

Executive Summary

Bridging the School-to-Work Divide

Interim Implementation
and Impact Findings
from New York City's
P-TECH 9-14 Schools

Rachel Rosen
D. Crystal Byndloss
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May 2020

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with

Fernando Medina

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Overview

The New York City P-TECH Grades 9-14 schools represent an education model that ties together the secondary, higher education, and workforce systems as a way to improve outcomes in both domains. The distinguishing feature of the P-TECH 9-14 model, as it is referred to in this report, is a partnership between a high school, a local community college, and one or more employer partners that focuses on preparing students for both college and careers — not one or the other — within a six-year timeframe.

Education and workforce development are traditionally seen as separate spheres of influence with multiple transition points that students have been left to navigate largely on their own (for example, high school to postsecondary, and postsecondary to the workforce). P-TECH 9-14 is designed to seamlessly assist student navigation of those points — supporting student success and mitigating the potential for students to fall through the cracks. P-TECH 9-14 schools collaborate with local colleges to provide students with an opportunity to earn a high school diploma (within four years) followed by a cost-free, industry-recognized associate’s degree. During the six-year program, employer partners support P-TECH 9-14 schools by providing students with work-based learning experiences such as internships, mentoring, and job shadowing. By design, the P-TECH 9-14 model offers students the opportunity to participate in focused and accelerated high school pathways, early college, and career-focused activities.

This study offers initial impact and implementation findings from the first rigorous evaluation of the model, evaluating the first seven P-TECH 9-14 schools that opened in New York City. The study leverages the random lottery process created by the New York City High School Admissions System to identify impacts. The majority of the students in the sample who participated in the admissions lotteries were academically below proficiency in both math and English language arts (ELA) prior to entering high school.

Key Findings

- Students’ high school coursework and New York State Regents exams are accelerated, and all schools focus on career and technical education (CTE) programs — classes that teach students specific workplace skills aligned with the labor market and “soft skills” such as good work habits and interpersonal skills.
- College coursework begins largely in tenth grade and the pacing and progress of course taking varies by student. The degree pathways are designed to complement the high school CTE coursework and lead to credentials toward specific careers.
- The specific work-based opportunities available, such as workplace visits, job shadowing, and internships, and levels of participation differed across schools.
- P-TECH 9-14 students earned more total credits than students in other schools, with results driven by credit accumulation in CTE and other nonacademic subjects. These additional credits did not appear to come at the expense of earning academic credits.
- At the end of two years of high school, 42 percent of P-TECH 9-14 students had passed the ELA Regents exam with a score qualifying them for enrollment in City University of New York (CUNY) courses, compared with 25 percent of comparison group students. By the end of three years, the gap was smaller but still favored P-TECH 9-14 students.
- These pass rates indicate that more P-TECH 9-14 students were eligible to dual enroll in CUNY coursework in earlier years than their comparison group counterparts.

Acknowledgments

This report represents the first three years of research conducted by the P-TECH 9-14 study team. It has involved collaboration with multiple partners and engaged stakeholders as well as the support of many additional MDRC staff members, and would not have been possible without them.

Special gratitude is offered to the staffs of the New York City Department of Education's (NYC DOE) Office of Postsecondary Readiness and the City University of New York's (CUNY) Early College Initiative. All have collaborated with us with a spirit of openness, answered multiple questions, provided information, and supported the development of ongoing research relationships with the schools in the study. We particularly want to thank Reina Utsunomiya and Raisa Schwanbeck of the NYC DOE and Brian Donnelly and Rodrigo Ramirez of CUNY for their generous time, insights, and partnership. We also offer thanks to Vandeen Campbell and the staff of the CUNY Office of Research, Evaluation and Program Support, who helped facilitate access to CUNY data and records. James Kemple of the Research Alliance for New York City Schools provided us with access and support for use of the RANYCS longitudinal data files used for analysis, as well as valuable research feedback and perspective. Grace Suh at IBM helped us understand the origins of P-TECH 9-14, as well as IBM's vision for P-TECH 9-14 beyond New York City. The principals and staff members at each of the seven P-TECH 9-14 schools have been patient with our requests and open to our visits and inquiry. We thank them for their eagerness to share their experiences with us and willingness to open their doors and welcome us into their schools. The P-TECH 9-14 study is one of the member projects in the CTE Research Network, also funded by the federal Institute of Education Sciences, and we have benefited from valuable input from the other researchers within this network.

