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Massachusetts Innovation Pathway & Early College Pathway

Program Evaluation Impact Report

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# Executive Summary

In 2017, the Commonwealth of Massachusetts launched the High Quality College and Career Pathways (HQCCP) initiative to improve college and career readiness programming for secondary education students across the Commonwealth. The HQCCP initiative includes two types of pathway programs—Early College (EC) and Innovation Pathway (IP). In 2017, the Massachusetts Department of Elementary and Secondary Education (DESE) hired ICF to conduct an external evaluation of the first cohort of nine EC and IP programs that were designed in April 2018 (see Table ES.1). Each of the programs in that first cohort received a competitive implementation grant, worth approximately $140,000 each, to support the implementation of their program during the 2018–19 school year.

Table ES.1. Overview of First Cohort of EC and IP Designees

|  |
| --- |
| EC Designees |
| * Bunker Hill Community College and Charlestown High School, Boston Public Schools * Bunker Hill Community College and Chelsea High School, Chelsea Public Schools * Salem State University and Salem High School * Massasoit Community College and New Heights Charter School of Brockton * Holyoke Community College and Holyoke Public Schools |
| IP Designees |
| * Worcester Public Schools * Nantucket Public Schools * Northampton Public Schools * Uxbridge Public Schools |

ICF’s evaluation focused on measuring planning, implementation, outcomes/impact, and sustainability of the first cohort of EC and IP programs. This report presents findings from the outcomes/impact study.[[1]](#footnote-2)

## Preliminary Outcomes

As part of the outcomes study, ICF collected data from students and other program stakeholders in spring 2019—via a student survey and site visits—to collect data on stakeholder perceptions of early program outcomes. An analysis of those data suggests the following preliminary program outcomes across EC and IP programs:

* **Development of employability skills for students**
* **Exposure to different career and college opportunities**
* **Increased student confidence**
* **Decreased financial burden on students and families**
* **Enhanced relationships with external partners**
* **Development of technical skills for students**
* **Meeting student needs and supporting future plans**

## Program Impact

ICF additionally conducted a rigorous quasi-experimental design (QED) to identify program impact on pathway program students compared to similar students in a matched comparison group for a variety of academic and behavioral outcomes. ICF researchers used propensity score matching (PSM) to identify the comparison group based on a variety of student demographic characteristics (e.g., race/ethnicity, limited English proficiency status, economically disadvantaged status) and baseline academic characteristics (e.g., Grade 8 MCAS scores). Findings from the analysis are broken out by pathway program type.

### EC Program Impact

The EC program impact analysis relied on a relatively large sample size (treatment: *n*=422; comparison: *n*=422). Overall, the EC program had several notable statistically significant impacts on a variety of student outcomes, including those related to advanced course taking, grade point average (GPA), graduating college-ready, attendance and discipline. A summary of key findings is as follows:

* **EC students significantly outperformed comparison students in advanced course taking.[[2]](#footnote-3) Specifically, EC students were about five times more likely to take an advanced course, two times more likely to take an AP course, and 11 times more likely to take a postsecondary credit course than the matched comparison group.**
* **EC students earned significantly higher GPAs than comparison students, in both overall GPA and advance course GPA, with effect sizes at 0.2.**
* **EC students were 1.6 times more likely to graduate with completion of the Massachusetts Core Curriculum (a college readiness indicator) than comparison students.**
* **EC students had significantly higher attendance rates than comparison students (93% vs. 88%), with a moderate effect size of 0.4.**
* **EC students had 30% fewer disciplinary incidents than the comparison group.**

### IP Program Impact

The IP program had fewer statistically significant impacts compared to the EC program, however that may be the result of the IP program having a comparatively smaller sample size (treatment: *n*=124; comparison: *n*=124)—making it more difficult to detect significance even for the same magnitude of impacts. The IP program impacts that were significant related to graduating college-ready, attendance, and discipline. A summary of key findings is as follows:

* **IP students were over two times more likely to graduate with completion of the Massachusetts Core Curriculum (a college readiness indicator) than comparison students.**
* **IP students had significantly higher attendance rates than comparison students (95% vs. 92%), with a moderate effect size of 0.3.**
* **IP students had 40% fewer disciplinary incidents than the comparison group.**

## Conclusions and Implications

Based on the results of the outcome study conducted in spring 2019, there is preliminary evidence that the IP and EC programs are providing students with a variety of employability, social-emotional skills, and technical skills, providing opportunities for students to learn about college and career, reducing the financial burden of postsecondary education on students and families, helping to connect school districts and postsecondary institutions to a variety of external partners, and meeting student needs and supporting their future plans.

To examine program impact, a quasi-experimental study (QED) was conducted and the IP and EC students were matched to comparison students with similar demographics. Results of the impact study show that the EC programs are having a significant positive impact on students in terms of advanced course taking, academic performance, college readiness, and behavior (attendance and discipline). The IP programs are having a significant positive impact on graduating college-ready and behavior (attendance and discipline).

An important limitation of this research is that it only covered the first year of program implementation and did not include any longer-term outcomes, such as the impact of the program on postsecondary education enrollment and retention, costs of college for students and families, and earnings of recently graduated students. In addition, this study only focused on nine programs (with just eight programs included in the impact study). Further, due to limitations on available data, ICF researchers did not have baseline academic data for all students or baseline attendance and discipline data. Without these data, it was not possible to control for all contributing factors in the observed outcomes. This limitation may have resulted in an over estimation of positive findings for the pathway programs. Further study examining multiple years of student pathway program participation—ideally with a larger sample size—on short-term and longer-term outcomes is recommended to understand the full impact of the HQCCP initiative on students in the Commonwealth.

# Introduction

In 2017, the Commonwealth of Massachusetts launched the High Quality College and Career Pathways (HQCCP) initiative to improve college and career readiness programming for secondary education students across the Commonwealth. This effort was supported, in part, by the multimillion dollar New Skills for Youth (NSFY) Grant Program, established by JP Morgan Chase & Co., the Council of Chief State School Officers, and the National Association of State Directors of Career Technical Education Consortium to promote college and career readiness initiatives at the state level. The Commonwealth of Massachusetts received a $100,000 NSFY grant in 2016 to create a three-year plan to increase career readiness among high school graduates and then a $2 million NSFY grant in 2017 to put the plan into action. The Massachusetts Department of Elementary and Secondary Education (DESE), the recipient of the grant, used the grant to expand the HQCCP initiative, which was already under development through other efforts of the Commonwealth.

This report documents findings from an evaluation of the first cohort of designated programs (made up of high schools, school districts, and institutions of higher education [IHEs]) to implement the HQCCP initiative in the 2018–19 school year.

## Background on the HQCCP Initiative

In early 2015, Governor Charlie Baker established the Massachusetts Workforce Skills Cabinet (WSC) through an Executive Order. The WSC aligned the Executive Offices of Education, Labor and Workforce Development, and Housing and Economic Development to develop a comprehensive economic growth agenda and implement a strategy to ensure that individuals can develop and continuously improve skills to meet the needs of employers in the Commonwealth. The HQCCP initiative was an outgrowth of the work of the WSC. The HQCCP initiative includes two types of pathways—Early College (EC) and Innovation Pathway (IP). Each type of pathway program has its own origins which are described in more detail in this section.

### Early College Pathways

Early College (EC) programs provide opportunities for high school students to take college-level courses while they are still in high school, providing a pathway to support student progression from high school to postsecondary education. EC programs depend on robust partnerships between high schools and IHEs and enable high school students to earn a significant number of college credits in a rigorous and supportive environment.

EC high schools became prominent in the last 17 years and research has documented positive impacts on high school graduation and postsecondary enrollment for participating students (Webb & Gerwin, 2014). One study found that EC students were more likely to graduate high school than their counterparts, with 90% of EC students receiving a diploma compared to 78% of students nationally (Webb & Gerwin, 2014). Another study found that EC students were significantly more likely to enroll in college than comparison students, with 80% of EC students enrolled in college compared to 71% of comparison students (Berger et al., 2013).

In January 2017, the Massachusetts Board of Elementary and Secondary Education (BESE) and Board of Higher Education (BHE) passed a joint resolution to launch an EC Initiative, intended to support the expansion of EC in Massachusetts and establish an EC Program Designation. In that same resolution, the Boards created the Early College Joint Committee (ECJC), a committee of both boards, to be ultimately responsible for approving the designation criteria and process.

The ECJC is also the governing body tasked with ultimately approving designated Massachusetts EC programs as recommended by Department of Higher Education (DHE) and Department of Elementary and Secondary Education (DESE) staff following the extensive application and review process.

### Innovation Pathways

Career pathway programs, which the U.S. Department of Education (2015) describes as being rooted in the formation of the first career academies in 1969, have been found to facilitate the transition from high school to college and career. According to a study by the University of Minnesota, students who participated in career and technical education (CTE) transition programs were significantly more likely than comparison students to have a clear career goal and a plan to achieve their academic goals upon high school graduation (Lekes et al., 2007). CTE students also reported feeling more prepared for college and career than their matched non-CTE counterparts (Lekes et al., 2007).

The Commonwealth’s support of career pathway programs was buttressed by receipt of the NSFY grant to address the need for greater career preparation and access to high-quality career pathways. In particular, the NSFY grant supported the development of strategies to scale high-quality career pathways that provide students with access to postsecondary and workforce credentials—with the goal of better preparing young people to prosper in the global economy.

In July 2017, the Commonwealth launched the IP career pathway initiative designed to connect student learning to an in-demand industry sector in the regional and state economy. Participation in this kind of pathway is intended to lead students to opportunities for meaningful careers in that industry sector and prepare for postsecondary education and training. In July 2017, the Commonwealth additionally launched a designation process for schools and districts developing IP programs.

## Required Pathway Components

The guiding principles that inform the core components of HQCCPs—both EC and IP—include **(1) Equitable Access**, (**2) Guided Academic Pathways**, **(3) Enhanced Student Support**, **(4) Relevant Connection to Career**, and **(5) Deep Partnerships**.

Using best practices from NSFY, DESE and DHE identified six components for the EC and IP programs that aligned with the five guiding principles. These components include: Advising, Labor Market Demand, Integrated Instruction, Work-Based Learning, Credential Preparation, and Postsecondary Linkages.

**Advising** combines career advising with personalized college and career plans for each student in the pathway program. Advising includes career and college access training and education for students in pathway programs. In addition, My Career and Academic Plan (MyCAP) is an online tool that school staff and students can use to create and monitor a student’s personalized learning plan. While MyCAP is not required statewide, the use of the tool is required for EC and IP designees. In particular, the advising component supports the second, third and fourth guiding principles regarding guided academic pathways, enhanced student support, and connection to career.

**Labor Market Demand** is a component of the pathway programs that aligns college and career opportunities with industry and employer demand. Both types of pathways are required to align their programming with career opportunities in a broad industry sector category that has high employer demand; however, the EC programs are not restricted to specific industries while the IPs do have that restriction. Specifically, IP designees must develop programming based on one or more of the five industry categories: manufacturing; information technology (IT); professional, scientific, and technical services; health care and social assistance; and finance and insurance. Labor market demand drives how partnerships choose guided academic pathways (the second principle), as well as how students are encouraged to make a connection to career (the fourth principle).

**Integrated Instruction** refers to the scope and sequence of courses and experiences that fit within the overall pathway program. Integrated instruction is required for both EC and IP programs, although the requirements are slightly different for each program. EC programs must offer dual-credit courses that lead to students obtaining at least 12 college credits. IP programs, on the other hand, must offer at least two technical courses aligned with a specific industry sector as well as at least two college-level courses. These college-level courses can include dual credit, AP courses, International Baccalaureate (IB), or other college-level courses (e.g., courses through Project Lead the Way). Integrated Instruction speaks to principles related to guided academic pathways and connection to career.

**Work-Based Learning** refers to the opportunity for students to receive hands-on training. This hands-on learning can come in the form of an internship, an intensive project (e.g., capstone) that requires students to apply what they have learned throughout the pathway, or other similar activities. While a range of activities qualify as work-based learning in EC, the IP requirements are more specific. For example, IP programs require that students either intern for 100 hours or complete a Capstone project aligned with an industry sector. These opportunities should include ongoing reflection (e.g., journal writing), use of the Massachusetts Work-Based Learning Plan, and an end-of-experience product such as an oral presentation or a written report. This component has been recognized as one of the most effective ways for students to make a connection to career.

