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Pathways in Technology Early College High School Program Summary Report, 2018–2019

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 2018–2019, LBJ and Crockett Early College High Schools began implementing P-TECH. More details about P-TECH are provided on page 5.

This report includes findings regarding demographic characteristics and academic outcomes of the students served by the program, highlights emerging topics from the student and teacher and program staff surveys, and provides general recommendations for future program implementation.

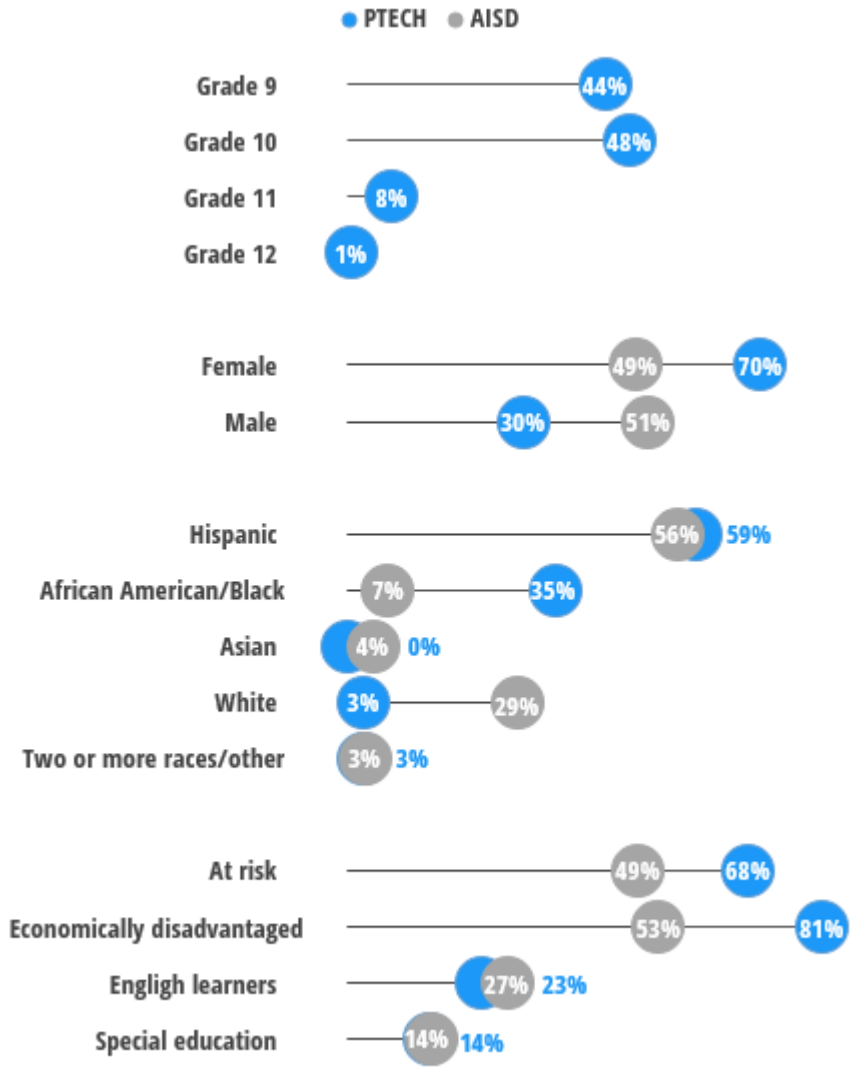
Demographics

Meeting criteria from the Texas Education Agency (TEA), 144 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 2018–2019, minority groups were represented at higher rates in the P-TECH Program than what was observed in Austin Independent School District (AISD) student body overall. More specifically, 59% of the students were Hispanic, 35% were African American, 81% were economically disadvantaged, and 68% were classified as at risk of dropping out of school (Figure 1). However, students classified as English learners were under-represented among P-TECH students. Lastly, 44% of P-TECH students were in 9th grade, 48% were in 10th grade, and 9% were in 11th or 12th grade.

Department of Research and Evaluation
Austin Independent School District

Figure 1.

A total of 144 students participated in P-TECH in 2018–2019.



Source. 2018–2019 AISD student enrollment records

College Ready Assessments

A higher percentage of P-TECH students than of students in the matched comparison group met college readiness (CR) criteria on the TSI reading, writing, and math tests (Figure 2). In addition, AISD P-TECH students met CR criteria on the TSI reading test (41%) at a higher rate for new schools (i.e., provisional) than recommended by TEA. At the provisional level, TEA recommended at least 35% of P-TECH students meet CR criteria on TSI reading and math. The percentage of P-TECH students who met CR criteria on the TSI math test (17%) was lower than the percentage of P-TECH students who passed TSI reading (43%) or writing (61%). However, the disaggregation of TSI math results by grade level showed that the majority of P-TECH 11th graders (82%) met CR criteria on the TSI math test.

Methods

P-TECH Student Recruitment

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

Matched Comparison Group

To evaluate P-TECH students' performance in the TSI assessments, P-TECH students' scores were compared with the scores of non-program high school students. Students in the comparison group (n = 113) attended the same campuses as P-TECH students and were matched based on socioeconomic status, ethnicity, and English learner status. Differences between program and comparison students were tested with a chi-square test of goodness of fit.