Finally, multiple MDRC staff members outside of the core project team provided essential feedback, insights, and review. In particular, Rebecca Unterman provided invaluable thought partnership and technical support for the data and methodological portions of this study. William Corrin, John Hutchins, Marie-Andree Somers, Sue Scrivener, Meghan McCormick, and Jedediah Teres also provided thoughtful and creative feedback and suggestions. Former MDRC president Gordon Berlin and former MDRC vice president Robert Ivry have been champions of this project and we thank them for their optimism, encouragement, and constructive criticism, which strengthened and improved this report. MDRC board members Richard Murnane and Josh McGee also provided valuable insights and perspectives on drafts of this report. Sonia Drohojowska provided exceptional resource management and we thank her for her deeply strategic and thoughtful advice. Jill Kirschenbaum provided editorial support and advice. Melissa Gelin, Reuben Perez, and Andrew Bell also provided valuable research assistance in the early phases of this project. Finally, we thank three interns who contributed to research activities that also inform this work: Indira Sanchez, Lori-Ann Clementson, and Nelson Sierra-Sosa.

Executive Summary

The New York City P-TECH Grades 9-14 schools represent an approach to career and technical education that aims to move well beyond the traditional vocational programs of the past. Initiated by IBM as a three-way partnership with the New York City Department of Education (NYC DOE) and the City University of New York (CUNY), the P-TECH 9-14 model is a multifaceted pathway program with a strong career focus that begins in high school and extends into college and the workforce.¹ These founding organizations opened the first P-TECH 9-14 school in Brooklyn in 2011. Since then the model has attracted national and international attention. As of 2019 it was being used in 24 countries, with over 200 schools partnering with some 600 businesses. The State of New York has allocated approximately \$40 million to fund P-TECH 9-14 expansion, making it a leader in P-TECH 9-14 student enrollment.²

This report offers initial impact and implementation findings from the first rigorous evaluation of the model and is funded by a grant from the federal Institute of Education Sciences. It presents the first look at the evaluation findings from the first seven P-TECH 9-14 schools that opened in New York City, provides background on the development of the model, and describes its high school, college, and work-based learning components. This report also discusses some of the ways in which the seven schools in the study vary in their implementation of the model. Furthermore, it provides information about the impact the P-TECH 9-14 model is having on students' high school outcomes. The findings suggest that students are meeting the benchmarks that the P-TECH schools were designed to help them achieve. That may bode well for the future successes of these students, most of whom entered ninth grade with weak academic achievement in both English language arts (ELA) and math.

The P-TECH 9-14 Model

In the United States, education and workforce development are usually seen as separate spheres of influence, with multiple transition points that students have been left to navigate largely on their own (for example, from high school to postsecondary and from postsecondary to the workforce). The innovation of P-TECH 9-14 is that it is both an education model that ties together the secondary and higher education systems, and a workforce model aimed at bridging the school-to-work divide in order to improve outcomes in both domains. P-TECH 9-14 is designed to seamlessly support navigation of those systems, reducing the potential for students to fall through the cracks, particularly those who do not have additional sources of support. This is a distinguishing feature of the P-TECH 9-14 model: the partnership between a high school, a local community college, and one or more employer partners, all focused on preparing students

¹The New York City Department of Education refers to the model as the “Grades 9-14 Schools” and the City University of New York refers to the model as the “9-14 Early College and Career” or “NYC P-TECH” model. These terms distinguish this model from other early college model schools operating within New York City. For the purposes of this report, the authors refer to the model as “P-TECH 9-14.”

