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Alternative career readiness measures for small and rural districts in Texas

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Alternative career readiness measures for small and rural districts in Texas

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Texas House Bill 3 established a college, career, and military readiness (CCMR) outcomes bonus, which provides extra funding to districts for each annual graduate demonstrating CCMR under the state accountability system. Some small district and rural district leaders expressed concern about the ability of their graduates to meet the career readiness component of the CCMR accountability standards due to a lack of career and technical education (CTE) program or course resources. In response to a request from the Texas Education Agency (TEA), this study examined whether graduates from small districts and rural districts who did not demonstrate CCMR demonstrated career readiness via five possible alternative career readiness options identified by TEA: CTE completer, CTE concentrator, CTE explorer, CTE participant, and work-based learner. The study used a statewide cohort of 2017–18 high school graduates to examine the percentage of graduates who did not meet CCMR accountability standards. For graduates who did not meet CCMR accountability standards, the study examined the percentages of graduates who met each of the possible alternative career readiness options. Finally, the study explored whether graduates who met the alternative career readiness options (but did not demonstrate CCMR) performed comparably on postsecondary college and career outcomes with graduates who met CCMR accountability standards. Key findings include:

- No substantive differences were identified between small districts and large districts or between rural districts and major suburban districts in the percentages of graduates who met a career readiness accountability standard.
- More than 40 percent of graduates did not demonstrate college, career, or military readiness.
- Nearly all graduates who did not demonstrate CCMR met at least one alternative career readiness option.
- Among graduates who did not demonstrate CCMR, a higher percentage from small districts and rural districts were CTE concentrators, whereas the percentage from small districts and rural districts who were CTE completers or work-based learners was similar to large districts and major suburban districts.
- CTE completers and work-based learners had higher rates of college enrollment than graduates who met a career readiness accountability standard.
- CTE completers had higher rates of credential attainment or college persistence than graduates who met a career readiness accountability standard.

Why this study?

Texas House Bill 3, a comprehensive reform of the state's school finance system that passed in 2019, established a college, career, and military readiness (CCMR) outcomes bonus, which provides extra funding to districts for each annual graduate demonstrating college, career, or military readiness under the state accountability system (TEA, 2019f; appendix A). According to the Texas Education Agency (TEA), some small district and rural district leaders expressed concern about the requirement that graduates must earn either an industry-based certification or a Level I or Level II certificate to demonstrate career readiness (see box 1 for key terms). The expected pathway to earning an industry-based certification or a Level I or Level II certificate while enrolled in a Texas high school is through career and technical education (CTE) programs (box 1 gives additional information on career readiness standards). However, local capacity and funding issues in small or rural districts can be obstacles to implementing CTE programs of study that culminate in attaining a recognized postsecondary credential (including industry-based certifications), especially credentials needed

for high-wage, in-demand occupations (Texas Rural Schools Task Force, 2017).[1] For example, rural districts may not have access to teachers with qualifications in certain CTE areas or the facilities required to train students in certain CTE areas. Rural communities may have fewer regional occupations that align to high-wage, in-demand occupations as defined by TEA, further constraining their options.

To address the concern that some districts may not be able to provide sufficient courses or programs to enable students to earn an industry-based certification, the provisions of House Bill 3 allow the Commissioner of Education to accept applications from districts to use graduate completion of a coherent sequence of courses aligned with an approved industry-based certification as a demonstration of career readiness for the CCMR outcomes bonus. District leaders must demonstrate in the application that the district is unable to provide enough courses or programs to enable students to earn an industry-based certification. The provisions of House Bill 3 also included a requirement that TEA conduct a study to determine whether graduates from small districts and rural districts demonstrate career readiness via alternative career readiness options.

TEA partnered with Regional Educational Laboratory (REL) Southwest to conduct a study focused on attainment of alternative career readiness options among high school graduates, and specifically graduates in small districts and rural districts. TEA was interested in exploring the attainment of alternative career readiness options for graduates that are connected to CTE classifications as defined by the Texas Perkins V Comprehensive Local Needs Assessment or connected to work-based learning opportunities. The Perkins V CTE classifications reflect the number of courses a student completes and the credits a student earns for CTE courses within programs of study.[2]

The study provides information on the implications of the CCMR accountability standards for high school graduates by examining the extent to which the cohort of 2017–18 Texas public school graduates did not meet CCMR accountability standards, particularly for graduates in small districts and rural districts. The study also provides information on the extent to which graduates demonstrated career readiness via alternative career readiness options identified by TEA. Finally, the study explores whether graduates who met the alternative career readiness options attained similar postsecondary college and career outcomes to graduates who met CCMR accountability standards to inform the Commissioner of Education as he considers alternative career readiness options.[3]

Box 1. Key terms

TEA college, career, and military readiness (CCMR) accountability standards. The study placed graduates into four mutually exclusive CCMR accountability standards categories. The study based these categories on definitions from the Texas Education Agency's (TEA's) *2019 Accountability Manual for Texas Public School Districts and Campuses* (TEA, 2019a). These accountability standards applied to the 2017–18 cohort of high school graduates (the study cohort). (See appendix A for more detail about each standard).

- *College ready.* Graduates who met one of the college readiness accountability standards.
- *Career ready.* Graduates who did not demonstrate college readiness but met one or more career readiness accountability standards.[4] Because TEA is interested in finding additional opportunities for students to demonstrate

[1] TEA identified high-wage, in-demand occupations in a two-phase process. In phase one, TEA identified high-wage, in-demand occupations using the median growth rate in employment, median annual salary, and minimum annual openings. In phase two, TEA formed groupings of occupations based on similarity of work activities, related postsecondary training, or related ONET standard occupational classifications. TEA (2019h) provides a more detailed description of the methodology.

[2] TEA aligns its definition of a program of study with Perkins V, describing a program of study as "a coordinated, nonduplicative sequence of academic and technical content at the secondary and postsecondary level that: Incorporates challenging state academic standards; Addresses academic, technical, and employability skills; Aligns with the needs of industries in the state, regional, and/or local economy; Progresses in specificity, beginning with all aspects of industry and leading to more occupation specific instruction; Has multiple entry and exit points that incorporate credentialing; Culminates in the attainment of a recognized postsecondary credential" (TEA, 2019h).

[3] Results for postsecondary college outcomes are presented in the main report. Results for postsecondary career outcomes are presented in appendix B.

[4] Career readiness accountability standards include earning an industry-based certification, earning a Level I or Level II certificate, graduating with a completed individualized education program and workforce readiness and currently identified as a student in special

CCMR outside of the college ready criteria, graduates meeting college ready accountability standards were excluded from the career or military readiness categories even if they demonstrated career or military readiness.

- *Military ready.* Graduates who did not demonstrate college readiness or career readiness but met the military readiness accountability standard.
- *Not college, career, or military ready.* Graduates who did not meet any college, career, or military readiness accountability standards.[5]

Alternative career readiness options identified by TEA. The study considered five alternative career readiness options as identified by TEA.

- Four mutually exclusive career and technical education (CTE) categories as defined by the Texas Comprehensive Local Needs Assessment in the state's Perkins V plan:
  - *CTE completer.* Graduates who completed three or more CTE courses for at least four credits, including a level 3 or level 4 course within the same program of study.[6]
  - *CTE concentrator.* Graduates who completed two or more CTE courses for at least two credits within the same program of study.
  - *CTE explorer*. Graduates who completed two or more CTE courses for at least two credits but not within the same program of study.
  - *CTE participant*. Graduates who completed one but not two or more CTE courses.
- A work-based learning category:
  - *Work-based learner.* Graduates who completed at least one work-based learning course (for example, a two-unit course in agricultural equipment design and fabrication/agricultural laboratory and field experience). Work-based learning opportunities within these courses may include, but are not limited to, facility visits, guest speakers, presentations, career information, career fairs, informational interviewing, job shadowing, internships, mentoring, and apprenticeships (TEA, 2019i). Work-based learners may also fall into one of the CTE categories.[7]

Industry-based certification. A certification providing evidence an individual possesses specific skills related to an occupation, typically by passing a test or a battery of tests. A certification body (such as a trade association or an industry-approved testing entity), rather than a higher education entity, confers these certifications.

Level I certificate. An award granted by an institution of higher education certifying the completion of a higher education program consisting of 15 to 42 semester credit hours and usually awarded in workforce education areas.

Level II certificate. An award granted by an institution of higher education certifying the completion of a higher education program consisting of 30 to 51 semester credit hours and usually awarded in workforce education areas.[8]

District size (student enrollment). TEA groups districts into nine district size categories based on the number of students in membership. TEA defines a small district as a district with fewer than 1,600 students, encompassing the three smallest district size categories (TEA, 2020a). Small districts represent 8.5 percent of the total statewide student body compared with 29.8 percent in districts with 50,000 or more students (see table A3 in appendix A).

Community type. TEA groups districts into eight district community types based on enrollment, enrollment growth, economic status, and proximity to urban areas. TEA defines a rural district as not designated as an urbanized area or an urban cluster by the U.S. Census Bureau. Rural districts represent 3.4 percent of the total statewide student body

education, graduating under an advanced degree plan and currently identified as a student in special education. (See table A1 in appendix A for more detail about each standard.)

[5] The annual cohort of 2017–18 graduates could demonstrate career readiness by completing CTE coherent sequence coursework aligned with an industry-based certification. However, TEA eliminated this criterion from the 2020–21 accountability standards. Therefore, for the purposes of this study, graduates who met only this criterion were included in the not college or career ready category. Tables C3–C5 in appendix C report findings separately for these graduates. (See table A1 in appendix A for more detail about each standard.)

[6] Course levels represent the order in which TEA recommends that students take courses within a given program of study (TEA, 2019d).

[7] The study was unable to differentiate work-based learning participation by each type of experience. However, tables C6 and C7 in appendix C report findings separately for graduates who completed at least one work-based learning course that was a practicum course and those who did not take at least one practicum course.

[8] Certificates are program specific. The level is often based on the number of hours required by a given program. A Level I certificate in auto mechanics may require a different number of hours than one in bioengineering, for example.

compared with the 32.5 percent in major suburban districts (see table A3 in appendix A). TEA includes a ninth community type category for all charter school districts regardless of community type. Because of this, the study excludes an estimated 177 charter school districts only when reporting on district community type (see box A1 in appendix A for more detail on each community type).

Research questions

The study explored three research questions related to the TEA CCMR accountability standards and possible alternative options for meeting the career readiness standard:

1. What percentages of 2017–18 high school graduates did not meet TEA CCMR accountability standards?
   a. How did attainment of TEA CCMR accountability standards differ by district size and community type?
2. For 2017–18 high school graduates who did not meet a CCMR accountability standard, what percentage met alternative career readiness options identified by TEA?
   a. How did attainment of alternative career readiness options for meeting the career readiness standard differ by district size and community type?
3. What percentage of 2017–18 high school graduates who met TEA CCMR accountability standards were enrolled in college, obtained a certificate or associate degree or persisted in college a second year, or were employed, compared with graduates who met alternative career readiness standards?

Box 2 provides a description of the data sources, sample, and methods.

Box 2. Data sources, sample, and methods

Data sources. The study used administrative student records from the Texas Education Agency (TEA) that included information about student demographic characteristics; course-taking history; attainment of college, career, and military readiness (CCMR) accountability standards; and career and technical education (CTE) classifications. The study used student-level information from public and private higher education institutions collected by the Texas Higher Education Coordinating Board. It used employment and earnings data collected by the Texas Workforce Commission. Appendix A includes a complete list of data sources.

Study population. The study used the statewide cohort of students who graduated in 2017–18 to answer all three research questions. This cohort of graduates is TEA's Perkins V baseline cohort and identifies CTE concentrators and completers as defined by TEA's Perkins V state plan. This cohort represents 347,893 graduates from Texas public high schools in 2017–18. Research question 2 included only those graduates who did not meet CCMR accountability standards. Appendix A includes additional details about the sample.

