



Case Studies of IB Career-Related Programmes That Yield Successful Workforce Pathways in the United States

Final Report

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October 2025

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Executive Summary

In this report, WestEd presents findings from a qualitative case study commissioned by the International Baccalaureate (IB) to examine the conditions and practices that support successful delivery of Career-related Programmes (CPs) in U.S. high schools. The CP integrates rigorous academic coursework, career-related studies, and experiential learning to prepare students aged 16 to 19 for both postsecondary education and the workforce. Since its introduction in the 2012–13 academic year, the CP has expanded to more than 400 IB World Schools across approximately 50 countries, including about 185 programs in the United States, demonstrating its adaptability to diverse local labor markets, regional workforce demands, and student interests.

In this qualitative case study, WestEd employed Brinkerhoff's (2003) Success Case Method (SCM) to examine how five U.S. high schools with exemplary CPs integrate academic rigor, career preparation, and community partnerships. WestEd collected data through 16 semistructured interviews with CP coordinators, educators, alumni,¹ and community partners across five sites, selected to represent diverse geographic, demographic, and programmatic contexts.

Purpose and Context

Situated within the broader field of Career and Technical Education (CTE), the CP reflects national priorities to expand equitable access to high-quality college and career pathways. Research demonstrates that promising CTE programs improve student engagement, graduation outcomes, and postsecondary readiness, particularly when aligned with labor market needs and supported by strong employer partnerships. Consistent with broader evidence demonstrating the association between CTE participation and positive postsecondary outcomes (e.g., Dare, 2006), recent research on the CP (Duxbury et al., 2021; Leake & Townsend, 2024) provides evidence that CP students exhibit higher rates of college enrollment and persistence relative to their non-CP counterparts. This study builds on that evidence by documenting how successful CPs operate across varied U.S. contexts.

¹ Throughout this report, the terms **alum** (singular) and **alumni** (plural) are used in place of **alumnus/alumna**. These forms are widely accepted, gender-neutral alternatives that promote inclusive and contemporary language use.

Study Design²

Guided by the SCM, this study employed a qualitative, multiple-case design to identify and analyze successful examples of CP practice in the United States. The SCM focuses on *what works, for whom, and under what conditions* (Fitzpatrick et al., 2011, p. 7), emphasizing learning from exemplary sites to inform broader practice and scaling. WestEd purposively selected sites through a multistep process involving IB interest holders, who nominated programs demonstrating mature practice, innovative practices, and demographic diversity. To capture variation across community, institutional, and student contexts, WestEd selected five schools from an initial pool of 10–15 nominees. At each site, WestEd conducted semistructured interviews with CP coordinators, educators, alumni, and industry partners to capture multiple perspectives on program design, student outcomes, and contextual conditions. This approach ensured triangulation and depth across cases. To preserve confidentiality, WestEd anonymized schools by assigning them letter identifiers (Schools A–E) and removing identifiable information.

Data collection included structured interviews with 16 informants: two alumni, seven CP and Diploma Programme (DP) coordinators, four administrators/educators, and three external partners.³ WestEd conducted these interviews to illuminate mechanisms contributing to program success. Six research questions, codeveloped with the IB, guided the development of the interview protocol, focusing on program structures, partnerships, student outcomes, program challenges, and opportunities for organizational support.

Key Success Factors

Analysis across the five case-study sites revealed three interrelated success factors that seemed to underpin successful CP practice. Together, these factors contributed to program sustainability and positioned the CP as a flexible bridge between college and career pathways.

1. Cultivating Postsecondary Readiness and Career Pathways

- development of transferable professional skills such as communication, adaptability, time management, and workplace readiness
- clear, structured pathways to postsecondary opportunities through dual credit, industry certifications, and aligned college programming

² It is important to note that the information presented in this report is based on the perspectives of stakeholders and informants at the case-study sites. Findings should not be interpreted as representative of all CP schools. Caution is therefore advised in extrapolating or generalizing results. For additional detail on the study method, see Appendix A: Methodology.

³ Several informants served in various roles. See Table A1 for details.

- early career exploration that helps students clarify goals and make informed postsecondary and career decisions
- 2. Building Enduring Community and Workforce Partnerships**
- sustained collaboration with employers, higher education institutions, and community organizations to provide authentic work-based learning experiences
 - strategic alignment with local labor market needs through employer engagement, apprenticeships, and internships
 - strong commitment from school and community stakeholders that supports long-term program sustainability
- 3. Career-Integrated Teaching and Learning**
- coordinated instructional models with clearly defined staffing structures and roles
 - industry-experienced educators delivering “apprenticeship in the classroom” approaches
 - integration with existing CTE infrastructure where available

Sites offering district-certified CTE pathways and dual-credit opportunities showed particularly strong alignment with local workforce needs and postsecondary transitions.

Programmatic Features

The five case-study schools illustrate varied but complementary approaches to integrating the CP with pathways and work-based learning. While Schools A, C, and D rely on established CTE infrastructures, dual credit, and industry certifications to bridge high school and postsecondary pathways, School B emphasizes an “IB-for-all” model with guaranteed, city-managed internships. School E, by contrast, prioritizes service-learning and nonprofit partnerships, reflecting its college-oriented culture. Across sites, internships, apprenticeships, dual credit, and credentialing appear in different combinations, but all schools provide structured opportunities for students to build professional competencies and explore career-aligned pathways. Established, district-certified CTE pathways are a cornerstone in several case-study schools, serving as the backbone for their CP integrations. School C leverages nine long-standing, district-certified CTE pathways, while School A offers 11 CTE-aligned pathways integrated into a career-related academies model, and School D provides 10 CTE pathways tied to state-approved credentials (see Table ES1 for details).

Table ES1. Summary of Career-Related Study Options by Case-Study School

School A (11)	School B (4)	School C (9)	School D (10)	School E (5)
Accounting	Computer Science	Automotive Technology	Automotive Technology	Business
Biomedical Sciences	Engineering	Carpentry	Business Administration & Career Development	Science, Technology, Engineering, and Math (STEM)
Business	Health Sciences	Culinary Arts	Child Development	Life and Health Sciences
Computer Science	Media Production	Digital Media	Construction Management & Architecture	Political Science and Law
Construction		Electricity	Criminal Justice & Law Enforcement	Visual and Performing Arts
Culinary Arts		Game Programming	Engineering	
Education		Heating, Ventilation, & Air Conditioning (HVAC)	Healthcare Professions	
Engineering		Modern Machine Tech	Hospitality & Tourism Management	
Health Services		Welding	Information Technology & Cybersecurity	
Manufacturing			Naval Junior Reserve Officers' Training Corps (JROTC)	
Marketing				

Emerging Program Typologies

WestEd surmised that schools apply these success factors through two complementary typologies of CP approaches that illustrate the program's adaptability across diverse educational and community contexts. These approaches—CTE-integrated and service-learning oriented—reflect how schools tailor the CP framework to local priorities while maintaining fidelity to its core design. Despite persistent challenges such as scheduling conflicts, staffing shortages, and perceptions of the CP's rigor, schools continue to adapt these models to strengthen programs.

- **CTE-Integrated Models (Schools A, C, D):** anchored in district-certified CTE pathways and strengthened through partnerships with technical colleges, unions, and credentialing bodies
- **Service-Learning, Work-Based Learning, and Civic Engagement Models (Schools B, E):** feature a work-based learning component and/or college-preparatory orientation emphasizing community partnerships and civic responsibility

Program Challenges

While the study surfaced many strengths of CP practice, it also revealed recurring challenges across sites that constrained program delivery. These challenges spanned structural, staffing, and systems-related issues, as well as persistent negative perceptions and difficulties sustaining external partnerships.

- **Program Structures and Scheduling:** Scheduling conflicts between IB requirements, state graduation mandates, and multiyear CTE sequences limit student access.
- **Staffing and Capacity:** Shortages of IB-trained staff and limited capacity among coordinators strain program delivery, particularly for core components, such as the Personal and Professional Skills (PPS) course.
- **Systems and Student Readiness:** Lack of comprehensive alumni tracking systems and uneven academic preparation among entering students create barriers to program evaluation and student success.
- **Partnerships and Perceptions:** Persistent negative perceptions about CP rigor compared to the DP, along with challenges sustaining external partnerships as programs grow, complicate sustainability efforts.

Implications

The study highlights the importance of context-responsive strategies that are tailored to local conditions and capacities, supported by scalable guidance from the IB organization. Successful CP practice relies on a combination of foundational elements—such as transferable skill development, strong community partnerships, and integrated instruction—and adaptive responses to local challenges, including staffing models and partnership structures. The case-study schools demonstrate that promising CP delivery is driven by strategic collaboration among educators, employers, and higher education institutions to codevelop relevant career-related studies. Through these partnerships, schools establish sustainable pathways that align with labor market needs while broadening access to postsecondary and workforce opportunities. Collectively, these findings position the CP as a scalable model for integrating academic rigor with applied learning to support diverse students in achieving successful college and career outcomes.

Introduction

In this report, WestEd presents its findings from a qualitative case study that the International Baccalaureate (IB) commissioned to examine Career-related Programmes (CPs) in the United States that demonstrate success in preparing students for postsecondary education and industry-relevant employment. Designed for students aged 16 to 19, the CP integrates academic coursework with career-related studies and experiential learning components—such as personal and professional skills development, service learning, and a Reflective Project⁴—to equip learners with the competencies needed for further education, apprenticeships, and entry into the workforce.

Since its introduction in the 2012–13 academic year, the CP has expanded to more than 400 IB World Schools in about 50 countries, with approximately 185 CPs operating in the United States. The CP's flexibility allows schools to tailor programming to meet local labor market demands and student interests. In light of this adaptability and growth, the IB commissioned this study to identify exemplar CPs and investigate the specific approaches, partnerships, and conditions that contribute to programmatic success.

Situated within the broader landscape of Career and Technical Education (CTE), the CP aligns with national priorities aimed at expanding equitable access to high-quality college and career pathways (Symonds et al., 2011). Extensive research has shown that well-designed CTE programs promote positive outcomes for students, including increased engagement, improved graduation rates, and enhanced postsecondary and workforce readiness (Alfeld & Bhattacharya, 2012; Stone & Lewis, 2012). Key factors that distinguish promising CTE programming include strong alignment with labor market needs, sustained collaboration with postsecondary institutions and employers, and intentional design of learner-centered curricula (Advance CTE, 2021; Imperatore & Hyslop, 2018).

Recent studies specific to the CP suggest that students enrolled in CPs exhibit higher rates of college enrollment and persistence compared to peers not enrolled in CPs (Duxbury et al., 2021; Leake & Townsend, 2024). Moreover, elements of high-performing CPs often mirror established CTE quality frameworks, including the Association for Career and Technical Education (ACTE) Quality Program of Study Framework, the Business & Industry Leadership Team model, and the National Career Clusters Framework (Advance CTE, 2024; Behler, 2021).

⁴ The Reflective Project is an in-depth body of work produced over an extended period of time and submitted toward the end of the CP and involves examining an ethical issue related to the student's career pathway.

These models emphasize the importance of responsive curriculum design, robust employer engagement, and alignment with students' long-term career goals.

In this study, we aim to document promising practices across selected CP sites, offering insights into how success is defined, achieved, and measured. The findings are intended to inform the IB's continuous improvement efforts and support CP providers in scaling equitable, high-impact career pathway models across diverse U.S. contexts.

How to Read This Report: A Guide for the Reader

In this report, WestEd presents its findings from qualitative case studies of five U.S. schools operationalizing the CP. WestEd has designed the report to help readers understand how select schools integrated academic rigor, career-related learning, and community partnerships to support student readiness for college, career, and civic life.

WestEd has organized the report to balance accessibility with analytic depth. The Executive Summary provides an overview of the study's purpose, methodology, and key findings. The Introduction and Study Design sections establish the research context and describe the use of Brinkerhoff's SCM to identify and examine exemplary CP sites.

The five case studies (Schools A–E) are detailed portraits of individual programs, each organized around six guiding research questions that explore program structures, partnerships, outcomes, and challenges. These narratives illustrate how schools adapt the CP framework to their unique contexts while maintaining academic integrity and community relevance.

The Cross-Case Analysis and Findings section synthesizes lessons across sites, identifying the factors that most consistently support successful CP practice, such as strong partnerships, coherent instructional models, and transferable skill development.

Readers seeking a broad overview may begin with the Executive Summary and Cross-Case Analysis, while those interested in contextual nuance or specific CP models may turn to the individual case studies.

Background

Context

The Career-related Programme (CP) is a relatively recent addition to the International Baccalaureate's (IB's) suite of academic offerings, launched globally in 2012 and in the United States shortly thereafter. Designed for students aged 16 to 19, the CP aims to provide a balanced educational experience that integrates academic rigor with practical, career-related learning. It combines core elements of an IB education—such as the development of intercultural understanding, critical thinking, and ethical reflection—with Career and Technical Education (CTE) components tailored to students' interests and regional labor market needs (International Baccalaureate Organization, 2023).

At the heart of the CP is its commitment to flexibility and contextual relevance. Unlike traditional academic pathways, the CP allows schools to align programming with local industry demands and student aspirations, offering career-related studies alongside Diploma Programme (DP) courses and a distinctive CP core. The CP core includes the Personal and Professional Skills (PPS) course, service learning, a Reflective Project, and language development—each designed to build transferable competencies that prepare students for both further education and meaningful employment (Hopfenbeck et al., 2021).

The CP operates at the intersection of CTE and college preparatory education, responding to growing calls for high school pathways that are both academically rigorous and economically relevant. Research underscores the value of career pathways that blend academic content with technical training, noting their role in increasing student engagement, improving graduation rates, and enhancing postsecondary readiness (Alfeld & Bhattacharya, 2012; Symonds et al., 2011). The CP aligns with these findings by offering a holistic, student-centered experience that cultivates both intellectual and practical skills.

Early research on the CP practice shows promising outcomes. Studies indicate that CP students are more likely to pursue postsecondary education and persist in college compared to non-CP peers, particularly when their programs are supported by strong employer partnerships and aligned with regional workforce needs (Duxbury et al., 2021; Leake & Townsend, 2024). Furthermore, implementation studies emphasize the importance of local adaptation, leadership support, and cross-sector collaboration in sustaining high-quality CPs (Hopfenbeck et al., 2021).

As of 2024, approximately 185 U.S.-based schools offer the CP, reflecting both growing interest and the program's ability to address persistent gaps in equitable college and career preparation. However, much remains to be learned about how schools deliver the CP successfully in diverse contexts. We seek to build on the existing knowledge base by identifying and analyzing U.S.

CPs that demonstrate exemplary practices and promising outcomes, contributing to broader discussions about the role of integrated academic-career pathways in secondary education.

Introduction of Five Case-Study Schools

This study profiled five schools selected through a purposive, evidence-based process designed to capture a range of successful CP practice. Each case study is grounded in interviews with multiple interest holders, including CP coordinators, educators, alumni, and community or industry partners, providing a triangulated view of program design and delivery. With this study, WestEd contributes to the growing body of literature on CP practice by examining five U.S.-based schools selected through a rigorous, multistep sampling process. The selected sites reflect geographic diversity, varied student populations, and a range of program configurations that highlight the CP's flexibility. Some schools profiled in this study have well-established CTE programs that include apprenticeships and structured partnerships with local industries, providing students with tangible on-ramps to career pathways. Other schools emphasize service-oriented models that build students' soft skills—such as communication, leadership, and collaboration—through community-based experiences. The alignment between CP and DP offerings, as well as the integration of local CTE courses, further illustrates the adaptable nature of the CP framework across differing educational ecosystems. By analyzing these diverse models, we seek to illuminate the key features and contextual factors that enable successful CP delivery.

Research Questions

Guided by the IB's interest in identifying conditions that foster high-quality operationalization of the CP, WestEd investigated how select U.S.-based CPs have structured their offerings to support positive postsecondary and workforce outcomes. The research questions, codeveloped with the IB and informed by relevant literature on CTE, school-to-work transitions, and program implementation (e.g., Alfeld & Bhattacharya, 2012; Hopfenbeck et al., 2021; Stone & Lewis, 2012), were intended to elicit a comprehensive understanding of both structural and experiential components that characterize successful CP sites.

WestEd organized the study around the following six research questions:

- RQ 1:** Do administrative and individual/group interview data from case-study schools show patterns among
- breadth and types of career-related studies offered?
 - successful student outcomes that involve
 - trade or vocational school attendance directly after high school,
 - apprenticeships or internships that do not arise from college/university attendance, or
 - employment directly after high school?
- RQ 2:** What characteristics of case-study CPs—regarding the student body, the local community, and its industries and proximal higher education institutions (HEIs)—seem to foster conditions for successful career-related studies?
- RQ 3:** What, if any, other outcomes do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs use to describe their CP as “successful” toward students’ workforce outcomes?
- RQ 4:** How do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs perceive that their school developed strong and sustainable
- career-related studies that lead students to successful industry pathways via partner HEIs?
 - ranges of career-related studies that achieve relevance for both student interest and industry demand?
 - partnership(s) with one or more local employer(s)?
 - buy-in among school and local community stakeholders?
- RQ 5:** In what ways has the school’s offering of career-related studies
- produced experiences that stakeholders find interesting, inspiring, or useful regarding ways to yield student success in the workforce?
 - generated insights about how to lead the widest range of students to achieve successful workforce outcomes?
 - involved challenges that have been important and/or difficult to overcome in yielding successful workforce outcomes?
- RQ 6:** What challenges do case-study schools encounter in their efforts to achieve program goals, and in what ways
- do challenges conform or vary across case-study schools?
 - are challenges met with specific mitigation strategies?
 - do interest holders see opportunities for the IB to provide targeted support to existing and future CP schools?

