled n	%
Overall	4,474	2,331	52.1	1,677	870	51.9	6,151	3,201	52.0	1,567	895	57.1
Two-Year*		1,341	57.5		458	52.6		1,799	56.2		283	31.6
Four-Year*		990	42.5		412	47.4		1,402	43.8		612	68.4

Source: Dallas ISD graduation file, 09/25/19. Demographic file, 05/20/19 (2018-19). NSC file, 05/01/20.

Note: Grad= Graduated. \*Enrolled in two year or less or four-year colleges. \*Students could not be located in the NSC file.

## How did the Dallas ISD perform on CTE related accountability measures?

### Methodology

Texas House Bill 22 (HB22) required the TEA to evaluate the academic performance of school districts with an accountability rating of A through F based on three domains: 1) student achievement, 2) school progress, and 3) closing the gaps. College, Career, and Military Readiness Indicators (CCMR) indicators account for 40 percent of the weighted performance of high school campuses, K-12 campuses, and school districts in the student achievement domain. CCMR indicators include, among others, dual-

credit course completion, associate degrees earned, and industry-based certifications earned. Ratings were released for the first time in August 2018 for the 2017-18 school year. The 2020 CCMR ratings were released in November 2020 reflecting data from the 2018-19 school year. Although CCMR data was reported on TEA reports (Texas Academic Performance Reports (TAPR), etc.) it will not be used in the calculations of accountability ratings for the 2019-2020 school year.

## Results

Over the past three years, Dallas ISD students have continuously improved on eight of the 10 presented CCMR measures (Table 19). Overall, the percentage of graduates who were College, Career or Military Ready increased by 15 percentage points from 46 percent in 2016-17 (2018 report) to 61 percent in 2018-19 (2020 report). On CTE related measures for the same timeframe, the percentage of graduates who earned an industry-based certification increased by one percentage point (1% vs 2%) and the percentage of graduates who completed CTE coherent sequence coursework aligned with industry-based certifications increased by nine percentage points (6% vs 15%). The percentage of graduates who completed Level I or Level II certificates increased by one percentage point from 2017-18 to 2018-19 (0% vs 1%). However, a lower percentage of graduates completed Individual Education Program and Workforce Readiness (3% vs 2%), and a lower percentage of graduates enrolled in the armed forces (1% vs 0%).

**Table 19: 2018 to 2020 Dallas ISD College, Career, and Military Readiness Indicators**

Indicator	2018		2019		2020	
	N/Credit	%	N/Credit	%	N/Credit	%
Graduated College; College, Career or Military Ready	7,685	46	8,085	57	8,293	61
Met TSI criteria in both ELA/Reading and Mathematics	1,962	26	2,193	27	2,292	28
Met criterion score on an AP/IB Exam in any subject	1,627	21	1,762	22	1,037	23
Earned dual credit for at least 3 hours in ELA or Mathematics or 9 hours in any subject*	753	10	893	11	1,145	14
Earned an industry-based certification from approved list	103	1	66	1	137	2
Earned a level I or level II certificate in any workforce education area			24	0	76	1
Earned an associate degree while in high school	177	2	135	2	245	3
Graduated with Completed Individual Education Program (IEP) and Workforce Readiness	206	3	201	2	194	2
Enlisted in the Armed Forces	65	1	14	0	28	0
CTE Coherent Sequence Coursework Aligned with Industry-Based Certifications*	452.0	6	1,144.5	14	1,247.0	15

Source: 2020 Texas district/school report cards and accountability data accessed on 11/20/20 at tea.texas.gov.

Note: Grey box indicates that data point was not available in 2018 TEA accountability report. \*2019 was the last year for this indicator to be counted towards CCMR.

Overall, a lower percentage of Dallas ISD graduates were college, career, or military ready (61%) than graduates of comparable districts ( $\geq 63\%$ ) in Texas (Table 20). Dallas ISD had the same percentage of graduates who earned an approved industry-based certification as El Paso ISD (2%), but lower than graduates in Fort Worth ISD (14%), San Antonio ISD (12%), Houston ISD (9%), and Austin ISD (8%). The percentage of Dallas ISD graduates who earned a Level I or Level II certificate was the same as San

Antonio ISD (1%), but higher than graduates in Houston ISD (0%), Austin ISD (0%), El Paso ISD (0%), and Fort Worth ISD (0%). A lower percentage of Dallas ISD graduates enrolled in the Armed Forces (0%) than El Paso ISD (5%), Fort Worth ISD (5%), Houston ISD (5%), San Antonio ISD (3%), and Austin ISD (2%) graduates. A higher percentage of Dallas ISD graduates, who did not meet any other criteria, completed CTE coherent sequence coursework aligned with industry-based certifications (15%) than graduates in San Antonio ISD (11%), Fort Worth ISD (9%), Houston ISD (8%), Austin ISD (3%), and El Paso ISD (2%).

