



# Career and Technical Education (CTE)

## Enrollment and Demographic Trends

2012–2013 to 2016–2017

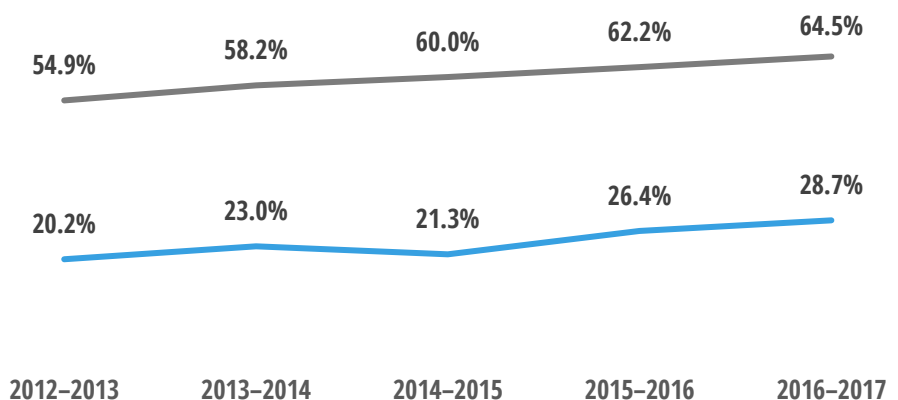
### Background & Overview

The mission of Austin Independent School District’s (AISD) Career and Technical Education (CTE) Department is to provide opportunities for students to acquire 21<sup>st</sup>-century academic and technical skills needed for entry into the global workforce and/or postsecondary education to become contributing members of their community. The purpose of this report is to examine the trends in CTE course enrollment and student demographics over the last 5 years, 2012–2013 to 2016–2017. Differences were seen in trends for students who take CTE courses and those who do not, however, larger discrepancies were seen between CTE concentrators and their non-CTE peers. Students enrolled in CTE courses were classified as CTE course takers, and students not enrolled in CTE courses as non-CTE course takers. In addition, the data were analyzed by comparing CTE concentrators and non-CTE concentrators. Students were considered CTE concentrators if (a) the student’s 4-year plan of courses reflected the intent to take a sequence of two or more CTE courses for three or more credits, (b) the student took one of the CTE courses in the sequence prior to his or her senior year, and/or (c) the student took an upper-level CTE course in the sequence during his or her junior or senior year that met the credit requirement.

### Enrollment

The percentage of high school students who were enrolled in CTE significantly increased each year during the 5-year time frame. The percentage of CTE concentrators dipped in 2014–2015, but otherwise increased over time (Figure 1).

Figure 1.  
Percentage of Students Enrolled in CTE Courses and Percentage of CTE Concentrators



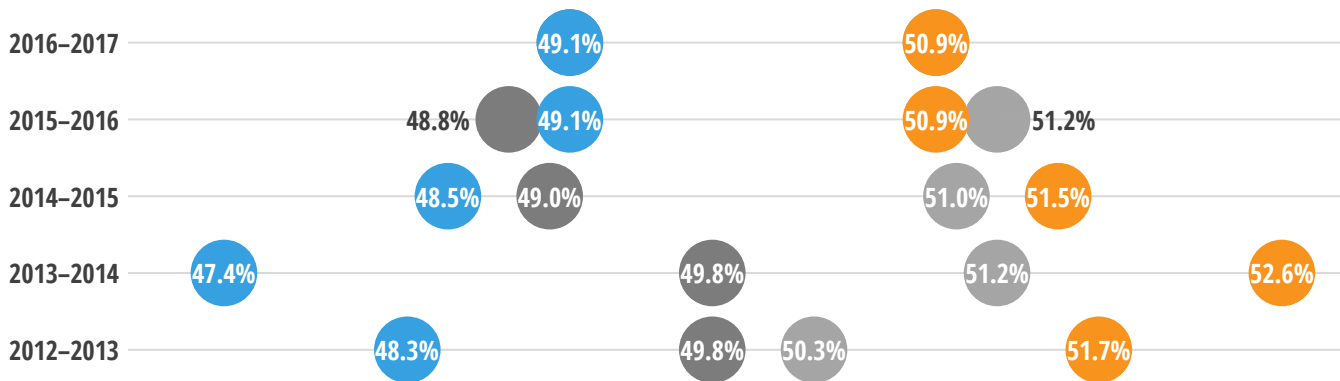
Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

## Gender

Significant differences existed in gender representation between CTE course takers and their peers (Figure 2). Male students were consistently overrepresented in CTE, compared with their non-CTE course taking peers. Additionally, significant differences existed in gender representation between CTE concentrators and their peers, with male students consistently overrepresented (Figure 3). In the 2016–2017 school year, the percentage of male non-CTE course takers and female CTE course takers was equal, as was the percentage of male CTE course takers and female non-CTE course takers, highlighting the overrepresentation of males enrolled in CTE courses.