Together, these questions surface the critical elements that shape program design, delivery, and perceived success across varied contexts. They support a holistic inquiry into both systemic and site-specific practices that may contribute to students’ postsecondary and career readiness.

Career-related Programmes Case Studies: Vignettes and Full Cases

The following vignettes provide concise portraits of how the Career-related Programme (CP) is operationalized across the five case-study schools. Each vignette draws directly on interviews with school staff, alumni, and community partners, as well as data provided by International Baccalaureate (IB) stakeholders and publicly available sources. Together, these sources illuminate the lived realities of delivery across diverse educational contexts. Each vignette draws directly from interviews with school staff, alumni, and community partners, triangulated with IB-provided data and publicly available documentation.

Used alongside the typology framework, these vignettes allow for comparison across models of CP delivery, illustrating both recurring patterns and context-specific adaptations. The section concludes with full case studies that provide a more comprehensive analysis of each school, including additional details and evidence. Each vignette and full case was developed using consistent analytic procedures and coding frameworks to ensure comparability across sites and reliability of interpretation.

All information presented in the vignettes and full case studies is drawn from interviews with informants, data provided by IB stakeholders, and publicly available sources. A detailed description of data collection and analysis procedures is provided in the Methodology. It is important to note that each of the five case-study schools offer multiple programs and structures designed to prepare students for college and career success, including academies, pathways, and other career-related study options—often in combination (e.g., academies that include several pathways). While most schools referred to these career-focused programs as pathways, for the purposes of this study, we use the term *career-related study options*. We also found overlap among the programs available to students at each site, making it difficult to quantify the exact number of distinct options. For example, the Information Technology & Cybersecurity Academy encompasses two separate pathways—Information Technology and Cybersecurity—illustrating how classifications may vary across contexts. Consequently, caution should be exercised when interpreting quantitative counts of program offerings.

School A: A Career Technical Education–Integrated Model

Context and Program Structure

School A is a large public high school serving approximately 1,800 students that has included the CP as part of a districtwide initiative to align academic rigor with workforce preparation. Although approximately 30 students were enrolled in the CP, the program is anchored in a robust academies model that introduces career exploration beginning in 9th grade and culminates in career-related studies across 11 pathways in fields such as business, health, engineering, and education. These structured options allow students to specialize while meeting CP requirements and earning industry-recognized credentials. Within this framework, the CP operates as an integrated extension of district career pathways, normalizing participation and enhancing sustainability.

Partnerships and Integration

A distinctive feature of School A's CP is its integration with local industry and higher education. The Chamber of Commerce functions as a critical intermediary, ensuring employer engagement in curriculum design, internships, and apprenticeships. At the same time, the technical college provides dual-credit courses taught by certified high school instructors, allowing students to earn credentials and industry-recognized certifications before graduation. Together, these partnerships create a coherent pipeline from secondary to postsecondary education while meeting local workforce needs.

School A Profile (2024–25)

Total Enrollment: Approx. 1,800

CP Enrollment: Approx. 30

Academies (4):

- Freshman Academy
- Business & Computer Science
- Health, Education, & IB Leadership
- Information Technology (IT), Engineering, & Culinary Arts

Career-related study options (11):

- Accounting
- Biomedical Sciences
- Business
- Computer Science
- Construction
- Culinary Arts
- Education
- Engineering
- Health Services
- Manufacturing
- Marketing

Student Outcomes

School A students graduate with early-college credits, industry credentials, and clarified career interests, often pursuing postsecondary pathways that continue the career-related studies they focused on during their CP. Employers and postsecondary partners reported that alumni return to local institutions and workplaces, suggesting that the CP here contributes to developing a sustainable regional workforce. An alum and the CP coordinator also underscored that the program cultivates workplace skills—communication, time management, and professionalism—that are transferable across industries.

Challenges

Structural complexity, particularly scheduling conflicts, makes it difficult for School A students to complete CP requirements that might also accompany dual-credit classes and work-based learning. Scheduling tensions also arise between the IB's service-learning requirement and paid apprenticeships, limiting flexibility among students who must prioritize employment. Staffing instability further complicates delivery, as maintaining dual-credit opportunities depends on the availability of certified instructors. Finally, the absence of a comprehensive alumni tracking system constrains School A's ability to evaluate long-term CP outcomes systematically.

School B: An IB-for-All Model With Guaranteed Internships

Context and Program Structure

School B is a public charter school serving more than 1,600 students in 6th grade through 12th grade, with approximately 90 students currently enrolled in the CP. The school operates under an “IB-for-all” model in which every student participates in at least one IB course and pursues either the DP or CP, fostering a unified academic culture that frames both pathways as rigorous and equally valued. Career exploration is introduced in the middle grades through design-based electives across four career-related studies—computer science, engineering, health sciences, and media production—enabling students to make informed program choices prior to 11th grade. Through this structure, School B institutionalizes CP participation while broadening access to advanced academic and career-focused learning opportunities.

School B Profile (2024–25)

Total Enrollment: Approx. 1,600
CP Enrollment: Approx. 90

Career-related study options (4):

- Computer Science
- Engineering
- Health Sciences
- Media Production

Partnerships and Integration

A central feature of School B’s CP is its integration with city-managed internship systems and national career-technical student organizations (CTSOs). Every CP student at School B is guaranteed a paid internship, managed through a centralized youth employment program that matches students with employers in sectors such as media, health care, and cybersecurity. This system removes the burden of placement from school staff and increases access and placement. In addition, partnerships with higher education–oriented organizations provide early-college credit opportunities through portfolio assessment, while CTSOs expand career-related learning beyond the classroom. Together, these partnerships embed authentic workplace exposure within the CP framework and reinforce its alignment with student interest and regional labor-market needs.

Student Outcomes

Leaders and an alum described the CP at School B as a comprehensive preparatory framework for both postsecondary education and long-term workforce success. The alum emphasized the development of workplace readiness skills—particularly programming, problem-solving, and professional collaboration—as critical to transitioning into college-level coursework. The Personal and Professional Skills (PPS) course further reinforced competencies in financial literacy and time management, while extracurricular and internship opportunities cultivated teamwork, leadership, and communication. Consistent with these supports, most CP students from School B matriculate to 4-year universities, pursuing pathways aligned with high-demand fields such as computer science, engineering, health sciences, and media production.

Challenges

Staffing shortages—particularly of IB-trained instructors—introduce variability in instructional quality and complicate delivery of CP core components. The CP coordinator identified the Reflective Project as a significant hurdle requiring consistent guidance from IB-trained teachers. In addition, some students enter the CP underprepared and struggle to reconcile the tensions between CP requirements and the inquiry-based pedagogical approaches and content-intensive demands of DP assessments. Negative perceptions among families and students about the CP's rigor presented further barriers, with the program at times perceived as a less demanding alternative to the DP. School leaders highlighted sustained advising and targeted outreach as critical strategies to counter these perceptions and to ensure that enrolled students are academically prepared to engage successfully with the program's rigorous coursework.

School C: A Career Technical Education– Integrated Model With Strong Industry Alignment

Context and Program Structure

School C is a large, public, urban high school serving approximately 1,200 students, with approximately 60 enrolled in the CP. The program is deeply embedded within a district that supports numerous IB schools with more than 100 IB programs and leverages a strong infrastructure of Career and Technical Education (CTE). With nine long-standing, district-certified CTE pathways—including Automotive Technology; Culinary Arts; Digital Media; Electricity; and Heating, Ventilation, & Air Conditioning (HVAC)—School C’s CP benefits from well-established, credentialed programs that predate its introduction. Outreach begins before high school through middle school engagement and structured guidance in 9th grade, ensuring students make informed pathway decisions at the end of sophomore year.

Partnerships and Integration

A hallmark of School C’s CP is its systematic alignment with industry partners and postsecondary institutions. A full-time CTE coordinator engages employers, unions, and trade organizations in curriculum design, student mentoring, and team-based challenges. Industry input drives curriculum revisions—for example, in 2024, HVAC coursework was updated to reflect sectoral shifts toward prefabricated components, while digital media pathways integrated new tools such as artificial intelligence (AI) and portfolio development. Postsecondary partners provide dual-credit opportunities, while industry certifications such as Occupational Safety and Health Administration (OSHA) safety training and Adobe proficiency strengthen workforce readiness. School C’s program also emphasizes community-oriented projects, such as the school’s community garden, which provides students with experiential learning connected to local needs.

School C Profile (2024–25)

Total Enrollment: Approx. 1,200
CP Enrollment: Approx. 60

Career-related study options (9):

- Automotive Technology
- Carpentry
- Culinary Arts
- Digital Media
- Electricity
- Game Programming
- Heating, Ventilation, & Air Conditioning
- Modern Machine Tech
- Welding

Student Outcomes

School C leaders and an alum emphasized the program's role in cultivating transferable skills, career adaptability, and long-term employability. The CP coordinator and the alum reported that the CP's demanding workload can build strength in time management and accountability, while projects and reflective practice can enhance professional communication and confidence. Some students graduate with certifications and directly enter technical careers, such as electrical work or digital media, while others pursue postsecondary study in aligned fields. Informants also highlighted the CP's dual impact—supporting immediate workforce entry and preparing students for 4-year institutions.

Challenges

At School C, scheduling conflicts remain a persistent barrier, as CP students must navigate the demands of multiple IB, CTE, and state graduation requirements with limited flexibility. Capacity constraints further complicate delivery since coordinators and instructors frequently carry multiple responsibilities and often lack adequate time to participate in IB-specific training. The PPS course presents an additional challenge, as the flexibility of the CP framework often requires instructors to independently design and adapt instructional materials. Cultural integration between the DP, the CP, and CTE has also been difficult at School C, with some instructors expressing skepticism about the CP's rigor and its appropriateness for college-bound students. Finally, sustaining partnerships is resource-intensive, as maintaining employer engagement and ensuring curricular alignment with evolving industry needs necessitate ongoing outreach and adaptation.

School D: An IB-for-All Model With Apprenticeship-Style Learning

Context and Program Structure

School D is a large, public, “IB-for-all” high school serving approximately 2,200 students, with approximately 90 participating in the CP, which is fully embedded within the broader IB framework. All students begin in the Middle Years Programme (MYP) in 9th grade before selecting either the DP or CP in 10th grade, a structure that normalizes IB participation and ensures equitable access to advanced programs. The CP currently enrolls approximately 90 students, who complete at least two DP courses alongside 1 of 10 career-related programs and 15 pathways spanning automotive technology, cybersecurity, and law enforcement. This inclusive and flexible design enables the CP to serve students with varied academic profiles and postsecondary aspirations, reinforcing its role as both a rigorous and an adaptable pathway within the school’s IB ecosystem.

Partnerships and Integration

A distinguishing feature of School D is its apprenticeship-in-the-classroom approach, where CTE instructors are professionals with backgrounds in industry providing authentic, hands-on instruction. Partnerships with local employers across sectors such as law, healthcare, and construction provide recurring internship placements, many of which translate into future employment opportunities. A dedicated internship coordinator manages employer relationships and ensures that student placements are meaningful and aligned with career pathways. In addition, the school maintains a strong partnership with a local college, which delivers dual-enrollment courses on the high school campus, expanding access to college-level coursework and aligning directly with CTE pathways.

School D Profile (2024–25)

Total Enrollment: Approx. 2,200
CP Enrollment: Approx. 90

Career-related study options (10):

- Automotive Technology
- Child Development
- Construction Management & Architecture
- Business Administration & Career Development
- Criminal Justice & Law Enforcement
- Healthcare Professions
- Hospitality & Tourism Management
- Information Technology & Cybersecurity
- Naval Junior Reserve Officers’ Training Corps (JROTC)
- Engineering

Student Outcomes

School D's CP emphasizes credential attainment, professionalism, and confidence building as indicators of success. Students can graduate with stackable industry certifications—such as Certified Clinical Medical Assistant, Pharmacy Technician, or HVAC/Electrician Apprentice—that enable both immediate workforce entry and continued training. Internships from School D provide authentic opportunities to apply learning and often lead to job offers. School D students also can develop professional behaviors, such as punctuality, communication, and workplace etiquette. Many CP graduates from School D continue into 2- or 4-year programs aligned with their high school pathways, reflecting the program's dual role in fostering career clarity and postsecondary readiness.

Challenges

Staffing instability at School D, particularly in the PPS course, disrupts program continuity, as instructors are frequently reassigned to the CP without adequate IB-specific training. Administrative gaps in understanding the rigor and complexity of the CP further contribute to misaligned staffing decisions and uneven resource allocation. As CP enrollment has grown, securing sufficient high-quality internship placements has become increasingly difficult, especially in fields with limited opportunities such as law and engineering. CP and internship coordinators reported being overextended, managing broad responsibilities with limited institutional support. Parent engagement also remains inconsistent, with persistent negative perceptions that the CP is less rigorous than the DP, necessitating sustained communication efforts and regular student showcases to build understanding and support.

School E: A Service-Learning Model in a College-Going Culture

Context and Program Structure

School E is a suburban public high school enrolling just over 1,000 students, with approximately 70 participating in the CP. In contrast to schools that emphasize direct workforce alignment, School E situates the CP within a broader college-going culture, with programming primarily designed to prepare students for 4-year postsecondary institutions. Program staff emphasized holistic student development, highlighting agency, relevance, and civic responsibility as central aims. Students pursue one of five career-related pathways—Life and Health Sciences; Business; Science, Technology, Engineering, and Math (STEM); Visual and Performing Arts, and Political Science and Law—while all CP students are required to design and implement a Service-Learning Project under structured faculty mentorship. This approach reinforces the CP’s identity as a bridge between academic study, applied learning, and civic engagement.

Partnerships and Integration

School E staff and students have cultivated an extensive network of more than 100 nonprofit partners, many of which students have initiated themselves through cold calls, interviews, and outreach. These community partnerships form the backbone of experiential learning, offering students authentic opportunities to lead projects such as fund-raising campaigns, murals, donation drives, and public awareness initiatives. Parents also play a significant role by participating in mock interview events and providing direct feedback to students on professionalism and presentation skills. School E has no formal dual-credit arrangements with higher education institutions and does not award industry-recognized certifications, instead positioning service-based partnerships as its primary vehicle for applied learning.

School E Profile (2024–25)

Total Enrollment: Approx. 1,000
CP Enrollment: Approx. 70

Career-related study options (5):

- Business
- Life and Health Sciences
- Political Science and Law
- Science, Technology, Engineering, and Math (STEM)
- Visual and Performing Arts

Student Outcomes

CP students at School E graduate with transferable professional skills and strong civic orientation. Program leaders and community partners emphasized the development of communication, self-management, teamwork, and leadership skills, all cultivated through project-based experiences. Informal alumni tracking suggests students leave with competitive resumes, confidence in professional settings, and the ability to articulate their experiences in college and career contexts. Some return to their service partner organizations as interns or pursue careers in nonprofit leadership and human services. Outcomes are framed less in terms of immediate job placement or certification and more around readiness for postsecondary education and civic engagement.

Challenges

The CP at School E faces several challenges tied to its positioning within a competitive, academically oriented environment. Perceptions persist that the CP is less rigorous than the DP or Advanced Placement (AP), requiring leaders to continually emphasize the program's distinct benefits. Structural scheduling constraints make it difficult to balance CP coursework with graduation requirements and multiyear arts or STEM sequences. Student readiness is another challenge, as sophomores are often tasked with making pathway decisions before fully clarifying their long-term goals. Finally, limited faculty capacity makes it difficult to sustain individualized mentorship for the Reflective Project and service-learning components as enrollment grows.

Significance of the Case Studies

The five case studies collectively illuminate how schools cultivate interest-holder buy-in and sustain the CP through strategic partnerships with local industries and HEIs. By embedding these partnerships into the design and delivery of career-related studies, schools translate regional workforce needs and student interests into accessible, coherent pathways that support both college and career readiness. Each case demonstrates a distinct but interrelated model of partnership formation, curriculum integration, and stakeholder engagement—offering empirically grounded insight into how CP can generate equitable and durable career-learning ecosystems.

The cross-case analysis contributes to the evidence base on career pathway development by identifying the contextual and organizational factors that facilitate program sustainability, stakeholder collaboration, and positive student outcomes. The findings aim to inform the IB's ongoing efforts to refine the CP framework and to guide schools in scaling promising, high-impact models of career-related education across diverse U.S. settings.

Success Case: School A

School A Profile (2024–25)

Total Enrollment: Approx. 1,800

CP Enrollment: Approx. 30

Academies (4):

- Freshman Academy
- Business & Computer Science
- Health, Education, & IB Leadership
- IT, Engineering, & Culinary Arts

Career-related study options (11):

- Accounting
- Biomedical Sciences
- Business
- Computer Science
- Construction
- Culinary Arts
- Education
- Engineering
- Health Services
- Manufacturing
- Marketing

Informants

- Middle Years Programme (MYP) coordinator and Career-related Programme (CP) coordinator, .5 full-time equivalent (FTE)
- Academies coordinator
- Director of high school partnerships, local technical college
- Vice president of operations, Chamber of Commerce

Site Overview

School A is a large public high school serving approximately 1,800 students that has included the CP as part of a districtwide initiative to align academic rigor with workforce preparation. Although approximately 30 students were enrolled in the CP, the program is anchored in a robust academies model that introduces career exploration beginning in 9th grade and culminates in career-related studies across 11 pathways in fields such as business, health, engineering, and education. These structured options allow students to specialize while meeting CP requirements and earning industry-recognized credentials. Within this framework, the CP operates as an integrated extension of district career pathways, normalizing participation and enhancing sustainability.