**Credential Preparation** supports students pursuing and obtaining industry-recognized credentials. These credentials may include certificates that are valued on the labor market (e.g., Occupational Safety and Health Administration [OSHA] certification) or credit towards a long-term academic credential such as an Associate’s or Bachelor’s degree. The credential preparation requirements are the same for EC and IP programs. **Postsecondary Linkages** refers to an explicit link between pathway students and postsecondary education institutions. Credential preparation and postsecondary linkages allow for guided academic pathways (second principle) to occur; postsecondary linkages also depend on effective partnerships (fifth principle) between high schools and postsecondary education institutions.

Finally, all the components at play support the most important principle of equitable access and demonstrate that effective partnerships have been achieved.

## First Cohort of Designated EC and IP Programs

In April 2018, five programs were selected to receive state designation for their EC programs and another four programs were selected to receive designation for their IP programs, as shown in Table 1. These programs were provided technical assistance and networking opportunities from the Commonwealth regarding the implementation of their pathway programs. In addition, these first nine designees were also eligible for competitive implementation grants through the Commonwealth’s New Skills for Youth (NSFY) grant, worth approximately $140,000 each, to support the development of their pathway programs. All nine of these programs received those grants, which supported implementation during the 2018–19 school year.

Table 1. Overview of First Cohort of EC and IP Designees

|  |
| --- |
| EC Designees |
| * Bunker Hill Community College and Charlestown High School, Boston Public Schools * Bunker Hill Community College and Chelsea High School, Chelsea Public Schools * Salem State University and Salem High School * Massasoit Community College and New Heights Charter School of Brockton * Holyoke Community College and Holyoke Public Schools |
| IP Designees |
| * Worcester Public Schools * Nantucket Public Schools * Northampton Public Schools * Uxbridge Public Schools |

## Evaluation Overview

In 2017, DESE hired ICF to conduct an external evaluation of its HQCCP initiative, including the EC and IP programs. This evaluation focused on measuring planning, implementation, outcomes/impact, and sustainability of the first nine designated programs.

ICF used a comprehensive mixed-methods approach to evaluate the first cohort of designated HQCCP programs. Mixed-methods studies are preferable in evaluations of complex programs because they attend to the nuances of the program and employ a variety of data collection and analysis strategies that capitalize on the strengths and account for the weaknesses inherent in individual methods (Creswell & Plano Clark, 2007; Tashakkori & Teddlie, 1998). This approach allowed the evaluation team to confirm study conclusions by triangulating findings across multiple data sources. ICF used an array of qualitative and quantitative data collection and analytic methods to describe the implementation, outcomes, and sustainability of the HQCCPs, and conducted a rigorous quasi-experimental design (QED) study to estimate the impact of participation in HQCCPs upon key project outcomes.

While the full three-year evaluation consisted of three distinct studies—an implementation study, an outcomes/impact study, and a sustainability study—this report is specifically focused on the outcomes/impact study. This section includes details regarding the evaluation design that specifically pertains to the evaluation activities conducted for this report, rather than the evaluation overall.

The evaluation activities conducted for this report were designed to address the following research questions:

1. How do teachers, administrators, student leaders, and external partners perceive the quality, relevance, and effectiveness of grantees’ HQCCP work? How do students perceive the quality of HQCCP elements?
2. What impact has the building out of additional HQCCP elements had on student outcomes?

To address the first research question, ICF conducted one-day site visits at each of the nine designated program sites and conducted interviews and focus groups with the following stakeholders: program coordinators, student leaders, school and district administrators, instructional staff, and external partners. In addition, ICF conducted a student survey regarding student perceptions of their pathway program. The ICF team analyzed these qualitative and quantitative data to understand stakeholder perceptions regarding the pathway program and identify preliminary program outcomes.

To address the second research question, ICF collected a variety of extant student data from DESE including student demographic and outcome data for all students in school districts with a designated pathway program. ICF conducted a quasi-experimental study (QED) with propensity score matching (PSM) to compare differences in a variety of outcomes between students participating in a pathway program with a matched comparison group. One designated EC program, Massasoit Community College and New Heights Charter School of Brockton, was excluded from the analysis as all students from New Heights Charter School participated in the EC program (thus a comparison group could not be assembled from within the school) and it was not possible to find a suitable comparison school, particularly as the high school was an EC charter school.

For more details on the methodology used for this study and the overall evaluation design, please see Appendix A. Appendix B includes the data collection instruments used for the evaluation. Appendices C–E include technical details from the analysis, including from the survey, the school district-provided participation data, and the impact analysis, respectively.

## Purpose of this Report

This report provides findings from the impact/outcomes study of the HQCCP initiative after the first year of program implementation during the 2018–19 school year.[[3]](#footnote-4) Findings include preliminary program outcomes, as perceived by key stakeholders, and the results of a rigorous QED impact analysis. Implications for future program implementation and further study are discussed. [[4]](#footnote-5)

# Participation in the IP and EC Programs

This section provides an overview of the students who participated in the first cohort of designated EC and IP pathway programs as well as some of the activities that they participated in. While the focus of this report is not an in-depth look at how the program was implemented, in order to contextualize program outcomes and impact, it is important to understand who participated in the pathway programs and the types of activities that students experienced.

## Pathway Program Participants

According to data provided by school districts regarding program participation, there were 772 students who participated in the first cohort of designated EC and IP programs. Three-quarters (*n*=560) of these students were in an EC program and one-quarter (*n*=192) were in an IP program. Table 2 shows the breakout by high school.

Table 2. Student Participation by Program Type and High School

|  |  |
| --- | --- |
| **School** | **Percentage of Total Students (*n*=772)** |
| ***Early College Pathway*** | ***(n=580; 75.1%)*** |
| Charlestown High School (Boston Public Schools) | 6.6% |
| Chelsea High School (Chelsea Public Schools) | 38.6% |
| Holyoke High School (Holyoke Public Schools) | 13.1% |
| New Heights Charter School of Brockton | 34.0% |
| Salem High School (Salem Public Schools) | 7.8% |
| ***Innovation Pathway*** | ***(n=192; 24.9%)*** |
| Burncoat High School (Worcester Public Schools) | 12.5% |
| Doherty High School (Worcester Public Schools) | 13.0% |
| Nantucket High School (Nantucket Public Schools) | 10.4% |
| Northampton High School (Northampton Public Schools) | 14.1% |
| Uxbridge High School (Uxbridge Public Schools) | 50.0% |

*Source*: School-provided extant participation data

Note: Percentages may not total 100% due to rounding.

A demographic profile of students in EC and IP programs, using data provided by DESE, is provided in Table 3.[[5]](#footnote-6) Among EC students, 75% are upperclassmen, 59% are female, and 68% are Latinx. In addition, 73% are economically disadvantaged, 11% have limited English proficiency (LEP), and 8% receive Special Education services. Among IP students, over 68% are lowerclassmen, approximately 69% are male, and 61% are White. In addition, 42% are economically disadvantaged, 17% have LEP, and 10% receive Special Education services.

Table 3. Demographic Description of Students Participating in an EC or IP Program

|  |  |  |
| --- | --- | --- |
| Students Participating in an EC or IP Program (*n*=616) | EC | IP |
| Total Number of Students | 469 | 147 |
| Grade Level | - | - |
| Grade 9 | 1.5% | 25.2% |
| Grade 10 | 23.0% | 42.9% |
| Grade 11 | 41.6% | 23.1% |
| Grade 12 | 33.9% | 8.8% |
| Gender | - | - |
| Female | 59.1% | 31.3% |
| Male | 40.9% | 68.7% |
| Race/Ethnicity | - | - |
| Asian | 2.3% | 4.1% |
| Black | 11.5% | 12.2% |
| Latinx | 68.4% | 21.1% |
| White | 16.2% | 61.2% |
| Other | 1.5% | 1.4% |
| Economically Disadvantaged | 72.9% | 42.2% |
| LEP | 11.1% | 17.0% |
| Special Education | 8.1% | 10.2% |

*Source*: DESE-provided extant data (SIMS)

Note: Percentages may not total 100% due to rounding.

In addition, a significant portion of student survey respondents from both pathway programs reported that the highest level of education achieved by their parents was high school (46% of EC respondents and 25% of IP respondents) (Table C.3, Appendix C).

## Pathway Program Activities

According to data provided by school districts and the student survey, students participated in a range of activities related to their pathway program. For the most part, students in EC and IP programs had similar rates of participation in activities; notable differences between the two pathway program types are mentioned as appliable.

Students participated in a variety of advising activities as part of their EC or IP program. According to data provided by districts, student advising included one-on-one advising, classroom lessons, activities in Naviance, guest speakers, online activities, field trips, workshops, small group counseling, and college advising activities, among others (Table D.3, Appendix, D). Nearly all pathway program students (99.6%) participated in in-person advising sessions and over half (59%) participated in online career/academic advising (Table D.4, Appendix D). Of those students who participated in advising, students participated in in-person advising for an average of 37 hours and participated in online advising for an average of 10 hours over the course of the 2018–19 school year (Table D.5, Appendix D). EC programs had much higher average in-person advising hours compared to IP programs (46 hours compared to 9 hours, respectively). Nearly all students (99.5%) had individual career/academic plans by the end of the 2018–19 school year (Table D.6, Appendix D).

Student survey respondents also reported having participated in a variety of work-based learning activities, including:

* Learning information about the availability of jobs and employment related to one or more industries (e.g., information regarding the need for different careers, salaries, and other related information) (EC: 66%, IP: 69%)
* Listening to a guest speaker present on career information (EC: 70%, IP: 70%)
* Conducting labor market research (EC: 18%, IP: 16%)
* Attending a career day or job fair event (EC: 39%, IP: 50%)
* Participating in a job site visit or company tour (EC: 26%, IP: 28%)
* Participating in a job-shadowing experience (EC: 21%, IP: 14%)
* Taking one or more technical courses (related to an industry) (IP only: 63%)

For more information on student-reported participation in work-based learning activities, see Table C.6, Appendix C.

Districts also reported that 42% of EC students and 12% of IP students had participated in an internship or capstone project (Table D.7, Appendix D). For those students who participated, EC students averaged 21 hours and IP students averaged 67 hours for work on an internship or capstone (D.8, Appendix D).

In addition to work-based learning experiences, student survey respondents also reported having participated in a several activities providing postsecondary education experiences, including:

* Learning about options after high school graduation, such as earning a certificate, Associate’s degree, Bachelor’s degree, or other credential (EC: 75%, IP: 65%)
* Visiting a college campus (EC: 79%, IP: 33%)
* Learning about the costs of college and options for paying for college (e.g., financial aid, scholarships) (EC: 81%, IP: 53%)
* Learning what it takes to succeed in college (EC: 77%, IP: 46%)
* Taking one or more college-level courses (AP, IB, or dual credit) (IP only: 21%)

Further, according to data provided by DESE, 28% of EC students took a course for college credit (like a dual credit course) (see Figure 1 in Section IV).

For more information on student-reported participation in work-based learning activities, see Table C.6, Appendix C.

Districts also reported different student supports provided to students. In particular, districts reported that 99% of EC students and 80% of IP students received tutoring/mentoring to support their work in the pathway program. The average number of hours spent on tutoring/mentoring, for those students who participated, was 99 hours for EC students and 15 hours for IP students (Table D.8, Appendix D).

# Preliminary Program Outcomes

The following section includes several perceived program outcomes highlighted by IP and EC stakeholders (e.g., program coordinators, teachers, administrators, students). Many of these perceptions were shared during in-person interviews and focus groups during spring 2019 site visits or in the spring 2019 student survey. Although many of these preliminary outcomes are anecdotal, they represent some of the earliest program outcomes collected for the evaluation and are worthy of further exploration.

## Development of Employability Skills for Students

Students, staff, and administrators from almost every pathway program cited the effective transfer of employability skills to participants.[[6]](#footnote-7) Multiple grantees developed course content—to be delivered in advising or other courses—to explicitly teach employability skills, including study skills, interview skills, written and oral communication skills, and resume-writing skills. One teacher stated,

“….Our group is primarily ninth graders, but we’ve been working on just how to be a professional. So having them come in as pretty immature ninth graders and seeing them already, halfway during the school year, become a little bit more mature and present themselves in a way that…a lot of my seniors don’t hold themselves the same way these kids do.”

Other grantees indicated that by virtue of taking dual-credit college courses, their students learned valuable skills such as note-taking during lectures or how to study for mid-term exams. Additionally, grantees noted that college courses have helped students articulate their own vision for the future. According to one fiscal manager from an IP program, “It makes me proud to be part of this district….It’s important for [the students], when they enter college, or they go right to the workforce, that they have these skills that we wouldn’t have without grants like this.”