²Only two of the seven P-TECH 9-14 schools in this report operating in New York City receive state funding.

for both college and careers — not one or the other — within a six-year timeframe. P-TECH 9-14 schools collaborate with local colleges to give students an opportunity to earn a high school diploma (within four years), followed by a cost-free, industry-recognized associate’s degree. During the six-year program, employer partners support P-TECH 9-14 schools in various ways, most commonly by providing students with work-based learning (WBL) experiences such as internships, mentoring, and job shadowing. Thus, the P-TECH 9-14 model offers students the opportunity to participate in focused and accelerated high school pathways, early college, and career-focused activities.

What Does P-TECH 9-14 Look Like on the Ground?

This report describes how the schools are developed, the P-TECH 9-14 high school experience, the six-year integrated education programming, college coursework, and work-based learning (WBL) opportunities for students, as illustrated in Figure ES.1. The findings are based on site visits, interviews, and a school leader survey.

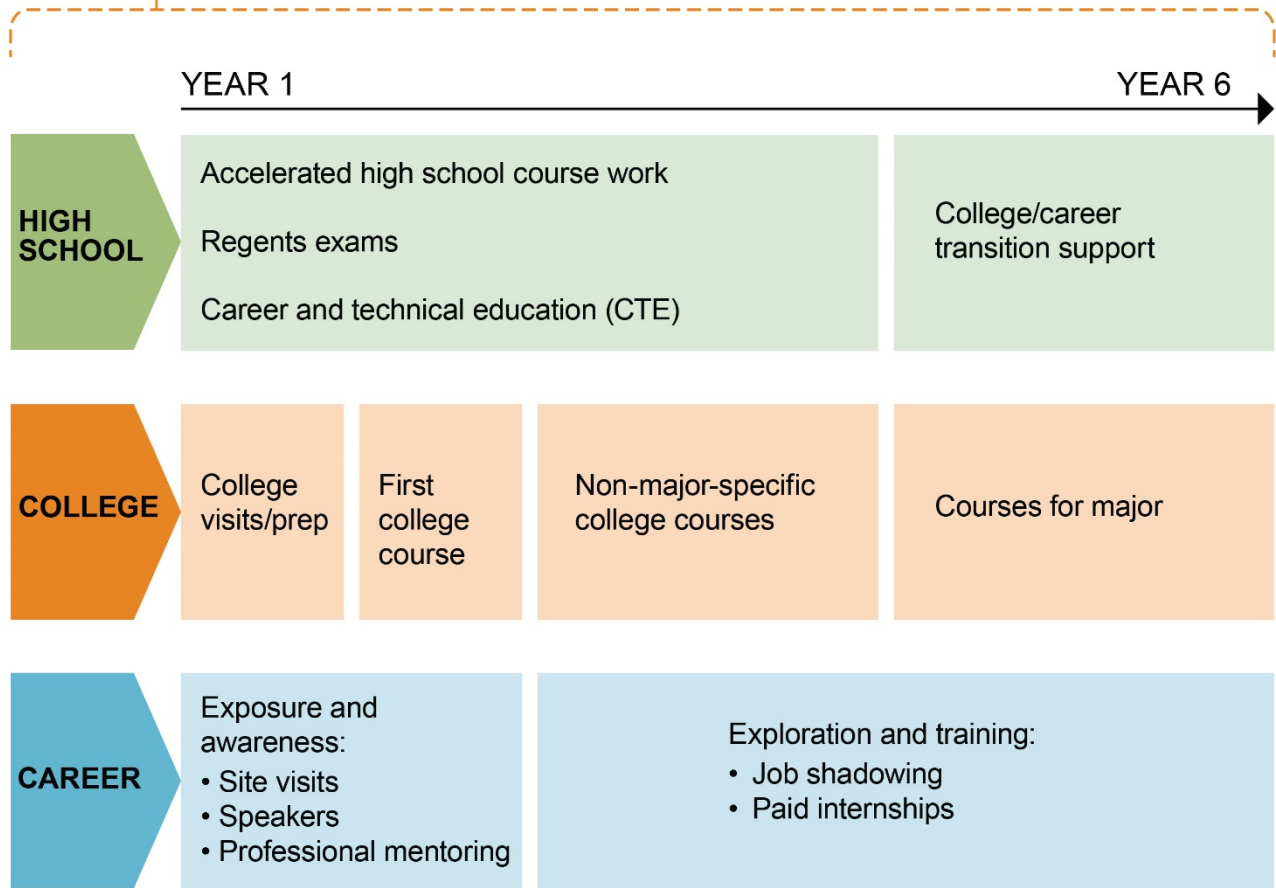
- The P-TECH 9-14 model relies on a partnership between a high school, a college, and one or more employers. The NYC DOE and CUNY Early College Initiative offices support these partnerships and provide structured opportunities for collaboration.
- All of the components have been implemented at all seven study schools, but many of the specific elements vary.
- Students’ high school coursework and the New York State Regents exams are accelerated, and all schools focus on career and technical education (CTE) programs (classes that teach students specific workplace skills such as architecture and civil engineering or electrical engineering that are aligned with the labor market), as well as “soft” skills such as good work habits and interpersonal skills.
- College coursework begins largely in tenth grade; pacing and progress of course taking varies by student. The degree pathways are designed to complement the high school CTE coursework and lead to credentials for specific careers.
- P-TECH 9-14 students participate in WBL activities such as workplace visits, job shadowing, and internships. The specific WBL opportunities available to students and the levels of student participation vary from school to school.

