MEMORANDUM January 15, 2016

TO: Board Members

FROM: Terry B. Grier, Ed.D.
Superintendent of Schools

SUBJECT: **CAREER AND TECHNICAL EDUCATION PROGRAM SUMMARY AND STUDENT PERFORMANCE OUTCOMES, 2014–2015**

CONTACT: Carla Stevens, 713-556-6700

Attached is the 2014–2015 summative report on the Houston Independent School District's (HISD) Career and Technical Education (CTE) program. The mission of the HISD CTE program is to empower students with the academic and technical skills needed to strengthen the economic and social foundation of the city of Houston and beyond. The program's goals and objectives focus on preparing students for success in their field of interest following graduation. The purpose of this summative report is to provide an overview of the initiatives of the CTE program, academic results, and matriculation rates of CTE students in HISD.

Key findings include:

- There was a 3.4 percent increase in CTE enrollment overall from the 2013–2014 school year to the 2014–2015 school year. The number of CTE 2 and 3 students, who were enrolled in a coherent sequence, was 20,905 in 2014–2015, a 46.5 percent increase from the 2013–2014 school year. There was a 29.4 percent decrease in the number of CTE 1 students, who were enrolled in CTE classes as electives, from 18,737 in 2013–2014 to 13,232 in 2014–2015.
- Following the same trend from 2014 STAAR EOC results, CTE students outperformed non-CTE students on all 2015 STAAR EOC exams.
- There was a 13.5 percent increase in the total number of CTE graduates, from 3,475 graduates in the spring of 2013 to 3,943 graduates in the spring of 2014.
- The percentages of CTE students from the ninth-grade cohort graduating from high school in a four-year period increased from 2013 to 2014 (90.1 percent for the class of 2013 to 91.5 percent for the class of 2014). These rates exceed the graduation rates of the district as a whole.

Should you have any further questions, please contact Carla Stevens in Research and Accountability at 713-556-6700.

Terry B. Grier
_____TBG

Attachment

cc: Superintendent's Direct Reports
Chief School Officers
Michael Webster
Renée Zuelke

HOUSTON INDEPENDENT SCHOOL DISTRICT

RESEARCH

Educational Program Report

CAREER AND TECHNICAL EDUCATION PROGRAM SUMMARY AND STUDENT PERFORMANCE OUTCOMES 2014 – 2015

HISD | Research and Accountability

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CAREER AND TECHNICAL EDUCATION
PROGRAM SUMMARY AND STUDENT PERFORMANCE OUTCOMES, 2014–2015

Executive Summary

The mission of the Houston Independent School District's (HISD) Career and Technical Education (CTE) program is to "empower students with the academic and technical skills needed to strengthen the economic and social foundation of the city of Houston and beyond" (HISD CTE Mission Statement). The program's goals and objectives focus on preparing students for success in their field of interest following graduation. The rigorous content was developed to assist students in acquiring knowledge and skills to apply to their selected field of interest (emerging profession). The program provides opportunities for early career application by allowing students to gain real world experience working with business collaborators and community stakeholders. Students learn interviewing techniques, communication skills, and portfolio/resume' development. Students also receive mentorship and guidance from teachers and business partners. To that end, this report will provide summative information pertaining to: CTE enrollment trends, CTE program initiatives, STAAR End-of-Course 2015 performance of CTE students, and graduation and dropout trends.

For this report, CTE and non-CTE classifications were derived from the Public Enrollment Information Management System (PEIMS) for the respective years that data were presented. In PEIMS, CTE students in grades nine through twelve are coded a "1", "2" or "3"; whereas, non-CTE students are coded "0". Students may participate in CTE courses beginning in grade six and student CTE enrollment grade classifications grades six through twelve were used to document enrollment trends. However, CTE student accountability within PEIMS, which includes academic achievement, graduation, and dropout trends is derived from students in grades nine through twelve based on student participation codes of "2" or "3" (coherent sequence takers). CTE students with a participation code of "1" were not included as CTE students for most comparisons, as these students are enrolled in CTE classes, but are not on a CTE plan of study to complete a specific sequence of courses.

Highlights

- There was a 3.4 percent increase in CTE enrollment overall from the 2013–2014 school year to the 2014–2015 school year. The number of CTE 2 and 3 students, who were enrolled in a coherent sequence, was 20,905 in 2014–2015, a 46.5 percent increase from the 2013–2014 school year. There was a 29.4 percent decrease in the number of CTE 1 students, who were enrolled in CTE classes as electives, from 18,737 in 2013–2014 to 13,232 in 2014–2015.
- The percentage of CTE students who met the Satisfactory standard on the 2015 Algebra I EOC was 7.5 percentage points higher than the percentage of non-CTE students who met the Satisfactory standard (70.4 percent vs. 62.9 percent).
- On the Biology EOC, the percentage of CTE students who met the Satisfactory standard exceeded the percentage of non-CTE students who met the standard by 5.4 percentage points (87.5 percent vs. 82.1 percent).
- The percentage of CTE students who met the Satisfactory standard on the 2015 English I EOC was 7.2 percentage points higher than non-CTE students who met Satisfactory standard (54.3 percent vs. 47.1).

- CTE students who met the Satisfactory standard was 6.0 percentage points higher than non-CTE students on the English II STAAR EOC (56.3 percent vs. 50.3 percent).
- There was a 4.7 percentage-point difference between CTE students and non-CTE students who met the Satisfactory standard on the U.S. History EOC (88.6 percent vs. 83.9 percent).
- There was a 13.5 percent increase in the total number of CTE graduates, from 3,475 graduates in the spring of 2013 to 3,943 graduates in the spring of 2014. The overall number of HISD graduates decreased by 4.1 percent, from 9,487 to 9,099 for the corresponding period.
- The percentages of CTE students from the ninth-grade cohort graduating from high school in a four-year period increased from 2013 to 2014 (90.1 percent for the class of 2013 to 91.5 percent for the class of 2014). The percentage of HISD students from the ninth-grade cohort graduating from high school in a four-year period did not change for the corresponding period (78.6 percent).
- In 2012–2013, the annual dropout rate of the CTE students was 1.9 percent and decreased to 1.6 percent in 2013–2014. The annual dropout rates for HISD students was 4.0 percent in 2012–2013, which decreased to 3.9 percent in 2013–2014.

Recommendations

1. The HISD CTE program should continue to commit to a variety of programming and opportunities for students to develop their career knowledge and skills. The diversity of course offerings available for students encourages and motivates them to focus on their future career options.
2. CTE students had higher percentages in all subjects on STAAR EOC assessments. The HISD CTE program should continue initiatives that motivate students to have a vested interest in education as well as providing them with support to overcome academic challenges.
3. Based on the 2015 STAAR EOC results, the rate of CTE students meeting the Advanced standard was lower than non-CTE students for English I, English II, and U.S. History. However, the amount of students meeting the Advanced standard was higher in most subjects than the previous year. CTE's continued high expectations of student performance and supporting students who may be able to reach higher standards of performance is important.