Students also reported on the development of employability skills in the survey—in particular, demonstrating ownership over their future plans. Using a four-point Likert scale, students were asked to rate a variety of potential program outcomes that applied to them.[[7]](#footnote-8) Eighty percent of EC students and 72% of IP students *agreed* or *strongly* *agreed* with the statement “My pathway program has helped me take ownership over my high school experience” (see Table C.13, Appendix C). In addition, students were also asked how helpful their pathway program has been in preparing them for learning new employability skills (e.g., time management, interpersonal communication). Eighty-eight percent of EC students and 89% of IP students found their program to be at least “somewhat helpful” (Table C.18, Appendix C).[[8]](#footnote-9)

## Exposure to Different Career and College Opportunities

Most of the program stakeholders explicitly discussed how students’ exposure to different career opportunities and college courses allowed them to explore what they like, or perhaps dislike, about a certain field. For example, one student completed an internship with an IT company and decided that he did not enjoy software development. He indicated that he was glad he found that out now (while in high school) and before spending a lot of time studying in that field. Another student was not happy with the college-level business course she was taking and decided to switch to a psychology course for the next semester which aligned more with her interests. Another student who was not very focused in school, according to a school administrator, enjoyed an IT summer internship so much that he began volunteering his time with the school’s IT department during the week. The school administrator added, “That’s the kind of situation that I’m excited about because he now has a course; he’s now focused. He knows what he wants to do. That was only one summer intern, one internship.” A teacher from another pathway program reported that students who were probably not college-bound are at least very seriously considering college as a result of the program, stating,

**Multiple Pathways to a Career**

“They’re learning that you don’t graduate from high school and become a nurse overnight and that you don’t have to go…[first] high school, [then] college, [and then become a] nurse. There’s multiple avenues to get to that end goal of being a nurse and the potential for them to do that is real, it’s not just a dream….So they can learn while they earn and make it a reality and not just a dream that they have to forgo.”

– School Administrator/Program Coordinator

“One student comes to mind who struggled sitting in class and now he’s kind of found his way and found something that he’s really interested in. I also think back to a lot of our kids, their parents never went to college or are in careers but aren’t in high-tech fields or real professional careers. So, giving them exposure to what the other opportunities are that are out there has been pretty successful.”

In addition to having a safe space to explore careers and college courses, students are also learning about the different paths available to them to pursue different careers. For example, students are learning that they do not need to follow a linear path of high school, college, and then career. They are learning that they could get a professional certification and/or college credits and work for a few years, then they could continue their education to get a degree with potential support from their employer.

Students and staff argued that these types of pathway programs are necessary mechanisms for serving those students who are traditionally underserved. Whether that is because it makes college more financially viable or because, as one administrator said, “it opens the doors to a lot of kids that wouldn’t have had the opportunity to have those doors opened,” these programs act as a stepping stone towards college and career for students in need of additional support.

Students also reported on their exposure to different college and career opportunities in the survey. Eighty-five percent of EC students and 70% of IP students *agreed* or *strongly* *agreed* with the statement “My pathway program has raised my awareness of college opportunities that I was not aware of previously.” In addition to raising awareness about college opportunities, students reported that their pathway program also encouraged them to enroll in postsecondary education. Specifically, 83% of EC students and 64% of IP students *agreed* or *strongly* *agreed* with the statement “My pathway program has encouraged me to enroll in a two-year or four-year college, technical school, or certificate program.” Regarding career opportunities, 80% of EC students and 77% of IP students *agreed* or *strongly* *agreed* with the statement “My pathway program has raised my awareness of potential work-related certifications or credentials.” In addition, 78% of EC students and IP students *agreed* or *strongly* *agreed* with the statement “My pathway program has motivated me to want to learn the skills needed for a specific job/career” (see Table C.13, Appendix C). Finally, students were also asked how helpful their pathway program has been in preparing them for learning about different career fields and gaining work experience in an industry in which they are interested. Ninety-one percent of EC students and 90% of IP students found their program to be at least *somewhat helpful* in preparing them for learning about different career fields. Eighty-one percent of IP students found their program to be at least *somewhat helpful* in providing work experience in an industry in which they are interested (Table C.18, Appendix C).[[9]](#footnote-10),[[10]](#footnote-11)

## Increased Student Confidence

A few program stakeholders reported that participation in dual-credit courses led to increased student confidence in their ability to go to college and be successful. Students who participated in college courses during high school reported gaining insight into the college experience and the expectations of college courses. School staff reported that students have been taking their college courses very seriously, learning to advocate for themselves, becoming more independent, and persisting in the face of difficulties. One teacher remarked that students demonstrated a sense of pride when they receive their grades for college courses, especially when they realized that all of the hard work they put into it has paid off. Additionally, students have learned about the resources available to them in college (such as tutoring and financial aid) to support their college goals. According to program stakeholders, many of the students participating in the pathway programs are first generation college-goers and, with additional support provided by the high school programs, participating students are seeing that they can do well in college.

|  |
| --- |
| **Setting Expectations for the College Experience** |
| “I think it [the EC program] helps set expectations to what students should experience in college. For an average person, graduating and attending college, you’re just hit with this reality that, hey, this is very different than what I expected in high school. But having the opportunity to experience beforehand while in high school with the support of your counselors and teachers, it’s very helpful because now you’ll know what to expect when you attend college. You’re not going to be surprised by the independence that you’ll have to undertake from your classes and the different types of schedules you’re going to have to have. So, I think the most important part of this program is how it sets you up and your expectations for college.”  – Early College Pathway Student |

Student survey respondents also reported increased confidence as a result of participation in their pathway program. Seventy-nine percent of EC students and 76% of IP students *agreed* or *strongly agreed* with the statement, “My pathway program has helped me build confidence about my ability to succeed in the future” (see Table C.13, Appendix C).

## Decreased Financial Burden on Students and Families

The majority of EC program stakeholders specifically indicated that their programs are decreasing the financial burden of college tuition for students and families by providing free dual-credit college courses. As a result of dual-credit courses, students are able to take prerequisite courses in high school and therefore can move forward in their desired major quickly once they graduate high school. Other students are bypassing remedial courses by passing high school classes that are aligned with college requirements (such as Statistics or Algebra), forgoing the need to take a placement exam. One stakeholder indicated that if a student takes full advantage of their EC programs, they can save up to $10,000 in college tuition fees and textbooks and can earn up to 12 credits.

## Enhanced Relationships with External Partners

As a requirement of the pathway program, each participating high school is partnered with a postsecondary institution (for the EC program) or an external organization (for the IP program). Several program stakeholders stated that their programs have supported the establishment of long-term relationships with their program partners as well as other local organizations such as city councils and mayors’ offices. Program leaders from two different programs shared that they have received support from their local city councils or mayor’s office for their pathway program. For example, one program stakeholder described how the city council raised money to provide academic scholarships for pathway program student recipients to use towards their college education upon graduation. Another program stakeholder stated, “As far as people working well together between the school department, the city, the chamber of commerce, school committee, city council…you know, there’s a lot of conversation taking place and a lot of open communications that really didn’t exist before.”

## Development of Technical Skills for Students

Multiple IP program stakeholders noted that students are walking away from their programs with concrete technical skills that will prepare them for careers in the IT, manufacturing, or nursing fields. For example, one stakeholder indicated that the IT students are supporting the high school’s IT department and providing technical assistance to teachers when IT issues arise in their classrooms. Stakeholders reported that the skills developed during the programs prepare students to get a job after high school with the goal of continuing their education while working.

|  |
| --- |
| **Female Students in a Male-Dominated Field** |
| One IP program is implementing an IT program in the high school. The computer science teacher recounted how she has taught computer science for many years and used to have maybe one female student in a class of 30 students. Now, with the IP program, she is seeing more and more female students enrolling in her computer science classes and has noticed that they are believing in themselves more, adding that, “they don’t have to just be one of those nerdy guys.” One female tenth-grade student in particular was mentioned as an example of how she has grown in her confidence and skills in computer science and has really benefited from the IP program. The teacher indicated that this student was not sure at first whether IT was the right field for her, but now thinks, “Yeah, I’m in. I can do this.”  During the student focus group, this particular student talked about her experience and how this program has exposed her to the IT and computer science field. She participated in the computer science courses available at the high school in ninth and tenth grade and also in a summer internship in 2018. She related that she is “super excited” now for her future in IT and feels like this opportunity will bring her to the “next level.” Additionally, the internship exposed her to many different aspects of computer science; she learned about troubleshooting software issues, computer hardware, imaging, and many other different topics. She stated, “…I liked that, and I feel like it was successful because I got exposure to multiple types of stuff, and it also made me interested in the computer science aspect of it. So, I think it [the IP program] was successful because of that.” |

## Meeting Student Needs and Supporting Future Plans

According to student survey data, EC and IP programs met most students’ needs. Specifically, when asked if their pathway program met their overall needs, 87% of EC students and 85% of IP students reported that their pathway program has either *met my needs a little* or *met my needs a lot* (see Table C.14, Appendix C). Generally, most respondents found their programs to be at least *somewhat helpful* in preparing students for postsecondary plans. Based on a 4-point scale, the most helpful aspect of the pathway program to EC students was “Staying on track to graduate on time from high school” (2.88). For IP students, the most helpful aspect was “Learning about different career fields” (2.87) (see Table C.18, Appendix C).

Generally, both types of pathway programs affected students’ plans for their future. Among EC students, 39% reported that their pathway program affected their plans for the future, and 45% of IP students reported the same (see Table C.16, Appendix C).

For more details on how perceptions of EC and IP pathway activities were broken out by various subgroups, see Appendix C.

# Program Impact

ICF conducted a QED with PSM to compare differences in a variety of outcomes between students participating in a pathway program with a matched comparison group. Results are presented in this section for each pathway program type, EC and IP.

## EC Impact

ICF explored the impact of the EC program on a variety of student academic and behavioral outcomes. A discussion of those results begins by sharing the results of the PSM that was used to assemble an equivalent comparison group for the EC students included in the study.

Note that one designated EC program, Massasoit Community College and New Heights Charter School of Brockton, was excluded from the analysis as all students from New Heights Charter School participated in the EC program (thus a comparison group could not be assembled from within the school) and it was not possible to find a suitable comparison school, particularly as the high school was a charter school devoted to EC.

### PSM

ICF used PSM to match each EC student with an equivalent peer in order to examine the effectiveness of the EC program. In particular, ICF used demographic data and Grade 8 English Language Arts (ELA) and math standardized test scores (when data were available) for the PSM (see Appendix A for more details). Out of the 469 EC students from four participating high schools, 422 (90%) were able to find close enough matches. Therefore, the analysis sample included a total of 844 students. Table 4 provides details of the sample before and after matching. As shown in the table, the EC student sample matches the comparison student sample with small non-significant differences in race/ethnicity and Grade 8 ELA/math scores.

Table 4. Analysis Sample Before and After Matching

|  | **Before Matching** | | | | **After Matching** | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **EC Stu.** | **Comparison**  **Stu.** | **Diff.** | **EC Stu.** | | **Comparison Stu.** | **Diff.** | |
| Number of Students | 469 | 8,360 | -7,891 | 422 | | 422 | 0 |
| Grade 9 | 7 | 2,309 | -2,302 | 7 | | 7 | 0 |
| Grade 10 | 108 | 1,998 | -1,890 | 86 | | 86 | 0 |
| Grade 11 | 195 | 1,903 | -1,708 | 177 | | 177 | 0 |
| Grade 12 | 159 | 2,154 | -1,995 | 152 | | 152 | 0 |
| Gender |  |  |  |  | |  |  |
| Female | 59.1% | 45.9% | 13.2\*\* | 57.8% | | 57.8% | 0 |
| Male | 40.9% | 54.1% | -13.2\*\* | 42.2% | | 42.2% | 0 |
| Race/Ethnicity |  |  |  |  | |  |  |
| Asian | 2.3% | 4.0% | -1.7\* | 1.7% | | 2.1% | -0.4 |
| Black | 11.5% | 11.0% | 0.5 | 10.7% | | 11.1% | -0.4 |
| Latinx | 68.4% | 48.4% | 20.0\*\* | 70.9% | | 66.4% | 4.5 |
| White | 16.2% | 33.3% | -17.1\*\* | 15.9% | | 19.0% | -3.1 |
| Other | 1.5% | 3.3% | -1.8\* | 0.9% | | 1.4% | -0.5 |
| Economically Disadvantaged | 72.9% | 57.5% | 15.4\*\* | 73.9% | | 73.9% | 0 |
| LEP | 11.1% | 21.3% | -10.2\*\* | 11.4% | | 11.4% | 0 |
| Special Education | 8.1% | 19.1% | -11.0\*\* | 8.5% | | 8.5% | 0 |
| Average ELA Scale Score at Grade 8 | 493  (*n=*89) | 489  (*n=*2,804) | 4 | 489  (*n=*73) | | 494  (*n=*73) | -5 |
| Average Math Scale Score at Grade 8 | 490  (*n=*89) | 488  (*n=*2,828) | 2 | 485  (*n=*73) | | 486  (*n=*73) | -1 |

*Source*: DESE-provided extant data (SIMS and MCAS)

Note: \**p*<.05; \*\**p*<.01

### Academic Outcomes

This section examines the EC program’s effect on students’ course taking, grade point average (GPA), SAT scores, and graduation and college plans.