Texas Success Initiative (TSI) Assessment Reporting

The TEA 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.

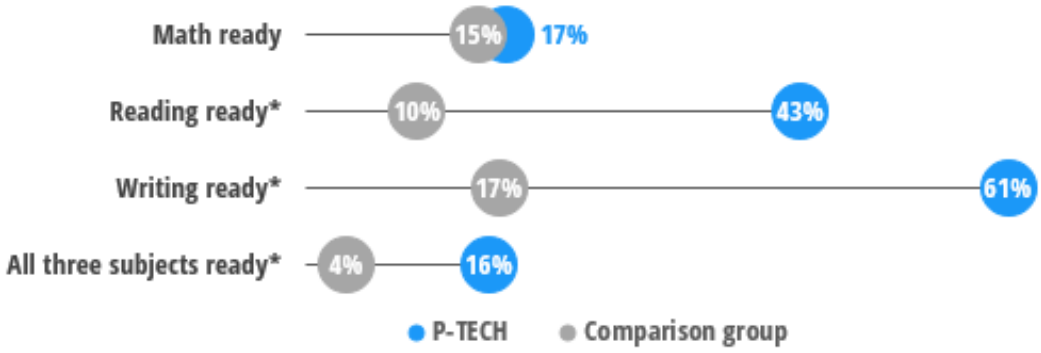
Students can take the TSI assessments multiple times until they meet CR criteria for each subject. This document reports students' highest TSI scores (across school years).

Student and Staff Survey

In the spring of 2019, students, teachers, and administrators at campuses that implemented P-TECH were asked to provide feedback about the program via an electronic survey. A total of 184 students and 262 teachers and administrators received a link to the survey.

Figure 2.

A significantly greater percentage of P-TECH students than of students from a comparison group passed the TSI college ready assessments.



Source. 2018–2019 AISD student records
* Significant differences were found using a chi-square test of goodness of fit, $p < 0.001$.

Dual Credit Earning

Similar to what was observed for college ready assessments, a significantly higher percentage of P-TECH students (16%) than of students in the comparison group (2%) earned dual credits in 2018–2019. In total, P-TECH students earned 86.5 dual credits in high school, and the majority of credits were earned by students in 10th and 11th grade (Table 1).

Table 1.

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

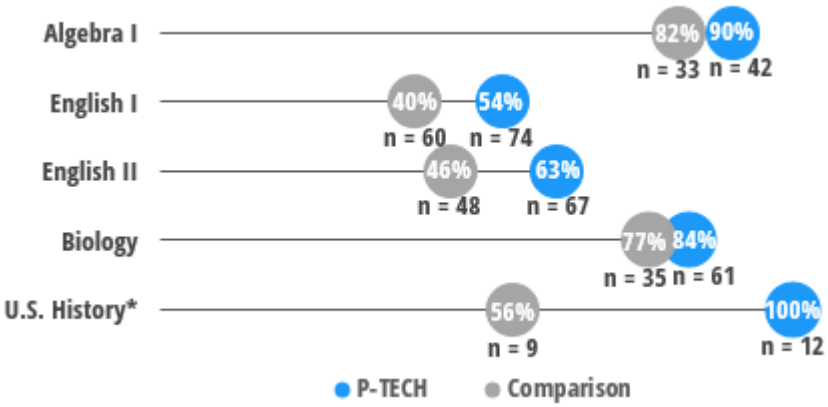
Grade level	Credits earned in high school
09	8.5
10	33.5
11	36
12	8.5
Total credits	86.5

Source. 2018–2019 AISD student records

End-of-Course (EOC) Performance

In 2018–2019, a significantly higher percentage of P-TECH students than of comparison students met standards for the U.S. history EOC assessment; however, both groups performed similarly on the other EOC subjects (Figure 3). In addition, more than 80% of P-TECH students who took EOC assessments in 2018–2019 met standards for the Algebra I, Biology, and U.S. History assessments. A total of 132 P-TECH students took the EOC tests in 2018–2019; of those, 42% were in 9th grade, 49% were in 10th grade, and 8% were in 11th grade.

Figure 3.
P-TECH students met the state passing standard for the U.S. History EOC at a significantly higher rate than did students in a matched comparison group, but both groups performed similarly in all other EOC subjects.



Source. 2018–2019 AISD student records
* Significant differences were found using a chi-square test of goodness of fit, $p < 0.01$.

Certifications

The P-TECH Program encouraged students to pursue certifications relevant to the academic area they were pursuing. Despite the fact that the majority of P-TECH students (92%) were in either their first or second year of high school, some P-TECH students (8%) have received industry certifications since 2017–2018. Students who received certifications were in 10th or 11th grade, and the majority of certifications (67%) were earned in 2018–2019. Forty-three percent of the certificates were in the field of construction technology, 25% were in business management information, 19% were in child guidance, and the remaining were in health sciences and culinary arts.