Methods. The study used descriptive statistics (counts and percentages) to answer each research question. To address research question 1, the study team calculated the percentage of 2017–18 graduates who met each TEA CCMR accountability standard category overall and by district size and community type. To address research question 2, the study team first limited the analysis to 2017–18 graduates who did not meet CCMR accountability standards. The team next calculated the percentage of these graduates who met each alternative career readiness option overall and by district size and community type. To address research question 3, the study team first calculated the percentage of 2017–18 high school graduates within each TEA CCMR accountability standard category that achieved each postsecondary outcome (that is, enrolled in college within one year of high school graduation, employed within one year of high school graduation, or obtained a certificate or associate degree within one year of high school graduation or persisted in college a second year). The study team next limited the analysis to 2017–18 graduates who did not meet CCMR accountability standards and calculated the percentage of 2017–18 high school graduates within each alternative career readiness option that achieved each postsecondary outcome. (See appendix A for a detailed description of methods.)

The study considered differences of greater than 5 percentage points as substantive and reported these differences in the findings section (see appendix A for additional information on the selection of this threshold). For research questions 1 and 2, the study used districts with 50,000 or more students as the district size reference group, and major suburban districts served as the district community reference group. The study used these reference groups to compare against small districts and rural districts. For research question 3, the study used graduates who met a career readiness accountability standard as the reference group.

Limitations. This study has several limitations. First, the postsecondary outcome attainment analysis excluded graduates who pursued out-of-state or federal employment (including in the armed services), who did not have a Texas employment record, or did not have a Texas college record. Second, the study team limited alternative career readiness options to those identified by TEA. Third, the study team limited analyses to a single cohort of graduates. Fourth, the study was able to identify all but one postsecondary outcome through one year post-high school graduation only. Fifth, the study relied on unemployment insurance wage reports to determine employment outcomes. These data are not broken out by part-time or full-time status, and individuals can be employed in multiple jobs with multiple wages in each quarter. (See appendix A for additional information on study limitations.)

Findings

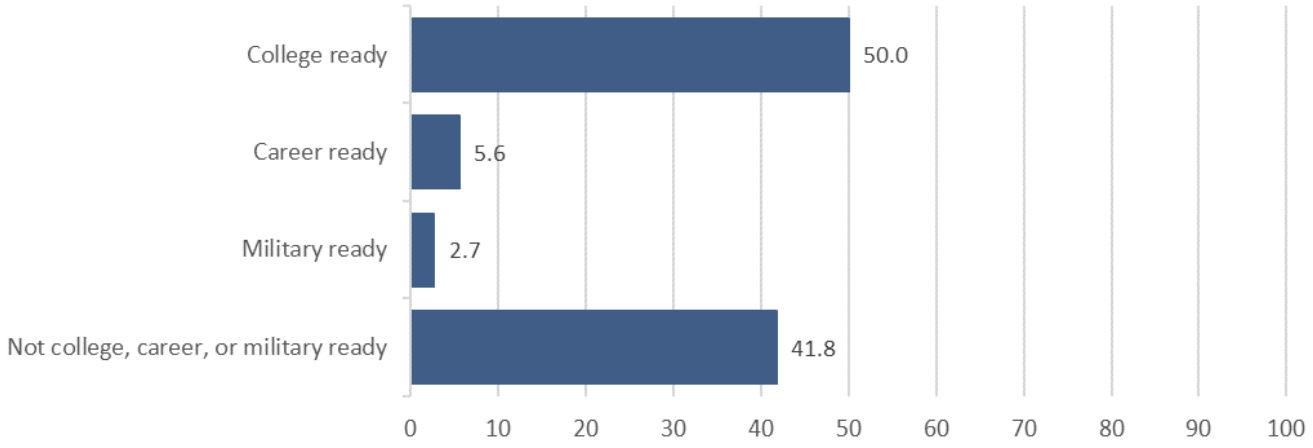
This section summarizes primary findings from the study. Appendix B provides additional detail to support the findings.

More than 40 percent of 2017–18 graduates did not demonstrate college, career, or military readiness

Nearly 60 percent of 2017–18 graduates met at least one CCMR accountability standard (58.2 percent). Half of the graduating cohort (50.0 percent) met a college readiness standard. An additional 5.6 percent of graduates met a career readiness standard, and 2.7 percent met the military readiness standard (figure 1, table B1 in appendix B). The remaining 41.8 percent of graduates did not meet any CCMR accountability standards.[9]

Figure 1. More than 40 percent of 2017–18 graduates did not demonstrate college, career, or military readiness

Percentage of 2017–18 graduates



Note: The figure represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas (N = 347,893). Percentages may not sum to 100 because of rounding. Percentages in the figure do not match TEA's Texas Academic Performance Report as the categories are mutually exclusive in this report (see box 1).
Source: Authors' analysis based on data described in appendix A.

A lower percentage of 2017–18 graduates from small districts met a college readiness accountability standard than large districts, whereas the percentages of college ready graduates from rural and major suburban districts were similar

The percentage of graduates who met a college readiness standard varied by district size and community type (figure 2, table B2 in appendix B). Districts with 50,000 or more students had a higher percentage of college ready graduates than districts with fewer than 1,600 students. Major suburban districts also had a numerically

[9] Table C1 in appendix C shows the percentage of 2017–18 graduates who achieved each TEA CCMR accountability standard by student demographics.

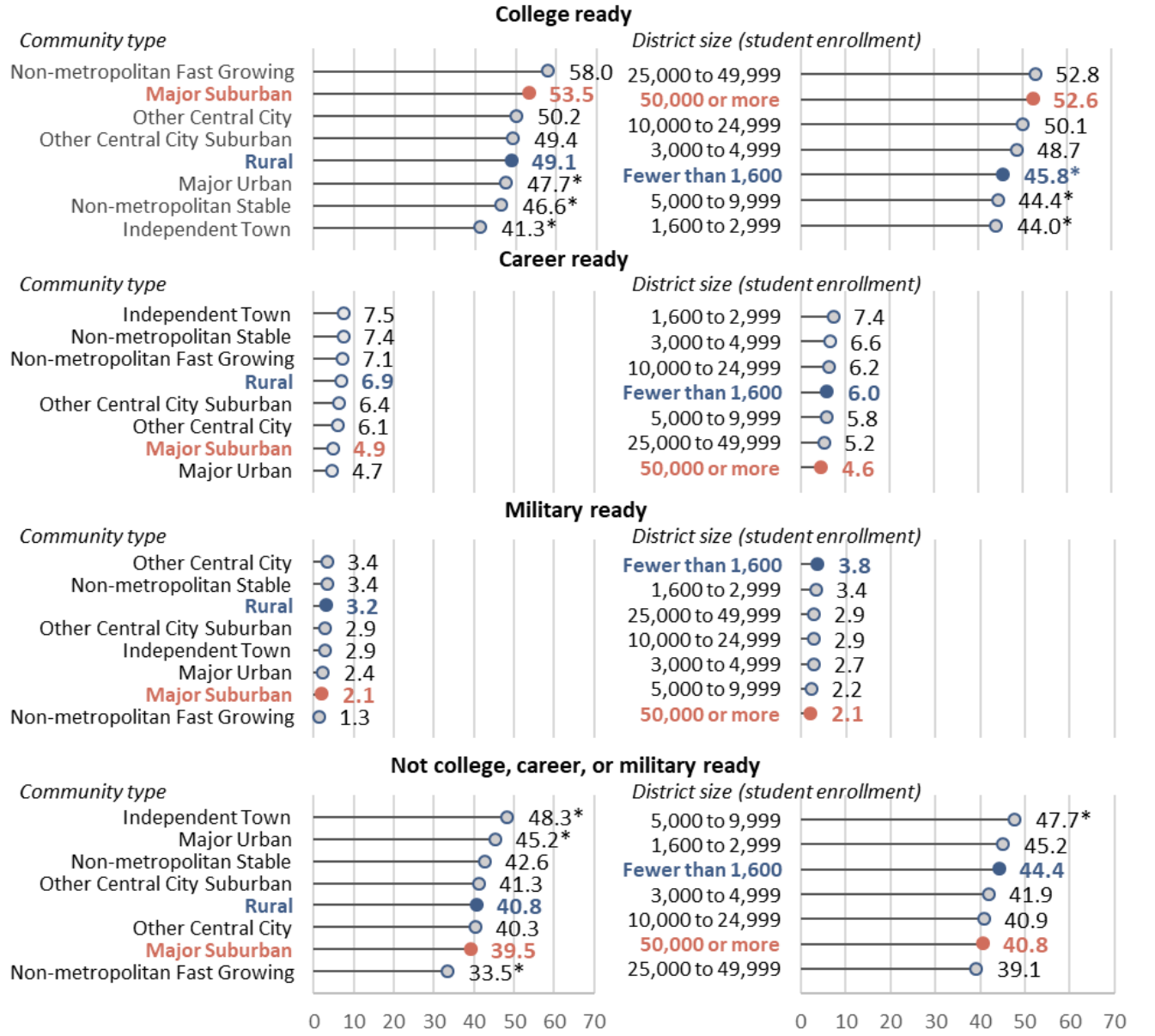
higher percentage of college ready graduates than rural districts; however, the 4.4 percentage point difference was just below the 5 percentage points threshold for substantive differences.

No substantive differences were identified between small and large districts or between rural and major suburban districts in the percentages of graduates who met a career readiness accountability standard; met a military readiness accountability standard; or did not demonstrate college, career, or military readiness

The percentage of graduates who met a career readiness standard, who met a military readiness standard, and who did not meet any CCMR accountability standards was comparable for districts with 50,000 and districts with fewer than 1,600 students (figure 2, table B2 in appendix B). Major suburban districts and rural districts also had a comparable percentage of career-ready graduates, military-ready graduates, and graduates who did not meet any CCMR accountability standards.

Figure 2. A lower percentage of 2017–18 graduates from small districts met a college readiness accountability standard than large districts, and no substantive differences were identified between small and large districts or between rural and major suburban districts in the percentages of graduates who met a career readiness accountability standard; met a military readiness accountability standard; or did not demonstrate college, career, or military readiness

Percentage of 2017–18 graduates



Note: The figure represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas (N = 347,893). The figure excludes charter school districts because TEA data for community type groups all charter schools together. While charter school districts are excluded from the community type category, they are included among the districts by size categories. Reference groups are labeled in bold red font and have red markers. Rural and small districts (districts with fewer than 1,600 students) are labeled in bold blue font and have blue markers. For district community type, major suburban districts served as the reference group, and for district size, districts with 50,000 or more students served as the reference group. The figure denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). The figure collapses three district size categories (districts with fewer than 500 students, districts with 500 to 999 students, and districts with 1,000 to 1,599 students) into one category, districts with fewer than 1,600 students.

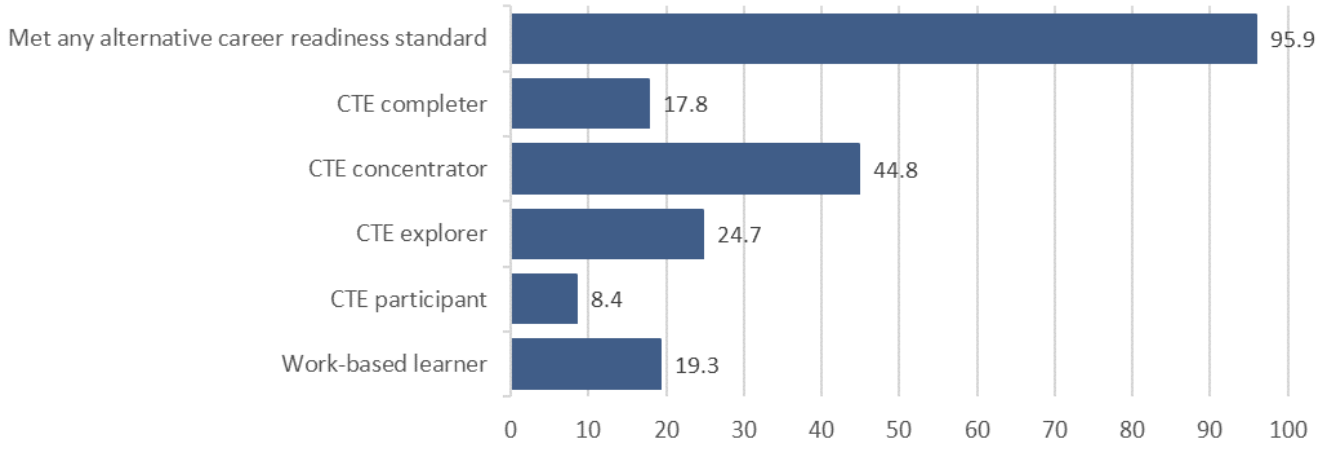
Source: Authors' analysis based on data described in appendix A.