#### Course Taking

One outcome of interest was advanced course taking. Figure 1 shows that EC students were significantly more likely than their comparison peers to take advanced, Advanced Placement (AP), and postsecondary credit courses.[[11]](#footnote-12) Specifically, 88% of EC students took at least one advanced course while only 60% comparison students did. Odds ratio (OR), a statistic that quantifies the strength of the association between two events, indicates that EC students were about five times more likely to take advanced courses than the comparison students. Regarding AP courses, 41% of EC students took at least one AP course compared to 27% in the comparison group. The odds ratio indicated that EC students were nearly two times more likely to take AP courses. Regarding postsecondary credit courses, 28% of EC students took at least one course for postsecondary credit compared to 3% of students who did so from the comparison group. The odds ratio indicated that EC students were over 11 times more likely to take courses for postsecondary credit, which provides strong evidence that the program has been effective in boosting college course taking.

Figure 1. Percentage of EC Students Took At Least One Advanced, AP, or Postsecondary Credit Course in 2019

*Source*: DESE-provided extant data (SCS)

Note: \**p*<.05; \*\**p*<.01

Analysis of covariance (ANCOVA) was conducted to examine whether the effect of the EC program remains after controlling for student demographics and previous academic performance. Table 5 provides ANCOVA results with controlling only for demographic variables. This analysis included the entire EC analysis sample of 844 students. After controlling for the demographic variables, the effect of participating the EC program remained significant on taking at least one advanced course, AP course, and postsecondary credit course.

Table 5. ANCOVA Results of Course Taking

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Advanced Course**  **(*n*=844)** | | | **AP Course**  **(*n*=844)** | | | **Postsecondary Credit Course (*n*=844)** | | |
|  | **F** | **df** | **Sig.** | **F** | **df** | **Sig.** | **F** | **df** | **Sig.** |
| EC Program | 101.32 | 1 | .000\*\* | 21.31 | 1 | .000\*\* | 115.92 | 1 | .000\*\* |
| Economically Disadvantaged | 1.37 | 1 | .241 | 0.67 | 1 | .412 | 7.06 | 1 | .008\*\* |
| Race/Ethnicity | 12.99 | 1 | .000\*\* | 6.69 | 1 | .010\*\* | 13.69 | 1 | .000\*\* |
| Gender | 2.05 | 1 | .153 | 4.65 | 1 | .031\* | 0.02 | 1 | .903 |

*Source*: DESE-provided extant data (SCS)

Note: \**p*<.05; \*\**p*<.01

Because previous academic performance is usually a strong predictor of student academic outcomes, ICF added Grade 8 ELA and math scores to the ANCOVA model to more accurately examine the effect of the EC program and test whether the effect remained after controlling for previous performance. Due to data availability, only about 17% of the EC sample was included in this analysis, which is too small for results to be generalizable to the entire EC sample.

We have still provided the results to provide information about a portion of the sample, but caution is strongly urged in interpreting the results. As shown in Table 6, after controlling for demographics and baseline academic performance, the effect of participating in the EC program remained significant on taking advanced and postsecondary credit courses, but not on AP courses.

Table 6. ANCOVA Results of Couse Taking for Students with Baseline Academic Data

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Advanced Course**  **(*n*=146)** | | | **AP Course**  **(*n*=146)** | | | **Postsecondary Credit Course**  **(*n*=146)** | | |
|  | **F** | **df** | **Sig.** | **F** | **df** | **Sig.** | **F** | **Df** | **Sig.** |
| EC Program | 5.35 | 1 | .022\* | 0.20 | 1 | .659 | 33.72 | 1 | .000\*\* |
| Grade 8 ELA | 4.10 | 1 | .045\* | 3.33 | 1 | .070 | 0.93 | 1 | .761 |
| Grade 8 Math | 2.35 | 1 | .128 | 2.78 | 1 | .098 | 2.47 | 1 | .119 |
| Economically Disadvantaged | 2.10 | 1 | .150 | 0.10 | 1 | .755 | 5.90 | 1 | .016\* |
| Race/Ethnicity | 0.03 | 1 | .873 | 2.59 | 1 | .110 | 1.75 | 1 | .189 |
| Gender | 3.18 | 1 | .077 | 0.84 | 1 | .362 | 2.58 | 1 | .111 |

*Source*: DESE-provided extant data (SIMS, MCAS and SCS)

Note: \**p*<.05; \*\**p*<.01

#### GPA

Similar to the course taking findings, the study also found strong effects of EC program participation on GPA.[[12]](#footnote-13) As shown in Table 7, the overall GPA of EC students was about 0.3 points higher (2.62 vs. 2.30) than the comparison students, with a small effect size of 0.24. The small effect size should not be interpreted to be inconsequential; it is not uncommon for effect sizes in education research to have smaller effect sizes (under 0.2) (Bakker, Cai, English, Kaiser, Mesa, & Van Dooren, 2019). EC students’ GPA for advanced courses was also statistically higher than the comparison peers, with an effect size of 0.23. GPA for AP courses also favored the EC group but the difference between the two groups was not statically significant. Regarding the GPA for courses earning postsecondary credit, comparison students earned an average GPA of 3.0 while EC students had lower GPA of 2.35. A potential explanation for this finding could be that comparison students who were not in the EC program but had the motivation and capability to take postsecondary courses were top students in schools. However, since these data came from a very small sample (*n=*22) and was not statistically significant, future study is needed to explore this outcome.

Table 7. Results of GPA for Early College Pathway and Comparison Students

|  | **EC Students** | | | **Comparison Students** | | |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***n*** | **Mean** | **SD** | ***n*** | **Mean** | **SD** | ***p* value** | **Effect Size (Cohen’s *d*)** |
| Overall GPA | 410 | 2.62 | .87 | 410 | 2.30 | 1.08 | .000\*\* | 0.24 |
| Advanced Course GPA | 217 | 2.77 | .96 | 217 | 2.44 | 1.14 | .001\*\* | 0.23 |
| AP Course GPA | 59 | 2.71 | 1.27 | 59 | 2.50 | 1.29 | .307 | - |
| Postsecondary Course GPA | 11 | 2.35 | 1.00 | 11 | 3.00 | .58 | .108 | - |

*Source*: DESE-provided extant data (SIMS and SCS)

Note: \**p*<.05; \*\**p*<.01

ANCOVA was conducted to examine whether the effect of the EC program remained after controlling for students’ demographics and previous academic performance. As shown in Table 8 and Table 9, the program effect remained strong for overall GPA after controlling for demographics and previous academic performances.

Table 8. ANCOVA Results of GPA

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Overall GPA**  **(n=832)** | | | **Advanced Course GPA**  **(n=597)** | | |
|  | **F** | **df** | **Sig.** | **F** | **Df** | **Sig.** |
| EC Program | 24.49 | 1 | .000\*\* | 6.56 | 1 | .011\* |
| Economically Disadvantaged | 16.10 | 1 | .000\*\* | 2.69 | 1 | .101 |
| Race/Ethnicity | 25.36 | 1 | .000\*\* | 11.00 | 1 | .001\*\* |
| Gender | 8.49 | 1 | .004\*\* | 3.95 | 1 | .047 |

*Source*: DESE-provided extant data (SIMS and SCS)

Note: \**p*<.05; \*\**p*<.01

Table 9. ANCOVA Results of GPA for Students with Baseline Academic Data

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Overall GPA**  **(*n*=146)** | | | **Advanced Course GPA**  **(*n*=97)** | | |
|  | **F** | **df** | **Sig.** | **F** | **Df** | **Sig.** |
| EC Program | 10.97 | 1 | .001\*\* | 4.28 | 1 | .041\* |
| Grade 8 ELA | 0.01 | 1 | .908 | 3.12 | 1 | .081 |
| Grade 8 Math | 27.00 | 1 | .000\*\* | 1.84 | 1 | .179 |
| Economically Disadvantaged | 0.02 | 1 | .904\* | 1.36 | 1 | .248 |
| Race/Ethnicity | 0.002 | 1 | .961 | 3.46 | 1 | .066 |
| Gender | 1.046 | 1 | .308 | 1.07 | 1 | .304 |

*Source*: DESE-provided extant data (SIMS, MCAS, and SCS)

Note: \**p*<.05; \*\**p*<.01

#### SAT

SAT scores were analyzed for Grade 11 students only, based on the assumption that most Grade 11 students took the SAT during a spring administration and so could have had time to be impacted by the EC program (in contrast, while most Grade 12 students take the SAT in the fall administration, they would not have been exposed to the program treatment for long enough to attribute any potential score differences to participation in the program). As a result of focusing on Grade 11 students only, the sample size for this outcome indicator was rather small (*n=*47 for each group). As Figure 2 shows, EC students and comparison students had the same score in SAT Reading, but the SAT Math scores for EC students were 20 points higher than the comparison group. Neither of the differences were statistically significant. Caution is urged in interpreting these results due to the small sample size.

Figure 2. SAT Reading and Math Scores by EC Participation

*Source*: DESE-provided extant data (College Board Data)

Due to the lack of significant results in the descriptive analysis, ANCOVA was not conducted.

#### Graduation and College Plans

Analysis for graduation outcomes was conducted for Grade 12 students only, which included 152 students in EC and 152 in the comparison group. As shown in Figure 3, the EC group had a lower graduation rate than the comparison group (89% vs. 93%), however this difference was not significant. Notably, the EC students did have a higher rate of graduating and completing the Massachusetts Core Curriculum, a college readiness indicator, than comparison students (82% vs. 70%) and this difference was statistically significant. Specifically, EC students were 1.6 times more likely to graduate with completing the MCC than their peers. In addition, more EC students planned to go to a 2- or 4-year college after high school graduation than the comparison students (80% vs. 72%), however this finding was not significant.

Figure 3. Graduation Rates and College Plans by EC Participation

*Source*: DESE-provided extant data (SIMS)

Note: \**p*<.05; \*\**p*<.01

After controlling demographic covariates, the positive effect of participating in an EC program remained significant for graduating and completing the MCC (Table 10), suggesting that the EC program had an impact in preparing students for college.

Table 10. ANCOVA Results of Graduation

|  |  |  |  |
| --- | --- | --- | --- |
| **ANCOVA** | **Graduate with MCC**  **(n=304)** | | |
|  | **F** | **df** | **Sig.** |
| EC Program | 4.46 | 1 | .035\* |
| Economically Disadvantaged | 0.01 | 1 | .944 |
| Race/Ethnicity | 7.64 | 1 | .006\*\* |
| Gender | 1.45 | 1 | .231 |

*Source*: DESE-provided extant data (SIMS)

Note: \**p*<.05; \*\**p*<.01

### Behavioral Outcomes

This section examines the EC program’s effect on students’ attendance rates and disciplinary incident occurrence rates.

#### Attendance

As shown in Figure 4, EC students had significantly higher attendance rates compared to their peers (93% vs. 88%), with a moderate effect size of 0.41.

Figure 4. Attendance Rates by EC Participation

*Source*: DESE-provided extant data (SIMS)

Note: \**p*<.05; \*\**p*<.01

ANCOVA was conducted to examine whether the effect of the EC program remained after controlling student demographics and previous academic performances. Table 11 provides ANCOVA results with controlling only demographic variables. This analysis included the entire analysis sample of 844 students. After controlling the demographic variables, the positive effect of participating the EC program remained significant on attendance rates. However, when the previous academic performance was controlled, the effect of participating in the EC program was no longer significant (Table 12). Caution is strongly urged in interpreting this finding since this ANCOVA was explorational and only included students with Grade 8 ELA and math data, which accounts for less than one fifth of the EC sample.