Figure 2.

The percentage of **male CTE course takers** was similar to that of **female non-CTE course takers**, as was the percentage of **male non-CTE course takers** and **female CTE course takers**, for 2012–2013 to 2016–2017.

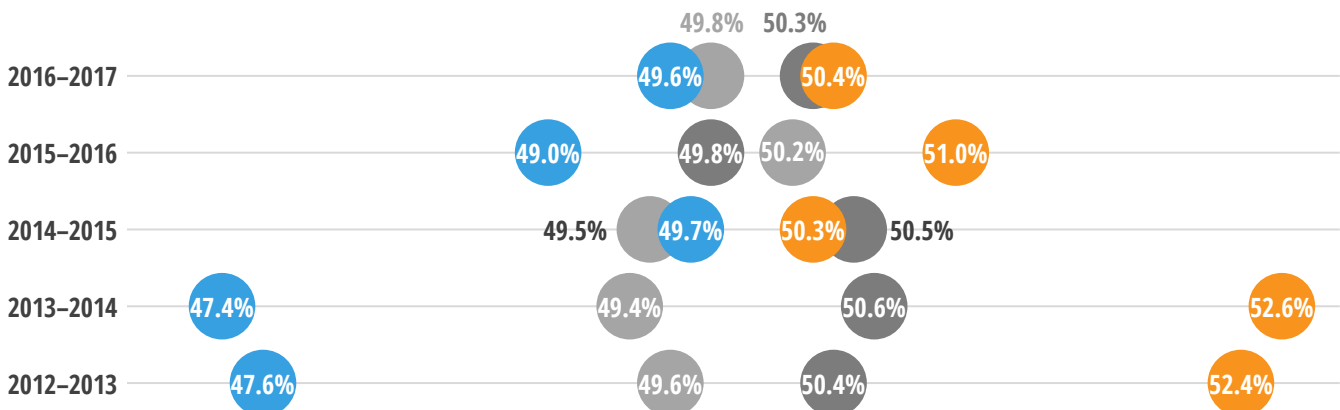


Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

Note. Each year, the difference in the percentage of male and female CTE course takers and their non-CTE peers was statistically significant at  $p < .01$ .

Figure 3.

The percentage of **male CTE concentrators** was larger than that of **male non-CTE concentrators**, **female non-CTE concentrators**, and **female CTE concentrators** for 2012–2013, 2013–2014, 2015–2016, and 2016–2017.



Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

Note. Each year, the difference in the percentage of male and female CTE concentrators and their non-CTE peers was statistically significant at  $p < .01$ .