Nearly all 2017–18 graduates who did not demonstrate college, career, or military readiness met at least one alternative career readiness option

Over 95 percent of graduates who did not meet a CCMR accountability standard met at least one alternative career readiness option identified by TEA (figure 3, table B3 in appendix B). More than 60 percent of these graduates met the CTE completer alternative career readiness option (17.8 percent) or the CTE concentrator alternative career readiness option (44.8 percent). Fewer than 10 percent of these graduates met the CTE participant alternative career readiness option (that is, completed only one CTE course). In addition, 19.3 percent of these graduates met the work-based learner alternative career readiness option. Nearly all (98.9 percent) graduates who completed at least one work-based learning course also fell into one of the four mutually exclusive CTE categories (table B5 in appendix B). [10]

Figure 3. Nearly all 2017–18 graduates who did not demonstrate college, career, or military readiness met at least one alternative career readiness option

Percentage of 2017–18 graduates who did not demonstrate college, career, or military readiness



CTE is career and technical education.
Note: The figure represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard (N = 145,466). Nearly all (98.9 percent) graduates who completed at least one work-based learning course also fell into one of the four mutually exclusive CTE categories (table B5 in appendix B).
Source: Authors' analysis based on data described in appendix A.

Among graduates who did not demonstrate college, career, or military readiness, a higher percentage from small districts and rural districts were career and technical education concentrators, whereas the percentages from small districts and rural districts who were career and technical education completers or work-based learners was similar to large districts and major suburban districts

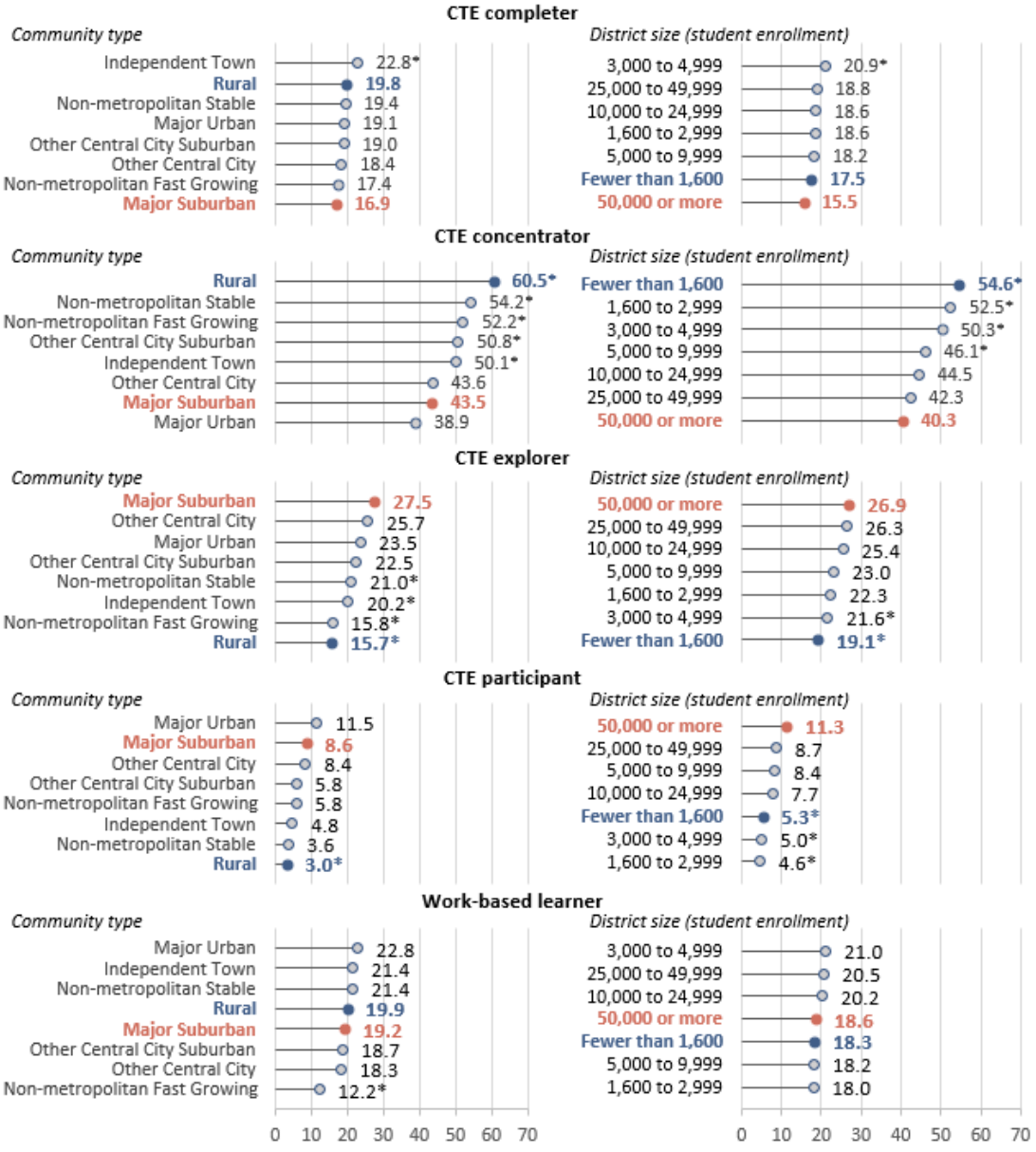
More graduates in districts with fewer than 1,600 students and rural districts met the CTE concentrator alternative career readiness option than graduates in districts with 50,000 students or more or major suburban districts. Districts with 50,000 or more students and major suburban districts had higher percentages of graduates who met the CTE explorer and CTE participant alternative career readiness option than districts with fewer than 1,600 students and rural districts (figure 4, table B4 in appendix B).

The percentages of graduates who met the CTE completer and work-based learner alternative career readiness option were comparable between districts with 50,000 students or more and districts with 1,600 or fewer students and between major suburban and rural districts (figure 4, table B4 in appendix B).

[10] Table C2 in appendix C shows the percentage of 2017–18 graduates who did not meet a CCMR accountability standard and who achieved each alternative career readiness option by student demographics.

Figure 4. Among graduates who did not demonstrate college, career, or military readiness, a higher percentage from small districts and rural districts were career and technical education concentrators, whereas the percentage from small districts and rural districts who were career and technical education completers or work-based learners was similar to large districts and major suburban districts

Percentage of 2017–18 graduates who did not demonstrate college, career, or military readiness



CTE is career and technical education.

Note: The figure represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard (N = 145,466). The figure excludes charter school districts because Texas Education Agency data for community type groups all charter schools together (see additional information on community type in box A1). Although charter school districts are excluded from the community type category, they are included among the districts by size categories. Reference groups are labeled in bold red font and have red markers. Rural and small districts (districts with fewer than 500 students) are labeled in bold blue font and have blue markers. For district community type, major suburban districts served as the reference group, and for district size, districts with 50,000 or more students served as the reference group. The figure denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). The figure collapses three district size categories (districts with fewer than 500 students, districts with 500 to 999 students, and districts with 1,000 to 1,599 students) into one category, districts with fewer than 1,600 students.

Source: Authors' analysis based on data described in appendix A.

Career and technical education completers and work-based learners had higher rates of college enrollment than graduates who met a career readiness accountability standard

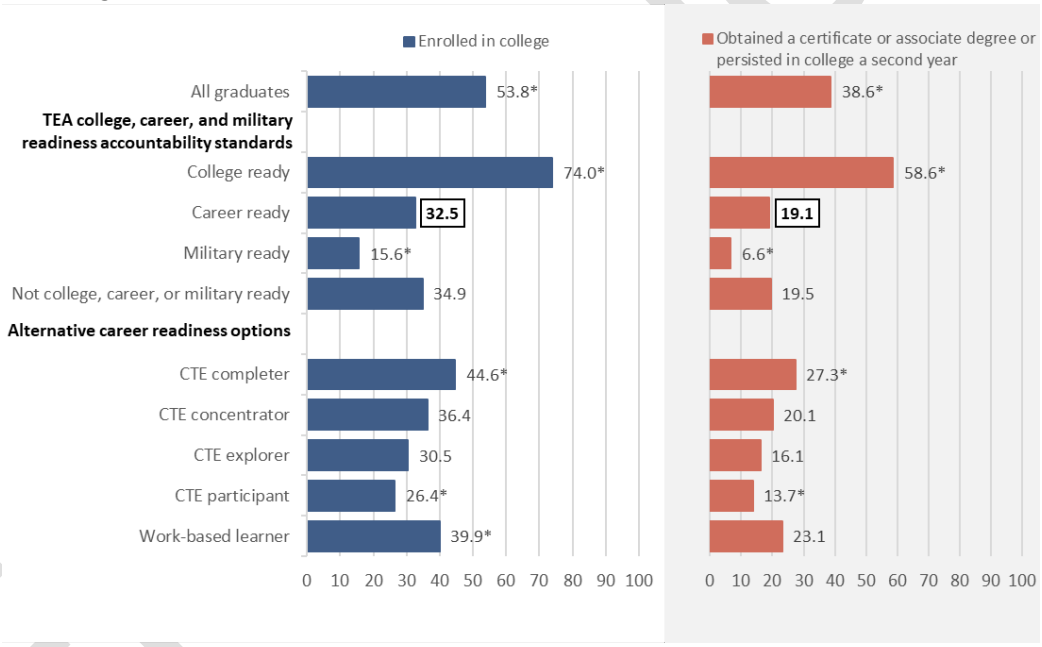
Thirty-two and a half percent of 2017–18 graduates who met career readiness accountability standards enrolled in college within one year of high school graduation (figure 5, tables B6–B7 in appendix B). In comparison, higher percentages of graduates who did not demonstrate CCMR but who met the CTE completer or work-based learner alternative career readiness option enrolled in college within one year (44.6 and 39.9 percent, respectively).

Career and technical education completers had higher rates of credential attainment or college persistence than graduates who met a career readiness accountability standard

While 19.1 percent of 2017–18 graduates who met career readiness accountability standards obtained a certificate or associate degree or persisted in college a second year, a higher percentage of graduates who did not demonstrate CCMR but who met the CTE completer alternative career readiness option obtained a certificate or associate degree or persisted in college within the same period (27.3 percent; figure 5, tables B6–B7 in appendix B).

Figure 5. Career and technical education completers, career and technical education concentrators, and work-based learners had similar or higher rates of college enrollment and credential attainment or college persistence than graduates who met a career readiness accountability standard

Percentage of 2017–18 graduates



CTE is career and technical education; TEA is Texas Education Agency.
Note: The figure represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas (N = 347,893). Enrolled in college and credential attainment are within one year of graduating high school. Persistence is enrolled in college in the fall of the second year following high school graduation, given the graduate was enrolled in college within one year of graduating high school. Graduates enrolled in college were enrolled in a two- or four-year college/university within Texas. Percentages for the reference group (career-ready graduates) are in black boxes with bold font. The figure denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*).
Source: Authors' analysis based on data described in appendix A.

Implications

The findings point to several implications for TEA to take into account as it considers alternative options for demonstrating career readiness under the accountability system.