Table 11. ANCOVA Results of Attendance

|  |  |  |  |
| --- | --- | --- | --- |
|  | **ANCOVA for Attendance Rate (n=844)** | | |
|  | **F** | **df** | **Sig.** |
| EC Program | 37.60 | 1 | .000\*\* |
| Economically Disadvantaged | 4.47 | 1 | .035\* |
| Race/Ethnicity | 3.52 | 1 | .061 |
| Gender | 5.17 | 1 | .023\* |

*Source*: DESE-provided extant data (SIMS and SCS)

Note: \**p*<.05; \*\**p*<.01

Table 12. ANCOVA Results of Attendance with Baseline Academic Data

|  |  |  |  |
| --- | --- | --- | --- |
|  | **ANCOVA for Attendance Rate (n=146)** | | |
|  | **F** | **df** | **Sig.** |
| EC Program | 1.71 | 1 | .193 |
| Grade 8 ELA | 0.07 | 1 | .787 |
| Grade 8 Math | 5.59 | 1 | .019\* |
| Economically Disadvantaged | 0.00 | 1 | .999 |
| Race/Ethnicity | 0.24 | 1 | .624 |
| Gender | 0.88 | 1 | .351 |

*Source*: DESE-provided extant data (SIMS and MCAS)

Note: \**p*<.05; \*\**p*<.01

#### Disciplinary Incidents

As shown in Figure 5, the occurrence of disciplinary incidents was found to be significant lower in the EC group than the comparison group (2% vs. 7%). The odds ratio of 0.3 indicated that the occurrence of disciplinary incidents in the EC group were 30% less than the comparison group.

Figure 5. Disciplinary Incident Rates by EC Participation

*Source*: DESE-provided extant data (SIMS and SSDR)

Note: \**p*<.05; \*\**p*<.01

ANCOVA was conducted to examine whether the effect of the EC program remained after controlling for student demographics and previous academic performance. After controlling these covariates, the positive effect of participating in the EC program remained significant on disciplinary incident occurrence rates. Again, caution is strongly urged in interpreting this finding since this ANCOVA only included students with Grade 8 ELA and math standardized test score data, which accounts for less than one fifth of the EC sample.

Table 13. ANCOVA Results of Disciplinary Incident Rates

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Disciplinary Incident Rate (n=844)** | | |
|  | **F** | **df** | **Sig.** |
| EC Program | 10.65 | 1 | .001\*\* |
| Economically Disadvantaged | 4.93 | 1 | .027\* |
| Race/Ethnicity | 1.12 | 1 | .290 |
| Gender | 0.54 | 1 | .465 |

*Source*: DESE-provided extant data (SIMS and SSDR)

Note: \**p*<.05; \*\**p*<.01

Table 14. ANCOVA Results of Disciplinary Incident Rates for Students with Baseline Academic Data

|  | **Disciplinary Incident Rate (n=146)** | | |
| --- | --- | --- | --- |
|  | **F** | **df** | **Sig.** |
| EC Program | 8.88 | 1 | .003\*\* |
| Grade 8 ELA | 0.52 | 1 | .471 |
| Grade 8 Math | 0.34 | 1 | .557 |
| Economically Disadvantaged | 0.58 | 1 | .448 |
| Race/Ethnicity | 1.38 | 1 | .243 |
| Gender | 0.12 | 1 | .731 |

*Source*: DESE-provided extant data (SIMS, MCAS and SSDR)

Note: \**p*<.05; \*\**p*<.01

## IP Impact

ICF explored the impact of the IP program on a variety of student academic and behavioral outcomes. A discussion of those results begins by sharing the results of the PSM that was used to assemble an equivalent comparison group for the IP students included in the study, before looking at the results of the impact analysis.

### PSM

ICF used PSM to match each IP student with an equivalent peer in order to examine the effectiveness of the program. In particular, ICF used demographic data and Grade 8 ELA and math standardized test scores (when data were available) for the PSM (see Appendix A for more details). Out of the 147 IP students from five participating high schools, 124 (84%) were able to find close enough matches. Therefore, our analysis sample includes a total of 248 students. Table 15 provides details of the sample before and after matching. As shown in the table, the IP student sample matches the comparison student sample with small non-significant differences in race/ethnicity and Grade 8 ELA scores.

Table 15. Analysis Sample Before and After Matching

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Before Matching** | | | | **After Matching** | | | |
|  | **IP Stu.** | **Comparison**  **Stu.** | **Diff.** | **IP Stu.** | | **Comparison Stu.** | **Diff.** | |
| Number of Students | 147 | 8,360 | -8,213 | 124 | | 124 | 0 | |
| Grade 9 | 37 | 2,309 | -2,272 | 28 | | 28 | 0 | |
| Grade 10 | 63 | 1,998 | -1,935 | 51 | | 51 | 0 | |
| Grade 11 | 34 | 1,903 | -1,869 | 33 | | 33 | 0 | |
| Grade 12 | 13 | 2,154 | -2,141 | 12 | | 12 | 0 | |
| Gender |  |  |  |  | |  |  |
| Female | 31.3% | 45.9% | -14.6\*\* | 32.3% | | 32.3% | 0 | |
| Male | 68.7% | 54.1% | -14.6\*\* | 67.7% | | 67.7% | 0 | |
| Race/Ethnicity |  |  |  |  | |  |  |
| Asian | 4.1% | 4.0% | 0.1 | 0 | | 0 | 0 | |
| Black | 12.2% | 11.0% | 1.2 | 11.3% | | 10.5% | 0.8 | |
| Latinx | 21.1% | 48.4% | -27.3\*\* | 19.4% | | 18.5% | 0.9 | |
| White | 61.2% | 33.3% | 27.9\*\* | 68.5% | | 69.4% | -0.9 | |
| Other | 1.4% | 3.3% | -1.9\* | .8% | | 1.6% | -0.8 | |
| Economically Disadvantaged | 42.2% | 57.5% | -15.3\*\* | 38.7% | | 38.7% | 0 |
| LEP | 17.0% | 21.3% | -4.3\*\* | 15.3% | | 15.3% | 0 |
| Special Education | 10.2% | 19.1% | -8.9\*\* | 12.1% | | 12.1% | 0 |
| Average ELA Scale Score at Grade 8 | 497  (*n=*80) | 489  (*n=*2,804) | 8\* | 495  (*n=*65) | | 505  (*n=*65) | -10\*\* | |
| Average Math Scale Score at Grade 8 | 495  (*n=*82) | 488  (*n=*2,828) | 7\* | 494  (*n=*65) | | 496  (*n=*65) | -2 | |

*Source*: DESE-provided extant data (SIMS, MCAS)

Note: \**p*<.05; \*\**p*<.01

### Academic Outcomes

This section examines the IP program’s effect on students’ course taking, GPA, SAT scores, and graduation and college plans.

#### Course Taking

Figure 6 shows that compared to their peers, IP students took advanced courses at a similar rate, took AP courses at a higher rate, and took courses for postsecondary credit at a lower rate. None of the differences were statistically significant, however.

Figure 6. Percentage of IP Students Who Took At Least One Advanced, AP, and Postsecondary Credit Course in 2019

*Source*: DESE-provided extant data (SIMS)

Due to the lack of significant results in the descriptive analysis, ANCOVA was not conducted.

#### GPA

As shown in Table 16, the overall GPA of IP students was slightly higher (2.98 vs. 2.86) than the comparison students, though the finding was not statistically significant.[[13]](#footnote-14) IP students’ GPA for advanced courses was lower than the comparison group (2.89 vs. 3.01), though this finding was also not statistically significant. For the AP course GPA, IP students had a higher GPA than comparison students (3.18 vs. 2.68), however, this finding, like the others, was not statistically significant. In addition, the AP course GPA comparison came from a very small sample (*n=*4 for each group) and so caution is urged in interpreting these results.

Table 16. Results of GPA for IP Students and Comparison Students

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **IP Students** | | | **Comparison Students** | | | ***p* value** | **Effect Size (Cohen’s *d*)** |
|  | ***n*** | **Mean** | **SD** | **n** | **Mean** | **SD** |  |  |
| Overall GPA | 123 | 2.98 | .70 | 123 | 2.86 | .91 | .153 | - |
| Advanced Course GPA | 55 | 2.89 | .93 | 55 | 3.01 | 1.00 | .533 | - |
| AP Course GPA | 4 | 3.18 | .81 | 4 | 2.68 | .97 | .412 | - |
| Postsecondary Course GPA | 0 | - | - | 0 | - | - | - | - |

*Source*: DESE-provided extant data (SIMS and SCS)

Note: \**p*<.05; \*\**p*<.01

Due to the lack of significant results in the descriptive analysis, ANCOVA was not conducted.

#### SAT

SAT scores were analyzed for Grade 11 students only, based on the assumption that most Grade 11 students took the SAT during a spring administration, and so could have had time to be impacted by the IP program (in contrast, while most Grade 12 students take the SAT in the fall administration, they would not have been exposed to the program treatment for long enough to attribute any potential score differences to participation in the program). As a result of focusing on Grade 11 students only, the sample size for this outcome indicator was very small (*n=*22 for each group). As Figure 7 shows, IP students had lower SAT Reading and SAT Math scores than comparison students, but neither of the differences were statistically significant. Caution is urged in interpreting these results due to the small sample size.

Figure 7. SAT Scores by IP Participation

*Source*: DESE-provided extant data (College Board Data)

Due to the lack of significant results in the descriptive analysis, ANCOVA was not conducted.

#### Graduation and College Plans

Analysis for graduation outcomes was conducted for Grade 12 students only, which included 12 students in IP and 12 in the comparison group.

As shown in Figure 8, the IP group had a lower graduation rate than the comparison group (83% vs. 100%), however this difference was not significant. Notably, the IP students did have a higher rate of graduating and completing the MCC, a college readiness indicator, than comparison students (75% vs. 33%) and this difference was statistically significant. Specifically, IP students were 2.1 times more likely to graduate with completing the MCC than their peers. In addition, more IP students planned to go to a 2- or 4-year college after high school graduation than the comparison students (67% vs. 50%), however this finding was not significant. Caution is urged in interpreting these results due to the small sample size.

Figure 8. Graduation and College Plans by IP Participation

*Source*: DESE-provided extant data (SIMS and SCS)

Note: \**p*<.05; \*\**p*<.01

Due to the small sample size, ANCOVA was not conducted.

### Behavioral Outcomes

This section examines the IP program’s effect on students’ attendance rates and disciplinary incident occurrence rates.

#### Attendance

As shown in Figure 9, IP students had significantly higher attendance rates compared to their peers (95% vs. 92%), with a small effect size of 0.29.

Figure 9. Attendance Rate by Group and IP Participation

*Source*: DESE-provided extant data (SIMS and SCS)

Note: \**p*<.05; \*\**p*<.01

ANCOVA results show that the positive effect of the IP program remained significant when controlling for demographic variables (Table 17). This analysis included the entire analysis sample of 248 IP students. However, when the previous academic performance was controlled, the effect of participating the IP program was no longer significant (Table 18). Caution is strongly urged in interpreting this finding since this ANCOVA was explorational and only included students with Grade 8 ELA and math standardized test data, which accounts for about half of the IP sample.

Table 17. ANCOVA Results of Attendance Rates

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Attendance Rate (n=248)** | | |
|  | **F** | **d** | **Sig.** |
| IP Program | 5.21 | 1 | .023\* |
| Economically Disadvantaged | 0.36 | 1 | .549\* |
| Race/Ethnicity | 1.03 | 1 | .312 |
| Gender | 1.24 | 1 | .266 |

*Source*: DESE-provided extant data (SIMS)

Note: \**p*<.05; \*\**p*<.01

Table 18. ANCOVA Results of Attendance Rates for Students with Baseline Academic Data

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Attendance Rate (n=130)** | | |
|  | **F** | **d** | **Sig.** |
| IP Program | 0.60 | 1 | .440 |
| Grade 8 ELA | 0.10 | 1 | .752 |
| Grade 8 Math | 9.24 | 1 | .003\*\* |
| Economically Disadvantaged | 2.04 | 1 | .156 |
| Race/Ethnicity | 0.50 | 1 | .479 |
| Gender | 1.79 | 1 | .184 |

*Source*: DESE-provided extant data (SIMS and MCAS)

Note: \**p*<.05; \*\**p*<.01

#### Disciplinary Incidents

As shown in Figure 10, the occurrence of disciplinary incidents was found to be significant lower in the IP group than the comparison group (5% vs. 13%). The odds ratio of 0.4 indicated that the occurrence of disciplinary incidents in the IP group was 40% less than the comparison group.

Figure 10. School Disciplinary Incident Rate by Group and IP Participation

*Source*: DESE-provided extant data (SIMS and SSDR)

Note: \**p*<.05; \*\**p*<.01

ANCOVA results show that when controlling demographic and baseline academic performance, the effect of the IP program on lower disciplinary incident rates remained significant (Table 19 and Table 20).