Administrative Response

The Career Readiness Department has reviewed the 2014–2015 Career and Technical Education (CTE) Program Evaluation. The report describes and evaluates specific trends within the district's CTE program. We are pleased to see that CTE students enrolled in a coherent sequence of courses continue to outperform non-CTE students on STAAR EOC. Additionally, coherent sequence CTE students continue to graduate from high school at a higher rate and show lower dropout rates than non-CTE students. The outperformance of students enrolled in a coherent sequence of CTE courses compared with the performance of non-CTE students is a consistent trend in all assessments (TAKS and STAAR EOC), as well as in graduation and dropout rates as far back as 2007. Consistent with the recent state legislation (HB 5 in 2013-2014) regarding the Foundation High School Program and the availability of Endorsement options for students entering high school in 2014-2015, more students are participating as CTE coherent sequence takers (participation code "2") rather than non-CTE students (participation code "1").

The department continues to review CTE programs across the district with a goal of increasing enrollment in CTE programs and work-based learning opportunities for students. Additionally, the department annually reviews CTE programming across the district to ensure the development of high school CTE programs

aligned with the following criteria: local labor market; demand for career field; proximity to potential local industry partners; proximity to neighboring schools to avoid redundancy; current school magnet program theme; availability of industry certification or postsecondary opportunities; possibility of school-based enterprise; relevant student organizations; capacity of school facility to engage in specific programs; adequate student enrollment to support programs; and student interest.

Introduction

The Career and Technical Education program (CTE) in the Houston Independent School District (HISD) empowers students to compete in a global society through rigorous coursework relative to their career goals (**Appendix A**, **page 16** lists the course concentrations and related courses.) The CTE curriculum is aligned with the state required Texas Essential Knowledge and Skills (TEKS) for Career and Technical Education, Chapter 130 and the TEKS for Career Development, Chapter 127 for High Schools. The program provides students with two paths to earn college credit: (1) Dual credit courses that allow students to earn both high school and college credit-hours simultaneously; and (2) Advanced Technical Credit courses that may be accepted for college-course credit after the student has enrolled at a participating college. Students who enroll in courses that combine college preparation with technical skills acquired in a coherent sequence of career and technology courses are labeled with CTE code 2 or 3. Students graduate with marketable skills to apply to careers related to their concentration. The HISD CTE program will be consolidating requirements for tracks 2 and 3 into one coded track, 2 in 2016–2017. The Texas Education Agency (TEA) has identified the following career concentrations that are implemented across the district:

- Agriculture, Food & Natural Resources
- Architecture & Construction
- Arts/AV Production & Communications
- Business, Management and Administration
- Education and Training
- Finance
- Government and Public Administration
- Health Science
- Hospitality and Tourism
- Human Services
- Information Technology
- Law, Public Safety, Corrections and Security
- Manufacturing
- Marketing, Sales and Service
- Science, Technology, Engineering and Mathematics
- Transportation, Distribution and Logistics

Methods

Data Collection

- Descriptive data, including student demographics and longitudinal enrollment figures in the CTE program, were obtained from the Public Education Information Management System (PEIMS). Within the program students were assigned a CTE code that indicated their level of enrollment in CTE courses. Students who took one or more CTE course as electives were coded “1”; students enrolled in CTE courses as part of a coherent sequential plan of study were assigned a code of “2” or “3” (See **Appendix B**, **page 17 and 18**). Enrollment numbers were collected based on total CTE participation as well as by code participation. The sample in this evaluation included students who attended HISD schools in 2014–2015, were identified as CTE students, and who had an Average Daily Attendance (ADA) eligibility classification other than ‘0’— enrolled, no membership. The HISD student assessment

databases were used to obtain CTE students' test data for the State of Texas Assessments of Academic Readiness (STAAR) End-of-Course (EOC). HISD demographic data reflect students who are eligible to participate in CTE courses (grades 6–12). This information is grouped by CTE codes 1, 2, and 3 combined.

- The STAAR is a state-mandated, criterion-referenced assessment used to measure student achievement. For this report, the STAAR results include End-of-Course (EOC) assessments in English language arts (English I and English II), mathematics (Algebra I), science (Biology), and social studies (U.S. History). Descriptive statistics included frequencies and percentages of students who met Level II, phase-in I Satisfactory and Advanced standards on the spring 2014 and spring 2015 EOC exams for ninth through twelfth-graders. STAAR results for CTE 2 and 3 coded students were combined to create the CTE student group, and the results for CTE 0 and 1 coded students were combined to create the non-CTE student group. The performance standards set for the STAAR end-of-course assessments are as follows:
    - **Level I: Unsatisfactory Academic Performance** – students are inadequately prepared for the following course.
    - **Level II: Satisfactory Academic Performance** – students are sufficiently prepared for the next course.
    - **Level III: Advanced Academic Performance** – students are well prepared for the following course.

- CTE and HISD annual dropout and longitudinal graduation rates were obtained from the Texas Education Agency (2015) Accountability Completion, Graduation, and Dropout Summary reports (reports dated: June 4, 2015). CTE student data include students coded as CTE 2 and CTE 3 combined[1]. The data reflect matriculation trends for HISD students in grades nine through twelve. The CTE matriculation data are based on the federal definitions without exclusions.

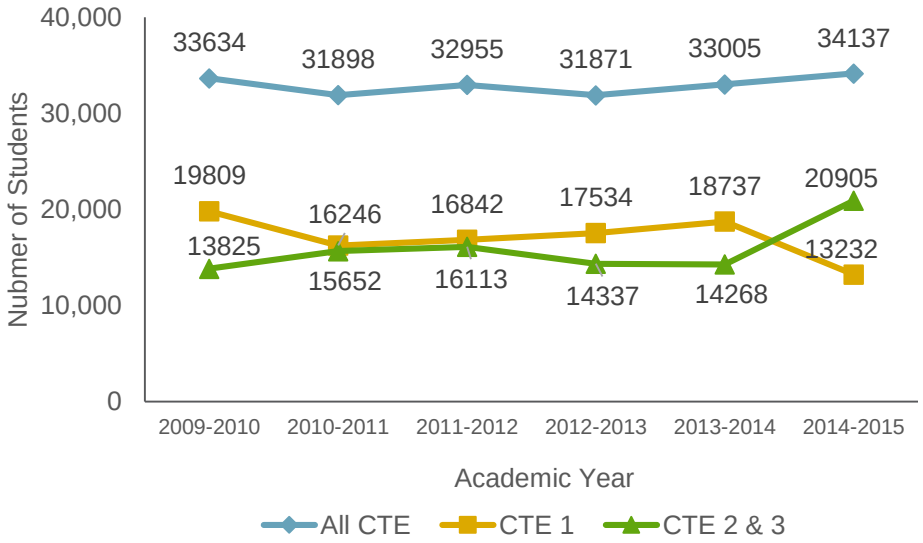
What were the demographic characteristics of students enrolled in the CTE program over the past five years, 2010–2015?