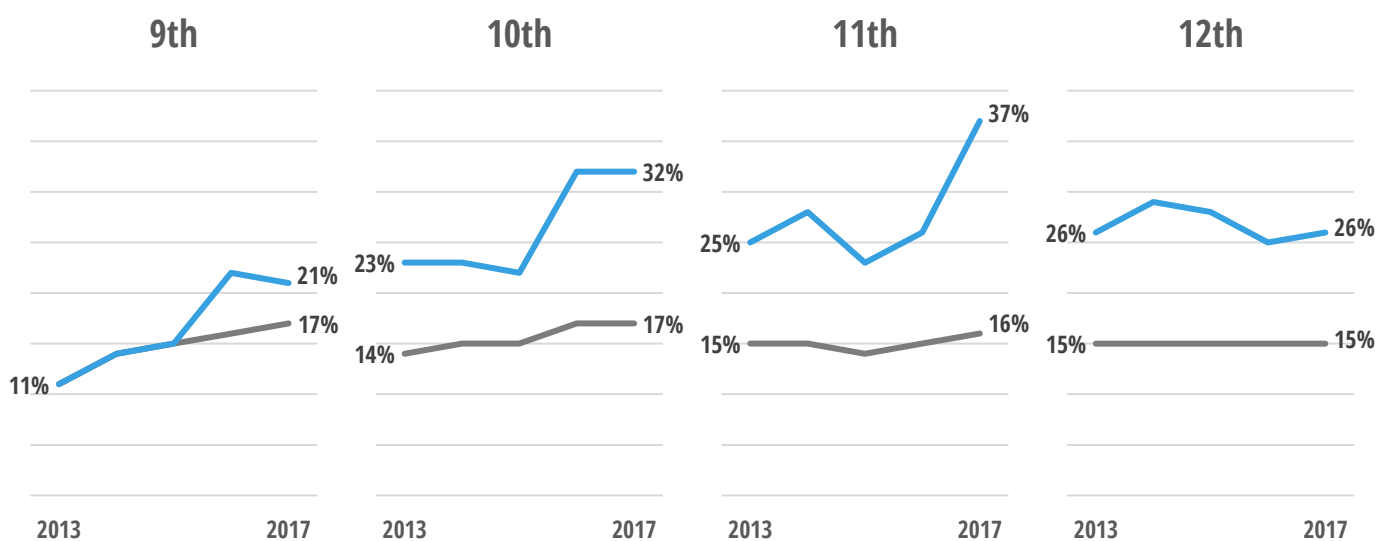
## Grade Level

### CTE Course Takers and Concentrators Among High School Students

CTE course taking increased in most grade levels over the past 5 years. The percentage of students taking CTE courses increased in 9<sup>th</sup> and 10<sup>th</sup> grades over the time period. The percentage of 11<sup>th</sup> graders taking CTE courses dipped slightly during the 2014–2015 school year and then increased in the last 2 years of the time period (Figure 4). Seniors’ enrollment in CTE courses was steady at 15% across the time period. Much of the overall increase in CTE course enrollment was attributed to the increased course taking by freshmen and sophomores. A slightly different enrollment trend was seen for CTE concentrators across the 5-year time frame. The increase in freshman concentrators was greater than that of their course taker peers. The overall percentage of 10<sup>th</sup>-grade CTE concentrators was substantially higher and increased more than that of the 10<sup>th</sup>-grade CTE course takers (Figure 4). As with the 11<sup>th</sup>-grade course takers, the percentage of 11<sup>th</sup>-grade concentrators dipped in the 2014–2015 school year; however, the dip was larger than that observed for the course takers. The percentage of senior CTE concentrators increased in the 2013–2014 school year, decreased 2 years in row, and increased in 2016–2017 (Figure 4).

Figure 4.

Percentage of CTE Course Takers and CTE Concentrators Among High School Students, by Grade Level



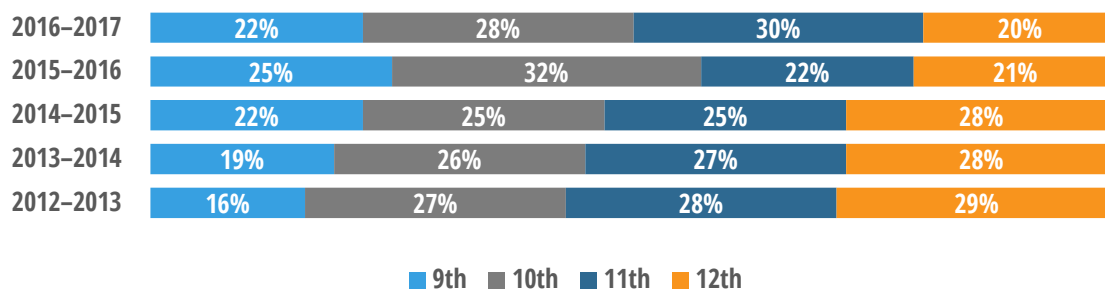
Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

### Distribution of CTE Concentrators, by Grade Level

The distribution of CTE concentrators by grade level changed over the 5-year time period. A shift appeared to occur between CTE concentrators in different grade levels regarding their distribution. Generally, the proportion of freshman and sophomores increased, surpassing the proportion of juniors and seniors in the 2015–2016 school year; however, this leveled out during the 2016–2017 school year, resulting in approximately even proportions. The proportion of freshman increased during the first four years and then slightly decreased in 2016–2017 (Figure 5). Sophomore CTE concentrators decreased slightly for 3 years, followed by a significant increase, and then by a decrease of 4 percentage points. CTE concentrators in 11<sup>th</sup> grade decreased from 2012–2013 through 2015–2016, after which an increase was seen. Senior CTE

concentrators decreased across the 5-year time period.