Table 19. ANCOVA Results of Disciplinary Incident Rates

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Disciplinary Incident Rate (*n*=248)** | | |
|  | **F** | **d** | **Sig.** |
| IP Program | 5.22 | 1 | .023\* |
| Economically Disadvantaged | 1.36 | 1 | .244 |
| Race/Ethnicity | 7.04 | 1 | .008\*\* |
| Gender | 5.54 | 1 | .019\* |

*Source*: DESE-provided extant data (SIMS and SSDR)

Note: \**p*<.05; \*\**p*<.01

Table 20. ANCOVA Results of Disciplinary Incident Rates for Students with Baseline Academic Data

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Violent Incident Occurrence Rate (*n*=130)** | | |
|  | **F** | **d** | **Sig.** |
| IP Program | 4.85 | 1 | .030\* |
| Grade 8 ELA | 4.00 | 1 | .048\* |
| Grade 8 Math | 0.73 | 1 | .787 |
| Economically Disadvantaged | 2.38 | 1 | .126 |
| Race/Ethnicity | 4.12 | 1 | .044\* |
| Gender | 3.77 | 1 | .054 |

*Source*: DESE-provided extant data (SIMS, MCAS and SCS)

Note: \**p*<.05; \*\**p*<.01

# Conclusions and Recommendations

Based on the results of ICF’s study, there is evidence that the EC programs are having a significant positive impact on students advanced course taking, academic performance, college readiness, and behavior (attendance and discipline). The IP programs are having a significant positive impact on graduating college-ready and behavior (attendance and discipline). Although the IP program had fewer statistically significant impacts compared to the EC program, this may be the result of the IP program having a smaller sample size for the impact analysis—making it more difficult to detect significance even for the same magnitude of impacts. The difference in the impacts for EC and IP should not necessarily be misconstrued to suggest that one pathway program is more successful than the other.

In addition to the program impacts demonstrated by the impact analysis, there is preliminary evidence that both the IP and EC programs are providing students with a variety of employability, social-emotional skills, and technical skills, providing opportunities for students to learn about college and career, reducing the financial burden of postsecondary education on students and families, helping to connect school districts and postsecondary institutions to a variety of external partners, and meeting student needs and supporting their future plans.

An important limitation of this research is that it covers only the first year of program implementation and does not include any longer-term outcomes, such as the impact of the program on postsecondary education enrollment and retention, costs of college for students and families, and earnings of recently graduated students. In addition, this study only focuses on nine programs (with just eight programs included in the impact study). Further, due to limitations on available data, ICF researchers did not have baseline academic data for all students or baseline attendance and discipline data. Without these data, it was not possible to control for all contributing factors in the observed outcomes. This limitation may have resulted in an over estimation of positive findings for the pathway programs.

Further study examining multiple years of student pathway program participation—ideally with a larger sample size—on short-term and longer-term outcomes is recommended to understand the full impact of the HQCCP initiative on students in the Commonwealth.

# References

Bakker, A., Cai, J., English, L. Kaiser, G., Mesa, V., & Van Dooren, W. (2019). Beyond small, medium, or large: Points of consideration when interpreting effect sizes. *Educational Studies in Mathematics,* *102,* 1–8. https://doi.org/10.1007/s10649-019-09908-4

Berger, A., Turk-Bicakci, L., Garet, M., Song, M., Knudson, J., Haxton, C., Cassidy, L. (2013). *Early college, early success: Early college high school initiative impact study* [PDF file]. Retrieved from <https://files.eric.ed.gov/fulltext/ED577243.pdf>

Creswell, J., & Plano Clark, V. (2007). *Designing and conducting mixed methods research.* Thousand Oaks, CA: Sage.

Lekes, N., Bragg, D., Loeb, J., Oleksiw, C., Marszalek, J., Brooks-LaRaviere, M., Zhu, R., Kremidas, C., Akukwe, G., Lee, H., & Hood, L. (2007). *Career and technical education pathway programs, academic performance, and the transition to college and career* [PDF file]. Retrieved from <https://files.eric.ed.gov/fulltext/ED497342.pdf>

U.S. Department of Education, Office of Career, Technical, and Adult Education. (2015). *The evolution and potential of career pathways* [PDF file]. Retrieved from <http://connectingcredentials.org/wp-content/uploads/2015/05/The-Evolution-and-Potential-of-Career-Pathways.pdf>.

Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches (Vol. 46).* Thousand Oaks, CA: Sage Publications.

Webb, M., & Gerwin, C. (2014). *Early college expansion: Propelling students to postsecondary success, at a school near you* [PDF file]. Retrieved from <https://files.eric.ed.gov/fulltext/ED559689.pdf>

# Appendix A. Methodology

## Impact Analysis

### Overview of Methodology and Analysis

To understand the effectiveness of the HQCCP initiative, a quasi-experimental design was utilized to track performance of pathway students from Grade 9 to Grade 12along with those from a matched comparison group. Pathway students who participated the program in 2018-2019 were matched to non-pathway students within their school or district and then student performance outcomes were reported after one year of program participation. To establish an equivalent comparison group, student-level propensity score matching (PSM) was utilized to match the pathway students with non-pathway students based on their demographics (i.e., gender, ethnicity, limited English proficiency [LEP] status, special education status, and economically disadvantaged status). When data were available, students’ Grade 8 English and math MCAS standardized test scores were also used to control baseline academic performance.

After the comparison group was established, research questions were first addressed by basic descriptive statistics and examined by significance tests, like chi-square and t tests. Specifically, the following outcomes were examined and compared between pathway and comparison students for each of the pathway programs (Early College [EC] and Innovation Pathway [IP]):

* GPA
* Participation in Advanced Courses, AP Courses, Postsecondary Credit Courses
* Attendance Rate and Disciplinary Incident Rate
* Graduation

For statistically significant findings, analysis of covariance (ANCOVA) was used to test the main effects by controlling for the effects of selected variables, including demographics and baseline academic performances, which usually co-vary with the dependent variables. ANCOVA removed the potential confounding effects from other covariates and examine the “true impact” of the program.

### Propensity Score Matching

This section presents a detailed description of the PSM methodology for selecting the sample used in this study.

The propensity score is the probability of treatment assignment conditional on observed characteristics. The propensity score allows one to design and analyze an observational (nonrandomized) study so that it mimics some of the particular characteristics of a randomized controlled trial. In particular, the propensity score is a balancing score: the distribution of covariates will be similar between treated and untreated subjects.

In this study, pathway students were matched with comparison students in the same school or district without replacement, meaning that once a comparison student was matched to a pathway student, he/she was no longer available in the pool and could not be matched to another pathway student. The matching process also used a combination of exact and nearest neighbor PSM at the student level to decrease the distance, or difference, between pathway and comparison groups. There is broad support in the literature for these matching procedures (Rosenbaum & Rubin, 1985; Smith, 1997; Stuart, 2010). For example, Stuart (2010) described performing an exact match on key covariates such as race or gender followed by using propensity scores to further guide the match (Stuart, 2010, p. 6). Likewise, Rosenbaum and Rubin (1985) described their approach that provided for an exact match on gender and then propensity scores to determine the closest match or nearest neighbor.

Table A.1 shows the detail of the matching methodology and variables. Students were matched within schools, and then pooled together to form the final analysis sample.

Table A.1. Propensity Score Matching Variables and Methodology

|  |  |
| --- | --- |
| **Matching Methodology** | **Variables Included** |
| **Exact** | School |
|  | Grade |
|  | Gender |
|  | Race/Ethnicity |
|  | Economically Disadvantage Status (Free/Reduced Lunch) |
|  | English Learner (Limited English Proficiency) |
|  | Special Education b |
| **Nearest Neighbor** | ELA Scale Score at 8th grade **a** |
|  | Math Scale Score at 8th grade **a** |

a. The 8th grade academic performance were only used when they are available.

The eight schools included in the study had a combined high school population of 8,364 students, of which 469 were enrolled in the EC program and 147 in the IP program. The PSM process was able to match 422 EC students and 124 IP students with statistically equivalent peers. Tables A2 and A3 show the sample sizes and the differences between the pathway and comparison students before and after matching for each matching variable. Before matching, the two groups had significant differences in composition of gender and race/ethnicity, as well as big differences on economically disadvantaged, limited English proficiency (LEP), and special education status. After matching, the two groups were almost identical in terms of demographics, though the comparison group had statistically significant better math performance at 8th grade for the IP program. The PSM was successful in controlling for observed differences between groups, thereby making the comparison groups more comparable for the EC and IP students.

Table A2. PSM Results for EC Program

|  | **Before Matching** | | | | **After Matching** | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **EC Stu.** | **Comparison**  **Stu.** | **Diff.** | **EC Stu.** | | **Comparison Stu.** | **Diff.** |
| Number of Students | 469 | 8,360 | -7,891 | 422 | | 422 | 0 |
| Grade 9 | 7 | 2,309 | -2,302 | 7 | | 7 | 0 |
| Grade 10 | 108 | 1,998 | -1,890 | 86 | | 86 | 0 |
| Grade 11 | 195 | 1,903 | -1,708 | 177 | | 177 | 0 |
| Grade 12 | 159 | 2,154 | -1,995 | 152 | | 152 | 0 |
| Gender |  |  |  |  | |  |  |
| Female | 59.1% | 45.9% | 13.2\*\* | 57.8% | | 57.8% | 0 |
| Male | 40.9% | 54.1% | -13.2\*\* | 42.2% | | 42.2% | 0 |
| Race/Ethnicity |  |  |  |  | |  |  |
| Asian | 2.3% | 4.0% | -1.7\* | 1.7% | | 2.1% | -0.4 |
| Black | 11.5% | 11.0% | 0.5 | 10.7% | | 11.1% | -0.4 |
| Latinx | 68.4% | 48.4% | 20.0\*\* | 70.9% | | 66.4% | 4.5 |
| White | 16.2% | 33.3% | -17.1\*\* | 15.9% | | 19.0% | -3.1 |
| Other | 1.5% | 3.3% | -1.8\* | 0.9% | | 1.4% | -0.5 |
| Economically Disadvantaged | 72.9% | 57.5% | 15.4\*\* | 73.9% | | 73.9% | 0 |
| LEP | 11.1% | 21.3% | -10.2\*\* | 11.4% | | 11.4% | 0 |
| Special Education | 8.1% | 19.1% | -11.0\*\* | 8.5% | | 8.5% | 0 |
| Average ELA Scale Score at Grade 8 | 493  (*n=*89) | 489  (*n=*2,804) | 4 | 489  (*n=*73) | | 494  (*n=*73) | -5 |
| Average Math Scale Score at Grade 8 | 490  (*n=*89) | 488  (*n=*2,828) | 2 | 485  (*n=*73) | | 486  (*n=*73) | -1 |

*Source*: DESE-provided extant data (SIMS and MCAS)

Note: \**p*<.05; \*\**p*<.01

Table A3. PSM Results for IP Program

|  | **Before Matching** | | | | **After Matching** | | |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **IP Stu.** | **Comparison**  **Stu.** | **Diff.** | **IP Stu.** | | **Comparison Stu.** | **Diff.** |
| Number of Students | 147 | 8,360 | -8,213 | 124 | | 124 | 0 |
| Grade 9 | 37 | 2,309 | -2,272 | 28 | | 28 | 0 |
| Grade 10 | 63 | 1,998 | -1,935 | 51 | | 51 | 0 |
| Grade 11 | 34 | 1,903 | -1,869 | 33 | | 33 | 0 |
| Grade 12 | 13 | 2,154 | -2,141 | 12 | | 12 | 0 |
| Gender |  |  |  |  | |  |  |
| Female | 31.3% | 45.9% | -14.6\*\* | 32.3% | | 32.3% | 0 |
| Male | 68.7% | 54.1% | -14.6\*\* | 67.7% | | 67.7% | 0 |
| Race/Ethnicity |  |  |  |  | |  |  |
| Asian | 4.1% | 4.0% | 0.1 | 0 | | 0 | 0 |
| Black | 12.2% | 11.0% | 1.2 | 11.3% | | 10.5% | 0.8 |
| Latinx | 21.1% | 48.4% | -27.3\*\* | 19.4% | | 18.5% | 0.9 |
| White | 61.2% | 33.3% | 27.9\*\* | 68.5% | | 69.4% | -0.9 |
| Other | 1.4% | 3.3% | -1.9\* | .8% | | 1.6% | -0.8 |
| Economically Disadvantaged | 42.2% | 57.5% | -15.3\*\* | 38.7% | | 38.7% | 0 |
| LEP | 17.0% | 21.3% | -4.3\*\* | 15.3% | | 15.3% | 0 |
| Special Education | 10.2% | 19.1% | -8.9\*\* | 12.1% | | 12.1% | 0 |
| Average ELA Scale Score at Grade 8 | 497  (*n=*80) | 489  (*n=*2,804) | 8\* | 495  (*n=*65) | | 505  (*n=*65) | -10\*\* |
| Average Math Scale Score at Grade 8 | 495  (*n=*82) | 488  (*n=*2,828) | 7\* | 494  (*n=*65) | | 496  (*n=*65) | -2 |

*Source*: DESE-provided extant data (SIMS and MCAS)

Note: \**p*<.05; \*\**p*<.01

## Site Visits

The ICF team conducted a one-day site visit for each of the nine EC and IP programs in December 2018 and January 2019. ICF worked with points of contact at each site to finalize a schedule that included interviews and focus groups with relevant program stakeholders, including:

* program coordinators;
* school and district administrators;
* teachers, professors, and other school staff;
* external partners; and
* students.