Figure 1 presents six-year enrollment data by CTE program codes for 2009–2010 through 2014–2015. CTE student enrollment by program code can also be found in **Appendix C**, **Table 1**, **page 19**.

- As seen in Figure 1, the enrollment for all CTE students was 34,137 in 2014–2015. This was a 3.4 percent increase in enrollment from the 2013–2014 school year. The number of CTE 2 (coherent sequence) and 3 (tech prep) students was 20,905 in 2014–2015, a 46.5 percent increase from the 2013–2014 school year. Conversely, there was a 29.4 percent decrease in the number of CTE 1 students from 18,737 in 2013–2014 to 13,232 in 2014–2015.

[1] TEA Performance-Based Monitoring Analysis System Manual, 2014 (page 35)

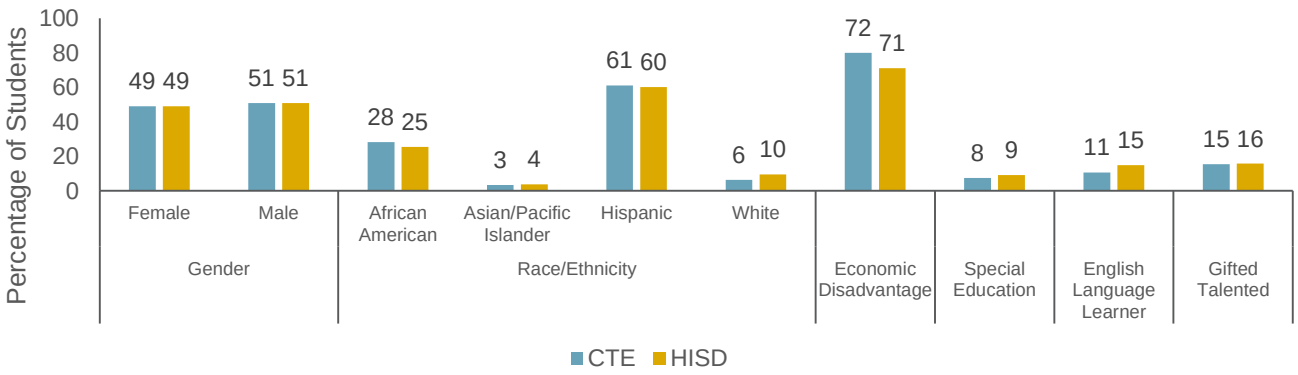
Figure 1. Enrollment Trends by CTE Code, 2009–2010 through 2014–2015



Enrollment by demographic information for CTE students (CTE codes 1, 2, and 3 combined) and all HISD students in eligible CTE grades (6th through 12th) are shown in **Figure 2**. **Appendix C, Table 2, page 20,** includes demographic data trends for two years.

- The ratio of female to male students enrolled in CTE program/classes (49:51) is approximately the same as HISD students (49:51) as displayed on Figure 2.
- There was a slightly higher percentage of Hispanics and African-Americans enrolled in CTE programs compared to the percentage in the district. A slightly lower proportion of Asian students were enrolled in CTE programs compared to their distribution in the overall district enrollment. White students represented six percent of the CTE program, while they made up ten percent of the district enrollment in grades six through twelve.
- The 2014–2015 CTE enrollment had a greater percentage of students who are economically disadvantaged and at-risk compared to the district.
- Two-year trends displayed in Table 2 (Appendix C, page 20) revealed that the percentage of CTE and HISD students coded as economically disadvantaged in grades six through twelve decreased from 2013–2014 to 2014–2015. Students within the district receiving special education services decreased by 0.5 percentage points, from 9.7 percent in 2013–2014 to 9.2 percent in 2014–2015. Similar trends were seen among CTE students where there was a 0.7 percentage point decrease in the percentage of students receiving special education services (8.3 percent to 7.6 percent).
- The percent of sixth through twelfth grade students within the district who received English language services/accommodations, English Language Learners (ELL), increased in 2014–2015 (13.9 percent to 14.9 percent). However, the percent of ELL students in the CTE program decreased from 15.7 percent in 2013–2014 to 10.7 percent in 2014–2015.

Figure 2. Percentage of CTE Students and All HISD 6th–12th Grade Students by Demographic Group, 2014–2015



What were key CTE program initiatives implemented in HISD during the 2014–2015 academic year?

Under the umbrella of the Career Readiness department, HISD provided career awareness, exploration, and technical education experiences to students in the 2014–2015 school year. Some key initiatives included: Broadening Work-Based Learning Opportunities through Business Partnerships, Providing Career Awareness to Elementary Students, Increasing Career Exploration Experiences for Middle School Students, Providing Print and Online Resources for Students and their Families, and Providing Additional Dual Credit Options for High School Students. In addition to key initiatives, the CTE department offered a variety of programs from which students could select a career pathway of study. Career pathways guide students in course selection regardless of their abilities, talents, or desired levels of education. By taking CTE courses, students are given opportunities to participate in hands-on training within their career pathway of interest. As such, HISD students engaged in opportunities to explore career options and prepare for work and/or post-secondary education. The initiatives ensure that all CTE students develop career awareness within their selected course of study, as well as receive exposure to professional experiences to develop mastery, confidence, and leadership skills. The following provides additional detail regarding key initiatives in CTE:

Broadening Work-Based Learning Opportunities through Business Partnerships:
Business partnerships provide students with enriching learning experiences, including one-on-one mentoring and real-world work opportunities. CTE students participate in field trips, site visits, and internships at local business. These businesses recognize the need to expose local students to various aspects of the world of work and the importance of on-the-job training experiences. Some of HISD business partners include Vaughn Construction, S&B Engineers, Lone Star College, Walmart, CVS Pharmacy, Exxon, Houston Community College, and Kroger. Local industry and business affiliates such as Mustang CAT, Kroger, Baker Hughes, and International Trucks of Houston have partnered with district high schools to provide support such as paid and unpaid internships for students, classroom speakers, facility tours, teacher externships, and financial and human capital assistance for the annual CTE When I Grow Up Career EXPO.

