Pathways in Technology Early College High School Program Summary Report, 2019–2020

Starting as early as 9th grade, Pathways in Technology (P-TECH) provides a 6-year, career-focused program that combines high school and college coursework with real-world work experience. Students gain work experience through job shadowing, internships, and apprenticeships in fields connected to their classroom studies. Students who successfully complete the 6-year program graduate with a high school diploma, an associate's degree, a career and technical education (CTE) endorsement, relevant industry certifications, and practical workplace experience. The program was implemented in collaboration with Austin Community College (ACC) and industry partners. Program guidance was provided by a P-TECH coordinator at each campus. In 2019–2020, Crockett, LBJ, and Navarro Early College High Schools implemented P-TECH. More details about P-TECH are provided on page 5.

This report includes findings regarding the demographic characteristics and academic outcomes of the students served by the program and provides general recommendations for future program implementation.

It is important to note that Austin Independent School District (AISD) campus closures due to COVID-19 affected implementation of educational programs across the district. Among several changes, return to classes after spring break was delayed. This compressed the remaining time students had to complete their course work in the spring semester. In addition, instruction was implemented exclusively online after spring break. Consequently, it is possible that these changes affected students' outcomes.
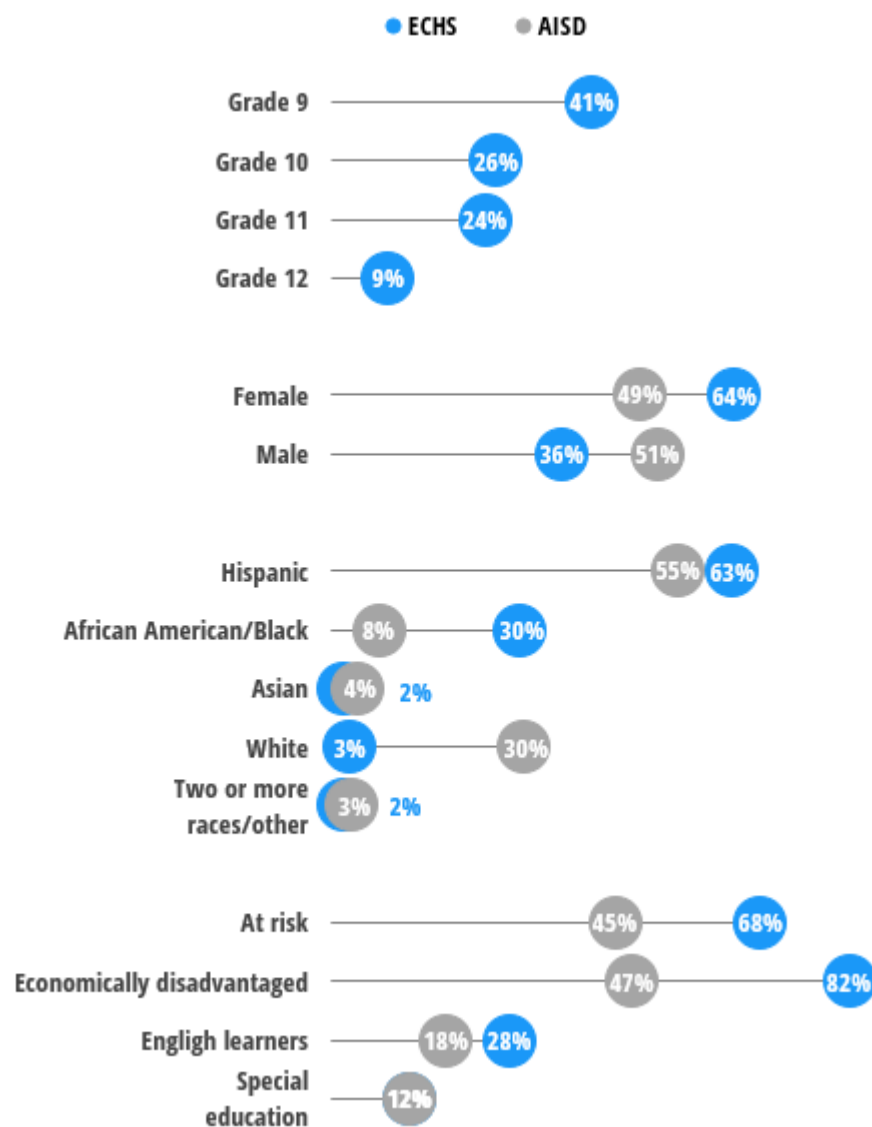
DEMOGRAPHICS