It may be worth exploring whether there are obstacles to graduates meeting college readiness standards in small and rural districts

Findings from this study suggest that Texas graduates meet CCMR accountability standards primarily by demonstrating college readiness, which was more common in large districts than in districts with fewer than 1,600 students. Whereas college readiness rates for graduates in major suburban districts were numerically higher than rural districts, that difference of 4.4 percentage points was just under the five percentage point threshold for substantive differences. There may be obstacles to graduates meeting college readiness standards in small districts and rural districts. For example, small districts may not offer Advanced Placement courses because of limited numbers of students, or rural districts may not be in areas close to community colleges to offer dual credit classes.

Additional research is needed to better understand the implications of all CCMR accountability standards for graduates in small districts and rural districts and the implications for various student groups

To enhance the findings from this study, it would be beneficial to conduct further research that incorporates additional cohorts of graduates and explores the attainment of CCMR accountability standards by various student subgroups. Further analysis of first year post-secondary student course performance (course passage and grade attainment) would be useful in order to provide a more complete scope of student post-secondary success. In addition, to fully understand how the standards align to postsecondary outcomes, it would be informative to explore postsecondary outcomes beyond the timeframe of this study to determine whether the accountability standards and alternative career readiness options lead to degree attainment or sustained employment in high-wage, in-demand occupations. Further analysis of employment outcomes would also be useful in order to differentiate low-wage, low-skill employment, which does not require or reflect rigorous secondary career training or readiness, from living wage or median wage employment which would provide a more accurate indication of rigorous secondary career training and readiness. Finally, accountability incentives can sometimes distort the impact of a given measure on the ultimate outcomes being sought in the absence of strong controls, so some study of that potential would also be beneficial here.

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Appendix A. Data and methods

Appendix A provides background on Texas House Bill 3 and college, career, and military readiness (CCMR) accountability standards in Texas. It also describes the data and analysis methods for the Regional Educational Laboratory (REL) Southwest study on student attainment of career readiness indicators in small districts and rural districts in Texas.

Background on Texas House Bill 3 and college, career, and military readiness standards in Texas

Texas House Bill 3, a comprehensive reform of the school finance system, passed in 2019, materially changed the way Texas commits to providing resources to its students and equipping them for life and career success (Texas Education Agency [TEA], 2019f). The bill addresses four major policy areas:

- Supports teachers and rewards teacher excellence.
- Increases funding and equity.
- Focuses on learning and improving student outcomes.
- Reduces and reforms property taxes and recapture.

For the third policy area focused on learning and improving outcomes, the bill established a CCMR outcomes bonus, which provides extra funding to districts for each annual graduate demonstrating CCMR accountability standards. These bonuses align to TEA's strategic plan that every child is prepared for success in college, career, or the military; allows districts to earn additional funds for preparing graduates; and aligns with goals set under the state's *60x30TX* plan for higher education (Texas Higher Education Coordinating Board, 2015).

The CCMR outcomes bonuses are paid to districts for each high school graduate in three categories, above a minimum threshold percentage (TEA, 2019e). The categories are economically disadvantaged students, non–economically disadvantaged students, and students enrolled in special education. Also, the CCMR outcomes bonuses have spending requirements. Districts must spend 55 percent of funds generated from the bonus on improvement activities. These activities include professional development and training for counselors on college entrance requirements and career awareness; funding for a college and career advisor; and purchase of technology platforms that assist students in gaining access to CCMR (TEA, 2019e).

For districts to earn the CCMR outcomes bonus, graduates must meet CCMR outcomes bonus standards. The CCMR outcomes bonus standards use criteria established in the CCMR component of the student achievement domain in the TEA's A–F accountability system.[11] The outcomes bonus standards for college and career readiness include the additional criteria that graduates meet Texas Success Initiative criteria (see table A1).

Up until the 2020–21 school year, graduates who completed CTE coherent sequence coursework (at least one course) aligned with industry-based certifications were career ready according to CCMR accountability definitions. However, TEA eliminated this career readiness standard from the accountability system as of the 2020–21 school year, and this standard is not included in the CCMR outcomes bonus standards.

[11] TEA bases district and school accountability scores on the number of points accrued for graduates meeting CCMR accountability standards divided by the number of graduates. One point applies for each annual graduate who accomplishes any one of the CCMR accountability standards (see box 1). Prior to the 2020–21 school year, districts earned one-half point credit for each student meeting the CTE coursework standard. However, TEA eliminated the CTE coursework standard from the accountability system as of the 2020–21 school year (TEA, 2019g).

Table A1. College, career, and military readiness standards as defined for the college, career, and military readiness outcomes bonus and the college, career, and military readiness standards in the Texas A–F accountability system for Texas districts and high schools

Standard	CCMR outcomes bonus	CCMR accountability system
College ready	• Meet Texas Success Initiative criteria (SAT/ACT/Texas Success Initiative Assessment) in reading and mathematics –AND– • Earn an associate degree prior to high school graduation, or • Enroll in college by the fall immediately after high school graduation	• Score a minimum of 3 on Advanced Placement or 4 on International Baccalaureate examinations • Meet Texas Success Initiative criteria (SAT/ACT/Texas Success Initiative Assessment/college prep course) in reading and mathematics • Complete a course for dual credit (nine hours or more in any subject or three hours or more in English language arts or mathematics) • Earn an associate degree • Complete an Onramps course in any subject and earn college credit
Career ready	• Meet Texas Success Initiative criteria (SAT/ACT/Texas Success Initiative Assessment) in reading and mathematics –AND– • Earn an industry-based certification by the fall immediately after high school graduation, or • Earn a Level I or Level II certificate by the fall immediately after high school graduation	• Earn an industry-based certification • Earn a Level I or Level II certificate • Graduate with a completed individualized education program and workforce readiness (graduation type codes 04, 05, 54, or 55) and currently identified as a student in special education • Graduate under an advanced degree plan and currently identified as a student in special education
Military ready	• Earn a passing score on the Armed Services Vocational Aptitude Battery –AND– • Enlist in the U.S. Armed Forces after high school graduation	• Enlist in the U.S. Armed Forces[12]

CCMR is college, career, and military readiness.

[12] For 2017–18 graduates, TEA relied on districts to determine what documentation was necessary to count a graduate as enlisting or intending to enlist in the U.S. Armed Forces after graduation. Documentation may have included, for example, a student survey, a conversation with the student, or documentation showing contact with a military recruiter (TEA, 2018). For 2019–20 graduates, TEA provided updated guidance to districts for documenting enlistment in the U.S. armed forces, reducing district discretion. In the future, TEA plans to obtain source data from the Department of Defense to document military enlistment (TEA, 2020c).

Notes: Texas Success Initiative criteria, established by the Texas Higher Education Coordinating Board, are scores on the Texas Success Initiative Assessment, SAT, and ACT. To demonstrate college readiness in reading, a student must meet one of the following minimum scores: 351 on the TSIA Reading section; 480 on the SAT Evidence-Based Reading and Writing section; or 19 on the ACT English section and an ACT Composite score of 23. To demonstrate college readiness in reading, a student must meet one of the following minimum scores: 350 on the TSIA Mathematics section; 530 on the SAT Mathematics section; or 19 on the ACT Mathematics section and an ACT Composite score of 23. Students may earn an associate degree before graduating from high school by enrolling in dual credit courses or through concurrent enrollment. Dual credit, as defined by TEA (Legacy Preparatory, 2011, p. 1), is the "process through which a student may earn high school credit for successfully completing a college course that provides advanced academic instruction beyond, or in greater depth than, the Texas Essential Knowledge and Skills (TEKS) for a corresponding high school course. The 'dual credit' earned is college credit and high school credit for one course." Concurrent enrollment, as defined by TEA, is "a circumstance in which a student is enrolled in two or more educational institutions at the same time (for example, a college and a university, or a high school and a college)." OnRamps, founded in 2011, facilitates a network of students, teachers, districts, community partners, and higher education institutions in Texas to offer college-level courses, professional development for teachers, and strategic partnerships to facilitate postsecondary enrollment, persistence, and completion (OnRamps, 2020). For a list of approved industry-based certifications for the 2019–20 school year, see the TEA's 2019–2020 Approved List of Industry-Based Certifications (TEA, 2019b). The TEA defines Level I and Level II certificates as "[a] formal award granted by an institution of higher education (IHE) certifying the satisfactory completion of a higher education program. Upon completion, a certificate is valid without further action on the individual's part. A certificate is usually awarded in workforce education areas by public and private two-year institutions. A Level I certificate is awarded for completing a program consisting of at least 15 hours and not more than 42 semester credit hours. A Level II certificate is awarded for completing a program of at least 30 but not more than 51 semester credit hours" (TEA, 2019a, p. 118).
Source: Texas Education Agency.

Data sources

The study used deidentified student-level administrative data from Texas, which were available through TEA and the data repository at the Texas Education Research Center at The University of Texas at Austin (table A2). Data stored at the Education Research Center include public education information from PK–12 schools collected by TEA; information from both public and private higher education institutions collected by the Texas Higher Education Coordinating Board; and students' employment and earnings data (if employed within Texas) collected by the Texas Workforce Commission.

Table A2. Data sources and key variables used in this study

Source	Description	Years	Key variables	Research questions
TEA	Perkins V baseline cohort	2017–18	Flags for CTE learners (that is, completers and concentrators), industry-based certifications earned, CCMR accountability standard(s) met, including a flag for military readiness	1, 2
TEA	Student demographics	2017–18	Gender, race/ethnicity, English learner status, economically disadvantaged status, special education status, and district and high school identifiers	1–3
TEA	Course completion	2011–12 to 2017–18	CTE course enrollment, course completion, and earned credit, during fall and spring semesters, including dual enrollment	1, 2
TEA public website	Community type	2017–18	TEA groups districts into eight categories ranging from major urban to rural	1, 2
TEA public website	District size	2017–18	Provides the number of students in membership at a district as of October 27, 2017 (that is, district size)	1, 2
TWC	UI (year and quarter)	2018–19	Quarterly reported employed occupation and wage amount for July 2018 through March 2019	3
THECB	Public two-year and four-year, and independent four-year college enrollment	2018–19 to 2019–20	Two- and four-year college/university (community or technical colleges, public universities, independent colleges or universities, and career schools or colleges)	3

Source	Description	Years	Key variables	Research questions
			enrollment from Texas institutions of higher education	
THECB	Public two-year and four-year, and independent four-year college credentials	2017–18 to2018–19	Two- and four-year (community or technical colleges, public universities, independent colleges or universities, and career schools or colleges) credential records, including certificates and degrees obtained from Texas institutions of higher education	3

CCMR is college, career, and military readiness; CTE is career and technical education; TEA is Texas Education Agency; TWC is Texas Workforce Commission; THECB is Texas Higher Education Coordinating Board; UI = Unemployment Insurance.
Note: Race/ethnicity subpopulations included White, Hispanic, Black, Asian, American Indian/Alaskan Native, and Hawaiian Native/Pacific Islander students. These groups account for more than 95 percent of the high school student population. An "Other" category captures other races/ethnicities and students who have two or more races.
Source: Authors' compilation.

TEA student-level data

Perkins V baseline cohort. REL Southwest researchers used TEA's Perkins V baseline data to answer all three research questions. The Perkins V baseline data contains the 2017–18 graduation cohort and identifies CTE learners (CTE concentrators and CTE completers) using statewide programs of study. TEA began a CTE transformation process in spring 2019 to align its definitions of CTE quality with federal Perkins V definitions. In late 2019, TEA created statewide CTE baseline data analyzing seven years of course completion records for the 2017–18 cohort of graduates. TEA created an automated process that takes course-taking data submitted by districts through the Public Education Information Management System and certified by TEA. It uses Perkins V definitions to determine which graduates were CTE concentrators and completers (TEA, 2020b). This file included any industry-based certifications earned by graduates and the CCMR accountability standard obtained by each graduate.

TEA's Public Education Information Management System. This database contains student-level records that capture data on multiple dimensions of public education in Texas, including student enrollment, demographics, and high school course enrollment. For members of the 2017–18 graduating cohort who were enrolled in a Texas public school for the entire period and who progressed sequentially, course enrollment goes back to grade 6.

