2020-21 DALLAS INDEPENDENT SCHOOL DISTRICT

Evaluation of Career and Technical Education

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 51 comprehensive CTE pathways to students in grades six through 12. Courses can be taken as one-off courses or in a program of study 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 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 2020-21, the total Dallas ISD CTE budget was $40,379,434, which included $28,139,321 for payroll expenses, and $4,046,618 for the Career Institutes. 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 2020-21 school year, Perkins V redefined pathways, resulting in the merging of several previously offered pathways. 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 51 comprehensive pathways in 2020-21. While CTE courses were previously offered as either a CTE coherent sequence of courses or electives, TEA revised the way they characterized CTE students in 2020-21. Starting with the 2020-21 school year, CTE student were identified by TEA as either CTE Participants, CTE Explorer, CTE Concentrator, or CTE Completer based on CTE course enrollment. Generally, CTE Participants and Explorers are similar to students in prior years identified as CTE elective, whereas CTE Concentrators and Completers are similar to CTE Coherent Sequence students prior to 2020-21.

NAF Academies

In 2020-21, the Dallas ISD, in cooperation with NAF, operated 48 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 2026-27, 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”.[1] Pathways offered at the Career Institutes are tuition free for all Dallas ISD students and have open enrollment. 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

[1] Career Institutes brochure Developing Leaders Building Futures and March 7, 2019 Dallas ISD Board Briefing on Career Institutes.

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.

Early College High Schools

In 2020-21, 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. 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 though one of the industry partners.

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 2020-21 list of approved industry-based certifications for the A-F Accountability System included 244 certifications within 14 primary career clusters.

CTE Implementation in Middle Schools

Forty-Three out of 45 middle schools (96%) offered one or more CTE courses in 2020-21 (13 percentage points increase from 83% in 2019-20). Of the 21 CTE courses offered, five were considered foundational courses and qualified for middle school credit, while 16 courses could be taken for high school credit. Five of the 21 courses utilized 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. Thirty-one middle schools (69%) offered the College and Career Readiness class and 23 middle schools (51%) offered one or more of the Investigating Careers classes.

What were the enrollment characteristics of CTE students?

During the 2020-21 school year, 42,029 students participated in CTE, including 12,862 middle school students and 29,167 high school students (Table 1), an overall increase of 10 percent (*n*=3,954) compared to 2019-20. In 2020-21, 45 percent of the 42,029 CTE students were CTE Participants (*n*=18,963), 23 percent were CTE Explorers (*n*=9,845), 22 percent were Concentrators (*n*=9,417), and nine percent were CTE Completers (*n*=3,804).

Table 1: 2020-21 CTE Enrollment by Grade

Grade	*N*	*%*
Middle School		
Grade 6	1,312	3.1
Grade 7	5,557	13.2
Grade 8	5,993	14.3
High School		
Grade 9	7,251	17.3
Grade 10	8,047	19.1
Grade 11	7,098	16.9
Grade 12	6,771	16.1
Overall		
Overall Middle School	12,862	30.6
Overall High School	29,167	69.4
Overall	42,029	100.0

Source: End-of-year demographic file, 06/07/21. CTE course file, 11/16/21. Dallas ISD course file, 08/16/21.

Districtwide, CTE students took the highest percentage of courses within the Business Management & Administration (29%), followed by Science, Technology, Engineering and Mathematics (20%), and Arts A V Technology Communications (14%)

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 29,167 high school students who enrolled in CTE courses in 2020-21, 13,709 students enrolled in one or more of these specialized high school CTE programs. Although 93 percent of the 13,709 students enrolled in only one of these programs, seven percent enrolled in two or three programs. Overall, 2,043 students enrolled in Career Institutes, 7,754 students enrolled in NAF Academies, and 4,977 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 (percentages were within three percentage points). A smaller percentage of CTE students received special education services (8%) compared to non-CTE students (13%). Forty-two percent (an increase of three percentage points over 2019-20) of CTE students were English learners compared to 44 percent of non-CTE students and 18 percent of CTE students were or Talented and Gifted (TAG)

eligible compared to 20 percent of non-CTE students. In contrast, there were slightly more economically disadvantaged CTE students (84%) than non-CTE students (83%). In 2020-21, CTE students were at the same risk of dropping out than non-CTE students (66%), a reduction of 11 percentage points over 2019-20.

What were the completion rates for CTE courses?

In 2020-21, CTE middle and high school students passed 81 percent of all CTE courses, compared to 93 percent in 2019-20. Passing rate by career clusters ranged from 69 percent (Agriculture Food Natural Resources) to 94 percent (Health Science). CTE Completers had the highest overall passing rate of 94 percent followed by CTE Concentrators (89%), and CTE Participants (77%). CTE Explorers had the lowest overall passing rate of 70 percent. Of the 4,977 Dallas ISD students participated in 10,451 CTE dual credit courses of which they passed 8,247 courses (79%). Thirty-five percent of CTE students who took dual credit courses were CTE Explorers (*n*=1,741), followed by CTE Participants (*n*=1,322, 27%), CTE Concentrators (*n*=1,153, 23%), and CTE Completers (*n*=761, 15%).