What Do School A Informants Believe Makes Their CP Distinctive?

A distinctive feature of School A's CP is its integration with local industry and higher education. The Chamber of Commerce functions as a critical intermediary, ensuring employer engagement in curriculum design, internships, and

apprenticeships. At the same time, the technical college provides dual-credit courses taught by certified high school instructors, allowing students to earn credentials and industry-recognized certifications before graduation. Together, these partnerships create a coherent pipeline from secondary to postsecondary education while meeting local workforce needs.

RQ 2. What characteristics of case-study CPs—regarding the student body, the local community, and its industries and proximal higher education institutions (HEIs)—seem to foster conditions for successful career-related studies?

Interviews with CP leaders and affiliated stakeholders at School A highlighted several contextual conditions—related to the student body, local community, and institutional partnerships—that support the development and sustainability of the CP. The following observations reflect how school and district personnel perceive these factors contributing to program success.

1. Districtwide IB Access and Early Career Exposure

School A's CP benefits from a districtwide International Baccalaureate (IB) model in which all 11th and 12th graders take at least one IB course. According to staff, broad access normalizes participation and makes the CP a viable option for a wide range of students. In parallel, the academies' structure begins career pathway exploration in 9th grade, allowing students to make informed choices about entering the CP based on several years of exposure to career-aligned coursework. The CP coordinator attributed growth in CP enrollment to personalized outreach efforts.

2. Alignment With Local Industry and Employer Engagement

School and district leaders emphasized strong relationships with local employers, facilitated through an active commerce organization. Employers contribute to curriculum development, provide capstone project feedback, and host students for internships and youth apprenticeships. To strengthen the integration of academic and career preparation, School A has begun formalizing a Career Pathway Relevance Review conducted annually in collaboration with the Chamber of Commerce and local employers. This review examines labor market trends, credential validity, and pathway enrollment patterns to ensure that offerings remain aligned with both student interests and regional workforce demand. Through this process, pathways in computer science, advanced manufacturing, and health services have been identified for expansion due to their high employment growth and student engagement potential.

“We’re very connected with the community ... we have a model that we have spent the last seven years implementing throughout our district, and because of that, we’ve been able to offer very specific career-related studies that connect to the career and industry needs of our community. ... When they leave high school, they’re very much prepared for the needs in [the region].”

—School A CP Coordinator

3. Integrated Dual-Credit Opportunities With Higher Education

A local technical college plays a central role in bridging high school and postsecondary pathways. Leaders noted that students earn college credit through courses taught by high school teachers using college-approved curricula. These dual-credit options are directly embedded in the CP's career pathways, helping students accumulate credentials and prepare for either employment or continued study.

In partnership with the technical college, School A is piloting the development of stackable credential maps that illustrate the progression from high school coursework to postsecondary certificates and degrees. These maps allow students and families to visualize how completion of CP and dual-credit courses can lead to immediate employability or continued college study. The school also plans to integrate an annual Dual Credit Success Audit—tracking student completion rates, credit transferability, and credential attainment—to ensure sustained quality and equity of access across pathways.

4. Clearly Defined Leadership Structures and Cross-Sector Collaboration

Informants pointed to clearly defined staff roles—including pathway specialists, work-based learning coordinators, and advisory team leads—as critical to managing partnerships and maintaining alignment between school, industry, and higher education. These structures enable frequent communication among stakeholders and are viewed as a key reason for the district's ability to scale and sustain its CP offerings over time.

RQ 3. What, if any, other outcomes do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs use to describe their CP as “successful” toward students’ workforce outcomes?

Leaders at School A identified a range of student indicators and outcomes—both measurable and developmental—as evidence of the CP's impact on workforce readiness. These include credential attainment, postsecondary alignment, and self-reported professional skills. Informants concurred that the program is considered promising due to its integration of academic rigor, career-focused learning, and strong partnerships with community and postsecondary institutions, which collectively prepare students for both college and employment.

1. Clarify Career Goals

One widely recognized indicator of success is the extent to which the CP helps students clarify their career goals. Participation in career-related studies and work-based learning allows students to confirm or reconsider their intended career paths while still in high

school. CP coordinators and the alum pointed to this early exposure as beneficial future educational and professional choices. To deepen understanding of workforce outcomes, School A is incorporating formal Career Goal Clarity Surveys at entry and exit points of the CP. These instruments measure students' evolving sense of professional direction, confidence in workplace skills, and understanding of local industry expectations. Results will be analyzed alongside credential completion and postsecondary enrollment data to provide a more complete picture of program effectiveness.

“Whenever we hear back from any [School A] alumni that has engaged in the IB as a whole, it’s always like I’ve never experienced a student that has said, ‘I wasn’t prepared.’... They come back to us and they say, ‘Wow, I was so much more prepared than my friends.’”

—School A CP Coordinator

2. Build Workplace Readiness Skills

CP coordinators and the alum described the CP as providing strong preparation for workplace skills and expectations, including effective communication, self-direction, time management, and professional conduct. These skills are cultivated through the program's academic rigor, Personal and Professional Skills (PPS) course, and work-based learning components.

3. Earn Early Postsecondary Credentials

Students often complete the program with multiple early postsecondary credentials. Most CP graduates enroll in college coursework—at either 2- or 4-year institutions—that aligns closely with their high school career pathways. Informants reported that students commonly continue in the same field they pursued during the CP, suggesting strong continuity between secondary and postsecondary experiences. This alignment is viewed as evidence of effective career preparation and the program's relevance to real-world career pathways.

4. Develop/Maintain the Local Workforce

A longer-term outcome, as defined by the local business alliance, is the extent to which CP alumni continue or return to work in the local area instead of moving to other regions. Although systematic alumni tracking is not yet operationalized, local business and technical college partners reported CP graduates in their institutions and workplaces.

RQ 4. How do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs perceive that their school developed strong and sustainable (a) career-related studies that lead students to successful industry pathways via partner HEIs, (b) ranges of career-related studies that achieve relevance for both student interest and industry demand, (c) partnership(s) with one or more local employer(s), and (d) buy-in among school and local community stakeholders?

School leaders attributed the program's growth and success to intentional alignment across academic, industry, and community sectors. They emphasized that sustainable career-related studies have been built through strong postsecondary articulation, diverse and adaptive pathway offerings, active employer engagement, and consistent support from both school and community leadership.

1. Strategically Aligned Partnerships Leading to College Credit and Certifications

CP leaders viewed the development of career-related studies as closely tied to a long-standing, strategically aligned partnership with the technical college. Through this partnership, students earn college credits in high school via certified instructors, obtain industry-recognized certifications, and complete career pathway certificates. These postsecondary-aligned opportunities are embedded within the school's curriculum and scheduling, enabling students to complete advanced technical coursework prior to graduation.

The technical college's integration into the district's strategic planning—through shared goals related to dual credit and college readiness—has enhanced the sustainability of these offerings. The partnership's strength is further reinforced by the technical college's responsiveness to student needs and its recognition of School A students as college students while still in high school. CP leaders regarded this continuity from secondary to postsecondary coursework as a key mechanism for ensuring that students transition into relevant pathways with both academic momentum and applied skills.

2. Relevant Career-Related Study Options

Leaders credited the school's ability to maintain a wide and relevant range of career-related study options—currently numbering 11 pathways—to its integration within the academies, a districtwide structure that embeds career exploration and pathway selection into students' high school experience starting in 9th grade.

Periodic consultation with local employers and postsecondary partners also allowed the school to respond to emerging needs. For example, leaders shared that interest in business, health services, and computer science has grown due to both student preferences and regional economic developments. This iterative and consultative model

supports the program's responsiveness and ensures that offerings are neither static nor misaligned with external opportunities. Beginning in 2025, School A will adopt a Career Pathway Evaluation Framework that includes annual performance indicators for each pathway—such as student completion, employer participation, credential attainment, and postsecondary persistence. Data from these evaluations will inform pathway renewal or redesign. For example, if a pathway demonstrates low enrollment but high employer demand, school and district leaders will collaborate with the Chamber of Commerce to adjust recruitment and curriculum alignment efforts.

3. Strategic and Sustained Partnerships With Employers

CP leaders described partnerships with local employers—particularly through the Chamber of Commerce—as central to the development and sustainability of their career-related programming. The Chamber of Commerce functions as an intermediary that facilitates communication between the school, the business community, and other interest holders.

Employers contribute by offering youth apprenticeships, engaging in capstone projects, participating in advisory councils, and hosting work-based learning opportunities. These activities are mutually beneficial: Students gain real-world experience while employers access a potential pipeline of future workers. CP leaders also indicated that input from employers has led to the adaptation of program offerings, including the introduction of interdisciplinary projects aimed at reengaging students in underenrolled pathways such as manufacturing.

The school's apprenticeship opportunities are further supported by statewide policies and systems that define program expectations and employer roles, creating a stable infrastructure for continued participation.

4. Strong Buy-In Among School and Community Interest Holders

CP leaders repeatedly cited strong buy-in among internal and external interest holders as a foundational element of program development. Several interrelated conditions support this:

- **Historical Familiarity With the IB:** School A has offered the Diploma Programme (DP) since 1978, contributing to a long-standing cultural association between IB and academic rigor.
- **Structural Coherence:** The CP is not a stand-alone program but is interwoven with the Academies, allowing students to naturally progress into the CP through existing structures.

- **Dedicated Staffing and Communication:** The CP coordinator, DP coordinator, academy coaches, and district-level staff maintained ongoing collaboration to ensure alignment between programming, scheduling, and partner engagement.
- **Community Visibility and Institutional Commitment:** Interest holders at the technical college reported that their partnerships with School A are embedded in strategic planning documents and leadership priorities, further reinforcing sustainability.

RQ 5: In what ways have the school's offer of career-related studies (a) produced experiences that stakeholders find interesting, inspiring, or useful regarding ways that yield student success in the workforce; (b) generated insights about how to lead the widest range of students to achieve successful workforce outcomes; and (c) involved challenges that have been important and/or difficult to overcome in yielding successful workforce outcomes?

Interest holders at School A reported that the school's career-related studies offer students meaningful opportunities to explore careers, earn credentials, and build skills aligned with both academic goals and workforce needs. These experiences are viewed as combining practical application with structured preparation for postsecondary success.

1. Early Exposure to Career Pathways

Career exploration at School A begins in the 9th grade, with students participating in a freshman seminar and selecting a pathway by sophomore year. This structure is perceived as helpful in allowing students to explore areas of interest before making longer term decisions. According to CP leaders, some students confirm interest in a particular field, while others choose to shift direction based on early exposure. Both outcomes are seen as contributing to more informed postsecondary planning.

2. Applied Learning Through Dual Credit and Work-Based Experiences

Students have access to college credit and technical coursework through the technical college, as well as youth apprenticeships coordinated with local employers. These experiences are viewed by interest holders as valuable for introducing students to workplace environments and college-level expectations. They also serve as a means for students to earn certifications or credentials before graduation, which some partners consider beneficial for employability and future study. Recognizing scheduling challenges for CP students balancing IB, dual credit, and apprenticeships, School A is developing a flexible Work-Based Learning Continuum. This model introduces tiered options—ranging from short-term job shadowing to sustained apprenticeships—to ensure every student experiences authentic workplace learning. In addition, the school is

piloting hybrid and summer internship options to reduce conflicts and broaden participation, particularly for students facing time or transportation barriers.

3. Structured Academic Reflection

The Reflective Project is recognized as a distinctive component of the CP, fostering students' analytical thinking and research skills while complementing the program's applied learning focus. Informants noted that this balance between critical inquiry and practical application enhances both college and career readiness.

4. Career-Related Skill Development

CP students often complete a sequence of coursework and work-based learning aligned with their career interests, including in fields such as health care, business, and technical services. Interest holders reported that students gain experience with workplace norms, communication, and time management through these opportunities. These skills are considered applicable across a range of postsecondary options. The Reflective Project will be revised to explicitly include an Applied Ethics in the Workplace component, enabling students to connect their academic research to dilemmas encountered in real or simulated professional contexts. This adjustment is intended to deepen the link between intellectual inquiry and ethical decision-making in students' chosen fields.

5. Program Breadth and Flexibility

School A offers 11 career-related pathways, which allows for a wide range of student interests to be accommodated. Interest holders considered this breadth to be a factor in maintaining student engagement and supporting alignment with local industry sectors. The ability for students to combine IB coursework with dual credit and industry-aligned studies is viewed as a flexible model that can serve a variety of academic and professional goals.

RQ 6: What challenges do case-study schools encounter in their efforts to achieve program goals, and in what ways (a) do challenges conform or vary across case-study schools, (b) are challenges met with specific mitigation strategies, and (c) do interest holders see opportunities for the IB to provide targeted support to existing and future CP schools?

School A leaders described the CP as a well-established and growing program but also reported challenges that affect access, delivery, and sustainability. These include scheduling constraints, service-hour requirements, staff turnover, and limited systems for tracking alumni outcomes.

1. Scheduling Conflicts and Course Access

One of the most frequently cited challenges for CPs, not unique to School A, is scheduling complexity. CP students often juggle IB coursework, dual-credit classes, and work-based learning experiences such as youth apprenticeships. Aligning all required components—particularly the PPS course and service-learning hours—with students' existing course loads can be difficult.

In some cases, students are unable to enroll in the full CP due to conflicts with required academic courses or external work commitments. This limits access for students who are otherwise interested in the program but cannot meet all its requirements.

2. Balancing CP Requirements With Paid Apprenticeships

A specific scheduling and policy-related challenge concerns the CP's service-learning requirement, which prohibits counting paid work (such as youth apprenticeships) toward the required 50 hours of service. While School A students benefit from robust apprenticeship opportunities, these cannot fulfill the IB's unpaid service expectations, creating a barrier for students who may not have time for additional unpaid commitments. CP leaders noted that while some students manage to complete both, others opt to become course candidates rather than full CP participants due to this conflict.

3. Staffing Issues and Course Availability

The availability of qualified instructors—especially those certified to teach dual-credit or IB courses—is another constraint. As teacher retirements and staffing shifts occur, maintaining continuity in dual-credit offerings can be difficult. If a certified instructor leaves, the school must ensure that replacements meet the postsecondary partner's qualifications to continue delivering credit-bearing coursework.

4. Tracking Postgraduation Outcomes

While School A has made efforts to monitor alumni trajectories (e.g., by encouraging LinkedIn use), there is currently no comprehensive system in place for tracking long-term outcomes. This limits the school's ability to systematically evaluate how well the CP is preparing students for sustained success in college or the workforce.

Leaders expressed interest in developing more robust methods to follow up with graduates and gather feedback to inform program improvement. To better assess long-term outcomes, School A is developing an Alumni Workforce Tracking System in collaboration with the technical college and local workforce boards. This system will collect employment, credential, and postsecondary persistence data to track graduates'

trajectories. Employers will also be invited to participate in annual Feedback Forums where they share observations on the readiness and performance of CP graduates, supporting data-driven program refinement.

5. Adapting to Evolving IB Requirements

The IB is currently revising CP requirements, including changes to the Reflective Project and service-learning components. CP staff at School A anticipated the need to adjust internal processes, timelines, and documentation in response to these updates. As the IB revises the CP core components, School A is developing a CP Implementation Playbook that aligns district practices with new IB guidance. This resource will include scheduling templates, service-learning integration models, and exemplars of reflective practice that meet both IB expectations and local workforce contexts. The playbook will serve as a professional development tool for coordinators and instructors, reinforcing program consistency across academies.

Success Case: School B

Informants

- CP coordinator; science, technology, engineering, and mathematics (STEM) teacher; and robotics coach
- Alum, class of 2024

School B Profile (2024–25)

Total Enrollment: Approx. 1,600

CP Enrollment: Approx. 90

Career-related study options (4):

- Computer Science
- Engineering
- Health Sciences
- Media Production

Site Overview

School B is a public charter school serving approximately 1,600 students in 6th grade through 12th grade, with approximately 90 students currently enrolled in the CP. The school operates under an “IB-for-all” model in which every student participates in at least one IB course and pursues either the DP or CP, fostering a unified academic culture that frames both pathways as rigorous and equally valued. Career exploration is introduced in the middle grades through design-based electives across four career-related studies—computer science, engineering, health sciences, and media production—enabling students to make informed program choices prior to 11th grade. Through this structure, School B institutionalizes CP participation while broadening access to advanced

academic and career-focused learning opportunities.

What Do School B Informants Believe Makes Their CP Distinctive?

According to the CP coordinator, the program’s strength lies in its “IB-for-all” model, where every student completes either the DP or the CP as a culminating experience during 11th and 12th grades, ensuring equitable access to rigorous academics. CP students can take up to five DP courses across core subjects, aligning both pathways in academic challenge and integrity. According to the CP coordinator and faculty interviews, School B developed its career pathways gradually, leveraging existing staff expertise and introducing exploratory electives in middle grades to gauge student interest, supporting sustainable, student-informed growth. Institutional support from the state education office has been essential—providing funding and a robust accountability framework that emphasizes industry alignment, work-based learning, career-tech participation, and internship access.