TEA publicly available data

REL Southwest researchers used TEA-constructed profiles of district community type and size (table A3). TEA classifies districts into eight community type categories using factors such as enrollment, growth in enrollment, economic status, and proximity to urban areas (box A1). TEA includes a ninth community type category for all charter school districts regardless of community type. Because of this, the study excludes charter school districts when reporting on district community type.

Table A3. Count and percentage of Texas public school districts and total students, by district size and community type, 2018

District characteristic	Texas public school districts		Total students	
	N	%	*N*	%
Community type				
Charter school districts	177	14.8	296,213	5.5
Independent town	68	5.7	253,912	4.7
Major suburban	79	6.6	1,748,087	32.5
Major urban	11	0.9	966,952	18.0

District characteristic	Texas public school districts		Total students	
	N	%	*N*	%
Non-metropolitan fast growing	33	2.8	36,701	0.7
Non-metropolitan stable	168	14.0	284,121	5.3
Other central city	39	3.3	851,075	15.8
Other central city suburban	163	13.6	765,233	14.2
Rural	462	38.5	182,718	3.4
Total	**1,200**	**100.0**	**5,385,012**	**100.0**
District size (student enrollment)				
Fewer than 1,600	780	65.0	458,786	8.5
Fewer than 500	394	32.8	102,312	1.9
500 to 999	234	19.5	164,744	3.1
1,000 to 1,599	152	12.7	191,730	3.6
1,600 to 2,999	139	11.6	300,796	5.6
3,000 to 4,999	85	7.1	323,569	6.0
5,000 to 9,999	80	6.7	555,663	10.3
10,000 to 24,999	65	5.4	1,019,272	18.9
25,000 to 49,999	31	2.6	1,122,293	20.8
50,000 or more	20	1.7	1,604,633	29.8
Total	**1,200**	**100.0**	**5,385,012**	**100.0**

Source: Texas Education Agency Snapshot 2018 data available for download at https://rptsvr1.tea.texas.gov/perfreport/snapshot/2018/index.html.

Box A1. Texas Education Agency community type definitions

Texas Education Agency (TEA) classifies districts into the eight community type categories below using factors such as enrollment, growth in enrollment, economic status, and proximity to urban areas. District community types are mutually exclusive. To be classified into a particular district community type, the district does not meet the classification criteria in any previous categories.

- *Major urban*. A district in a county with a minimum population of 985,000, where enrollment is the largest in the county or is at least 70 percent of the county's largest district. At least 35 percent of enrolled students are economically disadvantaged.
- *Major suburban*. A district, contiguous to a major urban district, where enrollment is at least 3 percent of the largest contiguous major urban district or at least 4,500 students. Or a district not contiguous to a major urban district, but in a county with a major urban district where district enrollment is at least 15 percent of the county's largest major urban district or at least 4,500 students.
- *Other central city*. A district not contiguous to a major urban district, in a county with a population of between 100,000 and 984,999, where district enrollment is the largest in the county or at least 75 percent of its largest district.
- *Other central city suburban*. A district in a county with a population of between 100,000 and 984,999, where enrollment is at least 15 percent of the county's largest district. Or a district contiguous to another central city district, where enrollment is at least 3 percent of the largest contiguous other central city district, and enrollment is equal to or greater than the state's median district enrollment.
- *Independent town*. A district in a county with a population of 25,000 to 99,999, where enrollment is the largest in the county or is at least 75 percent of the county's largest district.
- *Non-metropolitan fast growing*. A district where enrollment is at least 300 students and enrollment has increased by at least 20 percent over the past five years.
- *Non-metropolitan stable*. A district where enrollment is equal to or greater than the state's median district enrollment.
- *Rural*. A district with between 300 students and the state's median district enrollment and an enrollment growth rate of less than 20 percent over the past five years. Or a district with less than 300 students enrolled.

TEA includes a ninth community type category for all charter school districts regardless of community type. Because of this, the study excludes charter school districts when reporting on district community type.

Source: Texas Education Agency Snapshot 2018: Community Type https://rptsvr1.tea.texas.gov/perfreport/snapshot/2018/commtype.html

Workforce data

REL Southwest researchers used Texas Workforce Commission data on unemployment insurance wage reports to answer research question 3. These employment records include quarterly data on total pretax wages, occupational classifications of the employer, the number of employers, and employment locations for people who are paid wages within Texas. Unemployment insurance wage reports are limited to civilian employees who received wages from employers who paid unemployment insurance. These records exclude Texas high school graduates who are employed in another state, are federal employees, have a work-study arrangement at their college, or are independent contractors.[13]

Postsecondary education data

REL Southwest researchers used records of students' college enrollment, degree, and certificate attainment from the Texas Higher Education Coordinating Board to answer research question 3. Texas Higher Education Coordinating Board data capture student-level postsecondary records (that is, student enrollment status, degree, and certificate attainment) for approximately 90 percent of Texas high school graduates who enroll in college (Texas Higher Education Coordinating Board, 2017). This database was the primary source of information for tracking 2017–18 graduates' postsecondary education outcomes.

Study population

The study used the statewide Perkins V baseline cohort of students who graduated in 2017–18 to answer all three research questions. This cohort represents the population of graduates from Texas public high schools in 2017–18 with Perkins V definitions of CTE concentrators and completers as defined by TEA. The TEA data include student-level records on 347,893 graduates statewide (table A4). Research questions 1 and 3 used the population of 2017–18 graduates. In contrast, research question 2 included only those graduates who were neither college, career nor military ready as defined by the Texas CCMR accountability standards or graduates who demonstrated career readiness only by completing at least one CTE course aligned with an industry-based certification.

Table A4. Demographic characteristics of 2017–18 Texas public high school graduates

Demographic characteristic	Count	Percentage
All graduates	**347,893**	**100.0**
Race/ethnicity		
Male	173,505	49.9
Female	174,388	50.1
Race/ethnicity		
African American	43,498	12.5
Asian	16,120	4.6
Hispanic	173,265	49.8
White	107,067	30.8
Other	7,943	2.3

[13] Based on conversations with the Texas Workforce Commission, this file encompasses approximately 92 to 95 percent of the Texas workforce depending on the quarter being examined.

Demographic characteristic	Count	Percentage
Student group		
Special education	26,362	7.6
Economically disadvantaged	181,209	52.1
English learners	21,584	6.2

Note: Less than 1 percent of 2017–18 graduates had a missing special education and English learner status (n = 845).
Source: Authors' analysis based on data described in appendix A.

Analysis

This section describes the methods used to answer each of the study's research questions.

Research question 1

Research question 1 measured the extent to which 2017–18 graduates met TEA CCMR accountability standards. To address research question 1, the research team calculated the numbers and percentages of 2017–18 high school graduates who met these standards. Using the longitudinal file of 2017–18 graduates constructed by TEA, the research team classified graduates into one of the following mutually exclusive categories:

- *College ready.* Graduates who met one of the college readiness accountability standards.
- *Career ready.* Graduates who did not demonstrate college readiness but met one or more career readiness accountability standards.
- *Military ready.* Graduates who did not demonstrate college or career readiness but met the military readiness accountability standard.
- *Not college, career, or military ready.* Graduates who did not meet any of the college, career, or military readiness accountability standards.

Because TEA is interested in finding additional opportunities for students to demonstrate CCMR outside of the college ready criteria, graduates meeting college ready accountability standards were excluded from the career or military readiness categories even if they demonstrated career or military readiness.

The research team then used descriptive statistics to examine the numbers and percentages of graduates in Texas who attained each category of readiness accountability standards. The percentage calculation equation was as follows:

$$\mathrm{P}_{TX} = \frac{n_{MET_{G-TX}}}{N_{G-TX}}$$

where $n_{MET_{G-TX}}$ was the number of 2017–18 Texas graduates who attained each category of readiness standard and N_{G-TX} was the total number of 2017–18 high school graduates in Texas. The research team applied the formula for each category of readiness accountability standards.

To address research question 1a, the research team applied the formula by district size and community type categories. No missing data were noted. For research question 1, the study used districts with the largest number of graduates as reference groups. For district size, districts with 50,000 or more students served as the reference group, and for district community type, major suburban districts served as the reference group. The study used these reference groups to compare against small districts and rural districts. The study excluded charter school districts for district community type because TEA groups all charter schools together regardless of their community type.

Research question 2

Research question 2 measured the attainment of alternative career readiness options by 2017–18 graduates who did not demonstrate college, career, or military readiness. The research team limited the analysis for research question 2 to graduates who did not meet any CCMR accountability standards.

To address research question 2, the research team calculated the numbers and percentages of these graduates who met alternative career readiness options identified by TEA. The alternative career readiness options included four mutually exclusive CTE categories:

- *CTE completer.* Graduates who completed three or more CTE courses for at least four credits, including a level 3 or level 4 course within the same program of study. Graduates in this category were flagged in the Perkins V baseline cohort file by TEA.
- *CTE concentrator.* Graduates who completed two or more CTE courses for at least two credits within the same program of study. Graduates in this category were flagged in the Perkins V baseline cohort file by TEA.
- *CTE explorer.* Graduates who completed two or more CTE courses for at least two credits but not within the same program of study. This category was defined by the research team by calculating the number of CTE courses each graduate took in grades 7–12.
- *CTE participant.* Graduates who completed one but not two or more CTE courses. This category was defined by the research team by calculating the number of CTE courses each graduate took in grades 7–12.

The alternative career readiness options also included a fifth category that was not mutually exclusive:

- Work-based learner. Graduates who completed at least one work-based learning course. Nearly all (98.9 percent) of graduates who completed at least one work-based learning course also fell into one of the four mutually exclusive CTE categories (see table B5 in appendix B). This category was defined by the research team.[14]

Using the constructed longitudinal file of 2017–18 graduates, the research team limited the data to graduates who did not meet any CCMR accountability standards. Next, the research team identified which of these high school graduates met alternative career readiness options identified by TEA.

The team then used descriptive statistics to examine the numbers and percentages of graduates who attained each alternative career readiness option. The percentage calculation equation was as follows:

$$\mathrm{P}_{TX} = \frac{n_{MET_{G-notCCRM}}}{N_{G-notCCRM}}$$

where $n_{MET_{G-notCCRM}}$ was the number of graduates who did not meet any of the CCMR accountability standards who attained the alternative career readiness option, and $N_{G-notCCRM}$ was the number of graduates who did not meet any of the CCMR accountability standards. The research team then applied the formula for each alternative career readiness option. To address research question 2a, the research team applied the formula by district size and community type categories. No missing data were noted. For research question 2, the study used districts with the largest number of graduates as reference groups. For district size, districts with 50,000 or more students served as the reference group, and for district community type, major suburban districts served as the reference group. The study used these reference groups to compare

[14] The study was unable to differentiate work-based learning participation by all types of experiences (for example, facility visits, guest speakers, presentations, career information, career fairs, informational interviewing, job shadowing, internships, mentoring, and apprenticeships). However, tables C6–C7 in appendix C report findings separately for graduates who completed at least one work-based learning course that was a practicum course and those who did not take at least one practicum course.

against small districts and rural districts. The study excluded charter school districts for district community type because TEA groups all charter schools together regardless of their community type.

Research question 3

Research question 3 measured the postsecondary outcomes of 2017–18 graduates who met TEA CCMR accountability standards and alternative career readiness options. The research team calculated the extent to which graduates who met CCMR accountability standards (defined above for research question 1) or alternative career readiness options (defined above for research question 2) attained postsecondary outcomes of interest within one year of graduation.