**Table 20: 2020 Dallas ISD, Austin ISD, El Paso ISD, Fort Worth ISD, Houston ISD, San Antonio ISD CTE College, Career, and Military Readiness Indicators**

Indicator	Dallas ISD		Austin ISD		El Paso ISD		Fort Worth ISD		Houston ISD		San Antonio ISD	
	N	%	N	%	N	%	N	%	N	%	N	%
Graduated College; Career or Military Ready	8,293	61	4,463	86	4,192	74	4,455	63	11,261	71	2,647	73
Met TSI criteria in both ELA/Reading and Mathematics	2,292	28	3,272	73	2,417	58	1,403	31	4,893	43	1,103	42
Met TSI criteria in ELA/Reading	3,994	48	3,673	82	3,148	75	2,289	51	6,818	61	1,601	60
Met TSI criteria in Mathematics	2,467	30	3,535	79	2,703	64	1,612	36	5,805	52	1,405	53
Met criterion score on an AP/IB Exam in any subject	1,937	23	1,473	33	953	23	885	20	3,236	29	364	14
Earned dual credit for at least 3 hours in ELA or Mathematics or 9 hours in any subject	1,145	14	1,028	23	1,070	26	689	15	1,789	16	602	23
Earned an industry-based certification from approved list	137	2	369	8	81	2	613	14	990	9	316	12
Earned a level I or level II certificate in any workforce education area	76	1	16	0	0	0	0	0	47	0	20	1
Earned an associate degree while in high school	245	3	45	1	156	4	213	5	424	4	191	7
Graduated with Completed Individual Education Program (IEP) and Workforce Readiness	194	2	120	3	31	1	69	2	114	1	69	3
Identified as receiving special education services and earned an advanced degree plan	260	3	182	4	125	3	120	3	321	3	134	5
Enlisted in the Armed Forces	28	0	106	2	216	5	220	5	526	5	85	3
CTE coherent sequence aligned with an industry-based certification and did not meet any other criteria*	1,247	15	118	3	100	2	389	9	851	8	296	11

Source: 2020 Texas district/school report cards and accountability data accessed on 11/20/20 at tea.texas.gov.

Note: \* 2019 was the last year for this indicator to be counted towards CCMR.

## What were teacher perceptions of the CTE program?

### Methodology

The CTE department conducts an annual survey to collect programmatic feedback from teachers to assess program strengths and identify areas of improvement. Insights gained from the survey are meant to help with future program development and program evaluation. Survey items consist of a mix of closed- and open-ended questions regarding teacher qualifications, program alignment, facilities, CTE program strength, and CTE program needs. The 2019-20 survey was administered by CTE staff from May 11 through May 29, 2020, using Google Forms, an online survey-development tool. Realtime survey updates were accessible to the evaluator through Google Sheets. The evaluator used frequency analyses to calculate responses to closed-ended survey questions, and content analyses for responses to open-ended questions, grouping feedback into general themes.

### Results

Two-hundred and one CTE teachers (40%<sup>15</sup>) responded to the 2019-20 information request from the CTE department. Eighty percent of responding teachers ( $n=161$ ) indicated that they taught one career cluster while the remaining 20 percent of respondents ( $n=40$ ) indicated that they taught between two and six career clusters, with an average of 1.3 career clusters. Teachers further reported that they taught on average 118 students in 2019-20. Fifty-nine percent ( $n=118$ ) of teacher's indicated that students were provided opportunities to earn industry certifications. Regarding the program's impact on student career interests and post-secondary plans, teachers could select more than one response option. Ranked by combined percentages of agreed and strongly agreed response options, the following four areas stood out: the CTE program allows students to discover career opportunities they otherwise may not have considered (96%), the CTE program provides students with basic training to obtain a job (78%), the CTE program motivates students to pursue post-secondary education (75%), and the CTE program motivates students to complete high school who otherwise are at risk of dropping out (68%). Overall, 96 percent of CTE teachers indicated that learning activities were aligned with current practices in business, industry, and/or technology.

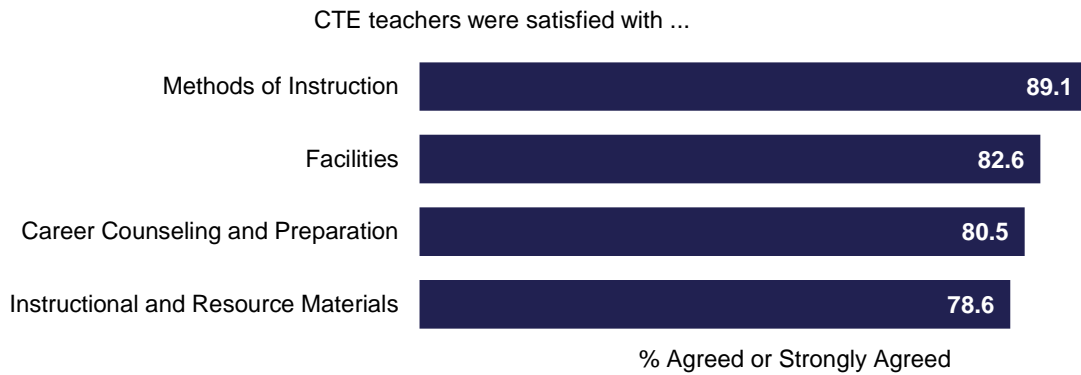
CTE teachers also provided feedback on the instructional and resource materials, methods of instructions, career counseling and preparation, and workplace cleanliness. Each section of the survey contained several questions about each category. Feedback by category is presented as an overall average (combined) in Figure 4. Individual questions by category are presented in Appendix F. Eighty-nine percent of respondents agreed or strongly agreed that instruction methods were appropriate to provide quality CTE education to Dallas ISD students. Eighty-three percent of respondents agreed or strongly agreed that facilities were well maintained and provided up-to-date technologies to ensure effective student learning. Eighty-one percent of respondents agreed or strongly agreed that the CTE program provided students

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<sup>15</sup> Course file listed 504 CTE teachers. However, the course file did not list a teacher for 290 courses.