In 2019–2020, 338 high school students participated in P-TECH. The majority were Hispanic, economically disadvantaged, and/or classified as at risk of dropping out of school. In addition, demographic groups typically under-represented in science, technology, engineering, and mathematics (STEM) careers and in postsecondary institutions were represented at higher rates in the P-TECH Program than what was observed in the district. More specifically, 63% of the students were Hispanic, 30% were African American, 82% were economically disadvantaged, and 68% were classified as at risk of dropping out of school (Figure 1). In addition, 28% of the students were classified as English learners and 12% were enrolled in special education programs. However, male students (36%) were under represented when compared with the percentage of male students in the district (51%).

Furthermore, The Texas Education Agency (TEA) recommends that schools implementing P-TECH monitor and encourage program persistence across the years.

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Data analysis showed that 100% of the 144 students who enrolled in P-TECH in 2018–2019 stayed in the program in 2019–2020.

All campuses implementing the program in 2019–2020 earned the TEA's Designated P-TECH credentials. At this credential level, the TEA recommends that minority group representation in the program be proportionate to those minority groups' distribution at the district level. Disaggregation of student demographics data for each campus indicated Crockett, LBJ, and Navarro met all of the TEA's recommendations except for the percentage of males and African Americans. LBJ had fewer male students and Crockett had fewer African Americans than indicated by the percentages in the TEA's recommendations (Appendix A).

Figure 1.
A total of 338 students participated in P-TECH in 2019–2020.

Source. 2019–2020 AISD student enrollment records

Methods

P-TECH Student Recruitment

The TEA's blueprint for P-TECH implementation recommends that schools recruit and enroll higher percentages of students from minority groups that are under represented in postsecondary institutions, compared with the percentages of these groups observed at the district level.

Texas Success Initiative (TSI) Assessment Reporting

The TEA's blueprint for the P-TECH Program requires that TSI assessments be provided to students accepted into P-TECH as early as possible to assess college readiness, thus allowing students to begin college courses and allowing program staff to design individual instructional support plans for the students.

Students can take the TSI assessments multiple times until they meet CR criteria for each subject. This document reports students' highest TSI scores (across school years).

ACADEMIC OUTCOMES
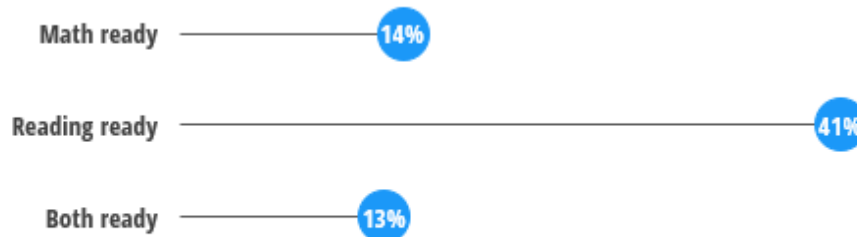
College Ready Assessments

Students can meet college readiness (CR) criteria on the Texas Success Initiative (TSI), the ACT, and/or the SAT. Overall, 13% of P-TECH students met CR criteria in both reading and math. Considering the math and reading assessments separately, higher percentages of students met CR criteria in the reading assessments (41%) than in the math assessments (14%; Figure 2).

As students progressed through high school, they were more likely to meet CR criteria in math. Disaggregation of CR assessments by grade level revealed that the percentage of students who met CR criteria in math gradually increased from 9th grade (11%) to 12th grade (48%). It is important to note that the CR assessments were originally created for 11th grade and up. Therefore, it is likely that students entering ECHS in 9th grade may not have taken the associated course work before they took the CR assessment.

The TEA recommended that 50% or more P-TECH students at designated campuses meet CR criteria in both reading and math on any of the CR assessments. Disaggregation of CR outcomes by campus revealed that none of the P-TECH campuses met the TEA's recommended percentages (Appendix B).

Figure 2.
A greater percentage of students met college readiness criteria in Reading than in math.