RQ 2. What characteristics of case-study CPs—regarding the student body, the local community, and its industries and proximal HEIs—seem to foster conditions for successful career-related studies?

School B's CP is supported by several structural and contextual factors, including early exposure through a 6th grade through 12th grade IB model, pathways aligned to student interest and staff expertise, and district-level support for Career and Technical Education (CTE). All CP students are guaranteed a paid internship through city-managed partnerships, providing consistent access to work-based learning. While there is no dual-credit component, leaders reported anecdotally that most graduates pursue postsecondary programs aligned with their CP pathways. These conditions collectively support the program's coherence and relevance.

1. Long-Term Student Engagement

School leaders emphasized that being a 6th grade through 12th grade IB school allows for continuity in both academic and career learning. Students begin exposure to design-based electives in middle school and continue exploring pathway options throughout 9th and 10th grades. By the time students reach 11th grade, they are able to make more informed decisions about selecting the CP.

2. Career Pathways Informed by Student Interest and Staff Capacity

According to the CP coordinator, School B selected career pathways—engineering, computer science, media production, and health sciences—based on existing faculty skills and strong student interest. Some teachers were already experienced in the content areas, while others were willing to develop their expertise. This internal alignment supported each pathway's gradual rollout and sustainability.

3. Structural Support From the State Education Agency

The CP coordinator cited the state education agency as a key enabler in maintaining high program standards, providing funding, defining curricular expectations, and mandating the inclusion of elements such as industry-aligned pathways, work-based learning, and student participation in career-tech organizations. This structure helps ensure consistency and accountability across CP delivery.

4. Centralized Internship Opportunities

A guaranteed paid internship is built into the CP through partnerships with youth employment organizations. The internship system is managed citywide, removing the burden of placement from school staff. According to the coordinator, CP students are prioritized in the internship matching process and placed in areas such as software development, media, health care, and cybersecurity.

RQ 3. What, if any, other outcomes do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs use to describe their CP as “successful” toward students’ workforce outcomes?

At School B, the CP is understood by staff and alumni as a preparatory framework that facilitates meaningful transitions into career-aligned postsecondary education and early professional life. Most students continue to 4-year colleges and universities. Success is not defined primarily by immediate job placement, but rather by students’ readiness for continued learning, their ability to apply skills in professional contexts, and their overall development as emerging professionals.

1. Build Workplace Readiness Skills

Students completing the CP are described as entering postsecondary settings with strong foundational competencies. According to an alum, high school experience with programming languages, problem-solving, and applied technical skills enabled them to make smooth transitions to college-level coursework and, in some cases, outperform peers who lacked such preparation.

2. High-Quality Internship Experience

The CP includes access to internships. An alum reported that these internships involved collaboration with mentors and the completion of real-world projects. Such experiences are viewed as both formative and instructive in helping students apply classroom knowledge and explore potential career paths.

3. Development of Professional and Interpersonal Competencies

Instruction in financial literacy, time management, and socioemotional development—particularly through the PPS course—is recognized as valuable preparation for life beyond high school. These skills are considered essential for navigating early adulthood and workplace expectations. The CP environment supports the development of leadership, teamwork, and communication skills. Students have taken on roles in student organizations, internship teams, and extracurricular activities that require initiative, coordination, and problem-solving—skills considered relevant across professional sectors.

RQ 4. How do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs perceive that their school developed strong and sustainable (a) career-related studies that lead students to successful industry pathways via partner HEIs, (b) ranges of career-related studies that achieve relevance for both student interest and industry demand, (c) partnership(s) with one or more local employer(s), and (d) buy-in among school and local community stakeholders?

At School B, school leaders have developed a model for career-related studies that is intentionally aligned with the broader academic mission of the school. Their approach reflects deliberate decision-making around instructional design, pathway relevance, partnership development, and interest-holder engagement.

1. Strategically Aligned Partnerships Leading to College Credit and Certifications

School B's CP model is designed to support students in pursuing further education in career-aligned fields rather than direct entry into the workforce. School leaders emphasized that the local labor market requires postsecondary training for most high-wage roles. Consequently, CP pathways at School B are structured to build foundational knowledge and skills that translate into success in 2-year and 4-year degree programs rather than terminal occupational certification.

To support this objective, School B has partnered with higher education-oriented organizations that provide engineering curricula and offer early college credit through student portfolio assessment. These partnerships allow students to demonstrate college-level competencies in their fields while still in high school and serve as a bridge between secondary and postsecondary learning expectations.

2. Relevant Career-Related Study Options

Student interest and local labor-market analysis drive the school's selection of CP pathways—currently in computer science, engineering, media production, and health sciences. Leadership noted that these areas were chosen for their alignment with high-wage, high-growth industries in the region, as well as for their feasibility in terms of staffing, space, and equipment. New pathways are introduced incrementally based on evidence of student demand and instructional capacity, often following a period of elective piloting in lower grades.

3. Strategic and Sustained Partnerships With Employers

Work-based learning is a central feature of School B's CP. Every CP student is guaranteed an internship through a centralized process that is brokered through a city-level system managed by the state education agency, which matches students with employers in STEM, media, business, and nonprofit sectors. School leadership viewed

this centralized infrastructure as critical to sustainability, ensuring access to consistent, high-quality placements without the administrative burden falling solely on the school. CP students have first access to internships in their CP pathway during the summer between junior and senior year. They can also participate in the Advanced Internship Program, in which they do an internship during their senior year as a replacement for one of their class periods.

In addition to internships, School B partners with national student organizations for computer science and engineering, media, and health sciences. These partnerships provide industry-aligned extracurricular experiences and reinforce the relevance of classroom learning. Teachers are encouraged to integrate these opportunities into their instructional planning, and school leadership reported that participation in these organizations has seemed to strengthen student engagement and performance across pathways.

“Our local educational agency ... realized it’s inefficient for every school to try and scrape around and find industry partners ... so now ... as far as internships for kids, that is managed entirely in some sense by the state. ... I’m not having to run around crossing my fingers and hoping to get an industry partner to work with our school.”

—School B CP Coordinator

RQ 5: In what ways have the school’s offer of career-related studies (a) produced experiences that stakeholders find interesting, inspiring, or useful regarding ways that yield student success in the workforce; (b) generated insights about how to lead the widest range of students to achieve successful workforce outcomes; and (c) involved challenges that have been important and/or difficult to overcome in yielding successful workforce outcomes?

At School B, the CP is intentionally structured to offer students career-related learning that is both rigorous and contextually relevant. According to school leadership, the program’s design and delivery reflect a strategic effort to align educational experiences with student interests, regional workforce trends, and postsecondary readiness. These experiences are viewed as meaningful not only for the technical skills they impart but also for the ways they foster student engagement, agency, and long-term planning.

1. Coherent, College-Going Model for Career-Related Learning

Unlike many CPs that aim to prepare students for immediate workforce entry, School B’s model assumes that most students will pursue postsecondary education. The CP is therefore structured to serve as a preparatory framework for further study in high-

demand fields. Pathways such as computer science, engineering, media production, and health sciences are selected based on both regional labor-market analysis and feasibility of delivery within a high school context. Leaders emphasized that the goal is not terminal certification, but rather to inspire interest, build foundational skills, and support students in pursuing aligned degrees or credentials beyond high school.

2. Early Exposure to Career Pathways

School B's 6th through 12th grade model allows for early exposure to career-related content, beginning with design-based courses in the MYP. This structure enables students to explore multiple interests before selecting a CP pathway in 10th grade. The CP coordinator noted that most students who opt into a pathway have already taken at least one aligned elective in 9th or 10th grade, allowing for more informed and confident decision-making.

3. Embedded Work-Based Learning Opportunities

Work-based learning is integrated into the CP through guaranteed internships facilitated by the school's partnership with a youth employment program. These internships are designed to provide authentic exposure to professional environments while building critical workplace skills. The CP coordinator emphasized that internships are not ancillary but embedded components of the career-related study experience. Students are matched with organizations that offer substantive projects in areas such as cybersecurity, software development, health care, and media. The structure and funding of these internships are supported through citywide systems, reducing administrative burden and ensuring equity in access.

4. Industry-Aligned Clubs and Competitive Teams

A distinctive feature of School B's CP model is its integration of career-technical student organizations (CTSOs) and extracurricular teams into the broader pathway experience. For example, the school's participation in robotics competitions for computer science and engineering and partnerships with organizations offer students avenues to extend their classroom learning into competitive or collaborative environments. These opportunities provide external audiences for student work, reinforce applied learning, and promote sustained engagement in technical disciplines. According to leadership, participation in these organizations has become a key driver of student interest and persistence in CP pathways.

5. Career-Related Skill Development

The CP also emphasizes the development of transferable skills that are essential in both postsecondary and workforce contexts. Leadership pointed to the PPS course as a

critical feature of the program, noting its focus on financial literacy, time management, and socioemotional development. The PPS curriculum is designed to provide students with the knowledge and habits necessary to navigate early adulthood, regardless of their career trajectory. These competencies are positioned as essential to long-term success.

RQ 6: What challenges do case-study schools encounter in their efforts to achieve program goals, and in what ways (a) do challenges conform or vary across case-study schools, (b) are challenges met with specific mitigation strategies, and (c) do interest holders see opportunities for the IB to provide targeted support to existing and future CP schools?

School B has a comprehensive and well-integrated CP, but several challenges have emerged in its efforts to maintain program fidelity, promote equitable outcomes, and support sustainable delivery. These challenges fall into three primary areas: limited certified staff and course availability, student preparedness, and negative family and student perceptions.

1. Limited Certified Staff and Course Availability

One of the most important challenges school leadership cited is ensuring that all CP instructors possess the pedagogical expertise and subject-matter knowledge necessary to meet the demands of a rigorous, interdisciplinary program. While School B has recruited highly skilled teachers in some career fields, not all instructors enter with prior industry experience or IB-specific training. This creates variability in instructional quality across pathways. The school relies on internal professional development and targeted hiring practices to address this, but leaders acknowledged that sustaining high instructional standards requires ongoing investment and support.

In addition, certain aspects of the CP—such as the Reflective Project—require advanced writing instruction and coaching that not all teachers feel fully prepared to deliver. Supporting students in completing extended written work, particularly those with less preparation, remains an area of concern for the CP leaders. While School B has instituted support systems, including dedicated staff to assist with reflective writing, ensuring consistent delivery across the teaching faculty remains a work in progress.

2. Student Preparedness

Although School B is structured as an “IB-for-all” school, leaders reported persistent disparities in outcomes specific to prior academic preparation. Students from historically marginalized backgrounds, particularly those entering the school with academic gaps, have been less likely at this school to excel on IB assessments or complete the CP certificate requirements at the same rate as their peers. Leaders emphasized that these

gaps are not due to differences in potential, but rather to systemic barriers that require differentiated teaching and more culturally responsive practices.

Building staff capacity to differentiate instruction effectively within the CP's rigorous academic framework has been a particular challenge. While IB standards are accessible in theory, in practice they require teachers to possess strong instructional design skills and a commitment to equity-focused teaching. Ensuring that all students receive the support they need to meet the demands of both DP coursework and the CP core—especially the Reflective Project and PPS course—remains an ongoing focus.

3. Negative Family and Student Perceptions

Another recurring challenge is addressing negative perceptions among families and students about the nature and purpose of the CP. Despite efforts to position CP as an academically rigorous and college-aligned option, some parents view it as a less demanding alternative to the DP, similar to a CTE program. School leaders described having to repeatedly clarify that School B's CP pathways are intended to prepare students for further study in high-demand fields.

Leaders believe students, too, sometimes make program choices for the wrong reasons—for example, opting into a CP to avoid higher level DP coursework without a genuine interest in the CP career pathway. Leaders emphasized the importance of proactive advising, including one-on-one meetings with all 10th graders, to ensure that program enrollment is based on authentic interest and informed decision-making.

“Parents in the American schooling system ... when they hear career-related education, they're like, ‘oh, that's for kids who don't go to college and it's the easy one.’... When I tell them what our pathways are—computer science, engineering, health sciences, and media production—I don't think the last time you were at your doctor's office you looked at them and said, ‘thank goodness you did the easy one in high school.’”

—School B CP Coordinator

Success Case: School C

School C Profile (2024–25)

Total Enrollment: Approx. 1,200

CP Enrollment: Approx. 60

Career-related study options (9):

- Automotive Technology
- Carpentry
- Culinary Arts
- Digital Media
- Electricity
- Game Programming
- Heating, Ventilation, & Air Conditioning
- Modern Machine Tech
- Welding

Informants

- CP coordinator: 100 percent FTE (incoming)
- DP coordinator: 100 percent FTE (former CP coordinator)
- CTE coordinator: 100 percent FTE
- CP alum, class of 2020

Site Profile

School C is a large, public, urban high school serving approximately 1,200 students, with approximately 60 enrolled in the CP. The program is deeply embedded within a district that supports numerous IB schools with more than 100 IB programs and leverages a strong infrastructure of CTE. With nine long-standing, district-certified CTE pathways—including Automotive Technology; Culinary Arts; Digital Media; Electricity; and Heating, Ventilation, & Air Conditioning (HVAC)—School C's CP benefits from well-established, credentialed programs that predate its introduction. Outreach begins before high school through middle school engagement and structured guidance in 9th

grade, ensuring students make informed pathway decisions at the end of sophomore year.

What Do School C Informants Believe Makes Their CP Distinctive?

Community-based service is identified as a critical aspect of CP at School C. Students are encouraged to consider local needs and participate in projects that connect learning to real-world contexts. For example, several CP students volunteer or intern in the school's community garden, which supplies produce to neighborhood residents. Students draw on skills from their CTE courses to contribute to the project—such as building planting structures, preparing meals using garden produce, or managing seasonal maintenance.

RQ 2. What characteristics of case-study CPs—regarding the student body, the local community, and its industries and proximal HEIs—seem to foster conditions for successful career-related studies?

School C has operationalized the CP within an existing infrastructure of CTE programming. Several institutional, instructional, and cultural factors contribute to the relative success of the CP at School C. These include leadership structures, staffing models, curriculum alignment, and engagement strategies that support both delivery and sustainability.

1. Preexisting, District-Certified CTE Pathways

A primary success factor is the presence of a long-established and district-supported CTE model. School C offers nine distinct, credentialed career pathways that serve as the career-related studies component of the CP. The permanence and depth of these programs allow CP coordinators to focus on student support and curricular integration rather than developing new pathways from scratch. In addition, because these pathways were already designed to include work-based learning and project-based instruction, they align closely with the goals of CP. For example, Reflective Projects and team-based challenges are supported by authentic workplace connections and industry-specific mentor input.

“We are a career and technical education school. ... So we have these really strong pathway programs that are supported by the district’s career and technical education departments. And so when the CP became available, it was like a no-brainer for us because we had this sort of natural environment ... we had DP and we had CTE, and it was kind of divisive. ... But now we’re able to allow CTE students to enroll in the IB through the CP program. So it’s a [natural fit for us] and really it’s kind of a nice marriage of the two.”

—School C CP Coordinator

2. Clearly Defined and Coordinated Staffing Model

Another key factor is the strategic division of labor among staff. The school employs separate coordinators for DP, CP, and CTE functions. Coordinators collaborate to streamline programming across tracks, with the CTE coordinator serving as a liaison between career instructors and the IB staff. This staffing model allows each role to remain focused and responsive.

3. Curriculum Responsiveness to Local Industry Input

The CTE coordinator described a systematic process for updating curriculum based on feedback from industry partners. Specific examples included revising HVAC instruction

in response to the increased use of prefabricated components and incorporating artificial intelligence (AI) tools and portfolio development in digital media courses. A dedicated CTE coordinator has also enabled consistent engagement with industry partners and alignment between classroom content and emerging labor market trends. Examples include revising welding and digital media curricula in response to feedback from employers and postsecondary institutions.

These revisions were framed as necessary to maintain alignment with workforce expectations and to provide students with current, applicable skills. In addition, a majority of CTE instructors have industry experience, which was described as a strength in reinforcing student engagement and industry relevance.

4. Partnerships That Extend Learning Beyond the Classroom

School C has cultivated a wide network of industry and postsecondary partners. These partnerships provide not only internships and exposure opportunities but also direct input into curriculum development and team-based learning challenges. The school organizes annual events, such as a senior showcase, that serve to both demonstrate student outcomes and maintain partner engagement. The CTE coordinator plays a key role in initiating and sustaining these relationships through ongoing outreach, recognition events, and codesigned experiences. As a result, students benefit from consistent workplace exposure and, in some cases, direct employment pipelines.

5. Postsecondary Connections Through Dual Credit and Program Pathways

Staff reported that certain pathways offer dual-credit opportunities and industry certifications in partnership, including local city colleges. These partnerships were identified by informants as mechanisms that support students' transitions to postsecondary programs. Staff also referred to alumni who had matriculated to 4-year institutions following their participation in CP-aligned studies.

RQ 3. What, if any, other outcomes do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs use to describe their CP as “successful” toward students’ workforce outcomes?

In interviews, School C leaders and an alum defined the CP's success not by immediate job placement but by its impact on students' readiness for long-term employability. They highlighted outcomes such as the development of transferable workforce-relevant skills, expanded postsecondary pathways and job entry, and career-minded behaviors.