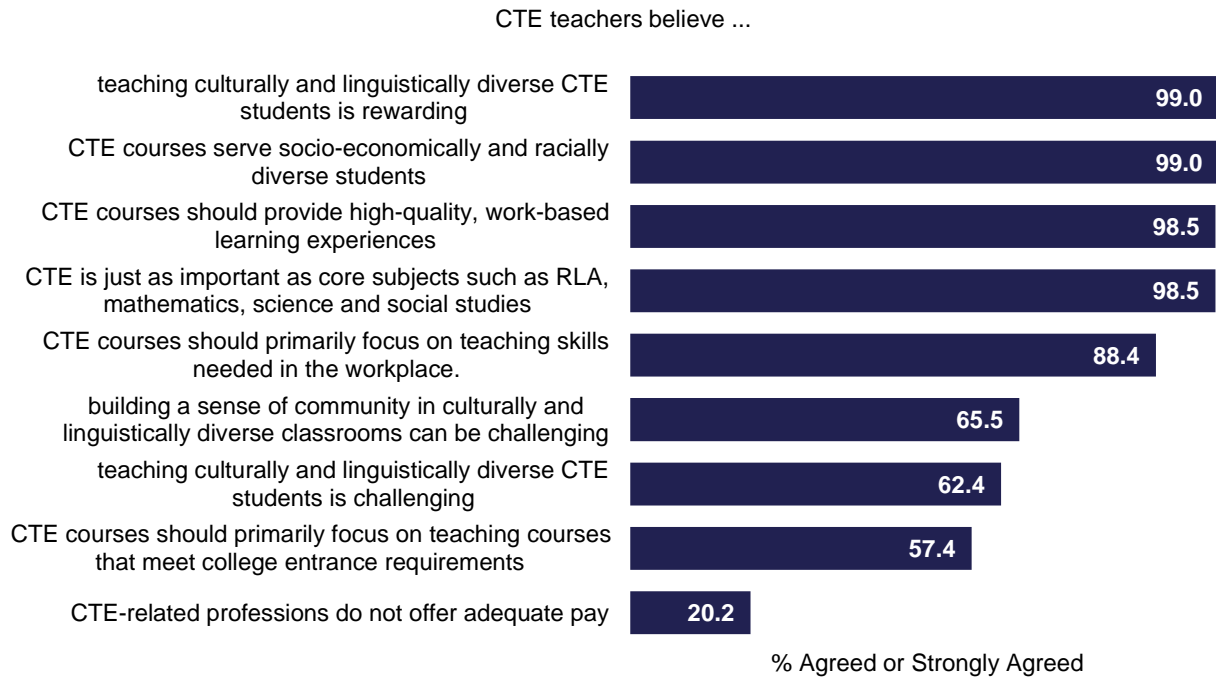
training in in-demand careers and established strong relationships with businesses and postsecondary schools. Seventy-nine percent of respondents indicated that the CTE program provided students with the appropriate instructional and resource materials needed to succeed.

**Figure 4: 2019-20 CTE Teacher Perceptions of the CTE Program**



Source: 2019-20 CTE Program Survey, 6/23/20.

CTE teachers also articulated their perception regarding the CTE program focus and implementation (Figure 5). Ninety-nine percent of teachers agreed or strongly agreed that the CTE program successfully serves a diverse student population. Although 62 percent of respondents indicated that serving such a diverse student population can at times be challenging, almost all respondents (99%) found their work to be rewarding. Ninety-nine percent of respondents agreed or strongly agreed that CTE courses should receive the same level of importance given to core courses. Respondents highlighted that CTE courses should provide high-quality, work-based, learning experiences (99%) and focus on teaching skills that are needed in the workforce (88%). Overall, 80 percent of respondents agreed that CTE related professions offer competitive pay.

**Figure 5: 2019-20 CTE Teacher Perceptions of CTE Program Focus and Implementation**

Source: 2019-20 CTE Program Survey, 06/23/20.

CTE teachers also provided feedback on the impact of COVID-19 and the resulting transition to at-home learning. Teachers could select more than one response option to articulate challenges they faced. One-hundred fifty-four of the 201 respondents (77%) indicated that students seemed to be less motivated. Sixty-two percent of respondents ( $n=125$ ) also noted that the delivery of instruction was impacted by the inability to provide hands-on-training, followed by technical issues ( $n=112$ , 56%). Overall, 95 percent of respondents ( $n=191$ ) reported that they tried to contact students or their parents on a weekly or more frequent basis (42% weekly basis, 28% daily basis, and 25% twice a week). Respondents noted that email (80%), Google classroom (75%), Zoom (72%), and YouTube (50%) were the primary means of teaching during the district closure. However, 41 percent of respondents ( $n=81$ ) noted that the lack of updated student contact information reduced their abilities to stay in touch with students. Thirty-five percent of respondents ( $n=70$ ) noted that the lack of adequate resources was a major challenge for classroom teachers during the district closure, followed by inadequate guidance from the District ( $n=25$ , 12%) and campus leadership ( $n=22$ , 11%).