Figure 5.  
Percentage of CTE Concentrators, by Grade Level



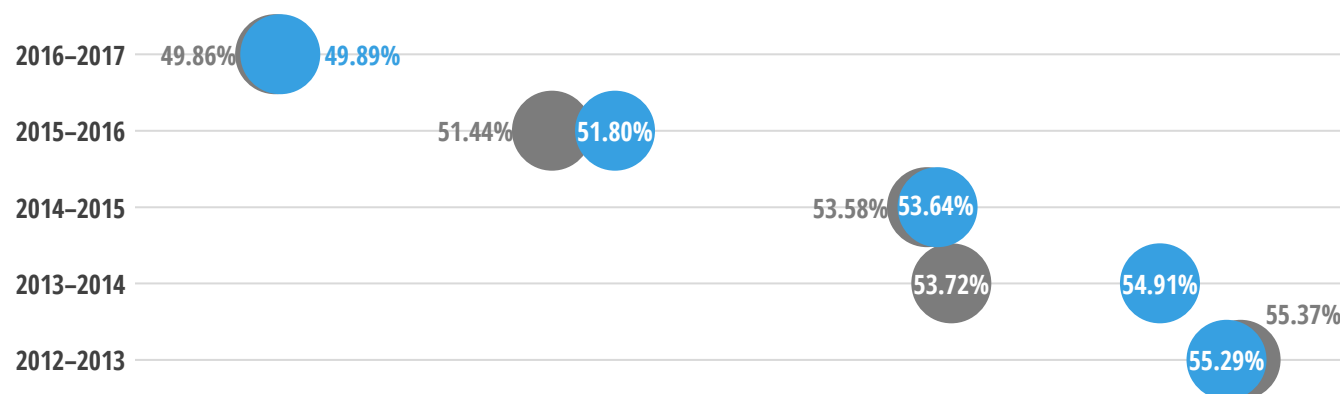
Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

## Economic Status

### CTE Course Takers

The percentage of economically disadvantaged students, as measured by eligibility for free or reduced-price lunch, decreased over time, regardless of CTE course taking status. Each year, the percentage of CTE course takers who were economically disadvantaged was slightly higher than that of non-CTE course takers (Figure 6). The difference was statistically significant for all 5 years.

Figure 6.  
Percentage of Economically Disadvantaged CTE Course Takers and Non-CTE Course Takers



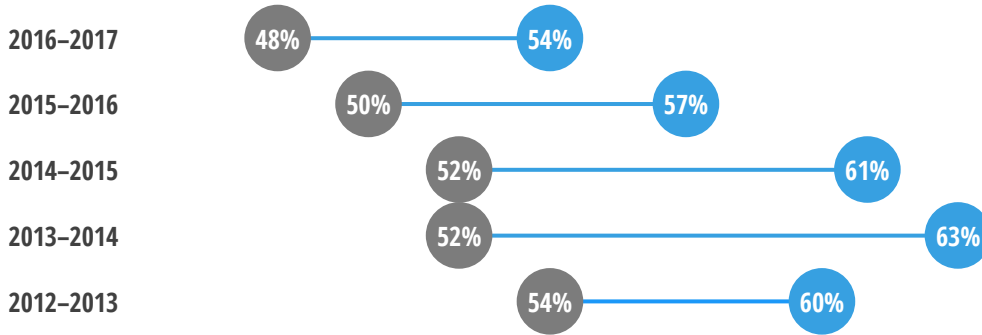
Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

### CTE Concentrators

Each year, the percentage of economically disadvantaged students was significantly higher among CTE concentrators than among non-CTE concentrators. The percentage point difference between the two groups was large, ranging between 6 and 11 (Figure 7). The relationship was the same between CTE course takers and their non-CTE peers; however, the difference in representation of economically disadvantaged students between CTE and non-CTE course takers was

between 1 and 2 percentage points. Economically disadvantaged students might receive the greatest benefit to continuing in a course sequence. Previous reports have shown that economically disadvantaged graduates were more likely to enroll in college if they were CTE concentrators (Pazera, 2016).