1. Development of Transferable, Workforce-Relevant Skills

The CP at School C fosters a range of transferable skills that prepare students for success in diverse professional environments. The alum informant reported that the program's demanding workload and strict deadlines significantly strengthened their time management abilities, which they found essential in high-pressure roles. Leaders reported that through the Reflective Project and structured mentorship, students develop professional communication and self-advocacy skills, gaining confidence in seeking support, articulating ideas, and navigating complex tasks. In addition, CP participation cultivated workplace habits such as attention to detail, adherence to safety protocols, and personal accountability—traits that are directly applicable to supervisory responsibilities and service-oriented roles.

“We have our CTE coordinator ... who works with local businesses to facilitate job shadows, speakers and experiential learning opportunities, internships ... for each of those nine pathways. ... Our most recent pathway is ... sponsored or started through a connection to the local electricity union workers union. ... They come in and do trainings, [students] go and visit them on job sites, and there is a really strong pathway where students can join that union right after graduating.”

—School C CP Coordinator

2. Expanded Postsecondary Pathways and Job Entry

School leaders and the alum highlighted the CP's role in broadening students' access to both immediate employment and postsecondary educational opportunities. Students who complete CTE-aligned pathways often graduate with industry-recognized certifications that facilitate entry into fields such as digital media, construction, and low-voltage electrical work; some later pursue college or specialized training programs to advance their careers. Strategic partnerships, such as those with the electrical union, provide direct pipelines from high school into union-sponsored apprenticeships, with staff noting continued alumni engagement in these structured workforce pathways. In addition, the program's academic rigor—particularly through the requirement of at least two DP courses—prepares students for the demands of higher education. Coordinators reported that this dual emphasis on technical competence and academic preparation supports students in developing the written communication, critical thinking, and organizational skills necessary for long-term success in both college and career settings.

3. Workplace Readiness Through Alumni Behavior

In the absence of formal tracking systems, school staff at School C rely on informal but consistent engagement with alumni to assess the long-term impact of the CP. Through social media and direct communication, staff gather anecdotal evidence of alumni career progression and professional behavior. Alumni frequently reported holding supervisory roles in service industries, enrolling in college after periods of employment, or entering structured workforce pathways such as union apprenticeships. Even those who have pursued careers outside their original CTE pathways are described by teachers and coordinators as demonstrating strong workplace habits—such as adaptability, accountability, and professional communication—which staff attribute to the CP’s emphasis on interdisciplinary learning, reflective practice, and applied ethics. This sustained alumni engagement offers qualitative evidence of the program’s contribution to workplace readiness.

RQ 4. How do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs perceive that their school developed strong and sustainable (a) career-related studies that lead students to successful industry pathways via partner HEIs, (b) ranges of career-related studies that achieve relevance for both student interest and industry demand, (c) partnership(s) with one or more local employer(s), and (d) buy-in among school and local community stakeholders?

1. Leveraging Established CTE Infrastructure to Strengthen CP Integration

CP coordinators and the CTE lead at School C view the school’s career-related studies (CRS) as well-integrated with both industry expectations and postsecondary pathways, largely due to a long-standing, district-certified CTE infrastructure and established partnerships with local institutions of higher education. This alignment predates the adoption of the CP, enabling the school to focus on integration rather than building new systems. Dual-credit opportunities are embedded in specific pathways—such as machine technology in collaboration with a community college and digital media with the state college—allowing students to earn college credit while in high school. In addition, students gain access to industry-recognized certifications, including Occupational Safety and Health Administration (OSHA) safety credentials and Adobe software proficiency, which serve as credentials for both workforce entry and academic advancement. Many CP students matriculate to 4-year institutions, continuing in fields aligned with their high school pathway experiences. This embedded alignment supports smooth transitions into postsecondary education and professional sectors.

2. Career-Related Studies Relevant to Both Student Interest and Industry Demand

Leaders at School C described their career-related study offerings as deliberately designed to align with both student interest and evolving industry needs. The school maintains nine stable CTE pathways that span diverse fields, including culinary arts, automotive technology, renewable energy, welding, and digital media. To support student engagement, exploratory programming is introduced in 9th grade, enabling students to make informed pathway selections by 10th grade, with flexibility to transfer when appropriate. Industry relevance is maintained through a structured process in which the CTE coordinator regularly solicits input from industry partners to inform curriculum updates. For example, HVAC instruction was revised in response to a sector-wide shift toward prefabricated components, and the digital media curriculum was updated to include emerging expectations in AI, marketing, and portfolio development. Many CTE instructors are former industry professionals—some of them School C graduates—who bring current field expertise into the classroom, further enhancing the responsiveness and credibility of the program.

3. Partnerships With One or More Local Employers

School C has established a broad and diversified network of employer partnerships, maintained through the proactive efforts of the school's full-time CTE coordinator. These partnerships span a variety of sectors, including unions, marketing firms, and trade organizations. They support a wide range of work-based learning experiences, including job shadowing, mentor-led projects, team-based industry challenges, and both paid and unpaid internships—many of which lead to direct job placements. In addition, students participate in on-site visits and professional panels with union apprentices and industry professionals, providing valuable exposure to workforce pathways. While these opportunities are not exclusive to CP students, they are intentionally structured to ensure CP participants engage with real-world industry problems, particularly as part of their Reflective Projects and career-focused learning experiences.

4. Buy-In Among School and Local Community Interest Holders

At School C, staff described interest-holder buy-in as both structurally supported and culturally embedded within the school community. A key factor is the integration of CP and non-CP students in shared classes and instructional environments, which minimizes perceptions of CP as a separate or less rigorous track. This inclusive, nonsegregated model has fostered greater staff acceptance and reinforced a unified academic culture. Administrative support has also played a vital role; the principal's background in IB teaching and commitment to CP expansion, along with the presence of a dedicated CP coordinator, have been instrumental in sustaining the program. Parental and community

support, while not always CP-specific, remains strong overall, bolstered by bilingual communications, proactive student advising, and the visibility of successful alumni. Alumni engagement further reinforces community connections, as former students often return to mentor current participants, share their experiences, or support program events—contributing to a cycle of continuity and trust.

RQ 5. In what ways have the school’s offer of career-related studies (a) produced experiences that stakeholders find interesting, inspiring, or useful regarding ways that yield student success in the workforce; (b) generated insights about how to lead the widest range of students to achieve successful workforce outcomes; and (c) involved challenges that have been important and/or difficult to overcome in yielding successful workforce outcomes?

School C’s integration of the CP into its long-standing CTE infrastructure has resulted in a set of experiences that multiple interest holders—leaders, teachers, alumni—described as meaningful, relevant, and impactful because they blend academic rigor, hands-on learning, and career exploration in ways that align with student interests and industry expectations.

1. Applied Learning That Builds Professionalism and Confidence

The CP alum and staff alike emphasized the value of experiences that simulate or directly replicate real-world conditions. For example, the alum reflected that the high expectations around deadlines, accountability, and project-based assignments in the CP helped them prepare for the demands of high-demand work environments, where turnaround times are tight and expectations are high. They credited the structure and rigor of the CP for cultivating a strong work ethic, time management skills, and the confidence to ask for help and persist through challenges.

Similarly, the CTE coordinator explained that all students—including those in the CP—engage with authentic industry problems through “team-based challenges,” simulations, and presentations with business partners. Students work alongside mentors to develop prototypes and propose solutions to current issues in their fields, such as supply chain disruptions in construction or AI implementation in digital media. These experiences are designed to be intellectually and professionally engaging and are often described by students as highlights of their time in the program.

2. Flexible, Student-Driven Exploration of Career Identity

The CP model supports student exploration of diverse career interests, even when students ultimately pursue fields unrelated to their original pathway. In several cases, students enrolled in the program based on interest in a specific career area but later

shifted directions—carrying with them transferable skills such as discipline, attention to detail, and workplace safety that proved valuable across roles, including those in leadership or management. Program staff noted that such experiences are common and highlighted the CP's strength in helping students build foundational competencies while clarifying or evolving their professional goals. Informants reported that alumni discovered new career aspirations—such as transitioning from technical fields to education or entrepreneurship—based on the skills and insights developed through their CP coursework and service learning.

3. Community-Oriented and Purposeful Learning

Interest holders highlighted service learning as a particularly inspiring component of the CP experience. For example, School C's community garden—staffed by both CP and DP students—serves as an applied site for biology, culinary, and environmental science learning. Students plant, harvest, and prepare food for community use while learning sustainable agricultural practices and teamwork. This initiative offers CP students a way to see the real-world impact of their skills and promotes a sense of civic contribution.

Moreover, staff cited the Reflective Project component of the CP as a valuable vehicle for students to engage with ethical and industry-specific challenges. The CTE coordinator described helping students identify “real problems worth solving” and then connecting students to mentors and resources to conduct authentic research and propose viable solutions.

“Students have work-based learning experiences ... a speaking engagement with a partner ... a field trip where they see the training facility ... then developing a team-based challenge with that partner ... working directly with a mentor on some sort of project-based challenge that affects them in industry.”

—School C CP Coordinator

4. Meaningful Industry and Postsecondary Engagement

School C's structured partnerships with unions, city colleges, and industry professionals allow students to see a continuum between high school, postsecondary training, and employment. These connections make learning feel relevant and grounded. Students not only are exposed to professions through speakers and field trips but also participate in internships, certification programs, and direct-to-work pipelines, especially in fields such as renewable energy, digital media, and culinary arts.

These industry-aligned activities often culminate in events such as the CTE senior showcase, where students demonstrate what they've learned over 3 years in a professional setting that partners, families, and school staff attend. According to leaders, these events reinforce student pride and help them articulate the value of their experiences to external audiences.

RQ 6. What challenges do case-study schools encounter in their efforts to achieve program goals, and in what ways (a) do challenges conform or vary across case-study schools, (b) are challenges met with specific mitigation strategies, and (c) do interest holders see opportunities for the IB to provide targeted support to existing and future CP schools?

School C's operationalization of the CP demonstrates thoughtful integration of academic and career preparation but also reveals several ongoing challenges. These challenges fall into four major categories: structural constraints, staffing and training demands, coordination across programs, and evolving curricular needs.

1. Structural and Scheduling Constraints

A challenge identified in CP delivery involves aligning program requirements with existing state graduation mandates and local course sequencing. Staff explained that CP students must complete at least two DP courses, while simultaneously fulfilling a multiyear CTE pathway and meeting district and state graduation criteria—leaving little room for flexibility. According to the CP coordinator, students are often forced to choose between completing 4 years of science or math, but not both, due to scheduling limitations. This constraint is especially problematic for students in technically demanding fields such as machine technology or low-voltage electrical work, where a more robust STEM foundation would be beneficial. Leaders also expressed a desire to expand IB course offerings, such as adding IB math options to better support pathway alignment but acknowledged that scheduling restrictions currently make this unfeasible. As one coordinator summarized, “There’s just not enough room in a kid’s schedule.” These limitations pose challenges for students who wish to remain open to multiple postsecondary pathways, including college and technical programs, each of which may require different academic preparation.

2. Staffing Capacity and Training Burdens

The successful operationalization of the CP at School C relies heavily on a team of specialized staff, including IB coordinators, a CTE coordinator, and instructors for the PPS course. Informants emphasized that while dedicated roles are essential, maintaining adequate staffing levels has been an ongoing challenge. One staff member noted that coordination duties cannot be effectively fulfilled alongside a full teaching load, describing

a prior arrangement where such dual responsibilities proved unsustainable. Additionally, training CTE instructors to deliver IB core components—particularly the Reflective Project and service learning—has placed further strain on staff already managing large class sizes, technical instruction, and safety oversight. Time and funding limitations also hinder regular participation in IB training. The PPS course, which serves as a cornerstone of the CP core, presents its own set of challenges: it is not externally assessed, lacks a fully developed IB curriculum, and often requires the instructor to create and adapt materials independently. These demands are compounded by periodic changes to IB core requirements, including evolving expectations around service learning and language development, making it difficult for staff to maintain continuity and consistency in instruction.

3. Program Integration and Cultural Perception

Staff described early challenges in integrating the CP into a school culture historically divided between the academic focus of the DP and the applied nature of CTE. Prior to the introduction of the CP, students in the DP and CTE were often perceived as belonging to distinct academic and social groups. This division led to initial skepticism among some CTE instructors, who questioned the placement of high-achieving, college-bound students in traditionally vocational classes—reflecting assumptions that academic and technical tracks were mutually exclusive. To address this, school leaders enacted deliberate strategies to promote coherence across programs, including standardizing expectations and reinforcing that all students—regardless of IB pathway—are held to consistent academic and behavioral standards. While progress has been made, efforts to fully align the school’s IB and CTE cultures are ongoing.

4. Sustainability of Industry and Postsecondary Partnerships

While School C has established a strong network of partnerships with unions, local employers, and city colleges, maintaining and expanding these relationships presents ongoing challenges—particularly within a rapidly evolving labor market. The CTE coordinator noted that sustaining these connections requires continuous outreach, relationship-building, and logistical coordination, including the organization of guest speakers, field trips, and internship placements. These partnerships are integral to the CP but depend on mutual trust and consistent engagement from external interest holders. In addition, ensuring curricular relevance requires regular industry input. For example, HVAC coursework has been updated in response to changes in the construction sector, such as increased use of prefabricated components, while digital media instruction now incorporates emerging tools such as AI. Adapting to such changes demands flexibility in instructional planning and ongoing professional development for teachers—conditions that are essential for long-term sustainability but not always readily supported at a systems level.

School D Profile (2024–25)

Total Enrollment: Approx. 2,200

CP Enrollment: Approx. 90

Career-related study options (10):

- Automotive Technology
- Child Development
- Construction Management & Architecture
- Business Administration & Career Development
- Criminal Justice & Law Enforcement
- Healthcare Professions
- Hospitality & Tourism Management
- Information Technology & Cybersecurity
- Naval JROTC
- Engineering

Success Case: School D

Informants

- DP/CP coordinator
- CTE teacher and internship coordinator

Site Profile

School D is a large, public, “IB-for-all” high school serving approximately 2,200 students, with approximately 90 participating in the CP, which is fully embedded within the broader IB framework. All students begin in the MYP in 9th grade before selecting either the DP or CP in 10th grade, a structure that normalizes IB participation and ensures equitable access to advanced programs. The CP currently enrolls approximately 90 students, who complete at least two DP courses alongside 1 of 10 career-related programs and 15 pathways spanning fields from automotive technology, cybersecurity, and law enforcement. This inclusive and flexible design enables the CP to serve students with varied academic profiles and postsecondary aspirations, reinforcing its role as both a rigorous and an adaptable pathway within the school’s IB ecosystem.

What Do School D Informants Believe Makes Their CP Distinctive?

Leaders at School D described their CP as distinctive for its inclusive structure, its alignment with authentic career preparation, and the depth of real-world learning it provides. They emphasized that all students begin their high school experience as IB students through the MYP, and those who choose the CP in 11th grade are supported in connecting their academic and career interests. The CP is intentionally designed to be flexible and accessible, allowing students in any of the school’s 14 CTE pathways to participate. Staff highlighted the value of career-experienced instructors who bring practical expertise into the classroom, creating what they called “apprenticeship in the classroom.” Informants also pointed to a strong internship program, supported by intentional employer partnerships and individualized student placements.

RQ 2. What characteristics of case-study CPs—regarding the student body, the local community, and its industries and proximal HEIs—seem to foster conditions for successful career-related studies?

Based on interviews with CP leadership and instructional staff, several characteristics of the student body, local community, and institutional partnerships were identified as key factors in supporting successful career-related studies.

1. Aligned to a Range of Academic Backgrounds and Postsecondary Goals

School D serves a large and diverse student population with differing academic levels and postsecondary plans. Informants emphasized that the CP is designed to be inclusive and flexible, serving students who are college-bound, career-focused, or still exploring. CP pathways offer a tangible route for students to build real skills and earn credentials that are immediately valuable. Staff highlighted that the program's structure accommodates students who may not have previously considered an IB program by offering multiple points of entry aligned with career interests and readiness levels.

2. Industry-Experienced Instructors and Employer Partnerships Supporting Career Readiness

A defining feature of School D's CP is its integration of industry-experienced CTE instructors and strong partnerships with local employers. Many CTE teachers are career changers who bring firsthand industry knowledge, fostering authenticity and practical relevance in the classroom. This approach enhances student engagement and deepens understanding of workplace expectations.

The school also maintains well-established relationships with employers across sectors such as healthcare, construction, and legal services. These partnerships provide recurring internship placements, with some employers offering postgraduation employment opportunities. According to informants, these connections have been cultivated over time and are sustained through consistent communication, student performance, and a shared commitment to prepare career-ready graduates.

3. Integration With Local College Through Dual Enrollment

School D maintains a strong relationship with a local college, which provides dual-enrollment opportunities for CP students. Informants noted that college faculty teach courses on the high school campus, removing access barriers and increasing student exposure to college-level expectations. A dual-enrollment coordinator at the school supports the application and enrollment process, ensuring that students can participate in courses aligned to their CTE pathway, such as law, healthcare, and biology. Staff described these offerings as valuable for both career alignment and college readiness.

4. Inclusive IB Culture and Early Program Preparation

School D operates as an “IB-for-all” school, with all students participating in the MYP in 9th and 10th grades. According to informants, this structure prepares students early for the rigor and structure of the CP. In the 10th grade, students receive targeted advising to explore and select their pathway, often building on prior interest areas. Staff noted that this early exposure and guidance help ensure that students make informed choices and enter the CP with a clear understanding of the expectations and opportunities it offers.

RQ 3. What, if any, other outcomes do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs use to describe their CP as “successful” toward students’ workforce outcomes?