## KEY FINDINGS AND RECOMMENDATIONS

### Key Findings

The primary purpose of the Career and Technical Education (CTE) programs is to prepare students for college and career success by providing them with the skills necessary to be competitive in a global economy. To meet this goal, the Dallas Independent School District (ISD) CTE department offers courses across 135 comprehensive CTE pathways to students in grades six through 12. Through participation in CTE, students can earn diploma endorsements, industry certifications, educational certificates, and college credit hours. In addition, students can participate in paid internships. Program activities are partially funded through state CTE funds and a grant established by the Carl D. Perkins Career and Technical Education Act of 2006. Overall, Dallas ISD budgeted \$38,589,277 for CTE activities. Of these funds, the Dallas ISD CTE Department oversaw a budget of \$8,925,867<sup>16</sup> which included \$1,713,000 for the Career Institutes and \$7,212,867 for CTE programs. CTE program funding increased by two percent from 2018-19 (\$7,079,587). Key findings included:

- During the 2019-20 school year, 38,075 students participated in CTE, including 9,702 middle school students and 28,373 high school students. Middle school enrollment in CTE courses increased by six percentage points from 2018-19 to 2019-20 (24% vs 30%), while high school enrollment remained stable compared to 2018-19 (71% both years).
- The ethnic composition of district CTE students was similar to middle and high school students not enrolled in the CTE program. There were more male than female students enrolled in CTE programs (52% vs 49%), a slightly higher percentage of CTE students were economically disadvantaged than for non-CTE students (84% vs 83%). More CTE students were at risk of dropping out than non-CTE students (77% vs 74%), a smaller percentage of CTE students received special education services compared to non-CTE students (8% vs 12%), and fewer CTE students were English learners compared to non-CTE students (39% vs 44%).
- Overall, CTE enrollment rates increased in middle school from 11 percent of grade six students to 46 percent of grade eight students, and in high school from 63 percent of grade nine students to 77 percent of grade 12 students.
- Seventy-five percent of CTE students took CTE courses as electives ( $n=28,505$ ) while 25 percent of students enrolled in a coherent sequence of courses ( $n=9,570$ ).
- In 2019-20, CTE students were enrolled on average in 1.4 career clusters. Career clusters with the highest enrollment by student were Business Management and Administration (18%), followed by Information Technology (16%), and Science, Technology, Engineering and Mathematics (15%).
- A total of 14,041 high school students enrolled in CTE courses through one or more specialized programs including the Career Institutes ( $n=760$ ), NAF Academies ( $n=9,229$ ), and ECHSs ( $n=4,624$ ).

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<sup>16</sup> Budget included \$6,342,555 in TEA funding and a \$2,583,312 Perkins Grant

- In 2019-20, 49 NAF Academies operated at 20 Dallas ISD campuses. Overall, five percent of NAF participants ( $n=497$ ) enrolled in more than one academy (max academies enrolled=3). NAF academies with the highest enrollment numbers for 2019-20 were the Academy of Information Technologies ( $n=2,777$ ), followed by the Academy of Finance ( $n=2,690$ ), and the Academy of Engineering ( $n=1,823$ ).
- In 2019-20, 760 students enrolled in the Principles of Construction class offered by the Career Institutes (CI) at 12 feeder campuses.
- In 2019-20, 38,075 CTE students enrolled in 60,708 CTE courses of which they passed 56,611 courses (93%). Likewise, 4,665 Dallas ISD students participated in 10,237 CTE dual credit courses of which they passed 9,203 courses (90%).
- CTE coherent sequence students had a higher passing rate than elective CTE students for all CTE course (95% vs 93%) and CTE dual credit courses (92% vs 87%).
- Overall, 2,971 Dallas ISD CTE students earned 4,206 credentials in 2019-20, including 3,331 industry-based certifications and 875 educational certificates. Certifications identified by TEA for the A to F accountability system accounted for 23 percent ( $n=770$ ) of all industry certifications earned.
- In 2019-20, 323 of the 1,163 coherent sequence CTE graduates (28%) earned an associate degree. The number of CTE students that earned an associate degree increased by 39 percent from 232 (2018-19) to 323 (2019-20).
- According to the 2019-20 NSC data file, 52 percent of 2018-19 CTE graduates and 57 percent of non-CTE graduates enrolled in college within one year of graduation. Of these students, more CTE students enrolled in a two-year or less college than non-CTE students (56% vs 32%). Similarly, a significantly lower percentage of CTE students enrolled in a four-year university than non-CTE students (44% vs 68%). Although there was no difference in the college enrollment percentage rates for CTE elective and coherent sequence students (each 52%), a slightly higher percentage of elective student enrolled in a four-year university than coherent sequence students (47% vs 43%).
- The percentage of graduates who were College, Career or Military Ready increased by 15 percentage points from 46 percent in 2016-17 (2018 report) to 61 percent in 2018-19 (2020 report).
- However, a lower percentage of Dallas ISD graduates were college, career, or military ready (61%) than graduates of comparable districts in Texas: Austin ISD (86%), El Paso ISD (74%), San Antonio ISD (73%), Houston ISD (71%), and Fort Worth ISD (63%).
- Two-hundred and one CTE teachers responded to the CTE departmental survey. Among the key-findings were that 96 percent of respondents agreed that the CTE program allows students to discover career opportunities they otherwise may not have considered. Seventy-eight percent of respondents agreed that the CTE program provides students with basic training to obtain a job, Furthermore, 68 percent of respondents agreed that the CTE program motivates students to complete high school who otherwise are at risk of dropping out. Overall, 96 percent of CTE teachers indicated that CTE learning activities were aligned with current practices in business, industry, and/or technology.