Survey Results

In the spring of 2019, students who had enrolled in P-TECH at the beginning of 2018–2019 were asked to provide their feedback about the program. Of the184 students who received a link to an electronic survey, 78% provided their feedback. Teachers and administrators at campuses that implemented P-TECH were also asked to provide feedback about the program via an electronic survey. A total of 262 teachers and administrators received a link to the survey, and 30% provided their feedback.

Student Feedback

Of the 143 students who answered the survey, 41% indicated they had taken dual-credit courses. Of the P-TECH students who had not yet taken dual-credit courses, 41% indicated they had not yet passed the college ready assessment required for taking a dual-credit course. Twenty-six percent of respondents who had not taken a dual-credit course had not decided if they wanted a college degree.

Students provided feedback on what they liked about the program. The majority (52%) of the students indicated the classes were interesting (Table 2). In addition, students indicated they hoped to find a job related to their P-TECH courses (44%), and that the courses helped them understand what working in those fields would be like (39%). Lastly, some P-TECH students indicated they had the opportunity to take college-level classes (37%) and were getting work experience in their field of study (30%).

Students also provided recommendations for program improvements. Forty percent of students indicated they wanted more mentoring and/or internship opportunities, and that more information about jobs related to their P-TECH courses (36%) would have been helpful. In addition, students indicated that more information about the P-TECH Program (24%) and more tutoring help with the coursework (20%) would make the program even better (Table 2). In open-ended answers, students indicated they would have liked more hands-on opportunities and more course work choices.

Table 2.

P-TECH Student Survey, 2018-2019

Survey item: I like this program because	% agree
The classes are interesting.	52%
The classes are challenging.	20%
It helps me understand what working in this field will look like.	39%
I am getting work experience in this field.	30%
I hope to find a job in this field after high school.	44%
I am working towards certifications that will help me find a job in this field after high school.	37%
I have the opportunity to take college level classes.	26%
The tutoring and/or mentoring sessions are helping me with my classes.	7%
The mentoring and/or internships are helping me develop skills I will need when I start working in this field.	9%

Survey Item: I think this program could be even better if	% agree
We had more tutoring help with the coursework.	20%
We had more mentoring and/or internships to help me develop skills I will need when I start working in this field.	40%
We could take more dual credit/college level courses.	13%
We had more information about the program earlier on.	24%
We had more information about this field of work earlier in the program.	36%

Source. 2018–2019 P-TECH student survey results

Lastly, students who left the program were asked why they had chosen to do so. Fifteen students answered this question and indicated the following reasons:

- After a few classes, the student realized he or she was not interested in that area.
- The classes were too easy.
- The student did not have enough information about requirements before joining the program.
- The classes were difficult, and the student needed more help.
- The student moved to a different school.

Staff Feedback

Of the 79 teachers and campus staff who provided their feedback, 59% indicated they understood the P-TECH Program. In addition, most respondents indicated that the program provided students with career preparation (71%), hands-on learning (61%), and industry experience (56%). Campus staff who responded to the survey indicated that industry partners provided P-TECH students with technical expertise (43%), content area expertise (35%), mentorship (34%), and job interview opportunities (29%). Furthermore, survey respondents indicated the program was promoted to parents and students through printed materials (42%), the campus website (41%), teacher recommendations (37%), social media (23%), parent nights (38%), and summer camps (10%). Lastly, campus staff agreed that the program gave students an opportunity to earn certifications (78%), licenses (71%), and an associate's degree (78%).

Conclusions and Recommendations

The academic outcomes for the first year of P-TECH implementation were positive. A total of 144 high school students participated in the program, and at-risk and economically disadvantaged students were represented in P-TECH at higher rates than in the AISD student body. In addition, higher percentages of P-TECH students than of comparison students met CR criteria for all TSI subjects and met standards on the U.S. History EOC assessment. However, the percentage of students who met CR criteria on the TSI math was lower than the percentage of students who met CR criteria on reading and writing. 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. The 2018–2019 TSI assessment was originally created for 11th grade and up, and thus students entering ECHS in 9th grade may not have taken the associated course work yet. The 2018–2019 school year was the first year of P-TECH implementation, and consequently the majority of students were in 9th or 10th grade. In addition, when TSI math results were disaggregated by grade level, the majority of 11th graders (89%) had met CR criteria in math.

Despite several positive evaluation results, data analyses revealed areas for program improvement. The following recommendations are provided:

> Given the low percentage of campus staff who felt they understood the program, it is recommended that program staff work with campus staff to increase awareness and understanding of the P-TECH Program campus wide.
>
> Given the lower percentages of English learners and male students enrolled in the program, compared with what is observed in the AISD student body, it is recommended that program staff target recruiting to those groups of students.

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 website, https://tea.texas.gov/Academics/College%2C_Career%2C_and_Military_Prep/Pathways_in_Technology_Early_College_High_School_%28P-TECH %29).

The P-TECH Program operates as a high school within high schools, and 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.

In 2018–2019, P-TECH was implemented in two AISD high schools: LBJ and Crockett. This report describes the P-TECH Program implementation at the district level, combining data from both campuses, and observing TEA's requirements for the provisional level of implementation. Future reports will describe program implementation at the campus and district levels.