Informants emphasized that workforce readiness is not observed solely by immediate employment but through a broader lens that includes credential attainment, professionalism, confidence, and postsecondary alignment. Success is seen in students’ ability to engage with real-world settings, navigate professional expectations, and transition into career-aligned education or training. The observations below reflect the multifaceted ways in which CP leaders assess workforce preparedness.

1. Industry-Recognized Credentials

School leaders highlighted that students graduate with stackable, industry-recognized credentials such as Certified Clinical Medical Assistant, Pharmacy Technician, and HVAC/Electrician Apprentice certifications. These credentials enable immediate job entry and provide a foundation for continued training or education in the field.

2. Internship Completion and Real-World Application

Successful completion of internships is viewed as a central indicator of workforce readiness. Students engage in hands-on placements across sectors, gaining experience in communication, time management, and job-specific skills. Leaders emphasized that these placements reflect students’ ability to apply classroom learning in authentic professional environments.

“They’re actually constructing a mini-house. So just the hands-on opportunities the students get to have, I think, has really increased ... and again, them being able to speak to their experiences, having been in that work field, I think they’re able to offer a lot more than a teacher that doesn’t have as much experience.”

—School D CP Coordinator

3. Professional Skill Development

Staff consistently cited professionalism, communication, and punctuality as key workplace behaviors developed through the CP. Activities such as mock interviews, resume writing, and networking events are intentionally integrated to support these competencies, with observable growth noted by both staff and employers.

4. Confidence and Career Clarity

Informants noted that students seem to emerge from the program with increased confidence and a clearer sense of their career direction. Exposure to real-world experiences, mentorship, and role-specific tasks help students identify what careers they want to pursue—or rule out—which is seen as a critical success indicator.

5. Postsecondary Transitions Into Aligned Pathways

School leaders reported that many CP graduates continue into 2- or 4-year programs that align with their high school pathway. Whether entering nursing programs, technical colleges, or business degrees, students are seen as making informed choices grounded in their CP experience.

RQ 4. How do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs perceive that their school developed strong and sustainable (a) career-related studies that lead students to successful industry pathways via partner HEIs, (b) ranges of career-related studies that achieve relevance for both student interest and industry demand, (c) partnership(s) with one or more local employer(s), and (d) buy-in among school and local community stakeholders?

At School D, CP leaders attributed the development of sustainable career-related studies to strong alignment with postsecondary institutions and industry expectations. A central element is the school's partnership with the local community college, which offers dual-enrollment courses—taught on campus by college faculty—that are directly linked to students' CTE pathways. A dedicated coordinator supports students through the enrollment process, ensuring equitable access. All career pathways are tied to state-approved credentials and developed in collaboration with the state's Department of Education, reinforcing workforce relevance. These structures, combined with capstone experiences such as internships and advanced technical coursework, provide a coherent bridge from high school to industry-aligned higher education opportunities.

1. Partnerships With Employers

CP leaders at School D attributed the strength and sustainability of their employer partnerships to intentional relationship-building, dedicated staffing, and a clear focus on

aligning student experiences with workforce expectations. A central strategy has been the appointment of a full-time internship coordinator who cultivates and maintains connections with a wide range of local employers. This role ensures that students are matched with meaningful, career-aligned internship opportunities and that partnerships remain active and mutually beneficial. Leaders emphasized that these relationships are not transactional but built on consistent communication, follow-through, and responsiveness to employer needs. Employer engagement is embedded throughout the program—business partners are invited to participate in mock interviews, serve as guest speakers, and provide feedback on student readiness and program alignment. Many of these partnerships have developed into long-term collaborations, strengthened by the school's ability to deliver well-prepared, professional students. CP leaders also noted that employer input helps shape curriculum and inform updates to ensure pathways remain relevant. This two-way feedback loop—paired with the school's strong administrative support and commitment to real-world learning—has allowed employer partnerships to evolve into a stable, integrated component of the CP's work-based learning infrastructure.

2. Buy-In Among School and Local Community Interest Holders

School D leaders described the development of interest-holder buy-in as a result of deliberate outreach, visible student success, and the integration of CP into the broader school culture. Administrators actively support the CP's expansion, including the recent appointment of a dedicated CTE administrator to grow the program and promote alignment with the school's IB identity. Outreach to families and community partners includes student-led presentations, hands-on showcases, and engagement events such as mock interviews and capstone displays. Teachers with industry backgrounds help reinforce the credibility and appeal of CP pathways by sharing firsthand knowledge and connecting instruction to real-world contexts. Partnerships with local businesses, hospitals, and colleges have developed through sustained relationship building and student performance, which in turn strengthens community confidence in the program's value. Although CP leaders noted challenges in reaching all parents, they are expanding efforts through events, newsletters, and personal conversations.

RQ 5. In what ways have the school’s offer of career-related studies (a) produced experiences that stakeholders find interesting, inspiring, or useful regarding ways that yield student success in the workforce; (b) generated insights about how to lead the widest range of students to achieve successful workforce outcomes; and (c) involved challenges that have been important and/or difficult to overcome in yielding successful workforce outcomes?

At School D, the CP is viewed by school leaders and staff as a source of highly engaging and meaningful experiences for students, families, and community partners. These experiences are characterized by their authenticity, practical relevance, and capacity to foster personal and professional growth. Drawing from staff interviews, the following six observations illustrate how the CP is perceived to generate inspiring and useful outcomes.

1. Authentic Work-Based Learning Opportunities

Students at School D participate in internships across a range of professional settings—including healthcare, law, construction, and public service—where they apply classroom knowledge in real-world environments. Staff reported that these internships frequently lead to part-time or full-time employment offers and that some employers consistently request CP interns due to their preparedness and professionalism.

2. Career Exploration and Direction

Internship placements are also seen as critical tools for career discovery. According to CP leaders, students often use these experiences to affirm or reconsider their intended career paths. This process of self-reflection is viewed as a key developmental benefit of the CP, helping students make informed postsecondary decisions.

3. Integration of Industry Expertise Into Instruction

CTE teachers at School D bring substantial industry experience to their classrooms, creating a hands-on instructional model referred to by staff as “apprenticeship in the classroom.” This approach enhances student engagement by connecting content to real-world practice and is seen as particularly impactful in sustaining student motivation and interest.

4. Opportunities for Applied Leadership and Public Engagement

CP students also participate in CTSOs such as Distributive Education Clubs of America, and SkillsUSA, which allow them to engage in leadership, public speaking, and competitive events. These experiences can build professional confidence and connect students to broader networks beyond the school.

5. Community and Employer Partnership Engagement

School D has cultivated strong relationships with local businesses and organizations, in part through its structured internship program and employer engagement in events such as mock interviews. These partners frequently expressed satisfaction with student contributions, reinforcing trust in the school's programming and creating a virtuous cycle of support and opportunity.

6. Expanded Academic Access Through Dual Enrollment

Students in CP pathways have the opportunity to take dual-enrollment courses taught on campus by local college faculty. This exposure to college-level content in a familiar environment supports academic confidence and strengthens the bridge between secondary and postsecondary education.

RQ 6. What challenges do case-study schools encounter in their efforts to achieve program goals, and in what ways (a) do challenges conform or vary across case-study schools, (b) are challenges met with specific mitigation strategies, and (c) do interest holders see opportunities for the IB to provide targeted support to existing and future CP schools?

At School D, leaders described a highly committed and expanding CP but noted that growth has been accompanied by structural, staffing, and logistical challenges that complicate full program operationalization. The following key observations reflect the range of barriers leaders are actively working to mitigate.

1. Staffing Instability in Core CP Roles

Maintaining consistent instructional staffing for the PPS course has been difficult. CP leaders reported frequent turnover in PPS instructors, often due to misalignment between administrative staffing decisions and the specialized nature of the course. New teachers are sometimes assigned without adequate background or understanding of IB expectations, which disrupts program continuity and places added burden on CP coordinators to provide training and support.

2. Limited Administrative Understanding of CP Requirements

Several challenges stem from a perceived lack of awareness among administrators regarding the complexity and rigor of the CP. Leaders indicated that CP responsibilities are often undervalued or misunderstood, particularly with respect to the PPS course. In some cases, administrators treat PPS as a general intervention—intended to provide broad academic or behavioral support—rather than recognizing it as a core IB component. This misunderstanding can lessen recognition of the program’s academic value and affect scheduling and resource support.

“I don’t think our administrators ... see the value of the CP. They see it more as they’re just learning those technical skills, not all the rigor and all the requirements that are also required in PPS.”

—School D CP Coordinator

3. Internship Capacity and Industry Engagement

As CP enrollment has grown, securing sufficient high-quality internship placements has become increasingly challenging. Staff noted that while many industry partners are eager to return after hosting students, other sectors—such as law and engineering—remain difficult to engage. Age restrictions and reluctance to host high school students can limit access, resulting in delayed or mismatched placements for some students.

4. Overextension of Program Coordinators

Much of the program’s functionality depends on the initiative and sustained effort of a small number of staff. Both the CP coordinator and internship coordinator described managing wide-ranging responsibilities with limited institutional support. Their roles involve not only program oversight and compliance but also student outreach, parent education, professional development, and employer engagement—all of which are time-intensive and require targeted staffing investment.

5. Balancing Program Scale and Equity of Access

School D offers over 14 CTE pathways and continues to add more. While this diversity is a strength, leaders acknowledged that some pathways remain underenrolled, creating scheduling inefficiencies and complicating equitable access to CP-aligned IB coursework. Part-time regional students from other schools further strain the scheduling system, creating logistical tension between capacity and demand.

6. Parent and Community Awareness Gaps

Despite efforts to promote the CP through events, newsletters, and classroom presentations, leaders noted that parent engagement remains uneven. Some families—especially those less familiar with CTE—continue to view the program as less rigorous or valuable than traditional academic tracks. CP leaders have addressed this through student showcases, alumni panels, and data-sharing about certifications and career earnings but acknowledged that sustained perception change requires a long-term effort.

Success Case: School E

Informants

- CP coordinator (0.4 FTE)
- DP coordinator, Theory of Knowledge teacher
- Former principal (now district superintendent)
- Executive director, nonprofit

School E Profile (2024–25)

Total Enrollment: Approx. 1,000

CP Enrollment: Approx. 70

Career-related study options (5):

- Business
- Life and Health Sciences
- Political Science and Law
- Science, Technology, Engineering, and Math (STEM)
- Visual and Performing Arts

Site Profile

School E is a suburban, public high school enrolling just over 1,000 students, with approximately 70 participating in the CP. In contrast to schools that emphasize direct workforce alignment, School E situates the CP within a broader college-going culture, with programming primarily designed to prepare students for 4-year postsecondary institutions. Program staff emphasized holistic student development, highlighting agency, relevance, and civic responsibility as central aims. Students pursue one of five career-related pathways—Life and Health Sciences, Business, STEM, Visual and Performing Arts, and Political Science and Law—while all CP students are required to design and engage in a Service-Learning Project under structured faculty mentorship. This approach reinforces the CP's identity as a bridge between academic study, applied learning, and civic engagement.

What Do School E Informants Believe Makes Their CP Distinctive?

Rather than preparing students for immediate workforce entry, the CP emphasizes college readiness and commitment to service through coursework that cultivates critical thinking, leadership, and civic responsibility. Students begin by researching nonprofit organizations and conducting cold calls, then participating in Service-Learning Projects and designing fund-raisers for the host organization. With a robust network of more than 100 community partnerships, developed organically through student and staff outreach, students can access meaningful opportunities for engagement, including creative contributions such as painting murals, organizing supply drives, and developing awareness campaigns. The CP and DP coordinators are highly collaborative and share a commitment to equity and rigor, making continuous

program refinements. Through this model, the CP at School E offers students a pathway that supports both postsecondary success and the development of agency, relevance, and purpose.

RQ 2. What characteristics of case-study CPs—regarding the student body, the local community, and its industries and proximal HEIs—seem to foster conditions for successful career-related studies?

At School E, the CP is shaped by a college-focused student body, strong community and parental involvement, and a program model centered on service learning and skill development. Students take an active role in forming partnerships with nonprofit organizations, while parents contribute to career-readiness activities such as mock interviews. Although the program does not include formal ties to higher education or industry credentialing, it fosters communication, leadership, and real-world engagement through structured, student-led experiences.

1. College-Oriented Student Body With Interest in Applied Learning

CP staff at School E described their student body as primarily composed of students planning to attend 4-year colleges. They noted that the CP appeals to students who may benefit from applied learning and career-connected experiences alongside rigorous academic coursework. Staff emphasized that students self-select into the CP based on interest and that the program supports readiness for a variety of postsecondary pathways, including college and career preparation.

“I think the community here in this school is really special. We have ... an unbelievably dedicated and knowledgeable staff that are creative, are willing to help, are collaborative. So, I think it’s not so much the program as it is the people that work around it that just ... it makes my life very easy to implement a strong program.”

—School E CP Coordinator

2. Student-Initiated and Maintained Community Partnerships

Informants reported that students actively reach out to nonprofit organizations to initiate Service-Learning Projects. The program includes structured opportunities—such as Philanthropy Day and a required Service-Learning Project—that prepare students to research, contact, and collaborate with community partners. CP staff estimated that the school maintains more than 100 partnerships, many of which are established through student initiative and sustained through ongoing communication and collaboration.

3. Parental Involvement in Career Preparation Activities

CP leaders highlighted parental engagement as a program asset. Parents are involved in events such as the mock interview project, where they serve as interviewers, and in guest-speaking roles. Staff noted that parents often support the development of professional skills by providing students with feedback during these events, contributing to a realistic and supportive learning environment.

4. Emphasis on Communication and Leadership Skill Development

A community partner described CP students as consistently demonstrating maturity, professionalism, and initiative. Students lead projects, design public presentations, and manage logistics, such as donation drives and volunteer coordination. These responsibilities were seen by the partner as meaningful, both to the students and to the organization, and as helping students build skills that are relevant to future academic and professional settings.

RQ 3. What, if any, other outcomes do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs use to describe their CP as “successful” toward students’ workforce outcomes?

A key indicator of workforce readiness cited by school leaders and a community partner is students’ orientation toward civic responsibility and community involvement. The partner described how a few students returned in later years to intern at the organization or pursue careers in human services, counseling, and nonprofit leadership, suggesting that early exposure influenced their professional goals and values.

1. Development of Transferable Professional Skills

School leaders consistently emphasized that CP students seemed to acquire critical skills relevant to college and career, including communication, self-management, public speaking, collaboration, and time management. These skills can be cultivated through the CP’s project-based components—such as the Reflective Project and the Service-Learning Project—and reinforced through structured guidance and mentorship. According to school leaders, these early professional interactions can help students become comfortable working with adults, presenting themselves in formal settings, and managing authentic responsibilities. A community partner specifically highlighted how students, through their outreach and service, are treated as “adult volunteers” and tend to rise to that level of responsibility. They are expected to ask thoughtful questions, propose feasible projects, and collaborate effectively to meet community needs—outcomes that can contribute directly to workforce readiness. The program’s structure

encourages students to “get comfortable being uncomfortable,” which school leaders see as essential preparation for both college and career contexts.

2. Preparation for Postsecondary Transitions

According to school leaders, alumni tracking shows that CP students often leave the program with strong resumes, the ability to articulate their experiences during interviews, and the confidence to seek out postsecondary opportunities. The CP includes a Professionalism Unit that covers resume development, mock internships, and strategies for building professional networks. In addition, the program features a strong Language Development component that is part of a state-recognized Model World Language Program aligned with American Council on the Teaching of Foreign Languages and state standards. Together, these elements support the development of both academic and professional skills. School leaders reported that this structure seems to promote student success, reflected in consistently strong outcomes on key assessments and the cultivation of transferable skills for life beyond high school.

RQ 4. How do CP students, CP alumni, CP school leaders and educators, local employers, and faculty/staff at partner HEIs perceive that their school developed strong and sustainable (a) career-related studies that lead students to successful industry pathways via partner HEIs, (b) ranges of career-related studies that achieve relevance for both student interest and industry demand, (c) partnership(s) with one or more local employer(s), and (d) buy-in among school and local community stakeholders?

CP leaders reported that while formal articulation agreements or dual-enrollment pathways with partner HEIs are not currently in place, the program’s career-related coursework is intentionally designed to align with postsecondary expectations. In previous years, students engaged in career-focused experiences, such as career days and lab-based demonstrations through partnerships with local hospitals and colleges, and leaders are interested in reestablishing these connections postpandemic, particularly in fields such as engineering and health sciences. Rather than relying on external validation, school leaders highlighted that CP courses in areas such as business, STEM, and the arts meet rigorous state standards and are taught by qualified instructors.

1. Relevance to Student Interest and Industry Demand

Pathway development at School E is designed to reflect both student interests and programmatic feasibility. Leaders identified business, STEM, visual and performing arts, political science, and law as the current CP pathways, with some better aligned to state standards than others. The school carefully considers which pathways can be scheduled effectively and which offer students a meaningful learning experience that can support

both academic and personal growth. Leaders also emphasized that many students self-select into pathways based on personal interest, which enhances motivation and follow-through on program requirements such as the Reflective Project and the Service-Learning Project.

The emphasis on student fit and individualized guidance is a central feature of the program. Students in the 10th grade receive counseling support to assess whether the CP or DP is the better option, and guidance counselors are trained to help students navigate these decisions based on interests, schedules, and academic readiness. This process has seemed to both reduce attrition and contribute to better long-term alignment between student goals and pathway selection.