Within CTE, students gain valuable insight and hands-on career experiences through internships and job shadowing. Students are placed in work-based settings in order to acquire knowledge and skills within real work environments. HISD has developed partnerships with various organizations and companies that provide students with on-the-job training experiences. For example, CTE students served as interns at

Texas Children's Hospital and Methodist Hospital throughout the school year. Several students attending the High School for Law and Justice participated in job shadowing experiences at the Houston Emergency Center.

Providing Career Awareness to Elementary Students:
HISD elementary school students are exposed to career exploration presentations to increase career awareness and peak interest in various careers within the local labor market. The Career Cowboy provides students with interactive, music-filled demonstrations with information about various professions. Students also participate in activity stations and hands-on demonstrations that help them begin to develop links between skills, interests, and career choices. In 2014-2015, the Career Cowboy visited 81 Elementary Schools and engaged 14,124 students in a mobile learning unit, the Ready Wagon (a converted school bus filled with hands-on interactive stations in career exploration).

Increasing Career Exploration Experiences for Middle School Students:
In 2013-2014, HISD increased middle school enrollment to 2,026 in the hybrid Exploring Careers Principles of Information Technology or Concept of Engineering course. The course is designed to provide high school level credit in IT or Engineering while at the same time providing a specific curriculum that allows students to explore their own interests and aptitude as related to careers. Students can then make informed decisions about their high school and endorsement choices.

Providing Print and Online Resources for Students and their Families:
In 2014–2015, the Career Readiness Department retooled online and print materials to better inform and equip students, parents, teachers, and business partners about Career Education from grades PK-12. Key to this reform included a web presence that is audience driven and targeted using three key functions: PLAN (Students and Families), PREPARE (Teachers), and Partner (Businesses). The site can be visited at the following link: http://www.hisdcareerreadiness.org. Additionally, the department developed a booklet to outline key programs at all high school campuses which can be found here: http://www.hisdcareerreadiness.org/wp-content/uploads/2015/06/Career-Booklet-Final.pdf.

When I Grow Up Career EXPO
During the 2014–2015 school year, the department held the third annual When I Grow Up Career EXPO to allow area students to explore career options and develop an awareness of the opportunities available to them. The event included hands-on demonstrations, interactive presentations, and competitions. This event was open to K-12 students, parents, and industry partners and showcased the accomplishments of CTE students as well as promoted the CTE program to HISD students, parents, and community members. Over 90 businesses and approximately 5,000 people attended.

College Credit for CTE Students
During the 2014-2015 school year, there were two different kinds of courses that CTE students enrolled in to earn college credit; dual credit courses and Advanced Technical Credit (ATC) courses. Students enrolled in these courses were taught and graded in the same manner as college students who take the courses. Credits from these courses counted toward the Distinguished Achievement Program (DAP) graduation plan, when students earned a grade of "B" or better. All courses were open to eleventh and twelfth-grade students and were provided at no charge.

Dual credit courses allow students to earn both high school and college credit hours simultaneously and they are developed and taught by college-approved instructors. No prerequisite classes are required to enroll in these courses. Advanced technical credit (ATC) courses are developed at the state level and are

taught by local high-school teachers who receive specialized training. College credit for ATC courses are awarded once students enroll in a participating college or university. The ATC program provides an opportunity for students to receive credit at participating community colleges across Texas for taking certain enhanced technical courses during high school. ATC courses are only offered in technical or workforce areas. The course teachers must meet the ATC teacher requirements, go through ATC training, and teach the high school course so that it meets the content of the equivalent college course.

Dual Credit and Advanced Technical Credit opportunities are offered on many high school campuses as well as at the nine campuses that offer a Futures Academy. In collaboration with Houston Community College, students in a Futures Academy are able to earn an associate's degree or nationally recognized industry certifications in high-demand technical fields.

Career and Technology Student Organizations (CTSO)
CTE students are encouraged to join student organizations that are directly related to their selected career pathway. These organizations offer students opportunities to develop leadership and teamwork skills that help prepare them for the workforce and/or for postsecondary education and training. HISD has developed several partnerships with local, regional, and national professional organizations to allow school-level student organizations to participate fully in related activities and to benefit from their professional memberships. Some of these organizations include the Business Professionals of America (BPA), Future Business Leaders of America (FBLA), Family, Career and Community Leaders of America (FCCLA), Health Occupations Students of America (HOSA), SkillsUSA, and the Technology Student Association (TSA).

What were the academic performance results of students enrolled in the CTE program compared to HISD students districtwide over the past two school years, 2013–2014 and 2014–2015?

The STAAR End-of-Course (EOC) results of ninth through twelfth grade CTE students (code 2 and 3 combined) compared to non-CTE ninth through twelfth grade students (Code 0 and 1 combined) in the district are presented in **Figure 3**. CTE codes 2 and 3 represent students who are on track to earn a CTE certification or license based on their CTE curriculum sequence. The STAAR EOC measures academic performance in Algebra I, Biology, English I, English II, and U.S. History. The percentage of students who met the Satisfactory Phase-in 1 standard on the 2015 STAAR EOC assessments by CTE status and subject are shown. Following the same trend from 2014 STAAR EOC results, CTE students outperformed non-CTE students on all 2015 STAAR EOC exams (Figure 3; **Appendix C**, **Tables 3a and 3b**, **page 21**).

- The percentage of CTE students who met the Satisfactory standard on the 2015 Algebra I EOC was 7.5 percentage points higher than the percentage of non-CTE students who met the Satisfactory standard (70.4 percent vs. 62.9 percent).
- On the Biology EOC, the percentage of CTE students who met the Satisfactory standard exceeded the percentage of non-CTE students who met the standard by 5.4 percentage points (87.5 percent vs. 82.1 percent).
- The percentage of CTE students who met the Satisfactory standard on the 2015 English I EOC was 7.2 percentage points higher than non-CTE students who met Satisfactory standard (54.3 percent vs. 47.1).
- CTE students who met the Satisfactory standard was 6.0 percentage points higher than non-CTE students on the English II STAAR EOC (56.3 percent vs. 50.3 percent).

- There was a 4.7 percentage-point difference between CTE students and non-CTE students who met the Satisfactory standard on the U.S. History EOC (88.6 percent vs. 83.9 percent).
- When examining the performance of the students meeting the Advanced standard on the EOC assessments in 2015, the percentages of CTE students who met the Advanced standard was similar to non-CTE students on the Algebra I, Biology, and English I STAAR EOC. The largest difference between the CTE and non-CTE students who met the Advanced standard was in English II and U.S. History. CTE students were 1.6 percentage points lower than non-CTE students in English II and 3.6 percentage points lower in U.S. History. When considering EOC performance on comparable assessments in 2014, a higher percentage of CTE students met the Advanced standard in 2015 than they did the previous year in all subjects, with the exception of English II where there was a small decrease (<1 percentage point) (Appendix C, Tables 3a and 3b, page 21).