The research team created a longitudinal dataset that tracked the 2017–18 cohort of graduates two years into postsecondary education (two-year and four-year colleges/universities) and one year into employment. For enrollment in two- or four-year colleges/universities within Texas, REL Southwest researchers followed the 2017–18 cohort of graduates through the 2018–19 school year to determine whether a student enrolled at a two- or four-year college or university in their first year following high school graduation.[15] For persistence, the research team followed the 2017–18 cohort of graduates who enrolled at a two- or four-year college or university in 2018–19 through the fall of the 2019–20 school year to determine whether they continued to enroll at a two- or four-year college or university in the fall of their second year following high school graduation. For completion of postsecondary certificates or degrees, the research team followed the 2017–18 cohort of graduates through the 2018–19 school year to determine whether a student earned a Level I or Level II certificate or earned an associate's or bachelor's degree. The study included graduates who completed a postsecondary certificate or degree while still enrolled in high school within the broader group of graduates who earned certificates or degrees. Due to small sample sizes, the research team grouped persistence into the fall of the second year at college and attainment of postsecondary certificates or degrees into one outcome measure.

For employment within Texas, the research team followed the 2017–18 cohort of graduates through three quarters of unemployment insurance data, following high school graduation, and classified graduates as employed if they had a least one wage record in the Texas Workforce Commission unemployment insurance data.[16] It is important to note that this liberal definition of employment may not reflect career success.

To address research question 3, REL Southwest researchers used descriptive statistics to examine the number and percentages of 2017–18 graduates who enrolled in a two-or four-year college or university, received a certificate or degree from a higher education institution or persisted in college a second year, and/or were employed in Texas by each category of readiness accountability standards or alternative career readiness options determined in research questions 1 and 2. The percentages were calculated using the following equation:

$$\mathrm{P}_{PS} = \frac{n_{MET_{G-TX-PS}}}{N_{MET_{G-TX}}},$$

where $n_{MET_{G-TX-PS}}$ is the number of 2017–18 Texas graduates in a given category of readiness accountability standards who also obtained a given postsecondary outcome, and $N_{MET_{G-TX}}$ is the total number of 2017–18 high school graduates in Texas in a given category of readiness accountability standards. The research team applied the formula separately for each category of CCMR accountability standards or alternative career readiness options determined in research questions 1 and 2 and each postsecondary outcome. For research

[15] Leading and lagging summer enrollment terms were excluded from the enrollment success measure. Eligible enrollment terms were limited to the fall or spring semesters.

[16] Quarters are defined according to calendar years. The study will examine the wage reports for the third and fourth quarters of the 2018 calendar year (July to December 2018) and the first and second quarters of the 2019 calendar year (January to June 2019).

question 3, the study used graduates who met a career readiness accountability standard as the reference group.

Determining substantive differences

The study population represents a census. The differences observed among the study groups were assumed to be the true differences in the population. As such, the study did not use statistical tests to determine whether statistically significant differences existed. The research team used a threshold of 5 percentage points to determine whether the observed differences were substantive for each research question. TEA agreed they would consider this magnitude of difference worthy of attention. This threshold also aligns with a recent study by REL Midwest on postsecondary college and career outcomes that used a 5 percentage point threshold to determine whether differences in percentage values were substantive (Feygin, Guarino, & Pardo, 2019).

Limitations

This study has several limitations. First, the analysis of postsecondary outcome attainment excluded graduates who pursued out-of-state or federal employment, including those who enlisted in the military. It also excluded graduates who did not have a Texas employment record or a Texas college record. Second, the study team limited the analysis to alternative career readiness options identified by TEA. Other career readiness options not identified by TEA may be attainable for small districts and rural districts and predictive of postsecondary college or career success. Third, the analyses were limited to a single cohort of graduates. This cohort graduated under a different accountability and school finance regime than the one currently governing Texas public schools. This has implications for the generalizability of the findings to subsequent cohorts since the number and types of courses and other opportunities for achieving postsecondary readiness may have changed over time. For instance, the number of approved industry-based certifications more than tripled between 2017–18 and 2019–20, from 73 to 236, considerably expanding the menu of certifications available to graduates from subsequent cohorts. Fourth, the examination of alternative career readiness options was not disaggregated by student groups. This additional disaggregation could highlight other difficulties in achieving these options for students in rural or small districts. Fifth, due to the short study timeline, the study was able to identify all but one postsecondary outcome through one year post-high school graduation only. Except for persistence into the second year of college, the postsecondary outcomes were limited to this timeframe. Any outcomes that may occur at a later point in time could not be determined. For example, with a full-time enrollment of 12 credits in the fall and spring semesters, a student without any transferrable college credits earned in high school would be unable to earn a Level II certificate in one year (30 credits) unless the student also enrolled full time over the summer term. Therefore, although the study found that low percentages of graduates earned postsecondary credentials within one year of high school graduation, this is not necessarily indicative of long-term postsecondary achievement. Finally, the study relied on unemployment insurance wage reports to determine employment outcomes. These data are not broken out by part-time or full-time status, and individuals can be employed in multiple jobs with multiple wages in each quarter. Therefore, the study used a liberal definition of employment (that is, the individual had at least one wage record in the data) that may not reflect career success. For example, we cannot determine whether employment was in the high-wage, in-demand occupations identified by TEA. In addition, the study does not consider earnings data because of the limitations of the unemployment insurance wage reports.

Appendix B. Supporting analyses

This appendix provides results from supporting analyses.

Table B1 is a supplement to figure 1 in the main report. The table shows the count and percentage of 2017–18 graduates who achieved each Texas Education Agency (TEA) college, career, and military readiness (CCMR) accountability standard category.

Table B1. Count and percentage of 2017–18 graduates in each Texas Education Agency college, career, and military readiness accountability standard category

College or career readiness standard category	2017–18 graduates	
	N	%
College ready	173,787	50.0
Career ready	19,324	5.6
Military ready	9,316	2.7
Not college, career, or military ready	145,466	41.8
Total	347,893	100.0

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas (*N* = 347,893). Percentages may not sum to 100 because of rounding.
Source: Authors' analysis of data described in appendix A.

Table B2 is a supplement to figure 2 in the main report. The table shows the count and percentage of 2017–18 graduates who attained each TEA CCMR accountability standard category, overall and by district size and community type.

Table B2. Count and percentage of 2017–18 graduates in each Texas Education Agency college, career, and military readiness accountability standard category, by district size and community type

District characteristic	College ready		Career ready		Military ready		Not college, career, or military ready		Total	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%
Community type										
Major suburban	64,296	53.5	5,894	4.9	2,579	2.1	47,444	39.5	120,213	100.0
Independent town	6,790	41.3*	1,226	7.5	480	2.9	7,928	48.3*	16,424	100.0
Major urban	27,400	47.7*	2,699	4.7	1,386	2.4	25,925	45.2*	57,410	100.0
Non-metropolitan fast growing	1,560	58.0	191	7.1	36	1.3	901	33.5*	2,688	100.0
Non-metropolitan stable	9,068	46.6*	1,432	7.4	671	3.4	8,283	42.6	19,454	100.0
Other central city	27,311	50.2	3,330	6.1	1,827	3.4	21,926	40.3	54,394	100.0
Other central city suburban	25,142	49.4	3,257	6.4	1,479	2.9	21,053	41.3	50,931	100.0
Rural	5,933	49.1	828	6.9	386	3.2	4,928	40.8	12,075	100.0
Total	173,787	50.0	19,324	5.6	9,316	2.7	145,466	41.8	347,893	100.0
District size (student enrollment)										
50,000 or more	53,451	52.6	4,650	4.6	2,121	2.1	41,467	40.8	101,689	100.0
Fewer than 1,600	13,536	45.8*	1,787	6.0	1,121	3.8	13,109	44.4	29,553	100.0
Fewer than 500	2,933	42.7*	382	5.6	310	4.5	3,250	47.3*	6,875	100.0
500 to 999	5,024	46.9*	675	6.3	379	3.5	4,629	43.2	10,707	100.0
1,000 to 1,599	5,579	46.6*	730	6.1	432	3.6	5,230	43.7	11,971	100.0
1,600 to 2,999	8,306	44.0*	1,397	7.4	642	3.4	8,526	45.2	18,871	100.0
3,000 to 4,999	10,247	48.7	1,384	6.6	577	2.7	8,820	41.9	21,028	100.0
5,000 to 9,999	17,043	44.4*	2,226	5.8	837	2.2	18,313	47.7*	38,419	100.0
10,000 to 24,999	33,106	50.1	4,117	6.2	1,898	2.9	27,021	40.9	66,142	100.0
25,000 to 49,999	38,098	52.8	3,763	5.2	2,120	2.9	28,210	39.1	72,191	100.0
Total	173,787	50.0	19,324	5.6	9,316	2.7	145,466	41.8	347,893	100.0

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas (*N* = 347,893). The table excludes charter school districts because Texas Education Agency groups all charter schools together regardless of their community type. Although charter school districts are excluded from the community type category, they are included among the districts by size categories. Reference groups are shaded in gray. For district community type, major suburban districts served as the reference group, and for district size, districts with 50,000 or more students served as the reference group. The table denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). The table provides a collapsed category, districts with fewer than 1,600 students, for three district size categories (districts with fewer than 500 students, districts with 500 to 999 students, and districts with 1,000 to 1,599 students). The table also separately reports the counts and percentages for these three district size categories. Percentages may not sum to 100 because of rounding.
Source: Authors' analysis based on data described in appendix A.

Table B3 is a supplement to figure 3 in the main report. The table shows the count and percentage of 2017–18 graduates who did not meet a CCMR accountability standard who achieved each alternative career readiness option.

Table B3. Count and percentage of 2017–18 graduates who did not meet a college, career, and military readiness accountability standard, by alternative career readiness option attainment

	2017–18 graduates who did not meet a college, career, and military readiness accountability standard	
Alternative career readiness option	*N*	%
CTE completer	25,849	17.8
CTE concentrator	65,182	44.8
CTE explorer	35,942	24.7
CTE participant	12,282	8.4
Work-based learner	28,039	19.3
Total	139,563	95.9

CTE is career and technical education.
Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard (*N* = 145,466).
Source: Author's analysis based on data described in appendix A.

Table B4 is a supplement to figure 4 in the main report. The table shows the count and percentage of 2017–18 graduates who did not meet a CCMR accountability standard who achieved each alternative career readiness option, overall and by district size and community type.

Table B4. Count and percentage of 2017–18 graduates who did not meet a college, career, and military readiness accountability standard, by alternative career readiness option attainment and district size and community type

District characteristic	CTE completer		CTE concentrator		CTE explorer		CTE participant		Work-based learner		Total	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%
Community type												
Major suburban	8,014	16.9	20,652	43.5	13,033	27.5	4,072	8.6	9,090	19.2	45,849	96.6
Independent town	1,809	22.8*	3,975	50.1*	1,603	20.2*	383	4.8	1,698	21.4	7,775	98.1
Major urban	4,951	19.1	10,079	38.9	6,102	23.5	2,973	11.5	5,901	22.8	24,260	93.6
Non-metropolitan fast growing	157	17.4	470	52.2*	142	15.8*	52	5.8	110	12.2*	822	91.2*
Non-metropolitan stable	1,607	19.4	4,487	54.2*	1,735	21.0*	301	3.6	1,776	21.4	8,131	98.2
Other central city	4,032	18.4	9,549	43.6	5,631	25.7	1,835	8.4	4,016	18.3	21,083	96.2
Other central city suburban	3,991	19.0	10,693	50.8*	4,728	22.5	1,214	5.8	3,942	18.7	20,644	98.1
Rural	977	19.8	2,979	60.5*	774	15.7*	148	3.0*	979	19.9	4,879	99.0
Total	25,849	17.8	65,182	44.8	35,942	24.7	12,282	8.4	28,039	19.3	139,563	95.9
District size (student enrollment)												
50,000 or more	6,439	15.5	16,727	40.3	11,150	26.9	4,698	11.3	7,713	18.6	39,197	94.5
Fewer than 1,600	2,297	17.5	7,160	54.6*	2,502	19.1*	689	5.3*	2,393	18.3	12,653	96.5
Fewer than 500	421	13.0	1,516	46.7*	741	22.8	314	9.7	453	13.9	2,992	92.1
500 to 999	868	18.8	2,644	57.1*	789	17.0*	214	4.6*	926	20.0	4,517	97.6
1,000 to 1,599	1,008	19.3	3,000	57.4*	972	18.6*	161	3.1*	1,014	19.4	5,144	98.4
1,600 to 2,999	1,589	18.6	4,472	52.5*	1,899	22.3	394	4.6*	1,535	18.0	8,357	98.0
3,000 to 4,999	1,839	20.9*	4,432	50.3*	1,906	21.6*	440	5.0*	1,855	21.0	8,622	97.8
5,000 to 9,999	3,340	18.2	8,440	46.1*	4,214	23.0	1,529	8.4	3,326	18.2	17,543	95.8
10,000 to 24,999	5,034	18.6	12,011	44.5	6,860	25.4	2,077	7.7	5,447	20.2	26,023	96.3
25,000 to 49,999	5,311	18.8	11,940	42.3	7,411	26.3	2,455	8.7	5,770	20.5	27,168	96.3
Total	25,849	17.8	65,182	44.8	35,942	24.7	12,282	8.4	28,039	19.3	139,563	95.9

CTE is career and technical education.