Figure ES.1

An Integrated Six-Year Progression



The P-TECH 9-14 model starts in the ninth grade and integrates work-based learning opportunities and up to 60 college credits at no cost to the student.



How Has P-TECH 9-14 Affected Students?

The P-TECH 9-14 theory of action shows the benefit of students participating in a school model that creates a partnership between high school and college and employer partners from the fields of science, technology, engineering, and mathematics (STEM). This partnership provides opportunities for students to participate in CTE coursework and offers early exposure to college readiness exams (in this case, the Regents exams), as well as work-based learning opportunities. These activities should increase attendance, Regents exam pass rates, and college credit-earning during high school (dual enrollment); fill skills gaps; decrease the need for postsecondary remedial classes; and improve students' preparedness to meet employer needs. In the long term, increases are

expected in high school graduation rates, college enrollment and college credits earned, associate degree receipt, and rates of employment, as well as a reduction in the cost of higher education attainment.

This report examines the early impacts of the P-TECH 9-14 model on student outcomes in their first three years of high school, including course credit accumulation in academic and CTE-related courses, Regents exam attempts and pass levels, and attendance. Given the elements of the model, one would expect P-TECH 9-14 students to take more CTE courses than other students, as well as to attempt to pass Regents exams with CUNY-qualifying scores earlier than their peers, in order to be eligible to take college level or dual-enrollment courses that are part of the model.

This study used admissions lotteries created by the New York City High School Application Processing System (HSAPS) to form two groups of comparable students, akin to a random assignment study; the group that won admission to a P-TECH 9-14 school is referred to as the program group, while those who did not win a seat in one are referred to as the comparison group. This means that participation in the P-TECH 9-14 program caused the impact results discussed in this report. Overall, students in the study sample were mostly Black and Hispanic, from lower income neighborhoods, and underprepared academically for high school. Approximately 70 percent of the students were below proficient in eighth grade ELA and more than 70 percent were below proficient in eighth-grade math.

The report provides evidence that the P-TECH 9-14 students in the study sample are achieving positive outcomes compared with a group of similar students in other schools and that the P-TECH 9-14 schools are, on average, setting students up to accomplish the milestones that the model is designed to help them achieve.