Figure 3. Percent Met Satisfactory Standard for CTE and Non-CTE Students on EOC Exams, Spring 2015

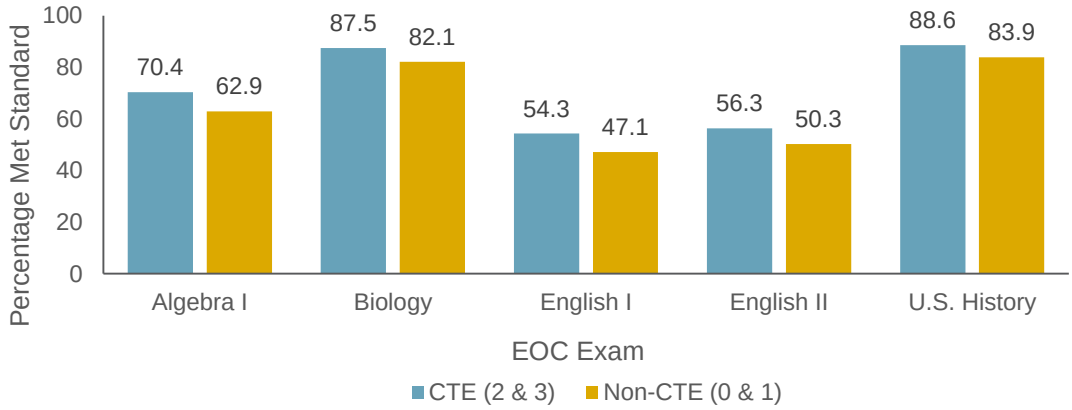
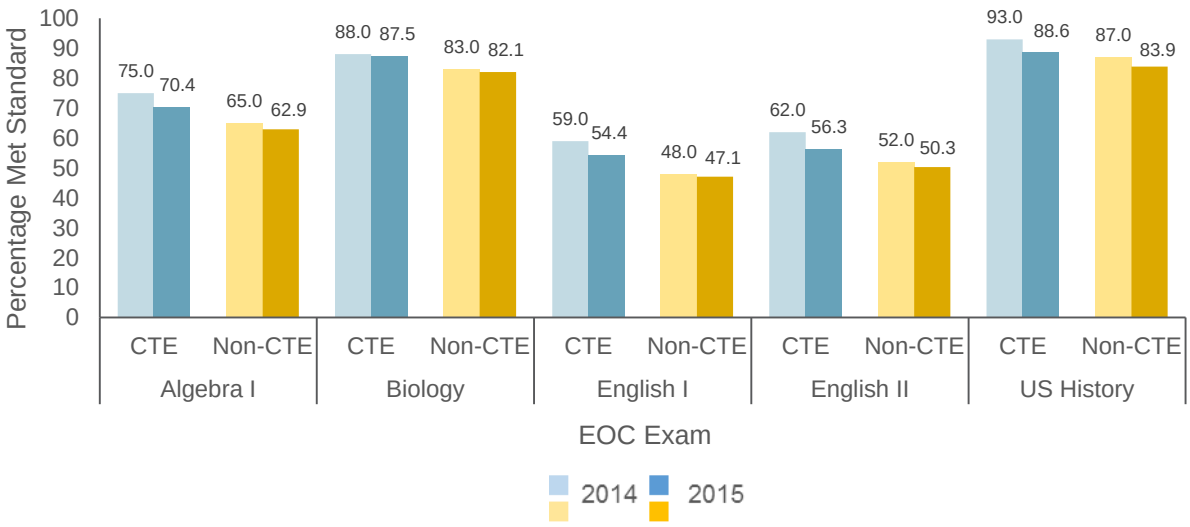


Figure 4 displays a two-year comparative performance trend between the CTE and non-CTE students on the Algebra I, Biology, English I, English II, and U.S. History STAAR EOC exams (Appendix C, Tables 3a and 3b, page 21).

- Students in the CTE program consistently performed better than non-CTE students in both 2013–2014 and 2014–2015 on STAAR EOC assessment subjects.
- The percentage of CTE students who met the Satisfactory Phase-in 1 standard decreased between 2013–2014 and 2014–2015 in all subjects on the STAAR EOC. Non-CTE students showed the same trend.

Figure 4. Percent Met Satisfactory for CTE and Non-CTE Students on the EOC Exams, Spring 2014 and Spring 2015

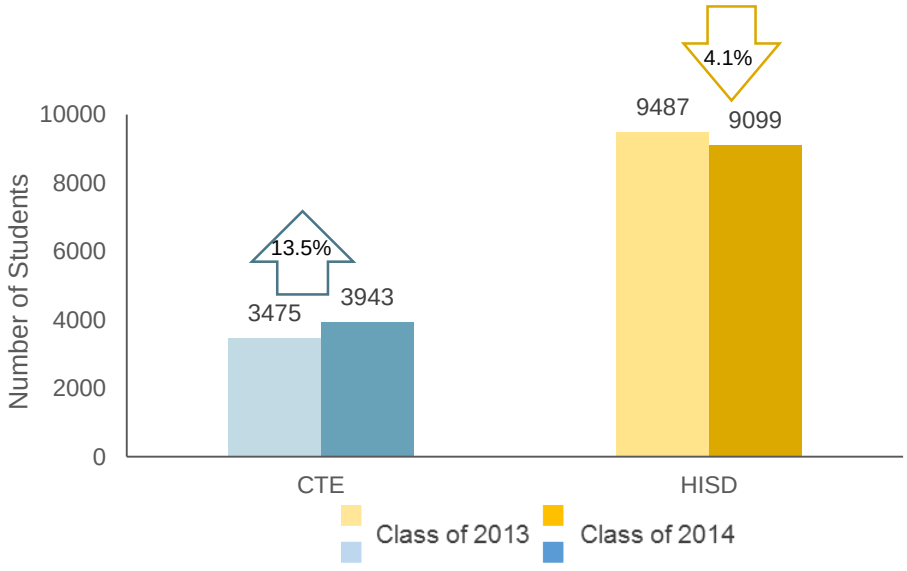


What were the graduation and annual dropout rates for students enrolled in the CTE program compared to HISD students districtwide over the past two years, 2012–2013 to 2014–2015?

The graduation counts for twelfth-grade students coded as CTE (codes 2 and 3 combined) from 2012–2013 to 2013–2014 (the most current year available) are presented in **Figure 5**. Graduation rates for the 2014–2015 school year will be available in 2015–2016. Students who enrolled in CTE courses as a general elective and who were coded as CTE 1 are not included, as these students are enrolled in CTE classes, but are not on a CTE plan to complete the CTE program.

- There was a 13.5 percent increase in the total number of CTE graduates, from 3,475 graduates in the spring of 2013 to 3,943 graduates in the spring of 2014. For the corresponding period, the number of HISD graduates decreased by 4.1 percent, from 9,487 to 9,099.