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard (*N* = 145,466). The table excludes charter school districts because the Texas Education Agency groups all charter schools together regardless of their community type. While charter school districts are excluded from the community type category, they are included among the districts by size categories. Reference groups are shaded in gray. For district community type, major suburban districts served as the reference group, and for district size, districts with 50,000 or more students served as the reference group. The table denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). The table provides a collapsed category, districts with fewer than 1,600 students, for three district size categories (districts with fewer than 500 students, districts with 500 to 999 students, and districts with 1,000 to 1,599 students). The table also separately reports the counts and percentages for these three district size categories.

Source: Authors' analysis based on data described in appendix A.

The work-based learning alternative career readiness option is not mutually exclusive to meeting a CTE alternative career readiness option. Table B5 reports the overlap between meeting the alternative work-based learner option and meeting the other alternative career readiness options. For 2017–18 graduates who did not meet a CCMR accountability standard, the table provides a cross-tabulation of the four mutually exclusive CTE category alternative career readiness options and the work-based learner option.

Table B5. Count and percentage of 2017–18 graduates who did not meet a college, career, and military readiness accountability standard, by alternative career and technical education career readiness option and alternative work-based learner career readiness option

Alternative CTE career readiness option	Non–work-based learner		Work-based learner	
	N	%	*N*	%
Met any CTE option	111,524	95.0	27,731	98.9
CTE completer	11,258	9.6	14,591	52.0
CTE concentrator	55,930	47.6	9,252	33.0
CTE explorer	33,014	28.1	2,928	10.4
CTE participant	11,322	9.6	960	3.4
Did not meet a CTE option	5,903	5.0	308	1.1
Total	117,427	100.0	28,039	100.0

CTE is career and technical education.
Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard (*N* = 145,466).
Source: Authors' analysis based on data described in appendix A.

Table B6 is a supplement to figure 5 in the main report. The table shows the count and percentage of 2017–18 graduates within each TEA CCMR accountability standard by postsecondary outcome achievement.

Table B6. Count and percentage of 2017–18 graduates in each Texas college, career, and military readiness accountability standard category, by postsecondary outcome

College or career readiness standard category	Enrolled in college		Obtained a certificate or associate degree or persisted in college a second year		Employed	
	N	%	*N*	%	*N*	%
College ready	128,596	74.0	101,746	58.6	99,040	57.0
Career ready	6,279	32.5	3,691	19.1	11,730	60.7
Military ready	1,452	15.6	619	6.6	5,587	60.0
Not college, career, or military ready	50,833	34.9	28,308	19.5	96,358	66.2
Total	187,160	53.8	134,364	38.6	212,715	61.1

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas (*N* = 347,893). Enrolled in college, employed, and credential attainment are within one year of graduating high school. Persistence is enrolled in college in the fall of the second year following high school graduation given the graduate was enrolled in college within one year of graduating high school. Graduates who were both enrolled in college and employed within one year of graduating high school are counted in both groupings. Graduates enrolled in college were enrolled in a two- or four-year college or university within Texas.
Source: Authors' analysis based on data described in appendix A.

Table B7 is a supplement to figure 5 in the main report. The table shows the count and percentage of 2017–18 graduates who did not meet a CCMR accountability standard, by alternative career readiness option met and postsecondary outcome.

Table B7. Count and percentage of 2017–18 graduates who did not meet a college, career, and military readiness accountability standard, by alternative career readiness option met and postsecondary outcome

	Enrolled in college		Obtained a certificate or associate degree or persisted in college a second year		Employed	
Alternative career readiness option	*N*	%	*N*	%	*N*	%
CTE completer	11,540	44.6	7,061	27.3	17,832	69.0
CTE concentrator	23,734	36.4	13,096	20.1	44,151	67.7
CTE explorer	10,962	30.5	5,773	16.1	23,558	65.5
CTE participant	3,237	26.4	1,677	13.7	7,395	60.2
Work-based learner	11,197	39.9	6,464	23.1	19,514	69.6
Total	50,833	34.9	28,308	19.5	96,358	66.2

CTE is career and technical education.

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard (*N* = 145,466). Enrolled in college, employed, and credential attainment are within one year of graduating high school. Persistence is enrolled in college in the fall of the second year following high school graduation given the graduate was enrolled in college within one year of graduating high school. Graduates who were both enrolled in college and employed within one year of graduating high school are counted in both groupings. Graduates enrolled in college were enrolled in a two- or four-year college/university within Texas.

Source: Authors' analysis based on data described in appendix A.

Appendix C. Supplemental analyses

This appendix provides additional findings about the 2017–18 graduates attainment of college, career, and military readiness (CCMR) accountability standards as defined by the Texas CCMR accountability standards, additional findings about the 2017–18 graduates who did not meet CCMR accountability standards but who completed CTE coherent sequence coursework aligned with an industry-based certification, and additional findings on postsecondary degree attainment for 2017–18 graduates.

Table C1 shows the percentage of 2017–18 graduates who achieved each Texas Education Agency (TEA) CCMR accountability standard by student demographics.

Table C1. Percentage of 2017–18 graduates in each Texas college, career, and military readiness accountability standard category, by student demographics

Demographic characteristic	College ready	Career ready	Military ready	Not college, career, or military ready
All graduates	**50.0**	**5.6**	**2.7**	**41.8**
Sex				
Male	46.2	6.9	3.7	43.2
Female	53.7*	4.3	1.7	40.4
Race/ethnicity				
White	61.3	4.8	2.3	31.6
African American	32.2*	7.0	3.3	57.6*
Asian	81.6*	1.3	1.2	15.8*
Hispanic	44.3*	6.1	2.9	46.7*
Other	53.7*	4.6	2.8	38.9*
Special education status				
Not in special education	53.6	2.1	2.8	41.6
Special education	7.2*	48.1*	1.6	43.1
Economically disadvantaged status				
Not economically disadvantaged	62.0	4.1	2.0	31.9
Economically disadvantaged	38.9*	6.9	3.3	51.0*
English learner status				
Not English learner student	51.8	5.4	2.7	40.2
English learner student	24.1*	8.8	2.6	64.6*

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas (N = 347,893). Reference groups are shaded in gray. The table denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). Percentages may not sum to 100 because of rounding.
Source: Authors' analysis of data described in appendix A.

Table C2 shows the percentage of 2017–18 graduates who did not meet a CCMR accountability standard who achieved each alternative career readiness option by student demographics.

Table C2. Percentage of 2017–18 graduates who did not meet a college, career, or military readiness accountability standard, by alternative career readiness option and student demographics

Demographic characteristic	CTE completer	CTE concentrator	CTE explorer	CTE participant	Work-based learner
Not college, career, or military ready graduates	**17.8**	**44.8**	**24.7**	**8.4**	**19.3**
Sex					
Male	16.1	46.1	25.5	8.3	16.8
Female	19.6	43.5	23.9	8.6	21.9*
Race/ethnicity					
White	17.4	49.1	23.1	6.7	19.0
African American	15.3	45.2	26.1	9.2	17.0
Asian	13.5	41.0*	27.2	12.5*	15.3
Hispanic	18.9	43.0*	24.7	8.8	20.4
Other	14.1	44.8	27.2	9.5	16.4
Special education status					
Not in special education	18.4	45.2	24.6	8.2	19.3
Special education	11.7*	42.2	26.4	11.1	19.9
Economically disadvantaged status					
Not economically disadvantaged	17.1	46.0	24.4	8.2	18.2
Economically disadvantaged	18.1	44.1	24.9	8.6	19.9
English learner status					
Not English learner student	18.3	45.7	24.4	7.8	19.7
English learner student	13.6	37.9*	27.3	13.8*	16.2

CTE is career and technical education.
Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard (N = 145,466). Reference groups are shaded in gray. The table denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). Percentages for each subgroup may not sum to 100 because of rounding.
Source: Authors' analysis of data described in appendix A.

The annual cohort of 2017–18 graduates could also demonstrate career readiness by completing CTE coherent sequence coursework aligned with an industry-based certification. However, TEA eliminated this criterion from the 2020–21 accountability standards. Therefore, for the purposes of this study, graduates who met only this criterion were considered not college or career ready. Table C3 shows the count and percentage of 2017–18 graduates who met only this prior criterion (see column 4 of Table C3), overall and by district size and community type.

Table C3. Count and percentage of 2017–18 graduates who met college and career readiness accountability standards, and graduates who did not meet college, career, or military readiness accountability standards but who completed career and technical education coherent sequence coursework aligned with an industry-based certification, by district size and community type

District characteristic	College ready		Career ready		Military ready		Not college, career, or military ready, Completed CTE coursework		Not college, career, or military ready, Other		Total	
	N	%	*N*	%	*N*	%	*N*	%	*N*	%	*N*	%
Community type												
Major suburban	64,296	53.5	5,894	4.9	2,579	2.1	15,313	12.7	32,131	26.7	120,213	100.0
Independent town	6,790	41.3*	1,226	7.5	480	2.9	3,510	21.4*	4,418	26.9	16,424	100.0
Major urban	27,400	47.7*	2,699	4.7	1,386	2.4	7,711	13.4	18,214	31.7	57,410	100.0
Non-metropolitan fast growing	1,560	58.0	191	7.1	36	1.3	427	15.9	474	17.6*	2,688	100.0
Non-metropolitan stable	9,068	46.6*	1,432	7.4	671	3.4	3,723	19.1*	4,560	23.4	19,454	100.0
Other central city	27,311	50.2	3,330	6.1	1,827	3.4	7,756	14.3	14,170	26.1	54,394	100.0
Other central city suburban	25,142	49.4	3,257	6.4	1,479	2.9	9,204	18.1*	11,849	23.3	50,931	100.0
Rural	5,933	49.1	828	6.9	386	3.2	2,372	19.6*	2,556	21.2*	12,075	100.0
Total	173,787	50.0	19,324	5.6	9,316	2.7	50,592	14.5	94,874	27.3	347,893	100.0
District size (student enrollment)												
50,000 or more	53,451	52.6	4,650	4.6	2,121	2.1	12,045	11.8	29,422	28.9	101,689	100.0
Fewer than 1,600	13,536	45.8*	1,787	6.0	1,121	3.8	5,327	18.0*	7,782	26.3	29,553	100.0
Fewer than 500	2,933	42.7*	382	5.6	310	4.5	1,009	14.7	2,241	32.6	6,875	100.0
500 to 999	5,024	46.9*	675	6.3	379	3.5	2,067	19.3*	2,562	23.9	10,707	100.0
1,000 to 1,599	5,579	46.6*	730	6.1	432	3.6	2,251	18.8*	2,979	24.9	11,971	100.0
1,600 to 2,999	8,306	44.0*	1,397	7.4	642	3.4	3,770	20.0*	4,756	25.2	18,871	100.0
3,000 to 4,999	10,247	48.7	1,384	6.6	577	2.7	3,872	18.4*	4,948	23.5*	21,028	100.0
5,000 to 9,999	17,043	44.4*	2,226	5.8	837	2.2	6,383	16.6	11,930	31.1	38,419	100.0
10,000 to 24,999	33,106	50.1	4,117	6.2	1,898	2.9	9,841	14.9	17,180	26.0	66,142	100.0
25,000 to 49,999	38,098	52.8	3,763	5.2	2,120	2.9	9,354	13.0	18,856	26.1	72,191	100.0
Total	173,787	50.0	19,324	5.6	9,316	2.7	50,592	14.5	94,874	27.3	347,893	100.0

CTE is career and technical education.