- CTE teachers also provided feedback on the impact of COVID-19 and the resulting transition to at-home learning. Seventy-seven percent of respondents indicated that students seemed to be less motivated while 62 percent of respondents noted that the delivery of instructions was impacted by the inability to provide hands-on-training, and 56 percent of respondents faced technical issues. Overall, 95 percent respondents reported that they tried to contact students or their parents on a weekly basis. However, 41 percent of respondents noted that the lack of updated student contact information reduced their abilities to stay in touch with students and 35 percent of respondents noted that the lack of adequate resources was a major challenge for classroom teachers during the district closure.

## Recommendations

Based on the key findings, the following recommendations are offered for stakeholders.

**Continue to promote CTE students' completion of educational certificates and industry-based certifications.** CTE students earned 4,206 credentials in 2019-20, including 875 educational certificates and 3,331 industry-based certifications. Twenty-three percent ( $n=770$ ) of all industry certifications earned were A-F certifications providing points towards TEA's A to F accountability system. Completion of A-F certifications increase by 260 percent compared to 2018-19 ( $n=214$ ). However, the total number of completed industry-based certifications decreased from 4,652 in 2018-19 to 3,331 in 2019-20 in part due to students not being able to take certification tests during at-home learning on District provided Chromebooks. Given that industry-based certifications can provide students with an advantage in finding employment, the CTE department should continue to find ways to provide students with opportunities to complete certification requirements.

**Continue to support specialized CTE initiatives including Career Institutes and NAF Academies.** In 2019-20, 760 students enrolled in the Principles of Construction class offered by the Career Institutes at 12 feeder campuses. An additional 9,229 students enrolled in one or more NAF Academies. Of the 49 NAF academies, 23 academies (47%) were honored by NAF as distinguished academies. Review of the program documents indicated that these programs help provide specialized work-based, learning experiences that may otherwise be inaccessible for a large part of Dallas ISD students; ensuring that students have the opportunity to earn a living wage after graduating high school.

**Continue to work with the IT Department on accurately tracking CTE participation.** Review of PowerSchool enrollment data indicated that CTE students were not accurately marked as such. This is especially true for cases in which students participate in more than one program, such as being an Early College High School student and taking CTE courses. In such cases students should be marked in PowerSchool as both ECHS and CTE but are often only marked as ECHS, resulting in the underreporting of CTE students. In addition, the CTE department should work to establish protocols for CTE staff and teachers to maintain accurate student enrollment and credentialing information.

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# APPENDICES

## Appendix A

### Appendix A: 2019-20 Career Pathways and Academies by Campus

Career and Technical Education (CTE) Pathways by Career Cluster and Endorsement	Business and Industry							Public Services					STEM			
	Agriculture, Food & Natural Resources	Architecture & Construction	Arts, A/V Technology & Communications	Business Management & Administration	Marketing	Finance	Hospitality & Tourism	Information Technology	Transportation, Distribution & Logistics	Manufacturing	Education & Training	Government & Public Administration	Health Science	Human Services	Law, Public Safety, Corrections & Security	Science, Technology, Engineering & Mathematics
Bryan Adams				*	*		*	NAF					NAF	*	NAF	
Adamson				*	*	NAF			*	*		NAF			NAF	
Carter			*	*		NAF		NAF						*		
City Lab	*	*														
Conrad						NAF	NAF	NAF				NAF			NAF	
Hillcrest				*	*							NAF			NAF	
IDEA						NAF		NAF								
Jefferson				*	*	NAF	NAF	*							NAF	
Kimball				*	*		NAF							*	NAF	
Lincoln			*	*	*			*							NAF	
Madison				*				NAF								
Molina		*	*				*									
North Dallas						NAF		NAF							NAF	
Obama															*	
Pinkston		*						*	*	*				*		
Rangel															*	
Roosevelt				*			*					NAF				
Samuell		*		*				NAF								
Seagoville	*		*	*				*								
Skyline	*	*	*	*	*	NAF	NAF	NAF	*		*	NAF	*		NAF	
Smith New Tech			*													
South Oak Cliff				*		*		NAF		*					NAF	
Spruce			*	*		NAF		NAF	*	*					NAF	
Sunset				*	*	NAF		*				NAF		*		
Townview Business			*	*	*	*		*								
Townview Education										*			*			
Townview Health							*					*				
Townview Law											*			*		
Townview SEM															*	
Washington PVA			*													
White				*	*	*		NAF		*		NAF	*		NAF	
Wilmer-Hutchins		*		*		NAF	NAF	NAF	*							
Wilson						NAF	NAF								NAF	
<b>Total CTE Pathways</b>	<b>3</b>	<b>6</b>	<b>9</b>	<b>18</b>	<b>10</b>	<b>14</b>	<b>11</b>	<b>17</b>	<b>5</b>	<b>3</b>	<b>4</b>	<b>2</b>	<b>9</b>	<b>3</b>	<b>6</b>	<b>15</b>

Source: CTE Department program document, Fall 2019.

Note: PVA= Performing and Visual Arts, SEM= Science and Engineering.