Figure 5. Number of CTE and HISD Graduates, Spring 2013 and Spring 2014



Twelfth-grade students earn one of three diploma distinctions based on the level and quantity of credits acquired during high school. These four diploma types are Completion of Individualized Education Plan (IEP), Regular/Minimum, Recommended, Distinguished Achievement, and Transitional/Foundational High School Program (**Appendix C**, **Table 4**, **page 22**).

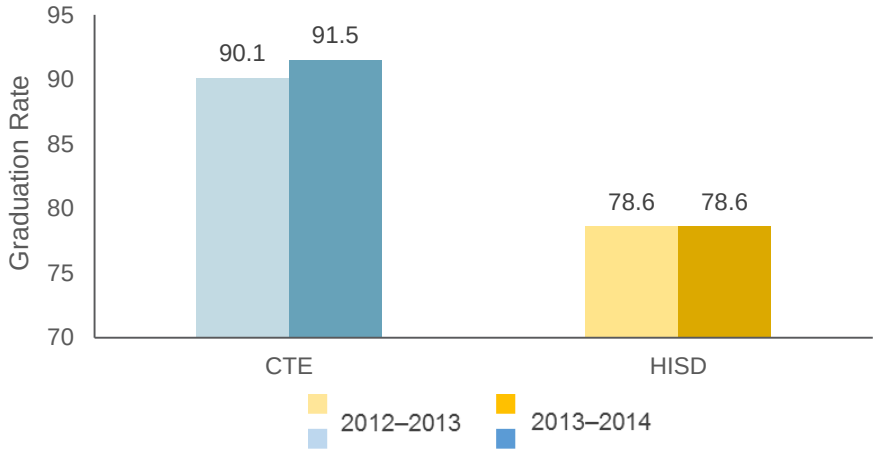
- The majority of CTE students (80.3 percent) graduated earning the Recommended diploma distinction In the spring of 2014. This was 0.6 percentage points higher than the percentage for CTE students who graduated with the Recommended distinction in spring 2013 (79.7 percent). A higher percentage of CTE students earned a Recommended diploma in both 2013 and 2014 compared to the district (Appendix C, Table 4, page 22).
- The percentage of CTE students who graduated with a Distinguished Achievement distinction decreased between the class of 2013 and the class of 2014 (5.9 percent vs. 4.6 percent), while the district percentage of students graduating with Distinguished Achievement distinction increased between the class of 2013 and the class of 2014 (6.7 percent to 8.1 percent).

Longitudinal Graduation Rates

The longitudinal graduation rate represents the percentage of students from a class of first-time ninth graders who complete their high school education by their anticipated graduation date (Texas Education Agency, 2015). **Figure 6** displays the four-year longitudinal graduation rates for CTE (codes 2 and 3 combined) and all HISD students for the 2013 and 2014 graduating classes.

- The percentages of CTE students from the ninth-grade cohort graduating from high school in a four-year period increased from 2013 to 2014 (90.1 percent for the class of 2013 to 91.5 percent for the class of 2014). The percentage of HISD students from the ninth-grade cohort graduating from high school in a four-year period did not change from 2013 to 2014 (78.6 percent). For each year displayed, the percentage of CTE students graduating from high school in the four-year period was at least 11.5 percentage points higher than that of the district.

Figure 6. CTE and HISD Longitudinal Graduation Rates Based on Ninth Grade Cohorts, Class of 2013 and Class of 2014 (Federal Rates with no Exclusions)



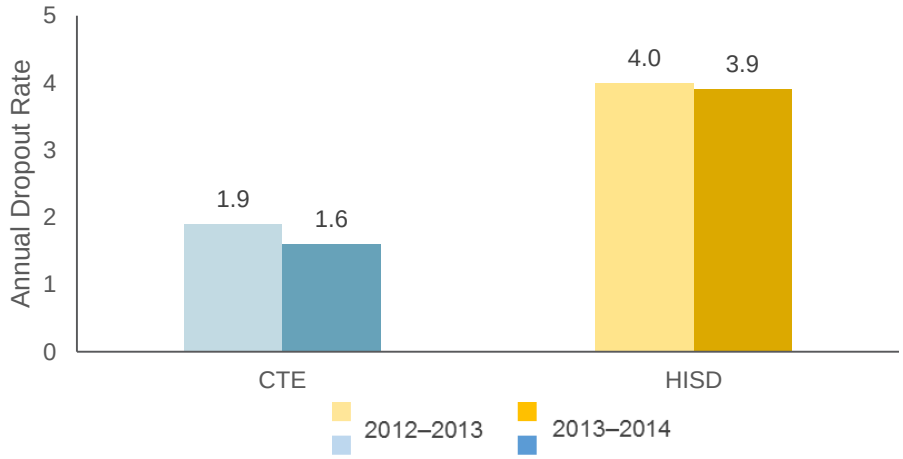
Source: TEA Performance-Based Monitoring Analysis System Report (PBMAS), 2015

Annual Dropout Rates

Figure 7 shows the annual dropout rates[2] (grades 9 through 12) for CTE (codes 2 and 3 combined) and HISD students for the 2012–2013 and 2013–2014 school years.

- In 2012–2013, the annual dropout rate of the CTE students was 1.9 percent and decreased to 1.6 percent in 2013–2014. The annual dropout rates for HISD students was 4.0 percent in 2012–2013 and decreased to 3.9 percent in 2013–2014.

Figure 7. CTE (2 and 3 combined) and HISD Annual Dropout Rates, Grades 9 through 12, 2012–2013 and 2013–2014



Source: TEA Performance-Based Monitoring Analysis System Report (PBMAS), 2015

Discussion

The HISD CTE program offers career concentration courses and career pathways in which students are equipped with the academic and technical skills required to successfully enter the workforce and postsecondary education after high-school graduation. Many CTE students earn certifications and/or licensures as evidence of skill mastery in selected career concentrations. Participation in CTE student organizations fosters the development of leadership skills, while exposure to mentors and business partners provides guidance and practical experiences. In general, CTE students were found to outperform their non-CTE counterparts on the STAAR EOC exams. Although a lower percentage of CTE students met the Advanced standard on the English I, English II, and U.S. History STAAR EOC assessments compared to non-CTE, larger percentages of ninth through twelfth-grade CTE students enrolled in career pathway courses met the Satisfactory standard in all subjects in 2015. The HISD CTE program did not show year-to-year gains, with a lower percentage of students meeting Satisfactory standards in 2015 compared to the previous year for all subjects. This trend, however, was the same for non-CTE students in the district. In addition, students enrolled in CTE programs had higher 4-year graduation rates and lower annual dropout rates compared to the district's overall rates for the same period. The higher performance by CTE students

[2] The annual dropout rate is the number of students that dropped out of school in grades nine through twelve in a particular school year divided by the number of students enrolled in that particular school year. Only students with PEIMS CTE status codes 2 (coherent sequence) or 3 (tech prep) are included in the calculation of this indicator.

supports the belief that involvement in the CTE program can be academically-beneficial for students (Castellano, Sundell, Overman, and Aliaga, 2012).