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

Overall, 15,013 out of the 29,167 CTE high school students took one or more *STAAR EOC* exams in 2020-21 (51%). The subject test with the highest participation count was English II (*n*=7,734), followed by U.S. History (*n*=6,600). Majority of CTE students met the Approaches+ benchmark for U.S. History (85%), followed by Biology (62%) and English II (60%). CTE Concentrators participated in the greatest number of *STAAR EOC* exams, while CTE Completers met the Approaches + benchmark most often (75%) across all subject tests, followed by CTE Concentrators (68%).

How many credentials were earned by CTE high school students?

Overall, 3,866 Dallas ISD CTE students earned 4,921 credentials in 2020-21, including 4,454 industry-based certifications and 467 educational certificates. This is an increase of 715 credentials from 2019-20 (4,206 credentials). Compared to 2019-20, the number of industry-based certifications increased by 1,122, while the number of educational certificates decreased by 408.

How many associate degrees were awarded to CTE students?

Overall, 791 CTE graduates earned an associate degree in 2020-21. Of these, all but one were ECHS students, including 584 PTECH students and 206 traditional ECHS students. Students who participated in a program of study (CTE Concentrators and CTE Completers) accounted for 532 associate degrees (67%). In 2020-21, more Associate of Science degrees were awarded to CTE students (*n*=374, 47%) than Associate of Applied Science (*n*=275, 35%), Associate of Arts (*n*=97, 12%), or Associates of Arts in Teaching (*n*=45, 6%) degrees

What were the college enrollment rates for CTE students?

According to the 2020-21 NSC data file, 31 percent of CTE graduates and 39 percent of non-CTE graduates enrolled in college within one year of graduation. Of these students, a higher percentage of CTE students (27%) enrolled in a two-year college than non-CTE students (18%). On the other hand, a lower percentage of CTE students enrolled in a four-year university than non-CTE students (74% vs 82%). College enrollment in two-year colleges differed by two percentage point between CTE elective and coherent sequence students (26% vs 28%). Similarly, a slightly higher percentage of coherent sequence students enrolled in a four-year university than elective students (74% vs 72%). Overall, college enrollment numbers within one year of graduation were lower for all student groups compared to students who graduated in 2018-19 (21 percentage points for CTE graduates vs. 18 percentage points for non-CTE graduates).

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

Over the past three years, the percentage of Dallas ISD graduates who were College, Career or Military Ready decreased by eight percentage points from 57 percent in 2017-18 to 49 percent in 2019-20. On CTE related measures for the same timeframe, the percentage of graduates who earned at least three dual credit hours in ELA or Mathematics or nine hours in any subject increased by 10 percentage points (11% vs 21%) and the percentage of graduates who completed Level I or Level II certificates increased by four percentage point from 2017-18 to 2019-20 (0% vs 4%). The percentage of graduates who earned an industry-based certification increased by two percentage points (1% vs 3%) and the percentage of graduates who completed Individual Education Program and Workforce Readiness and met criterion score on an AP/IB exam increased by one percentage point (2% vs 3% and 22% vs 23%, respectively). Compared to other similar large urban districts in Texas, a lower percentage of Dallas ISD graduates were College, Career, or Military ready (49%) than graduates of Austin ISD (85%), El Paso ISD (73%), San Antonio ISD (68%), Fort Worth ISD (62%), and Houston ISD (62%).

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 2020-21 survey was administered by CTE staff from April

13 through May 13, 2021, using JotForm, an online survey-development tool. A total of 299 CTE teachers (40%) responded to the information request. Among the key-findings were that 98 percent of respondents agreed that the CTE program allows students to discover career opportunities they otherwise may not have considered. Eighty-one percent of respondents agreed that the CTE program provides students with basic training to obtain a job, Furthermore, 80 percent of respondents agreed that the CTE program motivates students to complete high school who otherwise are at risk of dropping out. Overall, 99 percent of CTE teachers indicated that CTE learning activities were aligned with current practices in business, industry, and/or technology. However, 68 percent of respondents also noted that the delivery of instruction in a hybrid teaching environment was impacted by technical issues.

RECOMMENDATIONS

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

Continue to work with the IT Department on accurately tracking CTE participation. Review of PowerSchool enrollment data indicated that CTE students were not accurately identified as such. This is especially true for cases in which students participate in more than one program, such as being an ECHS student taking CTE courses, resulting in the underreporting of CTE students.

Continue to support specialized CTE initiatives including Career Institutes and NAF Academies. In 2020-21, 2,043 CTE students enrolled in Career Institute classes at one of three campuses. An additional 7,754 students enrolled in one or more NAF 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; increasing the likelihood that students can earn a living wage after graduating high school.

Continue to promote CTE students' completion of educational certificates and industry-based certifications. CTE students earned 4,921 credentials in 2020-21, including 467 educational certificates and 4,454 industry-based certifications. Thirty-eight percent (*n*=1,684) of all industry certifications earned were A-F certifications providing points towards TEA's A to F accountability system. Although the numbers of industry-based certifications increased for the first time in two years by 33 percent from 2019-20 to 2020-21 (A-F certifications increased by 118%), the number of educational certificates earned decreased over the same timeframe by 46 percent. Given the importance of credentials in finding employment, the CTE department should continue to find ways to promote the participation and completion of industry-based certifications or educational certificates.

REFERENCES

Career Institutes. (2019). Developing Leaders, Building Futures. Dallas, TX. Dallas Independent School District.

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