## Appendix B

## Appendix B: 2020-21 Career Institute Pathways

		9th Grade	10th Grade	11th Grade	12th Grade
 Aviation	 COURSES	Introduction to Aerospace and Aviation	Introduction to Unmanned Aerial Vehicles (UAV) Flight and Aviation Ground School	Advanced Aircraft Systems	Practicum in Transportation Systems
	 CERTIFICATIONS	OSHA 10	FAA Remote Unmanned Aerial Vehicle Pilot Certification	Southwest Airlines Professional Communications	Student Pilot Certificate
 Construction	 COURSES	Principles of Construction	Construction Technology I	Construction Technology II	Practicum In Construction Technology
	 CERTIFICATIONS	OSHA 10	Autodesk Certified Professional (ACP) in Autodesk Revit Building Systems	NCCER Core Curriculum	NCCER Carpentry, Level 1
 Interior Design	 COURSES	Principles of Architecture	Interior Design I	Interior Design II	Practicum In Architecture
	 CERTIFICATIONS	OSHA 10	AAFCS Interior Design Fundamentals	Autodesk Certified User in AutoCAD	Autodesk Certified Professional (ACP) in Autodesk Revit Building Systems
 Plumbing	 COURSES	Principles of Construction	Plumbing Technology I	Plumbing Technology II	Practicum In Construction Technology
	 CERTIFICATIONS	OSHA 10	Autodesk Certified Professional (ACP) in Autodesk Revit Building Systems	NCCER Core Curriculum	NCCER Plumbing, Level 1
 Electrical	 COURSES	Principles of Construction	Electrical Technology I	Electrical Technology II	Practicum In Construction Technology
	 CERTIFICATIONS	OSHA 10	Autodesk Certified Professional (ACP) in Autodesk Revit Building Systems	NCCER Core Curriculum	NCCER Electrical, Level 1
 HVAC	 COURSES	Principles of Construction	HVAC and Refrigeration Technology I	HVAC and Refrigeration Technology II	Practicum In Construction Technology
	 CERTIFICATIONS	OSHA 10	Autodesk Certified Professional (ACP) in Autodesk Revit Building Systems	NCCER Core Curriculum	ACCA (Air Conditioning Contractors of America) Refrigerant Handling (EPA 608)
 Mechatronics	 COURSES	Principles of Manufacturing	Manufacturing Engineering Technology I	Manufacturing Engineering Technology II	Practicum In Manufacturing
	 CERTIFICATIONS	OSHA 10 Auto CAD	MSSC (Manufacturing Skills Standards Council) Certified Production Technician (CPT)	NIMS (National Institute for Metalworking Skills) Industrial Technology Maintenance and (TIM)- Maintenance Operations	NIMS (National Institute for Metalworking Skills) Industrial Technology Maintenance and (TIM) Process Control Systems
 Cybersecurity	 COURSES	Foundations of Cybersecurity	AP Computer Science Principles	Computer Science 1 or AP Computer Science A	Cybersecurity Capstone
	 CERTIFICATIONS	CompTIA IT Fundamentals	Microsoft Technology Associate (MTA) Security Fundamentals	CompTIA Security+	Oracle Certified Associate (OCA), Java SE 8 Programmer
Other courses offered on Campus: Spanish I, Spanish II, Principles of Information Technology, Computer Science I (LOTE Credit) AP Computer Science Principles, General Employability Skills.					

Source: Career Institutes program flyer provided, Fall 2019.

## Appendix C

Appendix C, Table 1: 2019-20 CTE Student Enrollment by Career Cluster

Career Cluster	Middle School CTE (n=9,702)		High School CTE (n=28,373)		Overall CTE (N=38,075)			Enrollment by Cluster %
	Elective	Coherent Sequence	Elective	Coherent Sequence	Elective	Coherent Sequence	Total Enrollment	
	n	n	n	n	n	n	N	
Agriculture, Food & Natural Resources	0		379	173	379	173	552	1.4
Architecture & Construction	0		1,418	493	1,418	493	1,911	5.0
Arts, A/V Technology & Communications	1,524		2,491	1,125	4,015	1,125	5,140	13.5
Business Management & Administration	880		3,836	2,153	4,716	2,153	6,869	18.0
Marketing	0		1,064	712	1,064	712	1,776	4.7
Finance	0		1,825	1,573	1,825	1,573	3,398	8.9
Hospitality & Tourism	0		1,330	763	1,330	763	2,093	5.5
Information Technology	454		3,834	1,724	4,288	1,724	6,012	15.8
Transportation, Distribution & Logistics	0		631	354	631	354	985	2.6
Manufacturing	0		206	187	206	187	393	1.0
Education & Training	38		346	355	384	355	739	1.9
Government & Public Administration	0		32	360	32	360	392	1.0
Health Science	0		1,984	1,461	1,984	1,461	3,445	9.0
Human Services	337		1,728	782	2,065	782	2,847	7.5
Law, Public Safety, Corrections & Security	0		1,346	876	1,346	876	2,222	5.8
Science, Technology, Engineering & Mathematics	2,501		2,094	1,249	4,595	1,249	5,844	15.3
Career Technical Education Courses*	5,726		215	901	5,941	901	6,842	18.0

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: Column percent does not sum to 100 percent as student could enroll in more than one career cluster. A grey box indicates that no middle schools did offer a coherent sequence of CTE courses. \*Career Technical Education Courses is not a CTE cluster but serves as a holder for CTE courses that can serve more than one cluster.