Figure 7.  
Percentage of Economically Disadvantaged CTE Concentrators and Non-CTE Concentrators



Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

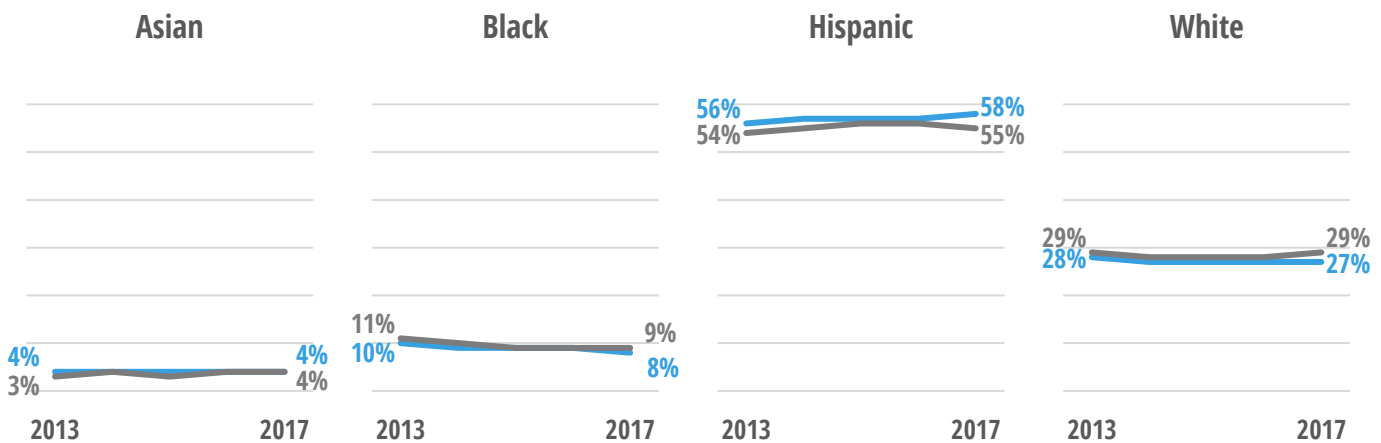
Note. Each year, the difference in the percentage of economically disadvantaged students between CTE concentrators and their peers was statistically significant at  $p < .01$ .

## Race/Ethnicity

### CTE Course Takers

Hispanic CTE course takers were significantly overrepresented across the 5-year time period, compared with their non-CTE-course-taking peers (Figure 8). In the district as a whole, the percentage of Hispanic student increased every year across the 5-year time period. Other races/ethnicities had similar representation between CTE and non-CTE course takers, although differences were statistically significant.

Figure 8.  
Percentage of Race/Ethnic Group Among CTE and Non-CTE Course Takers



Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

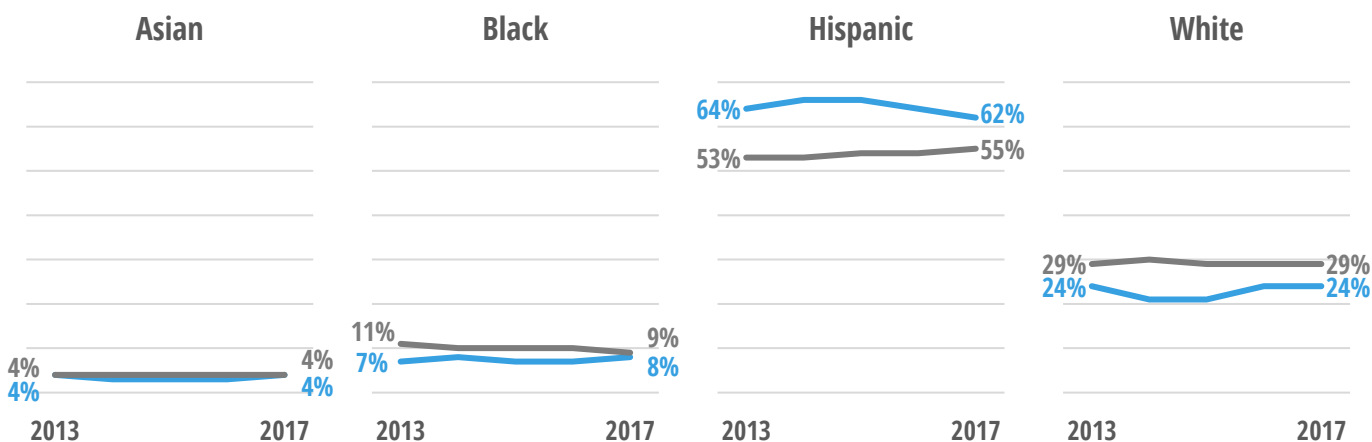
*Note.* Difference in the percentage of Asian, Black, Hispanic, and White students among CTE course takers and their peers is significant at  $p < 0.01$  for all 5 years.