ICF developed a tailored interview/focus group protocol to use during interviews and focus groups with each of the five groups listed above (see Appendix B). Prior to conducting these visits, ICF staff met to review each protocol and discuss site visit logistics.

Any student under the age of 18 needed a parent permission form in order to participate in a focus group; all students—regardless of age—signed an assent form after learning more about the focus group and confidentiality from the interviewer.

After receiving participant consent, all interviews and focus groups were recorded and transcribed. Analysts then used Atlas.ti qualitative coding software to analyze the data and identify common as well as individual themes or trends across all programs.

## Surveys

ICF developed a survey to learn more about EC and IP programs from the student perspective. This survey included multiple choice as well as open-ended questions and gave students the opportunity to comment on the quality, effectiveness, and relevance of the program. Students took the survey over the course of five weeks in April–May 2019, and ICF estimates that it took students 15–20 minute to complete. Students from ten schools and all nine programs participated in the survey. For details on respondents, see Tables C.1–C.5 in Appendix C.

After closing the survey on May 10th, researchers first cleaned the data and then analyzed the closed-ended responses using SPSS statistical software. All open-ended responses were coded for common themes by hand. Each participating school received individual school-level reports containing anonymized quantitative and coded qualitative results from the ICF team on May 31, 2019.

## Extant Student Participation Data

ICF asked each school participating in an EC or IP program to fill out a data collection template with extant student participation information for the 2018–19 school year (see Appendix B). Each school sent these data to the ICF team in May–August 2019, providing information only for those students who participated in the EC or IP program. The data tracker asked schools to include the following information:

* student ID number;
* school name;
* number of college applications submitted;
* number of hours of student participation in in-person career/academic advising sessions;
* number of hours of student participation in online career/academic advising sessions;
* types of advising available to students;
* existence of individual career/academic plans (Yes/No);
* number of hours of student participation in internships and/or capstone projects; and
* number of tutoring/mentoring hours to support students in the pathway program.

ICF received data for students in all designated programs (*n*=772) (see Table D.1, Appendix D).

ICF then ran the analysis comparing data. Researchers calculated the total number of responses, response rates, and averages using Excel.

# Appendix B. Data Collection Protocols

## Site Visit Protocols

**Final Designation Site Visits  
Interview/Focus Group Protocol:** Program Coordinators

**Introduction**

* Briefly discuss the purpose of the focus group: *The Department of Elementary and Secondary Education would like to learn about grantees’ experiences implementing the Early College Program/Innovative Pathway Program grant. The purpose of this interview/focus group is to learn about your perceptions of the new pathway programming, how your program serves students, and key successes and major challenges encountered during the final designation phase. This session will take approximately 45–60 minutes.*
* Discuss relationship between this interview/focus group and grant application process: *Please note that as independent evaluators, we have no role in deciding or distributing funding.*
* Convey to each participant our confidentiality policy: *(1) the interview/focus group is voluntary; (2) you can decline to answer any questions, or you can stop participating in the interview/focus group at any time; (3) the information will be held in confidence to the extent permitted by law by the study team who have signed confidentiality agreements ensuring the protection of data; (4) interview/focus group data will be maintained in secure areas; and (5) please respect others’ privacy by not sharing any information outside of the interview/focus group.*
* Ask permission to record the interview/focus group: *In order to capture the discussion, I would like to record the session. Only the study team members will have access to the recording.* *If at least one person chooses not to have the interview/focus group recorded, we will not record the session but will take notes. We will not include your name(s) in these notes.*
* Describe plan to keep interview to designated time limits: *In order to keep our session within the timeframe provided, 45–60 minutes, we may need to interrupt the discussion, on occasion, and move on to the next question. Should this occur, we apologize in advance for being abrupt. We greatly value your feedback, though want to ensure we are respectful of your time.*
* Ask if they have any questions for you before you begin.

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**Notes to Interviewer:**

* Guidance has been provided regarding the approximate amount of time that each section should take. While you are not required to adhere to this guidance exactly, please be mindful of the time—ensuring that you cover all key topics without going over the allotted time (45–60 minutes).
* Be sure to keep interviewees on track, making sure that their answers refer only to the final designation phase—not the planning phase.
* *Italicized blue text* *in the protocol is lower priority—please skip if short on time.*

**Introduction (~5 minutes)**

1. Let’s begin with some brief introductions. Please tell me a little bit about yourself, including your name, job title, role as grant manager, and how long you have been in this role.

**Program Structure (~15 minutes)**

1. Briefly describe the main elements of your program. *[If the grantee was interviewed during the planning phase by our team, acknowledge this, but ask them to please repeat.]*
   1. *How did you tailor the pathway program to your local circumstances?* 
      1. *Process (e.g., needs assessment)*
      2. *Elements (e.g., industry sector…)*
   2. *How has the structure of your program changed from what was developed during the planning phase, if at all?*
2. What have been the key successes so far during program implementation?
   1. How have you been able to adapt the pathway program at all to build on those successes?
3. What challenges have you encountered during program implementation?
   1. How have you addressed those challenges?

**Meeting Student Needs (~10 minutes)**

1. From your perspective, to what extent is the pathway program meeting the needs of students as articulated in the grant application?
   1. *What student needs are not yet being met?*
   2. *How do you anticipate that this program, as it matures and progresses, will meet additional student needs that are not being met currently?*
2. What underrepresented student groups did your team target for representation in the pathway program?
   1. How successfully has your team engaged targeted underrepresented student groups in the first year of implementation? To what extent are underrepresented student groups enrolled in the pathway program?
   2. What challenges has your team faced in engaging those groups?
3. How are students at high need (e.g., students with disabilities, economically disadvantaged students, English Language Learners) performing in your pathway program, so far?
4. Describe any particular obstacles that students at high need have faced in the pathway.
5. What supports have been put in place to help students at high need overcome those obstacles?

**Perceptions of the Pathway (~5 minutes)**

1. From your perspective, how would you assess the quality of your pathway program thus far?
   1. To what degree is the pathway program engaging students in learning?
   2. How effective is the pathway program in preparing students for college and career?
   3. How effectively has your team been able to implement MyCAP, to date?

**Facilitators and Barriers (~8 minutes)**

1. To what extent and in what ways has the school or district leadership been supportive of the pathway program?
   1. What additional support you would hope to receive from the school or district in order to successfully implement the pathway program?
2. In what ways have parent/families demonstrated an interest in the pathway program?
   1. How have parents been engaging in MyCAP, if at all?
3. What school or community elements have helped to facilitate program implementation?
4. What school or community elements have hindered program implementation?

**Sustainability (~3 minutes)**

1. How is your team planning for program sustainability after the conclusion of grant funding?

**Potential Best Practices (~5 minutes)**

1. If there was a community similar to yours that also wanted to implement an Early College/Innovation Pathway program, what advice would you give to them as they entered the program implementation phase?
   1. *What elements/strategies would you suggest implementing, specifically?*

**External Support (~5 minutes)**

1. DESE is interested in learning more, from your perspective, about the true cost of implementing the pathway program and how grant resources have been used to support the work.
   1. Specifically—and we know you’ve given DESE information on this, but now that time has passed—what percentage of total anticipated program funding does the grant cover (e.g., 20%? 100%?)?
   2. Your team put together a plan for how you would dedicate grant funds. What departures from that plan or unforeseen expenses has your team encountered?
2. What supports, if any, have you received from the Department of Elementary and Secondary Education and/or the Department of Higher Education during the program implementation phase?
   1. How helpful were these supports?
   2. Are there other supports you wished you had?

**Final Designation Site Visits  
Interview/Focus Group Protocol:** Student Leaders

**Introduction**

* Briefly discuss the purpose of the focus group: *The Department of Elementary and Secondary Education would like to learn about grantees’ experiences implementing the Early College Program/Innovative Pathway Program grant. The purpose of this interview/focus group is to learn about student perceptions of the new pathway programming and how this program serves students. This session will take approximately 30-45 minutes.*
* Discuss relationship between this interview/focus group and grant application process: *Please note that as independent evaluators, we have no role in deciding or distributing funding.*
* Convey to each participant our confidentiality policy: *(1) the interview/focus group is voluntary; (2) you can decline to answer any questions, or you can stop participating in the interview/focus group at any time; (3) the information will be held in confidence to the extent permitted by law by the study team who have signed confidentiality agreements ensuring the protection of data; (4) interview/focus group data will be maintained in secure areas; and (5) please respect others’ privacy by not sharing any information outside of the interview/focus group.*
* Ask permission to record the interview/focus group: *In order to capture the discussion, I would like to record the session. Only the study team members will have access to the recording.* *If at least one person chooses not to have the interview/focus group recorded, we will not record the session but will take notes. We will not include your name(s) in these notes.*
* Describe plan to keep interview to designated time limits: *In order to keep our session within the timeframe provided, 30-45 minutes, we may need to interrupt the discussion, on occasion, and move on to the next question. Should this occur, we apologize in advance for being abrupt. We greatly value your feedback, though want to ensure we are respectful of your time.*
* Ask if they have any questions for you before you begin.

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**Notes to Interviewer:**

* Guidance has been provided regarding the approximate amount of time that each section should take. While you are not required to adhere to this guidance exactly, please be mindful of the time—ensuring that you cover all key topics without going over the allotted time (30–45 minutes).
* *Italicized blue text* *in the protocol is lower priority—please skip if short on time.*

**Introduction (~5 minutes)**

1. Let’s begin with some brief introductions. Please tell me a little bit about yourself, including your name, what grade you’re in, and your involvement in the pathway program.

**Program Structure (~10 minutes)**

1. Please describe the pathway program.
   1. What is the overall purpose of the pathway program?
   2. What are the different program components or elements?
2. Why did you decide to participate in the pathway program?
   1. How does the program support your college or career goals?
3. From your perspective, what has been successful so far about the pathway program?
4. Are you aware of any challenges with the pathway program so far? (e.g., transportation unable to take students to nearby campuses to take courses; course scheduling issues; inability to access new advising tools…)

**Meeting Student Needs (~5 minutes)**

1. How is the pathway program meeting your college and career access needs?
   1. How could the pathway program be improved to better meet your college and career access needs?

**Perceptions on Pathway Elements (~10 minutes)**

1. From your perspective, how would you describe the quality of each of the following elements of the pathway program:
   1. College and career advising
      1. MyCAP
   2. Alignment with labor market demands (i.e., the pathway will prepare you for high demand jobs in your region)
   3. Integration of hands-on and academic instruction
      1. Early College: opportunities to take dual-credit courses
      2. Innovation: opportunities to take technical courses aligned with your career pathway
   4. Work-based learning opportunities (e.g., internship, apprenticeship, capstone projects)
   5. Credential preparation and postsecondary links (i.e., pathways provide opportunities to work towards certificates and degrees related to field of study and are connected to colleges or other institutions that provide those certificates or degrees)
2. Focusing on MyCAP more specifically, please describe any activities you’ve participated in related to MyCAP.
   1. Where did these activities take place (e.g., in class or advisory)?

**Program Improvement (~5 minutes)**

1. What would you do to improve this program?
   1. *What do you hope to see this program accomplish in the coming years*?