Appendix C, Table 2: 2019-20 CTE Course Enrollment by Career Cluster

Career Cluster	Middle School CTE (n=9,702)		High School CTE (n=28,373)		Overall CTE (N=38,075)			Enrollment by Cluster %
	Elective	Coherent Sequence	Elective	Coherent Sequence	Elective	Coherent Sequence	Total Enrollment	
	n	n	n	n	n	n	N	
Agriculture, Food & Natural Resources	0		417	255	417	255	672	1.1
Architecture & Construction	0		1,525	676	1,525	676	2,201	3.6
Arts, A/V Technology & Communications	1,529		2,630	1,633	4,159	1,633	5,792	9.5
Business Management & Administration	890		4,380	3,041	5,270	3,041	8,311	13.7
Marketing	0		1,246	862	1,246	862	2,108	3.5
Finance	0		1,920	1,990	1,920	1,990	3,910	6.4
Hospitality & Tourism	0		1,344	894	1,344	894	2,238	3.7
Information Technology	454		4,164	2,445	4,618	2,445	7,063	11.6
Transportation, Distribution & Logistics	0		635	379	635	379	1,014	1.7
Manufacturing	0		226	298	226	298	524	0.9
Education & Training	38		383	429	421	429	850	1.4
Government & Public Administration	0		32	622	32	622	654	1.1
Health Science	0		2,019	2,462	2,019	2,462	4,481	7.4
Human Services	337		1,930	990	2,267	990	3,257	5.4
Law, Public Safety, Corrections & Security	0		1,449	1,203	1,449	1,203	2,652	4.4
Science, Technology, Engineering & Mathematics	3,030		2,402	1,700	5,432	1,700	7,132	11.7
Career Technical Education Courses*	6,663		215	971	6,878	971	7,849	12.9
<b>Overall</b>	<b>12,941</b>		<b>26,917</b>	<b>20,850</b>	<b>39,858</b>	<b>20,850</b>	<b>60,708</b>	<b>100.0</b>

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: Column percent does not sum to 100 percent as student could enroll in more than one career cluster. A grey box indicates that no middle schools did offer a coherent sequence of CTE courses. \*Career Technical Education Courses is not a CTE cluster but serves as a holder for CTE courses that can serve more than one cluster.

## Appendix D

**Appendix D, Table 1: 2019-20 CTE Course Enrollment and Completion Rates for Middle School Students**

Career Cluster	CTE Elective			CTE Coherent Sequence			Total CTE Enrollment		
	Enrolled	Passed		Enrolled	Passed		Enrolled	Passed	
	<i>N</i>	<i>n</i>	%	<i>N</i>	<i>n</i>	%	<i>N</i>	<i>n</i>	%
Education & Training	38	38	100.0				38	38	100.0
Science, Technology, Engineering & Mathematics	3,030	2,885	95.2				3,030	2,885	95.2
Career Technical Education Courses*	6,663	6,192	92.9				6,663	6,192	92.9
Arts, A/V Technology & Communications	1,529	1,420	92.9				1,529	1,420	92.9
Business Management & Administration	890	797	89.6				890	797	89.6
Information Technology	454	406	89.4				454	406	89.4
Human Services	337	289	85.8				337	289	85.8
Agriculture, Food & Natural Resources									
Architecture & Construction									
Finance									
Government & Public Administration									
Health Science									
Hospitality & Tourism									
Law, Public Safety, Corrections & Security									
Manufacturing									
Marketing									
Transportation, Distribution & Logistics									
<b>Overall</b>	<b>12,941</b>	<b>12,027</b>	<b>92.9</b>				<b>12,941</b>	<b>12,027</b>	<b>92.9</b>

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: Student could enroll in more than one career cluster. A grey box indicates that no students were enrolled \*Career Technical Education Courses is not a CTE cluster but serves as a holder for CTE courses that can serve more than one cluster.

Appendix D, Table 2: 2019-20 CTE Course Enrollment and Completion Rates for High School Students

Career Cluster	CTE Elective			CTE Coherent Sequence			Total CTE Enrollment		
	Enrolled	Passed		Enrolled	Passed		Enrolled	Passed	
	<i>N</i>	<i>n</i>	%	<i>N</i>	<i>n</i>	%	<i>N</i>	<i>n</i>	%
Government & Public Administration	32	31	96.9	622	619	99.5	654	650	99.4
Health Science	2,019	1,942	96.2	2,462	2,405	97.7	4,481	4,347	97.0
Transportation, Distribution & Logistics	635	604	95.1	379	373	98.4	1,014	977	96.4
Career Technical Education Courses*	215	205	95.3	971	928	95.6	1,186	1,133	95.5
Hospitality & Tourism	1,344	1,278	95.1	894	858	96.0	2,238	2,136	95.4
Manufacturing	226	220	97.3	298	278	93.3	524	498	95.0
Architecture & Construction	1,525	1,447	94.9	676	641	94.8	2,201	2,088	94.9
Education & Training	383	360	94.0	429	403	93.9	812	763	94.0
Arts, A/V Technology & Communications	2,630	2,454	93.3	1,633	1,550	94.9	4,263	4,004	93.9
Science, Technology, Engineering & Mathematics	2,402	2,240	93.3	1,700	1,581	93.0	4,102	3,821	93.1
Marketing	1,246	1,138	91.3	862	814	94.4	2,108	1,952	92.6
Agriculture, Food & Natural Resources	417	383	91.8	255	239	93.7	672	622	92.6
Law, Public Safety, Corrections & Security	1,449	1,317	90.9	1,203	1,137	94.5	2,652	2,454	92.5
Human Services	1,930	1,767	91.6	990	928	93.7	2,920	2,695	92.3
Finance	1,920	1,736	90.4	1,990	1,867	93.8	3,910	3,603	92.1
Business Management & Administration	4,380	3,972	90.7	3,041	2,821	92.8	7,421	6,793	91.5
Information Technology	4,164	3,758	90.2	2,445	2,290	93.7	6,609	6,048	91.5
Overall	26,917	24,852	92.3	20,850	19,732	94.6	47,767	44,584	93.3