The CTE program aligns with the districts mission to produce Global graduates who are ready for the world — possessing the characteristics they need to be successful in college and to compete in today's global workforce. CTE must continue to commit to a variety of programming and opportunities for students to develop their career knowledge and skills. CTE's continued high expectations of student performance and supporting students who may be able to reach higher standards of performance is important. Considering the higher graduation rates and lower annual dropout rates of CTE students, efforts should be made to increase the enrollment of ninth and tenth-grade students in a coherent sequence (CTE 2) of courses. Early career interest and enrollment in the CTE program may help students develop a stronger connection to school and career-oriented activities such that graduation becomes a more realistic and attainable goal.

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APPENDIX A
Career Concentrations and Related Courses*, 2014–2015

Career Concentration	Sample of Related Courses
Agriculture, Food & Natural Resources	Animal Science Horticulture Science and Resource Management
Architecture & Construction	Structural Design and Engineering Building Maintenance Construction Technology Plumbing HVAC Electrical Technology
Arts/AV Production & Communications	Printing and Imaging Audio/Video Production
Business, Management and Administration	Human Resources Business Management
Education and Training	Educator Preparation
Finance	Accounting Banking and Securities
Government and Public Administration	
Health Science	Health Science Technology Biomedical Technology
Hospitality and Tourism	Culinary Arts Hotel and Restaurant Management
Human Services	Cosmetology
Information Technology	Computer Maintenance Computer Programming Digital Media and Web Technologies Geographic Information Systems Telecommunications and Networking
Law, Public Safety, Corrections and Security	Court Systems Firefighter Forensic Science Law Enforcement and Corrections
Manufacturing	Precision Metal Manufacturing Welding Engineering
Marketing, Sales and Service	Retail Management
Science, Technology, Engineering and Mathematics	Robotics Engineering Biotechnology
Transportation, Distribution and Logistics	Automotive Technology Logistics and Global Supply Aviation Technology Maritime Technology

*Complete listing of courses can be found at http://www.houstonisd.org/portal/site/CareerTech

Appendix B

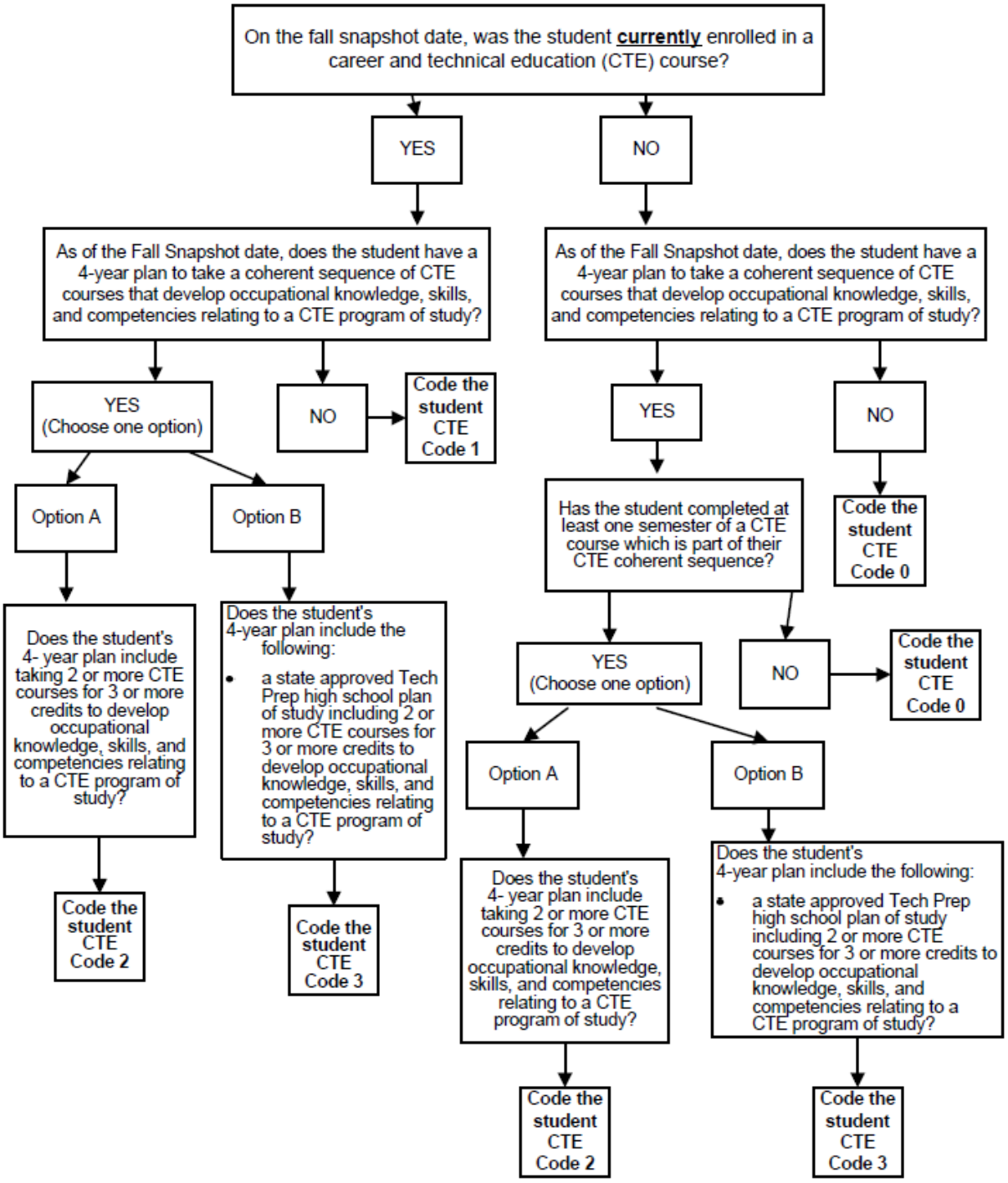
*PEIMS 2014–2015 Data Standards – Career and Technical Education Indicator Codes