### CTE Concentrators

The trend seen in CTE course takers and non-CTE course takers was also seen in CTE concentrators and their non-CTE peers. Hispanic CTE concentrators were overrepresented, compared with their non-CTE peers. Asian, Black, and White CTE concentrators were underrepresented, compared with their non-CTE peers (Figure 9). Ideally, the percentages of students for each race/ethnicity would be equal for CTE and non-CTE students, demonstrating an equal representation of the student population. However, significant differences in representation existed, with Hispanic students consistently overrepresented in CTE, and Black and White students consistently underrepresented. However, students of each race/ethnic group were not evenly distributed across campuses.

Figure 9.

Percentage of Race/Ethnic Group Among CTE Concentrators and Non-CTE Concentrators



*Source.* Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

*Note.* Difference in the percentage of Asian, Black, Hispanic, and White students among CTE concentrators and their peers is significant at  $p < 0.01$  for all 5 years.

### Language Spoken at Home

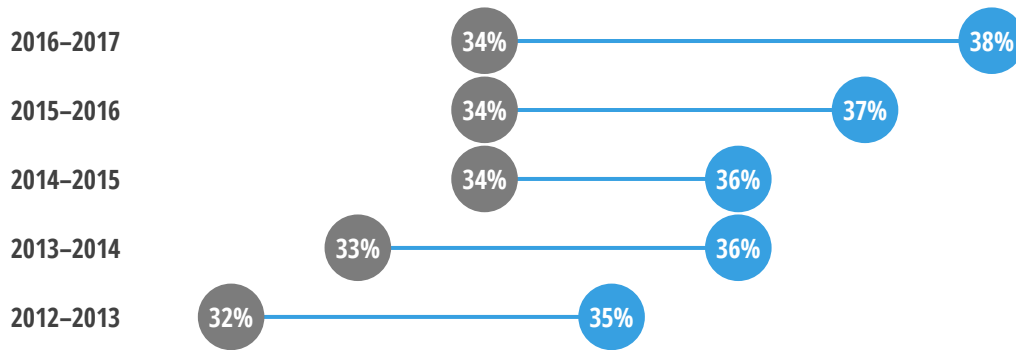
#### CTE Course Takers

Each school year, CTE course takers included a significantly higher percentage of students who did not speak English at home, compared with non-CTE course takers (Figure 10). Although the percentage of English language learners among CTE course takers rose steadily, the percentage of students with limited English proficiency was significantly lower each year among CTE course takers than among their non-CTE peers. It may seem contradictory for CTE course takers to include a significantly higher percentage of students who do not speak English at home, yet include a significantly lower percentage of English language learners, compared with non-CTE course takers. In some cases, CTE course takers may have been born in the United States to immigrant parents, or may have arrived in the country at a very young age, giving them time to learn English. Their parents may still speak their language of origin, while the children speak both languages. In some countries, children receive their education in English but speak their native language at home. The

reason for the significantly lower percentage of English language learners among CTE course takers than among their peers is unknown.

Figure 10.

**Percentage of CTE and Non-CTE Course Takers Who Speak a Language Other Than English at Home**



Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

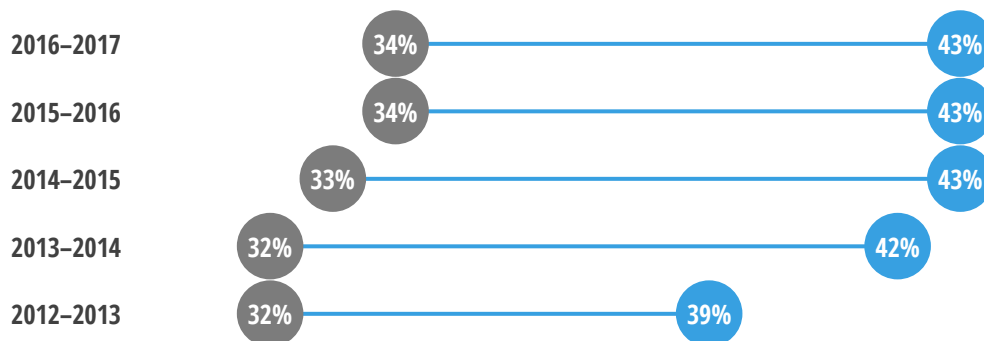
Note. Each year, the difference in the percentage of students who did not speak English at home by CTE course taking status was significant at  $p < .01$ .