Source: May demographic file, 05/29/20. CTE course file, 10/8/20. Dallas ISD course file, 07/30/20.

Note: Student could enroll in more than one career cluster. \*Career Technical Education Courses is not a CTE cluster but serves as a holder for CTE courses that can serve more than one cluster.

## Appendix E

### Appendix E: 2019-20 Tracks for the Associates Degree in Applied Science

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- Accounting
  - Advanced Manufacturing/Mechatronics
  - Allied Health
  - Business
  - Business Administration
  - Business and Finance
  - Computer-aided architectural design (CAAD)
  - Computer Graphics
  - Construction Technology
  - Criminal Justice
  - Digital Media Technology
  - Early Childhood Education
  - Electrical Engineering Technology
  - Electronic Technology
  - Energy Management
  - Heating, ventilation, and air conditioning (HVAC)
  - Gaming
  - Health Information Technology
  - Hospitality Management
  - Internet Development Technology
  - Law Enforcement
  - Logistics
  - Manufacturing
  - Management
  - Network Administration and Support
  - Personal Computer Support
  - Pre-Electrical Engineering
  - Pre-Mechanical Engineering
  - Public Health
  - Public Service
  - Software Programming
  - Visual Communications
- 

Source: Career Institutes slides presented at Board briefing on 03/07/19.

## Appendix F

### Appendix F: 2019-20 CTE Teacher Perceptions of the CTE Program

Survey Question	Agree <i>n</i>	Disagree <i>n</i>	Neutral <i>n</i>	Strongly Agree <i>n</i>	Strongly Disagree <i>n</i>	I Don't Know/ Not Applicable <i>n</i>	Grand Total <i>N</i>	Agree or Strongly Agree %
<b>Methods of Instruction</b>								
Instructional strategies provide the students with skills that will enable them to keep pace with the changing workplace and to have upward mobility in employment opportunities	84	4	14	98	1		201	90.5
An Individual Education Plan (IEP) is available in a timely manner for all Special Education students	74	10	20	76	9	12	201	79.4
Instructor analyzes, evaluates and makes changes in the curriculum as needed, to address the needs of students	69	2	2	123	2	3	201	97.0
<b>Workplace Cleanliness</b>								
The facility is arranged, organized, and maintained to ensure a safe and appropriate environment for effective student learning	85	10	18	83	4	1	201	84.0
The instructional areas are maintained in a clean and orderly fashion	91	7	7	91	3	2	201	91.5
Tools and/or equipment provided in the instructional areas are comparable to those used in business and/or industry	75	26	29	56	6	9	201	68.2
All safety protective equipment, including fire extinguishers, are accessible and the proper usage of such equipment is included in the instructional program	49	4	10	62		76	201	88.8
Safety training is provided to students and tests are administered annually and kept on file	37	8	10	52	1	93	201	82.4
<b>Career Counseling and Preparation</b>								
I am aware of the House Bill 5 endorsements selected by the students enrolled in my classes	79	9	21	66	5	21	201	80.6
Your Career and Technical Education program provides training for career opportunities available in the community and/or in the region	78	6	14	89	3	11	201	87.9
Strong partnerships exist with business and postsecondary schools for your Career and Technical Education program	73	14	32	66	5	11	201	73.2

table continues

Appendix F, Table 1 (continued)

Survey Question	Agree <i>n</i>	Disagree <i>n</i>	Neutral <i>n</i>	Strongly Agree <i>n</i>	Strongly Disagree <i>n</i>	I Don't Know/ Not Applicable <i>n</i>	Grand Total <i>N</i>	Agree or Strongly Agree %
<b>Instructional and Resource Materials</b>								
As a Career and Technical Education teacher, I am involved in the selection and acquisition of current instructional materials and supplies necessary to conduct a quality program of instruction	77	12	15	88	9		201	82.1
Students have adequate use and benefit of an up-to-date reference/technical library, equipment, and career resources	91	22	17	56	14	1	201	73.5
A variety of instructional materials are available and used to accommodate student differences, such as varying reading levels and learning styles	84	18	25	64	9	1	201	74.0
Instructional materials, tools, equipment, and supplies are modified or accommodations made, when appropriate, to meet the needs of all students including special populations	90	7	20	79	3	2	201	84.9

Source: 2019-20 CTE Program Survey, 06/23/20

Note: Grey box indicates that answer option did not exist or received zero responses. Presented survey questions reflect a sample of questions asked to CTE teachers.