Code	Translation
	When assigning the Career and Technical Indicator Code, include enrollment in all Career and Technical Education (CTE) courses, regardless of course funding weight
0	Not Enrolled In A CTE Course
1	Enrolled In A CTE Course A student in grades 6-8 who is taking a CTE course as of the fall snapshot date or completed a CTE course by the end of the school year. A student in grades 9-12 who is taking a CTE course as of the fall snapshot date or completed a CTE course by the end of the school year, and the student's 4-year plan of study does not outline a coherent sequence of courses in CTE
	The following codes are for students who on the fall snapshot date: (a) have a 4-year plan to take a coherent sequence (2 or more CTE courses for 3 or more credits) of courses in CTE, and (b) are enrolled in or have completed a semester of CTE course(s), which are part of their CTE coherent sequence of courses. If a student's 4-year plan changes, then the student could go from a code 2 or 3 to a 0 or 1 in a subsequent school year
2	Participant In A Coherent Sequence Of Courses A student in grades 9-12 who is enrolled in a sequential course of study, which develops occupational knowledge, skills, and competencies relating to a CTE program of study. The student must have a 4-year plan of study to take 2 or more CTE courses for 3 or more credits
3	Participant In Tech Prep Program A student in grades 9-12 who follows a state approved Tech Prep high school plan of study leading to postsecondary education and training. The student must have a 4-year secondary plan of study that includes a CTE coherent sequence of courses of 2 or more CTE courses for 3 or more credits. The plan must provide at least one option for articulated and/or concurrent credit at the postsecondary level

Note: Code 3 will remain in place for the 2015-2016 school year and then be removed for the 2016-2017 school year. New edits are in place for the 2015-2016 school year that restrict certain students from being reported with CTE code 3.

*Retrieved from the Texas Education Agency on 2/13/2015

Career and Technical Education Indicator Code
Fall Snapshot Decision Chart (E0031)



Appendix C

Table 1. Student Enrollment by CTE Codes, 2013–2014 and 2014–2015

	2009–2010	2010–2011	2011–2012	2012–2013	2013–2014	2014–2015
Total HISD Student Enrollment (6th – 12th)	87,576	87,826	87,244	87,418	90,630	92,355
	CTE Student Enrollment					
Number of CTE Students Coded 1	19,809	16,246	16,842	14,337	14,268	13,232
Number of CTE Students Coded 2	12,542	13,709	12,283	14,858	17,843	20,856
Number of CTE Students Coded 3	1,283	1,943	3,830	2,676	894	49
Total Number of CTE Students	**33,634**	**31,898**	**32,955**	**31,871**	**33,005**	**34,137**

Note: Data retrieved from TEA PEIMS, September 2014 and February 2015

Table 2. District and CTE (Codes 1, 2, and 3) Course Enrollment by Student Groups*, 2013-2014 and 2014-2015				
	Academic Year			
	2013–2014		2014–2015	
Subgroup	N	%	N	%
Total HISD 6th through 12th Grade Student Enrollment	**90,630**	**100**	**92,355**	**100**
Gender				
Female	44,403	49.0	45,348	49.1
Male	46,227	51.0	47,007	50.9
Ethnicity				
American Indian	212	<1.0	208	<1.0
Asian/Pacific Islander	3,369	3.7	3,470	3.7
African-American	23,685	26.1	23,541	25.5
Hispanic	54,209	59.8	55,616	60.2
White	8,454	9.3	8,803	9.5
Two or More	701	<1.0	717	<1.0
Economically Disadvantaged	68,791	75.9	65,586	71.0
At Risk	51,937	57.3	59,516	64.4
Special Education	8,750	9.7	8,521	9.2
Limited English Proficiency	12,564	13.9	13,790	14.9
Gifted & Talented (G/T)	14,381	15.9	14,569	15.8
Total CTE Student Enrollment	**33,005**	**100**	**34137**	**100**
Gender				
Female	16,193	49.1	16,742	49.0
Male	16,812	50.9	17,395	51.0
Ethnicity				
American Indian	81	<1.0	70	<1
Asian/Pacific Islander	1,054	3.2	1,151	3.5
African-American	9,285	28.1	9,665	28.3
Hispanic	20,304	61.5	20,866	61.1
White	2,112	6.4	2,183	6.4
Two or More†	169	<1.0	212	<1
Economically Disadvantaged	25,278	76.6	24,568	72.0
At Risk	19,802	60.0	23,848	69.9
Special Education	2,735	8.3	2,583	7.6
Limited English Proficiency	5,188	15.7	3,640	10.7
Gifted & Talented (G/T)	5,024	15.2	5,259	15.4

Table 3a. Percent Met Satisfactory Phase-in 1 and Advanced Standards by STAAR EOC Subject and CTE Status, Spring 2015			
	N	% Satisfactory	% Advanced
CTE (Codes 2 & 3)			
Algebra I	4518	70.4	9.1
Biology	5514	87.5	14.2
English I	6699	54.3	6.3
English II	6581	56.3	3.5
US History	4519	88.6	20.5
Non-CTE (Codes 0 & 1)			
Algebra I	6011	62.9	8.2
Biology	6976	82.1	13.7
English I	8843	47.1	7.0
English II	7058	50.3	5.1
US History	5896	83.9	24.1

Table 3b. Percent Met Satisfactory Phase-in 1 and Advanced Standards by STAAR EOC Subject and CTE Status, Spring 2014			
	N	% Satisfactory	% Advanced
CTE (Codes 2 & 3)			
Algebra I	3591	75.9	8.5
Biology	4491	88.4	10.5
English I	5804	59.4	6.3
English II	5498	62.3	4.3
US History	4542	93.9	15.0
Non-CTE (Codes 0 & 1)			
Algebra I	6686	64.9	5.7
Biology	5219	83.2	8.8
English I	6108	48.5	4.5
English II	4233	52.5	4.6
US History	2594	87.4	14.6

Table 4. Percent of CTE Graduates by Diploma Type, Spring 2013 and Spring 2014

	Type of Diploma	2013		2014	
		N	%	N	%
CTE Code 2 and 3	Completion of Individualized Education Plan	22	0.6	66	16.5
	Regular/Minimum[1]	501	14.4	601	29.9
	Recommended	2770	79.7	3206	80.3
	Distinguished Achievement	204	5.9	182	4.6
	Transitional[2]			3	<1
	Total	3474	100.0	5345	100.0
HISD	Completion of Individualized Education Plan	349	3.7	375	4.0
	Regular/Minimum[1]	1705	5.6	1392	14.9
	Recommended	6796	71.6	6798	72.8
	Distinguished Achievement	637	6.7	755	8.1
	Transitional[2]			17	<1
	Total	9487	100.0	9337	100.0

1. Students who completed received special education services graduate in a minimum high school program under TAC Chapter 74 with curriculum content modifications through the student's individualized education program (IEP).
2. Transitional students are students who are completing the fourth/final year of high school during the 2013-2014 school year and chose to earn a Foundation High School Program diploma. These students will graduate under TAC Chapter 74.