Math ready — 14%

Reading ready — 41%

Both ready — 13%

Source. 2019–2020 AISD student records

Dual Credit Earning

In total, P-TECH students earned 216.5 dual credits (DCs) in high school (Table 1). Of the 338 P-TECH students, 36% earned one or more DCs in high school. When grade level was taken into consideration, 59% of the P-TECH 12th graders earned DCs in high school. At the designated level of program implementation, the TEA recommended that 80% of P-TECH students complete one or more DC courses in high school. Disaggregation of DC course completion data by campus indicated that Crockett surpassed the TEA's recommendations, whereas LBJ and Navarro did not meet the TEA's recommendations (Appendix B).

Table 1.

Most DCs were earned by P-TECH students in 10th and 11th grade.

Grade level	Credits earned in high school	% who earned DC per grade level
09	18.5	32%
10	63.5	36%
11	60	33%
12	61.5	59%
Total credits	216.5	36%

Source. 2019–2020 AISD student records

Postsecondary Outcomes

Preliminary AISD graduation data for 2019–2020 indicated positive outcomes for P-TECH participants. Of the 29 students who were in 12th grade, 97% graduated. However, none of the students received an associate's degree. It is important to note that 2019–2020 was the second year of P-TECH implementation, and 12th graders did not participate in 4 years of P-TECH programming and did not have the time to earn the credits needed for the associate's degree.

The program encouraged students to pursue certifications relevant to the academic area they were pursuing. Overall, 13% of all P-TECH students have earned industry certifications since 2016–2017. However, the majority of P-TECH students (67%) were in either their first or second year of high school and may not have completed the necessary coursework needed for certification. This may explain the low overall percentage of certifications earned. Disaggregation of certification data by grade level showed that none of 9th graders, 24% of the 10th graders, 9% of the 11th graders, and 59% of the 12th graders earned certifications.

Furthermore, the majority of certifications earned were in the field of health sciences (70%), followed by certifications in business management (13%) and construction technology (9%) (Table 2). The remaining certifications were in the field of automotive mechanics, culinary arts, and child development.

Lastly, the TEA recommended that 30% of the P-TECH students or more earn an industry certification by graduation. Disaggregation of 12th-grade student certification data by campus indicated that Crockett and LBJ (the only two campuses with P-TECH students in 12th grade) surpassed the TEA's recommendations (Appendix B).

Table 2.

Most certifications earned were in the field of health sciences.

Certification field	Certifications earned
Health science	70%
Business management	13%
Construction technology	9%
Automotive mechanics	4%
Other	4%
Total certifications	54

Source. 2019–2020 AISD student records

COORDINATORS' THOUGHTS ON DC COMPLETION AFTER CAMPUS CLOSURES

P-TECH coordinators worked closely with students to plan their academic path in the program; coordinate academic and social support; and help them identify, enroll in, and be successful in DC courses. Therefore, to assess whether the COVID-19 pandemic affected implementation of the P-TECH Program, coordinators were asked to provide their thoughts on how work with their students proceeded after campus closures. Coordinators provided feedback biweekly during focus group sessions held from early April until the end of the semester and via an electronic survey.

Program coordinators reported some successes amidst programmatic changes brought about by campus closures due to COVID-19. For example, P-TECH coordinators indicated that many students seemed to prefer the online format, and the students who participated in the classes did complete their course and earned credits for it. In fact, coordinators mentioned that several students were interested in summer DC courses because they were going to be online. However, P-TECH coordinators also reported difficulties after campuses closed down. The most prominent issues seemed to be related to the internet connections and communications with ACC professors and/or communications with students.

CONCLUSIONS

P-TECH campuses were open-enrollment high schools that enabled students least likely to attend college to have an opportunity to receive both a high school diploma and a credential and/or an associate's degree. P-TECH campuses had program coordinators and tutors to support students socially and academically.

The enrollment and academic outcomes for the second year of P-TECH implementation were positive. A total of 338 high school students participated in the program, and students economically disadvantaged and/or at risk of dropping out of school were represented in the program at higher rates than in the district. Similarly, the program enrolled higher percentages of African American, Hispanic, and English learners than the percentages represented in the district. In addition, regarding student retention, all students who attended P-TECH in the prior year re enrolled in the program in 2019–2020. Lastly, regarding postsecondary outcomes, P-TECH campuses surpassed the TEA's industry certification recommendations, and 97% of the P-TECH students graduated from high school.