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas (*N* = 347,893). The table excludes charter school districts because the Texas Education Agency groups all charter schools together regardless of their community type. While charter school districts are excluded from the community type category, they are included among the districts by size categories. Reference groups are shaded in gray. For district community type, major suburban districts served as the reference group, and for district size, districts with 50,000 or more students served as the reference group. The table denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). The table provides a collapsed category, districts with fewer than 1,600 students, for three district size categories (districts with fewer than 500 students, districts with 500 to 999 students, and districts with 1,000 to 1,599 students). The table also separately reports the counts and percentages for these three district size categories. Percentages may not sum to 100 because of rounding.
Source: Authors' analysis based on data described in appendix A.

Table C4 shows the count and percentage of graduates who achieved each alternative career readiness option among the 2017–18 graduates who did not meet CCMR accountability standards but who completed CTE coherent sequence coursework aligned with an industry-based certification, overall and by district size and community type.

Table C4. Count and percentage of graduates who achieved each alternative career readiness option among the 2017–18 graduates who did not meet college, career, and military readiness accountability standards but who completed career and technical education coherent sequence coursework aligned with an industry-based certification, overall and by district size and community type

District characteristic	CTE completer		CTE concentrator		Work-based learner		Total	
	N	%	*N*	%	*N*	%	*N*	%
Community type								
Major suburban	5,618	36.7	7,786	50.9	5,205	34.0	15,310	100.0
Independent town	1,301	37.1	1,872	53.3	1,083	30.9	3,510	100.0
Major urban	3,228	41.9*	3,730	48.4	3,028	39.3*	7,706	99.9
Non-metropolitan fast growing	115	26.9*	276	64.6*	68	15.9*	427	100.0
Non-metropolitan stable	1,140	30.6*	2,188	58.8*	1,052	28.3*	3,723	100.0
Other central city	2,793	36.0	3,937	50.8	2,429	31.3	7,755	100.0
Other central city suburban	2,923	31.8	5,250	57.0*	2,342	25.5*	9,203	100.0
Rural	608	25.6*	1,524	64.3*	588	24.8*	2,371	100.0
Total	17,906	35.4	26,881	53.1	15,954	31.5	50,581	100.0
District size (student enrollment)								
50,000 or more	4,494	37.3	6,199	51.5	4,102	34.1	12,040	100.0
Fewer than 1,600	1,464	27.5*	3,323	62.4*	1,360	25.5*	5,326	100.0
Fewer than 500	247	24.5*	645	63.9*	221	21.9*	1,009	100.0
500 to 999	560	27.1*	1,301	62.9*	548	26.5*	2,066	100.0
1,000 to 1,599	657	29.2*	1,377	61.2*	591	26.3*	2,251	100.0
1,600 to 2,999	1,204	31.9*	2,174	57.7*	945	25.1*	3,770	100.0
3,000 to 4,999	1,317	34.0	2,143	55.4	1,096	28.3*	3,871	100.0
5,000 to 9,999	2,347	36.8	3,450	54.1	1,982	31.1	6,382	100.0
10,000 to 24,999	3,628	36.9	4,919	50.0	3,207	32.6	9,840	100.0
25,000 to 49,999	3,452	36.9	4,673	50.0	3,262	34.9	9,352	100.0
Total	17,906	35.4	26,881	53.1	15,954	31.5	50,581	100.0

CTE is career and technical education.

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard but who completed CTE coherent sequence coursework aligned with an industry-based certification (*N* = 50,592). The table excludes charter school districts because Texas Education Agency groups all charter schools together regardless of their community type. While charter school districts are excluded from the community type category, they are included among the districts by size categories. The table does not separately report counts and percentages for the CTE explorer and CTE participant alternative career readiness options. However, they are included in the total columns. Reference groups are shaded in gray. For district community type, major suburban districts served as the reference group, and for district size, districts with 50,000 or more students served as the reference group. The table denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). The table provides a collapsed category, districts with fewer than 1,600 students, for three district size categories (districts with fewer than 500 students, districts with 500 to 999 students, and districts with 1,000 to 1,599 students). The table also separately reports the counts and percentages for these three district size categories.
Source: Authors' analysis based on data described in appendix A.

Table C5 shows the count and percentage of graduates who achieved each postsecondary outcome among 2017–18 graduates who did not meet a CCMR accountability standard but who completed CTE coherent sequence coursework aligned with an industry-based certification, by alternative career readiness option met.

Table C5. Count and percentage of graduates who achieved each postsecondary outcome among 2017–18 graduates who did not meet a college, career, and military readiness accountability standard but who completed career and technical education coherent sequence coursework aligned with an industry-based certification, by alternative career readiness option met

	Enrolled in college		Obtained a certificate or associate degree or persisted in college a second year		Employed	
Alternative career readiness option	*N*	%	*N*	%	*N*	%
CTE completer	8,269	46.2	5,125	28.6	12,407	69.3
CTE concentrator	10,370	38.6	5,685	21.2	18,250	67.9
CTE explorer	1,663	30.1	830	15.0	3,696	66.9
CTE participant	59	22.2	21	7.9	160	60.2
Work-based learner	7,204	45.2	4,319	27.1	11,213	70.3
Total	20,362	40.3	11,662	23.1	34,520	68.2

CTE is career and technical education.
Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard but who completed CTE coherent sequence coursework aligned with an industry-based certification (*N* = 50,592). Enrolled in college, employed, and credential attainment are within one year of graduating high school. Persistence is enrolled in college in the fall of the second year following high school graduation given the graduate was enrolled in college within one year of graduating high school. Graduates who were both enrolled in college and employed within one year of graduating high school are counted in both groupings. Graduates enrolled in college were enrolled in a two- or four-year college/university within Texas.
Source: Authors' analysis based on data described in appendix A.

As a supplemental analysis, the study examined attainment of the work-based learning alternative career readiness option by work-based learning course type. Table C6 shows the count and percentage of 2017–18 graduates who did not meet a CCMR accountability standard and who achieved each alternative career readiness option, overall and by district size and community type. It separately reports on graduates who completed at least one work-based learning course that was a practicum course and those who did not take at least one practicum course.

Table C6. Count and percentage of 2017–18 graduates who did not meet a college, career, and military readiness accountability standard, by work-based learning course type and district size and community type

District characteristic	Work-based learner, Practicum		Work-based learner, Other		Work-based learner, Total	
	N	%	*N*	%	*N*	%
Community type						
Major suburban	5,253	11.1	3,837	8.1	9,090	19.2
Independent town	761	9.6	937	11.8	1,698	21.4
Major urban	3,154	12.2	2,747	10.6	5,901	22.8
Non-metropolitan fast growing	57	6.3	53	5.9	110	12.2*
Non-metropolitan stable	618	7.5	1,158	14.0*	1,776	21.4
Other central city	2,058	9.4	1,958	8.9	4,016	18.3
Other central city suburban	1,921	9.1	2,021	9.6	3,942	18.7
Rural	364	7.4	615	12.5	979	19.9
Total	14,354	9.9	13,685	9.4	28,039	19.3
District size (student enrollment)						
50,000 or more	4,055	9.8	3,658	8.8	7,713	18.6
Fewer than 1,600	829	6.3	1,564	11.9	2,393	18.3
Fewer than 500	187	5.8	266	8.2	453	13.9
500 to 999	283	6.1	643	13.9*	926	20.0
1,000 to 1,599	359	6.9	655	12.5	1,014	19.4
1,600 to 2,999	596	7.0	939	11.0	1,535	18.0
3,000 to 4,999	856	9.7	999	11.3	1,855	21.0
5,000 to 9,999	1,708	9.3	1,618	8.8	3,326	18.2
10,000 to 24,999	2,878	10.7	2,569	9.5	5,447	20.2
25,000 to 49,999	3,432	12.2	2,338	8.3	5,770	20.5
Total	14,354	9.9	13,685	9.4	28,039	19.3

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard and who met the work-based learner alternative career readiness option (*N* = 28,039). The table excludes charter school districts because Texas Education Agency groups all charter schools together regardless of their community type. While charter school districts are excluded from the community type category, they are included among the districts by size categories. Reference groups are shaded in gray. For district community type, major suburban districts served as the reference group, and for district size, districts with 50,000 or more students served as the reference group. The table denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). The table provides a collapsed category, districts with fewer than 1,600 students, for three district size categories (districts with fewer than 500 students, districts with 500 to 999 students, and districts with 1,000 to 1,599 students). The table also separately reports the counts and percentages for these three district size categories.
Source: Authors' analysis based on data described in appendix A.

Table C7 shows the count and percentage of 2017–18 graduates who did not meet a CCMR accountability standard, by alternative career readiness option met and postsecondary outcome. It separately reports on graduates who completed at least one work-based learning course that was a practicum course and those who did not take at least one practicum course.

Table C7. Count and percentage of 2017–18 graduates who did not meet a college, career, and military readiness accountability standard, by alternative career readiness option met and postsecondary outcome

	Enrolled in college		Obtained a certificate or associate degree or persisted in college a second year		Employed	
Alternative career readiness option	*N*	%	*N*	%	*N*	%
CTE completer	11,540	44.6	7,061	27.3	17,832	69.0
CTE concentrator	23,734	36.4	13,096	20.1	44,151	67.7
CTE explorer	10,962	30.5	5,773	16.1	23,558	65.5
CTE participant	3,237	26.4	1,677	13.7	7,395	60.2
Work-based learner, Practicum	6,452	45.0	3,863	26.9	9,833	68.5
Work-based learner, Other	4,745	34.7	2,601	19.0	9,681	70.7
Total	50,833	34.9	28,308	19.5	96,358	66.2

CTE is career and technical education.

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas who did not meet a college, career, and military readiness accountability standard (*N* = 145,466). Enrolled in college, employed, and credential attainment are within one year of graduating high school. Persistence is enrolled in college in the fall of the second year following high school graduation given the graduate was enrolled in college within one year of graduating high school. Graduates who were both enrolled in college and employed within one year of graduating high school are counted in both groupings. Graduates enrolled in college were enrolled in a two- or four-year college/university within Texas.

Source: Authors' analysis based on data described in appendix A.

Table C8 shows the composition of 2017–18 graduates demographic characteristics within each TEA CCMR accountability standard.

Table C8. Percentage of 2017–18 graduates by demographic characteristics within each Texas college, career, and military readiness accountability standard

Demographic characteristic	Career ready	College ready	Military ready	Not college, career, or military ready
All graduates	**100.0**	**100.0**	**100.0**	**100.0**
Sex				
Male	61.5	46.2*	68.7*	51.6*
Female	38.5	53.8*	31.3*	48.4*
Race/ethnicity				
White	26.6	37.8*	26.4	23.2
African American	15.7	8.0*	15.3	17.2
Asian	1.1	7.6*	2.1	1.8
Hispanic	54.7	44.1*	53.9	55.7
Other	1.9	2.5	2.4	2.1
Special education status				
Not in special education	34.4	98.9*	95.3*	91.6*
Special education	65.5	1.1*	4.6*	7.8*
Economically disadvantaged status				
Not economically disadvantaged	35.6	59.4*	36.3	36.5
Economically disadvantaged	64.4	40.6*	63.7	63.5
English learner status				
Not English learner student	90.1	97.0*	94.0	89.9
English learner student	9.8	3.0*	5.9	9.6

Note: The table represents data for the annual statewide cohort of 2017–18 high school graduates from public high schools in Texas (*N* = 347,893). Reference groups are shaded in gray. The table denotes percentages that differ from the reference group by more than 5 percentage points with an asterisk (*). Percentages within each subgroup category may not sum to 100 because of rounding.
Source: Authors' analysis of data described in appendix A.

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