2. Partnerships With Employers and Community-Based Organizations

School E's most consistent and robust partnerships are with local nonprofit organizations, cultivated through the program's structured philanthropy and service-learning components. At the start of their CP experience, students are introduced to principles of philanthropy and are guided through a process that includes researching nonprofits, making cold calls, conducting interviews, and selecting a community partner. The relationships built through this process are typically sustained through repeat engagement across cohorts and have grown into a network of more than 100 partner organizations.

One nonprofit partner has worked with CP students for over a decade. The organization's director described the relationship as mutually beneficial, noting that students consistently demonstrate professionalism, creativity, and initiative. Projects have included fund-raising campaigns, donation drives, public awareness efforts, and facility enhancements such as murals and room redesigns. Students are expected to contribute meaningfully—developing promotional materials, conducting community outreach, or organizing events—all of which mirror real-world tasks and support professional skill development.

3. Building Family Buy-In

CP leaders emphasized that strong interest-holder support has been critical to the program's growth and sustainability. Within the school, the CP is viewed as equal in rigor and value to the DP. This parity is reinforced through joint communications, coordinated staff efforts, and shared program infrastructure. Leaders intentionally challenged negative perceptions that the CP is less rigorous or only appropriate for non-college-bound students by emphasizing the program's focus on real-world application and transferable skills.

The school also invests in educating parents and students about the long-term benefits of the CP. By collecting and sharing college admissions data, alumni reflections, and examples of student success, the CP team is able to demonstrate the value of the program beyond high school. Community partners also support this narrative, with some students returning to intern at their partner organizations in college or pursuing careers in nonprofit leadership, human services, or related fields.

RQ 5. In what ways have the school's offer of career-related studies (a) produced experiences that stakeholders find interesting, inspiring, or useful regarding ways that yield student success in the workforce; (b) generated insights about how to lead the widest range of students to achieve successful workforce outcomes; and (c) involved challenges that have been important and/or difficult to overcome in yielding successful workforce outcomes?

School E's CP is intentionally designed to connect academic preparation with real-world relevance. Though situated within a college-going culture, the CP emphasizes service learning, community engagement, and student-driven inquiry—producing experiences that school leaders and community partners described as deeply meaningful, formative, and valuable for students' personal and professional development.

1. Authentic Community-Based Projects

One of the most consistently cited sources of engagement and impact is the CP's emphasis on community-based service learning. Students begin by exploring philanthropic interests and researching nonprofit organizations, including making cold calls and conducting interviews. They then develop and engage in Service-Learning Projects aligned with their chosen organization's mission. Leaders emphasized that this process helps students apply communication, project management, and decision-making skills in authentic settings.

A long-standing community partner described how CP students have designed murals, led donation drives, created promotional materials, and contributed to therapeutic environments for child clients. The partner emphasized that students consistently produce creative and high-quality work, adding, "A mural project designed and executed by students has remained in use for nearly a decade and continues to draw praise from staff and visitors."

2. Real-World Application and Reflection

The CP structure includes deliberate scaffolding to connect academic work with real-world application. Leaders described how the Reflective Project and PPS course require

students to think critically about ethical issues and their broader societal roles. Service learning, in particular, is structured to ensure that students are not simply completing hours but making a genuine contribution. For example, students have helped coordinate school supply drives, healthy snack donations, and warm clothing collections for children receiving social services. These projects are described as both meaningful to the organizations involved and eye-opening for students, many of whom come to recognize disparities in access to basic needs within their own communities.

3. Long-Term Impact

Both school leaders and community partners noted that these experiences often have lasting influence. Some CP alumni return to their service organizations as college interns or pursue related career paths. Others retain a strong sense of civic responsibility and continue engaging with nonprofit work beyond high school. One community partner emphasized that exposure to this type of work at a formative stage builds empathy, professional confidence, and a long-term commitment to service. “This is the next generation,” they noted, “and we have to create a spark.”

School leaders noted that students practice public speaking, collaborate in teams, conduct interviews, manage time effectively, and write analytically—skills that are often carried forward into postsecondary environments. The community partner also highlighted students’ professionalism, their ability to ask meaningful questions, and their willingness to engage with sensitive topics with maturity and care. These experiences are seen as both practically useful and personally transformative.

RQ 6. What challenges do case-study schools encounter in their efforts to achieve program goals, and in what ways (a) do challenges conform or vary across case-study schools, (b) are challenges met with specific mitigation strategies, and (c) do interest holders see opportunities for the IB to provide targeted support to existing and future CP schools?

Leaders at School E identified several challenges in operationalizing and sustaining the CP within a high-performing, college-bound student population. While the program is well-established and widely respected within the school community, leaders emphasized that its success has required ongoing problem-solving, institutional adaptation, and cultural reframing.

1. Negative Perceptions About the Nature and Rigor of CP

One of the most persistent challenges is overcoming negative perceptions about the CP as being “less rigorous” or “IB light” compared to the DP. Leaders explained that students and families often initially view the CP as a fallback option or as more

vocational than academic. They have worked intentionally to position the CP as equally rigorous, though differently structured, emphasizing that CP students complete two DP courses and extensive project-based work. Framing the CP as a college-preparatory pathway with distinctive benefits, such as applied learning and community engagement, has been key to increasing buy-in and enrollment.

2. Structural and Scheduling Constraints

The school operates within the constraints of the state's graduation requirements and traditional scheduling models, which can make it difficult for students to fulfill both CP and state-mandated coursework. Certain pathways, such as visual and performing arts, require multiyear course sequences that may conflict with students' desire for electives or study halls. Leaders noted that while they have been able to "fit the square peg into the round hole," this requires constant negotiation of time, staffing, and course offerings to accommodate student interest and program integrity.

3. Student Readiness and Program Selection

Selecting the appropriate IB pathway, the CP or DP, requires a level of self-awareness and long-term planning that many 10th-grade students have not yet fully developed. Leaders cited immaturity and lack of clarity about personal interests as barriers to appropriate program selection. Some students enter the CP without a clear sense of purpose or an understanding of the program's demands, which can affect their engagement and persistence. To mitigate this, the school has strengthened its advising and preprogram preparation by incorporating executive functioning and self-reflection work into earlier grades.

4. Staff Capacity

As the CP cohort has grown, leaders have noted that sustaining the individualized support central to the program, especially for the Reflective Project and Service-Learning Project, has become increasingly challenging. Managing mentorship for more than 70 students places considerable strain on faculty capacity. Although students benefit from the support of teachers and other staff, leaders expressed concern about the limited time and personnel available to ensure consistent, high-quality guidance across these long-term projects. Despite strong cross-departmental collaboration, maintaining one-on-one advising and meaningful mentorship has become more difficult, prompting a call for increased staffing or dedicated time to preserve the program's personalized approach.

5. Competition With AP Courses

Student preference for Advanced Placement (AP) courses presents an ongoing challenge for CP enrollment, as AP is often viewed as offering more tangible benefits in the college admissions process, such as weighted grade point average boosts and clearer credit recognition. As a result, some students opt for AP classes over the CP, despite the CP's focus on deeper learning and transferable, long-term skills. While leaders continue efforts to inform students and families about the distinct advantages of IB programming, the perception of AP as more immediately beneficial remains a strong influence. In addition, staff must navigate state-mandated scheduling constraints and competing academic demands. To address this, they have applied flexible solutions—such as delivering PPS during rotating physical education periods and structuring project timelines to balance workloads. Leaders have also worked to strengthen teacher support and shift community perceptions, challenging the notion that the CP is less rigorous than the DP. Through strategic communication and program framing, the CP is increasingly recognized as a valuable and demanding academic option.

6. Limited Integration With Higher Education or Credentialing Institutions

CP staff stated that the program does not currently involve formal partnerships with higher education institutions or industry certification bodies. Dual enrollment is not a component of the CP at School E, and students do not earn industry-recognized credentials through their participation. While some exposure to professional fields occurs—such as through field trips or guest speakers—the program is structured primarily around in-house instruction and community-based service learning.

Cross-Case Analysis and Findings

In the following table, we summarize the typologies of Career-related Programmes (CP) identified in the study—Career and Technical Education (CTE)—Integrated Models and Service-Learning, Work-Based Learning, & Civic Engagement Models—and indicate the five case-study schools that align with these approaches. The typologies highlight distinct but complementary strategies through which schools structure CP participation to balance academic rigor, workforce preparation, and civic development.

Table 1. Emerging Typologies of CP Across Case-Study Schools

Typology	School A	School B	School C	School D	School E
CTE-Integrated Models: • anchored in district-certified CTE pathways • strong partnerships with technical colleges, unions, and credentialing bodies • access to dual credit, apprenticeships, and industry-recognized certifications • strong workforce alignment	✓		✓	✓	
Service-Learning, Work-Based Learning, & Civic Engagement Models: • college-preparatory orientation emphasizing service learning and nonprofit partnerships • student-led community-based projects • strong focus on transferable skills, leadership, and civic responsibility • limited dual credit or credentials		✓			✓

We derived types from our analysis of interview transcripts with informants across all five sites. A check mark indicates that references to the typology surfaced in the transcripts for that school. The absence of a check mark does not necessarily mean the school is not aligned with the typology, only that it was not referenced explicitly in the interviews.

Cross-Case Analysis Synthesis and Implications

To synthesize findings across sites, the research team employed thematic coding and comparative case logic (Miles et al., 2020; Yin, 2018). WestEd developed codes inductively from the case narratives and then applied them consistently across all transcripts. The resulting matrices enabled the identification of recurring success factors, site-specific adaptations, and notable outliers. Through replication logic (Yin, 2018), we observed that while all five schools demonstrated the adaptability of CP, their strengths reflected distinct institutional and community infrastructures. Schools with established CTE systems (A, C, D) demonstrated the strongest alignment with workforce needs, whereas schools emphasizing work-based learning (B), service learning (E), or advanced career pathways reflected different logics of operationalization.

Key Comparative Dimensions

The cross-case analysis revealed convergence around several core conditions for success, as well as divergence in how these conditions were enacted across schools, reflecting differences in local context, leadership capacity, and community partnerships.

Success Factors

Successful operationalization of the CP seems to be supported by three key factors: building skills and pathways for postsecondary success, strong and active community and workforce partnerships, and career-integrated teaching and learning. The programs we studied that embed professional and transferable skills, provide early career exposure, and align pathways with postsecondary opportunities appear to foster student readiness. Strong employer, community, and higher education partnerships also seemed to extend learning and sustain relevance. Finally, clear staffing models, industry-experienced instructors, and integration with established CTE pathways appear linked to coherence and credibility (see Table 2 for details).

1. Building Skills and Pathways for Postsecondary Success

Informants from all five case-study schools emphasized workplace readiness, with the integration of internships and the Personal and Professional Skills (PPS) course most fully realized in Schools B, C, and D. Transferable skills such as adaptability, accountability, and professional communication are prioritized across sites, with School C offering the strongest example. Alignment with postsecondary pathways appears most clearly in Schools A, C, and D, where district-certified CTE programs and dual-credit options create seamless bridges to higher education. Schools A and B systemically embed early career exploration, while Schools C, D, and E rely on exploratory coursework and advising.

2. Strong and Active Community and Workforce Partnerships

Partnerships with employers and community organizations are central for all case-study schools but still vary by context. Schools A and D have the most formalized business partnerships, with intermediaries such as chambers of commerce and internship coordinators providing support. Schools C and E emphasize community-based experiential learning, embedding service projects within their CPs. Workforce alignment seems strongest at Schools A, C, and D, where their staffs codevelop curricula with technical colleges, unions, and credentialing agencies. Interest-holder buy-in is evident across sites, although it appears to be most deeply embedded in Schools A, C, and D.

3. Career-Integrated Teaching and Learning

Clear staffing and industry expertise supports instructional integration at case-study sites. Schools A and C demonstrate the most coordinated staffing models, while School D stands out for employing industry-experienced instructors who deliver what staff described as “apprenticeship in the classroom.” Preexisting, district-certified CTE pathways provide a strong foundation for integration in Schools A, C, and D, while Schools B and E rely more on site-level initiative and student demand.

Table 2. Identified Success Factors Across Case-Study Schools

School-identified success factors	School A	School B	School C	School D	School E
Build Skills and Pathways for Postsecondary Success					
Strengthen workplace readiness by building professional and interpersonal competencies	✓	✓	✓	✓	✓
Cultivate transferable, career-related skills that support adaptability across industries	✓	✓	✓	✓	✓
Provide students with exposure to relevant and career-aligned pathways	✓	✓	✓	✓	✓
Offer early career exploration opportunities that help students clarify goals	✓	✓	✓	✓	✓
Strong and Active Community and Workforce Partnerships					
Forge strong, strategic partnerships with local businesses and nonprofits	✓	✓	✓	✓	✓
Embed community-oriented partnerships and experiential learning into its CP	✓	✓	✓	✓	✓
Develop and sustain alignment with the local workforce to meet regional needs	✓	✓	✓	✓	✓
Secure strong buy-in and sustained commitment from school and community stakeholders	✓	✓	✓	✓	✓
Career-Integrated Teaching and Learning					
Provide a clearly defined and coordinated staffing model	✓	✓	✓	✓	✓
Offer access to industry-experienced CTE instructors providing hands-on learning	✓	✓	✓	✓	✓
Leverage preexisting, district-certified CTE pathways to support CP integration	✓	✓	✓	✓	✓

We derived success factors from our analysis of interview transcripts with informants across all five sites. A solid check mark is used to indicate whether a factor surfaced in the interview. A transparent check mark is used to indicate that a factor, or aspect of a factor, surfaced, but to a lesser degree.

The distribution of success factors across the five case-study schools illustrates both shared strengths and context-specific adaptations. All sites demonstrated commitments to building transferable skills, aligning instruction with postsecondary pathways, and fostering authentic community partnerships, although the mechanisms for doing so varied. For example, some schools leveraged district-certified CTE pathways and technical college partnerships to strengthen workforce alignment, while others emphasized service learning or early career exploration as strategies to build student agency. Collectively, these findings suggest that while the CP provides a flexible framework, its success depends on locally tailored approaches that balance academic rigor, career preparation, and interest-holder engagement.

Challenges

Across the case-study schools, efforts to deliver the CP reveal a set of recurring and interrelated challenges that influence both access and sustainability. These challenges cluster in three primary domains—**structural and capacity constraints; data and student readiness systems; and perceptions, partnerships, and program legitimacy**—with a cross-cutting concern regarding policy alignment and system coherence. Collectively, these categories capture the interplay between institutional limitations, information gaps, and cultural perceptions that shape program delivery and outcomes across diverse contexts (see Table 3 for details).

1. Structural and Capacity Constraints

Structural barriers and resource limitations continue to affect CP delivery across multiple sites. Scheduling conflicts and course availability emerged as particularly acute challenges in Schools A, C, D, and E, where state graduation mandates, International Baccalaureate (IB) subject requirements, and multiyear CTE sequences compete for limited space in students' schedules. In School C, these pressures are compounded by cultural divisions between Diploma Programme (DP) and CTE structures, requiring intentional leadership alignment to maintain coherence.

Staffing shortages and the limited number of IB-trained or dual-credit-certified instructors also emerged as recurring concerns in Schools A through D. These shortages directly affect delivery of the PPS course and continuity of dual-credit offerings. At several sites, coordinators and teachers carry overlapping responsibilities without sufficient institutional support, reflecting broader capacity constraints. In School D, these challenges are further exacerbated by limited administrative understanding of the CP's academic rigor and staffing needs, hindering stability and expansion.

2. Data and Student Readiness Systems

Schools also reported gaps in the systems used to monitor student progress and program impact. School A informants highlighted the absence of a comprehensive alumni-tracking mechanism, limiting the ability to measure long-term outcomes such as credential attainment or workforce placement. Similar data limitations across sites reduce capacity for evidence-based improvement and external reporting.

Student readiness challenges add another layer to this issue. In Schools B and E, coordinators observed that some students enter the CP underprepared for the demands of DP subjects, requiring supplemental academic support to persist and succeed. These dual challenges—limited data infrastructure and uneven academic preparation—highlight the need for more integrated tracking and early intervention systems that connect academic and career supports.

3. Perceptions, Partnership, and Program Legitimacy

Cultural and relational factors also affect the CP's growth and sustainability. Persistent perceptions of the CP as less rigorous than the DP remain most evident in Schools B, D, and E, where families and students sometimes view the CP as a “less academic” alternative rather than a complementary pathway. School leaders continually work to reframe this narrative, emphasizing the CP's alignment with college and career readiness standards and its capacity for dual-credit and credential attainment.

External partnerships, though foundational to CP success, are not immune to strain. In Schools C and D, shifting labor-market conditions and rising student participation have placed pressure on internship placements and employer capacity. These dynamics underscore the importance of maintaining strong intermediary relationships—such as chambers of commerce or workforce boards—to sustain engagement and ensure quality, equitable opportunities for students.

Table 3. Key Challenges to Career-related Programmes Across Case-Study Schools

Challenges	School A	School B	School C	School D	School E
Structural and Capacity Constraints					
Scheduling conflicts and limited course availability	✓		✓	✓	✓
Insufficient number of certified and IB-trained staff	✓	✓	✓	✓	
Constrained CP staff capacity			✓	✓	✓
Fragmented integration of the CP within existing school programs			✓	✓	
Limited administrative engagement and support			✓	✓	
Data and Student Readiness Systems					
Lack of a comprehensive system for tracking student outcomes	✓		✓		
CP students academically underprepared for DP coursework		✓			✓
Perceptions, Partnership, and Program Legitimacy					
Persistent negative perceptions about CP rigor		✓		✓	✓
Difficulty sustaining business and community partnerships			✓	✓	

We derived types from our analysis of interview transcripts with informants across all five sites. A check mark indicates that references to the typology surfaced in the transcripts for that school. The absence of a check mark does not necessarily mean the school is not aligned with the typology, only that it was not referenced explicitly in the interviews.