However, P-TECH students did not participate in internships and/or apprenticeships. This can be explained by the fact that 2019-2020 was the second year of P-TECH implementation. Consequently, the majority of P-TECH students were in 9th or 10th grade and not yet ready to participate in internships or apprenticeships. In addition, internships that were organized for students in higher grade levels were canceled due to the COVID-19 pandemic.

In addition, none of the P-TECH campuses met the TEA's recommendations for CR in both math and English and the percentage of students who met CR criteria in math was lower than the percentage of students who met CR criteria in reading. It is possible that students may need more time to take required courses and master the math concepts necessary to meet CR criteria on the TSI math test than is needed for other subjects. Supporting this theory, disaggregation of CR data by grade level revealed that a higher percentage of 12th graders than of students in 9th, 10th, or 11th grade met the CR criteria in math.

P-TECH BACKGROUND

AISD expects that all students will graduate ready for college, career, and life in a globally competitive economy and is committed to providing all students with quality college and career preparation. In this effort, AISD has created a series of college and career readiness support services and programs. P-TECH is one of such programs. P-TECH provides a 6-year, career-focused program that combines high school and college coursework with real-world work experience. Students who successfully complete the 6-year program graduate with a high school diploma, an associate's degree, a CTE endorsement, relevant industry certifications, and practical workplace experience.

The TEA, in collaboration with the Texas Workforce Commission (TWC) and the Texas Higher Education Coordinating Board (THECB), developed an implementation plan for the P-TECH Program that addresses:

- regional workforce needs
- course credit transfer policies between institutes of higher education
- internships, apprenticeships, and other work-based education programs

Under the authority of the Texas Education Code and the Texas Administrative Code, the TEA developed a designation process for the P-TECH Program. This designation process ensures that public school districts and charter schools operating P-TECH campuses maintain the integrity of the model (for more information, see the TEA's website, https://tea.texas.gov/academics/college-career-and-military-prep/pathways-in-technology-early-college-high-school-p-tech-0).

The P-TECH Program operates as a high school within high schools, and the TEA recognizes three levels of P-TECH implementation: provisional, designated, and designated with excellence. Each level requires that P-TECH high schools demonstrate they can implement all design elements and increasingly stringent outcomes-based measure (OBM) criteria. The provisional title is used for new P-TECH schools. The designated title is used for schools that have been able to maintain their provisional status and have met the OBMs associated with a designated status. Designated with excellence is used for schools that have had designated status for at least 5 years and have met the designated OBMs.

Appendix A

P-TECH Student Demographics per High School Campus

Demographics	District	TEA requirements	Crockett	LBJ	Navarro
			P-TECH designation		
Student count	(n = 22,591)		(n = 13)	(n = 250)	(n = 68)
Male	51%	No more than 5% under district	77%	25%	68%
African American	8%	No more than 5% under district	0	36%	10%
Hispanic	55%	No more than 5% under district	85%	59%	76%
At risk	51%	Incoming 9th graders no more than 15% under district	46%	71%	59%
9th-grader n count	n = 6,632		n = 97	n = 22	n = 7
Economically disadvantaged	47%	No more than 5% under district	92%	82%	78%
English learner	18%	Not taken into account	15%	30%	24%
Special education	12%	Not taken into account	15%	13%	7%

Source. 2019–2020 AISD student enrollment records

APPENDIX B

Program Retention, CR, DC Participation, and Postsecondary Outcomes per High School Campus

		P-TECH designation		
Persistence	**TEA requirements**	**Crockett**	**LBJ**	**Navarro**
		(n = 13)	(n = 250)	(n = 68)
Retain students in the program from grade to grade	80%	100%	100%	NA
CR	**TEA requirements**	**Crockett**	**LBJ**	**Navarro**
		(n =13)	(n = 250)	(n = 68)
Meet CR criteria in reading and math	50%	46%	10%	18%
DC	**TEA requirements**	**Crockett**	**LBJ**	**Navarro**
		(n =13)	(n = 250)	(n = 68)
Complete a DC course	80%	100%	30%	49%
Postsecondary outcomes	**TEA requirements**	**Crockett**	**LBJ**	**Navarro**
12th-graders		(n = 6)	(n = 28)	NA
Earn industry certification	30%	83%	61%	NA
Earn an associate's degree	30%	0%	0%	NA

Source. 2019–2020 AISD student enrollment records