- **By the end of both the second and third years of high school, P-TECH 9-14 students earned more total credits than students in other schools, with results driven by credit accumulation in CTE and other nonacademic subjects.** By the end of three years in high school, P-TECH 9-14 students had earned an average of two additional credits more than students in the comparison group. These additional credits did not appear to come at the expense of earning academic credits, the accumulation of which remained statistically equivalent between groups for all three years of high school.
- **Students in P-TECH 9-14 schools were much more likely to earn nonacademic credits in work-based learning, technology, engineering, and human service subjects.** They earned fewer credits in arts, physical education, and health. The subjects where students accumulated more credits are aligned with the career and industry themes associated with the seven P-TECH 9-14 schools.
- **P-TECH 9-14 students attempted more Regents exams than the comparison students in other schools, and a higher percentage of them passed the**

ELA Regents exam with a score qualifying them for enrollment in CUNY coursework in each of the first three years of high school. At the end of two years of high school, 42 percent of P-TECH 9-14 students had passed the ELA Regents with a CUNY-qualifying score, compared with 25 percent of comparison group students. By the end of three years, the gap was smaller but still favored P-TECH 9-14 students.

- **The CUNY-qualifying-score pass rates in ELA indicate that more P-TECH 9-14 students were eligible to dual enroll in CUNY coursework in earlier years** than their comparison group counterparts, which is in line with the early college aspect of this school model.

These early findings are encouraging and indicate that P-TECH 9-14 schools are having a positive effect on students' potential for transitioning to college and career settings. In particular, the increased accumulation of CTE and other nonacademic credits suggests that students are getting greater levels of career-related exposure than students in other schools. Furthermore, the various types of CTE courses being offered indicate that these schools are providing different and potentially more modern career experiences. They are helping students succeed in ways that do not appear to come at the expense of earning academic credits. Students are doing better at accumulating credits in fields related to the careers the P-TECH schools aim to prepare them for.

The positive findings on ELA Regents exam pass rates both at CUNY-qualifying levels and in earlier years than for comparison group students indicate that the P-TECH 9-14 model is successfully preparing students to take advantage of dual-enrollment opportunities at earlier points in high school. In addition, P-TECH 9-14 students ended their third year of high school with more Regents exams passed at the high school graduation level of 65 (a lower standard than a CUNY-qualifying score), and with better overall credit accumulation, leaving fewer credits to be earned in the fourth year of high school. This indicates that more P-TECH 9-14 students may be prepared to reach high school graduation than students in the comparison group.

The P-TECH 9-14 model appears to be meeting the needs of academically low-performing students, including those that entered the schools in eighth grade with the lowest levels of academic success. Overall, these interim findings are encouraging and provide evidence about how P-TECH 9-14 is supporting student success. Later reports from this study will focus on whether these findings foreshadow additional improvements in student outcomes related to high school graduation and college success.

About MDRC

MDRC is a nonprofit, nonpartisan social and education policy research organization dedicated to learning what works to improve the well-being of low-income people. Through its research and the active communication of its findings, MDRC seeks to enhance the effectiveness of social and education policies and programs.

Founded in 1974 and located in New York; Oakland, California; Washington, DC; and Los Angeles, MDRC is best known for mounting rigorous, large-scale, real-world tests of new and existing policies and programs. Its projects are a mix of demonstrations (field tests of promising new program approaches) and evaluations of ongoing government and community initiatives. MDRC's staff members bring an unusual combination of research and organizational experience to their work, providing expertise on the latest in qualitative and quantitative methods and on program design, development, implementation, and management. MDRC seeks to learn not just whether a program is effective but also how and why the program's effects occur. In addition, it tries to place each project's findings in the broader context of related research — in order to build knowledge about what works across the social and education policy fields. MDRC's findings, lessons, and best practices are shared with a broad audience in the policy and practitioner community as well as with the general public and the media.

Over the years, MDRC has brought its unique approach to an ever-growing range of policy areas and target populations. Once known primarily for evaluations of state welfare-to-work programs, today MDRC is also studying public school reforms, employment programs for ex-prisoners, and programs to help low-income students succeed in college. MDRC's projects are organized into five areas:

- Promoting Family Well-Being and Children's Development
- Improving Public Education
- Raising Academic Achievement and Persistence in College
- Supporting Low-Wage Workers and Communities
- Overcoming Barriers to Employment

Working in almost every state, all of the nation's largest cities, and Canada and the United Kingdom, MDRC conducts its projects in partnership with national, state, and local governments, public school systems, community organizations, and numerous private philanthropies.