Programmatic Features

The five case-study schools illustrate varied but complementary approaches to integrating the CP with pathways and work-based learning. While Schools A, C, and D rely on established CTE infrastructures, dual credit, and industry certifications to bridge high school and postsecondary pathways, School B emphasizes an “IB-for-all” model with guaranteed, city-managed internships. School E, by contrast, prioritizes service-learning and nonprofit partnerships, reflecting its college-oriented culture. Across sites, internships, apprenticeships, dual credit, and

credentialing appear in different combinations, but all schools provide structured opportunities for students to build professional competencies and explore career-aligned pathways (see Table 5 for details).

- **IB-for-All:** Schools A, B, D, and E have adopted a universal IB model, ensuring that all students engage in either the CP or DP. School D identifies as an “IB-for-all” school with all 9th- and 10th-grade students experiencing a Middle Years Programme (MYP) before selecting the CP or DP.
- **Internships and Apprenticeships:** These are central features for some case-study schools, though each differs in delivery: Some rely on guaranteed, centralized systems, others on employer-driven partnerships, and still others embed apprenticeship-style learning within classrooms. Internships are guaranteed in Schools B and D and widely available in Schools A and C.
- **Dual-Credit Opportunities With Higher Education Institutions (HEIs):** Schools A, C, and D offer dual credit and seem to be strongest where district-certified CTE structures and higher education partnerships are in place, creating seamless bridges from high school to college.
- **Career Technical Education:** Established, district-certified CTE pathways are a cornerstone in several case-study schools, serving as the backbone for their CP integrations. School C leverages nine long-standing, district-certified CTE pathways, while School A offers 11 CTE-aligned pathways integrated into a career-related academies model, and School D provides 10 CTE pathways tied to state-approved credentials (see Table 4 for details).

Table 4. Summary of Career-Related Study Options by Case-Study School

School A (11)	School B (4)	School C (9)	School D (10)	School E (5)
Accounting	Computer Science	Automotive Technology	Automotive Technology	Business
Biomedical Sciences	Engineering	Carpentry	Business Administration & Career Development	Science, Technology, Engineering, and Math (STEM)
Business	Health Sciences	Culinary Arts	Child Development	Life and Health Sciences
Computer Science	Media Production	Digital Media	Construction Management & Architecture	Political Science and Law
Construction		Electricity	Criminal Justice & Law Enforcement	Visual and Performing Arts
Culinary Arts		Game Programming	Engineering	
Education		Heating, Ventilation, & Air Conditioning (HVAC)	Healthcare Professions	
Engineering		Modern Machine Tech	Hospitality & Tourism Management	
Health Services		Welding	Information Technology & Cybersecurity	
Manufacturing			Naval Junior Reserve Officers' Training Corps (JROTC)	
Marketing				

Table 5. Programmatic Features of CPs Across Schools

WBL/Pathway opportunities	School A	School B	School C	School D	School E
IB-for-all	✓	✓		✓	✓
Internships and apprenticeships	✓	✓	✓	✓	
Dual-credit opportunity with HEI	✓		✓	✓	
CTE	✓	✓	✓	✓	

We derived programmatic features from our analysis of interview transcripts with informants across all five sites. A check mark is used to indicate a feature surfaced in an interview. The absence of a check mark does not necessarily indicate that the feature does not exist, only that a reference did not surface explicitly in the interviews.

These observations of programmatic features highlight the utility of cross-case analysis in identifying both core components of promising CP delivery (e.g., transferable skill development, integration with industry and community, and clear staffing models) and contextual contingencies (e.g., scheduling constraints, staffing shortages, negative perceptions) that necessitate local adaptation.

Conclusions

Summary of Key Insights

The cross-case analysis of five U.S. schools applying the CP underscores the program's capacity to combine academic rigor with real-world relevance. While contexts varied, the study revealed patterns in how schools develop student skills, leverage partnerships, and adapt the CP framework to local priorities. At the same time, persistent structural and capacity challenges constrain delivery and highlight the need for sustained support. The following five key insights capture the core strengths, adaptations, and barriers that define CP practice across the case-study sites. Because the study applied a rigorous case-selection and triangulated interview design, the findings reflect both the diversity of CP contexts and consistent patterns across promising delivery methods.

1. Transferable Skills Are the Defining Outcome of CP Participation

Across all five schools, CP interest holders emphasized the development of professional and transferable skills—including communication, adaptability, accountability, and time management—over narrow technical training. These competencies are consistently identified by alumni and staff as essential for both postsecondary persistence and workforce readiness.

2. Partnerships Drive Authentic Learning Opportunities

Sustained partnerships with employers, HEIs, and community organizations underpin program success. Schools leveraged these partnerships differently—through guaranteed internships (School B), apprenticeship-style instruction (School D), or nonprofit collaborations (School E)—but in every case, partnerships created authentic, applied learning experiences that reinforced program relevance.

3. The CP Functions as a Dual-Purpose Bridge to College and Career

Across all schools, the CP is positioned not as a terminal vocational track but as a rigorous pathway that broadens postsecondary options—whether through industry credentials and workforce pipelines (Schools A, C, D) or through academic preparation and civic engagement (Schools B, E).

4. Distinct Delivery Typologies Demonstrate the CP's Flexibility

Two complementary models—CTE-integrated (Schools A, C, D) and work-based learning or service-learning (Schools B, E)—show how the CP adapts to local institutional priorities and community contexts while maintaining academic rigor.

5. Persistent Structural and Capacity Barriers Limit Sustainability

Across schools, recurring challenges—including scheduling conflicts, shortages of IB-trained teachers, uneven student readiness, limited coordinator capacity, fragile partnerships, and negative perceptions about CP rigor—continue to constrain program growth and long-term stability.

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Appendix A. Methodology

Success Case Method

In this study, we employed the Success Case Method (SCM), a mixed-methods, utilization-focused evaluation framework that identifies high-performing cases to understand the contextual factors driving successful outcomes (Brinkerhoff, 2003). The SCM is particularly suited to applied education settings seeking to improve delivery quality and scalability. For this research, the SCM provided an appropriate design for analyzing how the Career-related Programme (CP) supports student transitions into postsecondary education and employment by illuminating *what works, for whom, and under what conditions* (Fitzpatrick et al., 2011, p. 7).

Given the International Baccalaureate's (IB's) goal of understanding how the CP supports successful student transitions into employment or postsecondary education, the SCM offers an appropriate and rigorous design for several reasons. First, the method is well-suited for identifying and analyzing high-functioning sites to determine what elements of program delivery are replicable and scalable (Brinkerhoff, 2005). Second, the SCM is congruent with qualitative inquiry traditions that seek to interpret participant experiences and institutional practices in depth and within their local context (Patton, 2015). Finally, the SCM aligns with the intended use of this research—to inform practice and decision-making among CP adopters, system leaders, and policy actors—by emphasizing findings that are both evidence-based and contextually grounded.

Sampling and Site Selection

To examine the conditions under the CP that contribute to successful postsecondary and workforce outcomes, we employed a multistep, purposive sampling strategy to identify exemplar schools applying the CP in the United States. SCM principles (Brinkerhoff, 2003) guided this strategy, which we also informed by promising practices in qualitative case selection (Patton, 2015), emphasizing both depth and diversity across study sites.

Step 1: Development of the Initial Candidate Pool

We initiated the sampling process by engaging key IB internal stakeholders to collaboratively refine and operationalize the definition of “success” in the context of CP delivery. We conducted a virtual group meeting, guided by a semistructured protocol, to solicit interest-holder perspectives on essential success criteria. These discussions referenced prior literature on

promising CP delivery (Hopfenbeck et al., 2021) and used Brinkerhoff's (2003) criteria for identifying programs that produce exemplary results. Key characteristics included the following:

- **Program Maturity:** sites with a minimum of 3 years of CP to ensure sufficient time for program development and refinement
- **Innovative Practices:** evidence of locally adapted novel approaches that may have contributed to increased student engagement and outcomes
- **Demographic Representation:** inclusion of schools serving diverse student populations across socioeconomic, racial/ethnic, and geographic dimensions

Following this consultative process, interest holders nominated 5–10 candidate schools each, accompanied by brief rationales aligned to the success criteria. The research team then triangulated across nomination lists, prioritizing schools that appeared most frequently, demonstrated demographic diversity, and exhibited unique adoption features. This yielded a pool of 10–15 finalist schools for further screening.

Step 2: Screening of Finalist Schools via Online Questionnaire

To refine the candidate pool and confirm site eligibility, we administered a structured online questionnaire to CP coordinators at the finalist schools using Google Forms. The questionnaire assessed (a) willingness to participate, (b) availability and type of student outcome data tracked, (c) presence of key program features identified in interest-holder consultations, and (d) self-defined indicators of success. Open-ended items provided qualitative insights into how each school conceptualized success and why they believed their program achieved positive outcomes. We also asked respondents to identify which local interest holders (e.g., CP students, alumni, educators, employers, postsecondary partners) would be accessible for participation in data collection.

Step 3: Case-Study Site Selection

For final case selection, we used a triangulated approach that synthesized questionnaire data, interest-holder nominations, and program characteristics. We selected five case-study schools that reflected diverse contexts, demonstrated alignment with evidence-based success indicators (Imperatore & Hyslop, 2018; Stone & Lewis, 2012), and expressed a clear willingness to support data collection. We identified two additional schools as alternates in the event that one or more of the top candidates became unavailable. This approach ensured the inclusion of schools that not only met established criteria but also offered the potential for rich, contextualized learning across cases (Yin, 2018).

Step 4: Validation and Engagement

To confirm school participation and prepare for data collection, we emailed CP coordinators at the five selected sites. These calls served to review expectations, confirm local interest-holder availability, and ensure that schools possessed the necessary documentation and infrastructure to support the study. Where appropriate, we invited alternates to participate in the event that any of the selected schools were unable to commit. This final step ensured feasibility and readiness, key considerations for qualitative case-based research.

Data Collection

We developed the data-collection strategy for this study to align with the guiding principles of the SCM (Brinkerhoff, 2003; Brinkerhoff & Dressler, 2015) and to generate rich, context-sensitive evidence about the delivery of the CP across five U.S.-based case-study schools. Consistent with promising practices in qualitative research and grounded theory (Creswell & Poth, 2018; Patton, 2015), we prioritized the use of multiple instruments tailored to the roles of diverse interest holders with the aim of capturing nuanced perspectives on CP practices, ensuring outcomes, and enabling conditions for success.

To support systematic and replicable data collection, we developed a suite of semistructured interview protocols aligned with the study's research questions and informed by widely recognized frameworks in Career and Technical Education (CTE). These included the Association for Career and Technical Education Quality Program of Study Framework (Imperatore & Hyslop, 2018), the Business & Industry Leadership Team model (Behler, 2021), and the National Career Clusters Framework (Advance CTE, 2024). WestEd customized interview protocols for each respondent group, including current CP students, CP alumni, CP school leaders and educators, local employers, and faculty and staff from partner higher education institutions (HEIs). The semistructured format allowed for both consistency across cases and the flexibility to probe emerging themes during interviews, which is essential for grounded theory analysis and exploratory case-based research (Charmaz, 2014).

Building on an initial interview with each site's CP coordinator, we employed a purposive, snowball sampling approach to identify additional participants who are the most knowledgeable about the CP's design, delivery, and outcomes. Snowball sampling, often used in qualitative case-study research, leverages the knowledge of initial participants to locate other individuals who are especially well-positioned to provide relevant, in-depth perspectives (Goodman, 1961; Noy, 2008). This strategy was intentionally aligned with the study's research questions, ensuring that recommended participants could speak directly to topics such as the breadth and types of career-related studies offered, the nature and sustainability of partnerships, and perceived student outcomes. At each site, CP coordinators nominated a diverse set of interest holders—

including current students, alumni, educators, local employers, and HEI partners—whose varied roles and experiences enabled the research team to gather data from multiple vantage points. This process yielded a rich mix of respondents across the five sites, enhancing the credibility, contextual depth, and triangulation of findings (Patton, 2015). Recognizing the heterogeneity of CP delivery across sites, we intentionally designed the data collection to be adaptive while maintaining methodological rigor.

Summary of Informant Decision-Making Process

To balance judgment, alignment, and feasibility, we used the following criteria to determine which additional contacts would be interviewed:

- **Coordinator Judgment:** whether the CP coordinator recommended or endorsed the contact as knowledgeable about the CP
- **Researcher Judgment:** whether, based on available information, the contact could meaningfully address the CP, student experience, research questions, and the interview protocol
- **Feasibility Constraints:** timeline and resource limitations that factored into inclusion decisions

WestEd selected informants for interviews by both program relevance and practical constraints. In all five schools, CP coordinators participated, as they held the most direct knowledge of their school's program. Where possible, WestEd prioritized alumni whose experiences aligned with the CP.

School staff participated when their roles overlapped with CP delivery (e.g., CTE coordinator, academies coordinator). WestEd generally excluded HEI representatives due to limited formal partnerships or relevance to the CP. Similarly, WestEd included industry and organizational representatives selectively, focusing on those whose involvement directly supported the CP (e.g., Chamber of Commerce members, nonprofit leaders).

Ultimately, inclusion required that the informant could meaningfully contribute to the research objectives while respecting timeline and resource boundaries. This meant prioritizing those with direct involvement in CP over peripheral or less-relevant contacts (see Table A1 for details).

Table A1. Case-Study Informants Identified, Interviewed, and Role

School	CP coordinator	Alumni	School staff	HEI	Industry/ Org.	Total no. informants
A	• Middle Years Programme (MYP)/CP coordinator	No contact provided	• Academies coordinator	• Director of partnership, technical college	• VP of operations, Chamber of Commerce	4
B	• CP coordinator/ STEM teacher/ coach	• Alum (class of 2024)	None—same individual oversees DP & CP	No HEI partnership reported	None—CP coordinator did not believe representative could speak to CP specifically	2
C	• CP coordinator (incoming) • Diploma Programme (DP) coordinator (former CP coordinator)	• Alum (class of 2020)	• CTE coordinator	No HEI partnership reported	None—CP coordinator did not believe representative could speak to CP specifically	4
D	• DP/CP coordinator	No contact provided	• CTE coordinator	No HEI partnership reported	None—CP coordinator did not believe representative could speak to CP specifically	2
E	• CP coordinator • DP coordinator	No contact provided	• District superintendent	No HEI partnership reported	• Executive director of nonprofit	4

WestEd designed interviews to explore participants' experiences with the development and delivery of student-centered, industry-relevant, career-related studies, as well as the processes by which these offerings were supported through partnerships with local employers, HEIs, and other community organizations. WestEd used open-ended questions to elicit detailed descriptions of interest-holder roles, perceived benefits and challenges of the CP model, and local contextual factors influencing program delivery. Example interview questions included the following:

1. What aspects of the CP do you believe have contributed the most to student success?
2. How are partnerships with local industry and higher education sustained?
3. Can you describe any significant challenges you have encountered and how they were addressed?

Cross-Case Analysis Analytic Approach

Following the completion of the individual case studies of Schools A–E, we conducted a systematic cross-case analysis to identify both convergent and divergent themes. Cross-case analysis is particularly valuable in applied education research, as it enables researchers to move beyond the idiosyncrasies of individual sites to identify recurring patterns, explanatory factors, and transferable lessons (Miles et al., 2020; Stake, 2006; Yin, 2018).

Our approach combined thematic coding with comparative case logic (Yin, 2018). We refined codes to ensure consistent application across sites (Saldaña, 2016), then applied those codes systematically across all cases. We developed a cross-case matrix (Miles et al., 2020) to map themes across the five schools, facilitating identification of both recurring patterns and site-specific outliers. In some tables, a check mark indicated that a feature emerged in interviews for a case-study school, with a solid check mark representing a prominent feature or theme and a transparent check mark signifying that the feature or theme appeared to a lesser extent. Importantly, the absence of a check mark does not imply the absence of the theme in practice, but rather that it was not explicitly captured in the available interview or document data.

The process involved the following:

1. **Theme Identification**—We derived success factors and challenges inductively from the case narratives and organized them into domains of instruction, partnerships, and program structures.
2. **Within-Case Coding**—We coded each case systematically for references to the identified themes, with attention to the strength and recurrence of evidence.
3. **Cross-Case Comparison**—We developed comparative matrices to identify patterns across schools.

Appendix B. Glossary of Abbreviations

Table B1. Glossary of Abbreviations

Abbreviation	Terms
AI	artificial intelligence
AP	Advanced Placement
CP	Career-related Programme
CTE	Career and Technical Education
CTSO	career-technical student organizations
DP	Diploma Programme
FTE	full-time equivalent
HEIs	higher education institutions
HVAC	Heating, Ventilation, & Air Conditioning
IB	International Baccalaureate
IT	Information Technology
JROTC	Junior Reserve Officers' Training Corps
MYP	Middle Years Programme
OSHA	Occupational Safety and Health Administration
PPS	Personal and Professional Skills
SCM	Success Case Method
STEM	Science, Technology, Engineering, and Math