**CTE Concentrators**

Each year, a significantly higher percentage of CTE concentrators than of non-CTE concentrators spoke a language other than English at home. The relationship was the same between CTE course takers and their non-CTE peers. However, the percentage point difference between CTE and non-CTE course takers was much smaller (i.e., between 2 and 3 percentage points) than it was between CTE and non-CTE concentrators (i.e., between 7 and 10 percentage points) (Figure 11). It appears that students who do not speak English at home are more likely to persist in CTE than are students who speak English at home.

Figure 11.

**Percentage of CTE Concentrators and Non-CTE Concentrators Who Speak a Language Other Than English at Home**



Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

Note. Each year, the difference in the percentage of students between CTE concentrators and their peers who did not speak English at home was significant at  $p < .01$ .

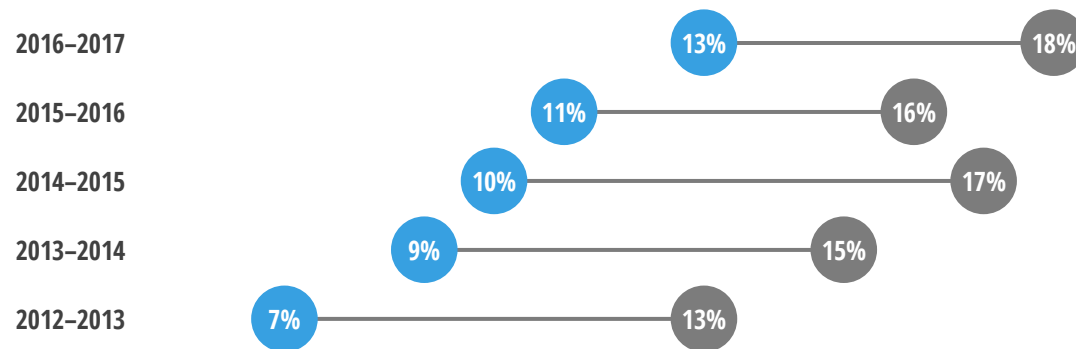
## English Language Learner Status

### CTE Course Takers

The percentage of CTE and non-CTE course takers who were English language learners increased each school year (Figure 12). However, the percentage of English language learners was significantly lower among CTE course takers than among their non-CTE peers.

Figure 12.

Percentage of English Language Learners Among CTE and Non-CTE Course Takers



Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

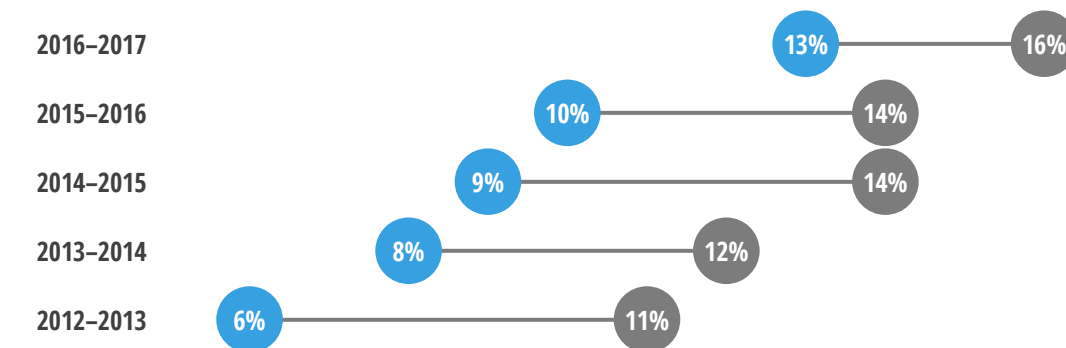
Note. Each year, the difference in the percentage of English language learners between CTE and non-CTE course takers was significant at  $p < .01$ .

### CTE Concentrators

The same relationship existed for CTE concentrators and their non-CTE concentrator peers (Figure 13). The gap between the CTE concentrators and their non-CTE concentrator peers was slightly smaller than that for course takers. Additionally, like for CTE course takers and their non-CTE course taker peers, the percentage increased across the 5-year time period for both CTE concentrators and their non-CTE concentrator peers.

Figure 13.

Percentage of English Language Learners Among CTE Concentrators and Non-CTE Concentrators



Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

Note. Each year, the difference in the percentage of English language learners between CTE concentrators and their peers was significant at  $p < .01$ .

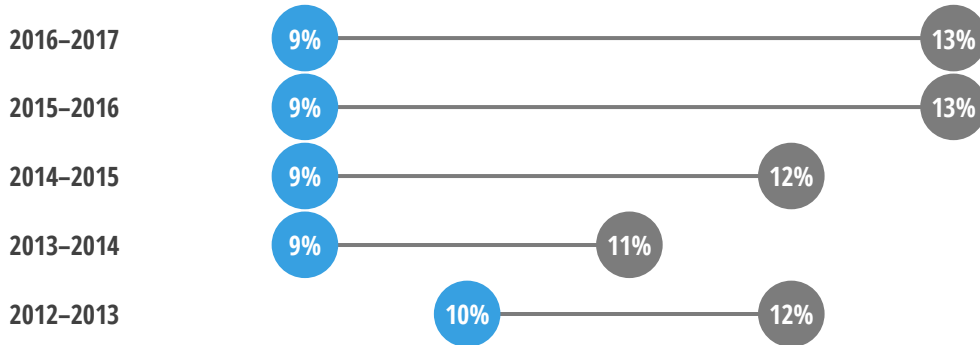


## Special Education

### CTE Course Takers

Each year, CTE course takers, compared with non-CTE course takers, included a significantly lower percentage of students in special education (Figure 14).

Figure 14.  
Percentage of Special Education Students Among CTE and Non-CTE Course Takers



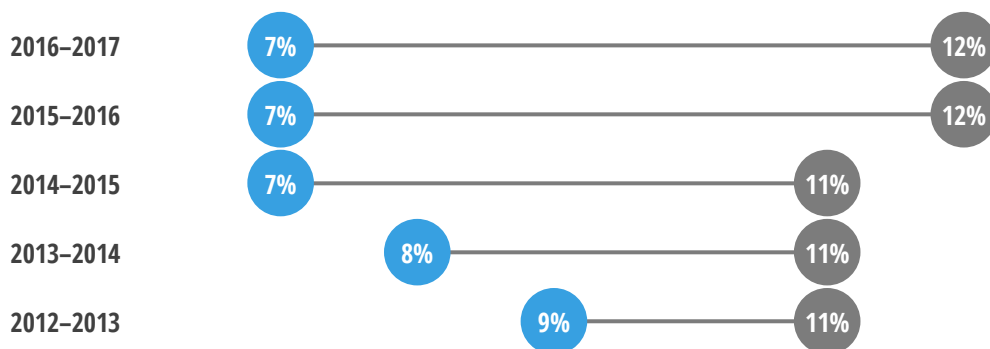
Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

Note. Each year, the difference in the percentage of special education students between CTE and non-CTE course takers was significant at  $p < .01$ .

### CTE Concentrators

Each year, a significantly lower percentage of CTE concentrators were in special education, compared with their non-CTE peers. The percentage of special education students among CTE concentrators decreased or remained the same every year (Figure 15). For the district as a whole, the percentage of special education students remained steady.

Figure 15.  
Percentage of Special Education Students Among CTE Concentrators and Non-CTE Concentrators



Source. Texas Education Agency’s Public Education Information Management System (PEIMS), submission 3, 2012–2013, 2013–2014, 2014–2015, 2015–2016, and 2016–2017

Note. Each year, the difference in the percentage of special education students between CTE concentrators and their peers was significant at  $p < .01$ .

## Conclusion

During the last 5 school years, enrollment in CTE courses has steadily increased, as has the number of CTE concentrators.

Although the interest in CTE programs has increased, differences exist with respect to gender, grade level, race/ethnicity distributions, and economic status, to name a few variables. Additionally, while differences were seen in trends for students who take CTE courses and those who do not, larger discrepancies were seen between CTE concentrators and their non-CTE peers. The explanation for these discrepancies is unknown and beyond the scope of this document; however, a closer examination of why these discrepancies exist is recommended.

## References

Pazera, C. (2016). *Postsecondary education and employment outcomes for career and technical education graduates in the Class of 2013* (DRE Publication No. 15.40 RB). Austin TX: Austin Independent School District.

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