**Final Designation Site Visits  
Interview/Focus Group Protocol:** School Staff

**Introduction**

* Briefly discuss the purpose of the focus group: *The Department of Elementary and Secondary Education would like to learn about grantees’ experiences implementing the Early College Program/Innovative Pathway Program grant. The purpose of this interview/focus group is to learn about your perceptions of the new pathway programming, how your program serves students, and key successes and major challenges encountered during the final designation phase. This session will take approximately 45–60 minutes.*
* Discuss relationship between this interview/focus group and grant application process: *Please note that as independent evaluators, we have no role in deciding or distributing funding.*
* Convey to each participant our confidentiality policy: *(1) the interview/focus group is voluntary; (2) you can decline to answer any questions, or you can stop participating in the interview/focus group at any time; (3) the information will be held in confidence to the extent permitted by law by the study team who have signed confidentiality agreements ensuring the protection of data; (4) interview/focus group data will be maintained in secure areas; and (5) please respect others’ privacy by not sharing any information outside of the interview/focus group.*
* Ask permission to record the interview/focus group: *In order to capture the discussion, I would like to record the session. Only the study team members will have access to the recording.* *If at least one person chooses not to have the interview/focus group recorded, we will not record the session but will take notes. We will not include your name(s) in these notes.*
* Describe plan to keep interview to designated time limits: *In order to keep our session within the timeframe provided, 45–60 minutes, we may need to interrupt the discussion, on occasion, and move on to the next question. Should this occur, we apologize in advance for being abrupt. We greatly value your feedback, though want to ensure we are respectful of your time.*
* Ask if they have any questions for you before you begin.

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**Notes to Interviewer:**

* Guidance has been provided regarding the approximate amount of time that each section should take. While you are not required to adhere to this guidance exactly, please be mindful of the time—ensuring that you cover all key topics without going over the allotted time (45–60 minutes).
* Be sure to keep interviewees on track, making sure that their answers refer only to the final designation/program implementation phase—not the planning phase.
* *Italicized blue text* *in the protocol is lower priority—please skip if short on time.*

**Introduction (~5 minutes)**

1. Let’s begin with some brief introductions. Please tell me a little bit about yourself, including your name, job title, role in the school and/or the pathway program, and how long you have been in this role.

**Program Structure (~20 minutes)**

1. Briefly describe the main elements of the pathway program that you are aware of.
2. *Which of these pathway elements do you interact with either regularly or somewhat regularly? In what ways?*
3. *How did your team tailor the pathway program to your local circumstances?*
   * 1. *Process (e.g., needs assessment)*
     2. *Elements (e.g., industry sector,)*
4. *How has the structure of this program changed from what was initially developed during the planning phase, if at all?*
5. What have been the key successes so far during program implementation?
   1. How has the team been able to adapt the pathway program at all to build on those successes?
6. What challenges has the team or school encountered during program implementation?
   1. How has the team addressed those challenges?
   2. What improvements still need to happen?

**Meeting Student Needs (~10 minutes)**

1. From your perspective, to what extent is the pathway program meeting the needs of students as articulated in the grant application?
   1. *What student needs are not yet being met?*
   2. *How do you anticipate that this program, as it matures and progresses, will meet additional student needs that are not being met currently?*
2. What underrepresented student groups did your team target for representation in the pathway program?
   1. How successfully has your team engaged targeted underrepresented student groups in the first year of implementation? To what extent are underrepresented student groups enrolled in the pathway program?
   2. What challenges has your team faced in engaging those groups?
3. How are students at high need (e.g., students with disabilities, economically disadvantaged students, English Language Learners) performing in your pathway program, so far?
4. Describe any particular obstacles that students at high need have faced in the pathway.
5. What supports have been put in place to help students at high need overcome those obstacles?

**Perceptions of the Pathway (~5 minutes)**

1. From your perspective, how would you assess the quality of the pathway program thus far?
   1. To what degree is the pathway program engaging students in learning?
   2. How effective is the pathway program in preparing students for college and career?
2. What has been your involvement with MyCAP to date?
   1. What is your perception of MyCAP implementation so far?
   2. How has MyCAP been improved by the pathway structure, if at all?
3. How has the implementation of the pathway program shaped the culture of the school, if at all?

**Facilitators and Barriers (~5 minutes)**

1. To what extent and in what ways has the school or district leadership been supportive of the pathway program?
   1. How has the school or district leadership been supportive of your work, specifically?
   2. What additional support would you hope to receive from the school or district in order to successfully implement the pathway program?
2. In what ways have parent/families demonstrated an interest in the pathway program?
   1. How have parents been engaging in MyCAP, if at all?
3. What school or community elements have helped to facilitate program implementation?
4. What school or community elements have hindered program implementation?

**Potential Best Practices (~5 minutes)**

1. If there was a community similar to yours that also wanted to implement an Early College/Innovation Pathway program, what advice would you give to them as they entered the program implementation phase?
   1. *What elements/strategies would you suggest implementing, specifically?*

**External Support (~5 minutes)**

1. What supports, if any, have you received from the Department of Elementary and Secondary Education and/or the Department of Higher Education during the program implementation phase?
   1. How helpful were these supports?
   2. Are there other supports you wished you had?

**Final Designation Site Visits  
Interview/Focus Group Protocol:** School/District Administrators

**Introduction**

* Briefly discuss the purpose of the focus group: *The Department of Elementary and Secondary Education would like to learn about grantees’ experiences implementing the Early College Program/Innovative Pathway Program grant. The purpose of this interview/focus group is to learn about your perceptions of the new pathway programming, how the program serves students, and key successes and major challenges encountered during the final designation phase. This session will take approximately 45–60 minutes.*
* Discuss relationship between this interview/focus group and grant application process: *Please note that as independent evaluators, we have no role in deciding or distributing funding.*
* Convey to each participant our confidentiality policy: *(1) the interview/focus group is voluntary; (2) you can decline to answer any questions, or you can stop participating in the interview/focus group at any time; (3) the information will be held in confidence to the extent permitted by law by the study team who have signed confidentiality agreements ensuring the protection of data; (4) interview/focus group data will be maintained in secure areas; and (5) please respect others’ privacy by not sharing any information outside of the interview/focus group.*
* Ask permission to record the interview/focus group: *In order to capture the discussion, I would like to record the session. Only the study team members will have access to the recording.* *If at least one person chooses not to have the interview/focus group recorded, we will not record the session but will take notes. We will not include your name(s) in these notes.*
* Describe plan to keep interview to designated time limits: *In order to keep our session within the timeframe provided, 45–60 minutes, we may need to interrupt the discussion, on occasion, and move on to the next question. Should this occur, we apologize in advance for being abrupt. We greatly value your feedback, though want to ensure we are respectful of your time.*
* Ask if they have any questions for you before you begin.

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**Notes to Interviewer:**

* Guidance has been provided regarding the approximate amount of time that each section should take. While you are not required to adhere to this guidance exactly, please be mindful of the time—ensuring that you cover all key topics without going over the allotted time (45–60 minutes).
* Be sure to keep interviewees on track, making sure that their answers refer only to the program implementation phase—not the planning phase.
* *Italicized blue text* *in the protocol is lower priority—please skip if short on time.*

**Introduction (~5 minutes)**

1. Let’s begin with some brief introductions. Please tell me a little bit about yourself, including your name, job title, role in the school and/or pathway program, and how long you have been in this role.

**Program Structure (~20 minutes)**

1. Briefly describe the main elements of the pathway program that you are aware of.
   1. *Which of these pathway elements do you interact with either regularly or somewhat regularly? In what ways?*
   2. *How has the structure of this program changed from what was initially developed during the planning phase, if at all?*
2. What have been the key successes so far during program implementation?
   1. How has the team been able to adapt the pathway program at all to build on those successes?
3. What challenges has the team encountered during program implementation?
   1. How has the team addressed those challenges?

**Meeting Student Needs (~10 minutes)**

1. From your perspective, to what extent is the pathway program meeting the needs of students as articulated in the grant application?
   1. *What student needs are not yet being met?*
   2. *How do you anticipate that this program, as it matures and progresses, will meet additional student needs that are not being met currently?*
2. What underrepresented student groups did your team target for representation in the pathway program?
3. How successfully has your team engaged targeted underrepresented student groups in the first year of implementation? To what extent are underrepresented student groups enrolled in the pathway program?
4. What challenges has your team faced in engaging those groups?
5. How are students at high need (e.g., students with disabilities, economically disadvantaged students, English Language Learners) performing in your pathway program, so far?
6. Describe any particular obstacles that students at high need have faced in the pathway.
7. What supports have been put in place to help students at high need overcome those obstacles?

**Perceptions of the Pathway (~5 minutes)**

1. From your perspective, how would you assess the quality of the pathway program thus far?
   1. To what degree is the pathway program engaging students in learning?
   2. How effective is the pathway program in preparing students for college and career?
   3. How effectively has your team been able to implement MyCAP, to date?
2. To what extent has the school or district leadership supported of the pathway program?
3. How has the implementation of the pathway program shaped the culture of the school, if at all?

**Facilitators and Barriers (~5 minutes)**

1. To what extent and in what ways have school and district leaders been supportive of the pathway program?
2. In what ways have parent/families demonstrated an interest in the pathway program?
3. What school or community elements have helped to facilitate program implementation?
4. What school or community elements have hindered program implementation?

**Potential Best Practices (~5 minutes)**

1. If there was a community similar to yours that also wanted to implement an Early College/Innovation Pathway program, what advice would you give to them as they entered the program implementation phase?
   1. *What elements/strategies would you suggest implementing, specifically?*

**Sustainability (~3 minutes)**

1. How is your team planning for program sustainability after the conclusion of grant funding?

**External Support (~5 minutes)**

1. DESE is interested in learning more, from your perspective, about the true cost of implementing the pathway program and how grant resources have been used to support the work.
   1. Specifically—and we know you’ve given DESE information on this, but now that time has passed—what percentage of total anticipated program funding does the grant cover (e.g., 20%? 100%?)?
   2. Your team put together a plan for how you would dedicate grant funds. What departures from that plan or unforeseen expenses has your team encountered?
2. Are you aware of any support that the school or the pathway leadership team have received from the Department of Elementary and Secondary Education and/or the Department of Higher Education during the program implementation phase?
3. If so, from your perspective, how helpful were these supports?
4. Are there other supports you wished you had?

**Grant Implementation Site Visits  
Interview/Focus Group Protocol:** External Partners

**Introduction**

* Briefly discuss the purpose of the focus group: *The Department of Elementary and Secondary Education would like to learn about grantees’ experiences implementing the Early College Program/Innovative Pathway Program grant. The purpose of this interview/focus group is to learn about your perceptions of the new pathway programming, how the program serves students, and key successes and major challenges encountered during the final designation phase. This session will take approximately 30–45 minutes.*
* Discuss relationship between this interview/focus group and grant application process: *Please note that as independent evaluators, we have no role in deciding or distributing funding.*
* Convey to each participant our confidentiality policy: *(1) the interview/focus group is voluntary; (2) you can decline to answer any questions, or you can stop participating in the interview/focus group at any time; (3) the information will be held in confidence to the extent permitted by law by the study team who have signed confidentiality agreements ensuring the protection of data; (4) interview/focus group data will be maintained in secure areas; and (5) please respect others’ privacy by not sharing any information outside of the interview/focus group.*
* Ask permission to record the interview/focus group: *In order to capture the discussion, I would like to record the session. Only the study team members will have access to the recording.* *If at least one person chooses not to have the interview/focus group recorded, we will not record the session but will take notes. We will not include your name(s) in these notes.*
* Describe plan to keep interview to designated time limits: *In order to keep our session within the timeframe provided, 45–60 minutes, we may need to interrupt the discussion, on occasion, and move on to the next question. Should this occur, we apologize in advance for being abrupt. We greatly value your feedback, though want to ensure we are respectful of your time.*
* Ask if they have any questions for you before you begin.

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**Notes to Interviewer:**

* Guidance has been provided regarding the approximate amount of time that each section should take. While you are not required to adhere to this guidance exactly, please be mindful of the time—ensuring that you cover all key topics without going over the allotted time (30–45 minutes).
* Be sure to keep interviewees on track, making sure that their answers refer only to the program implementation phase—not the planning phase.
* *Italicized blue text* *in the protocol is lower priority—please skip if short on time.*

**Introduction (~5 minutes)**

1. Let’s begin with some brief introductions. Please tell me a little bit about yourself, including your name, job title, role in supporting the pathway program, and how long you have been in this role.
2. What was your organization’s motivation for serving as a partner on the pathway program?

**Program Structure (~15 minutes)**

1. Which of these pathway elements do you interact with or support? What is the nature of your support or interaction?
   1. *Are you aware if the structure of this program has changed at all from what was initially developed during the planning phase? How so?*
2. From your perspective, what have been the key successes so far during program implementation?
   1. How has the team been able to adapt the pathway program to build on those successes, if at all?
3. What have been the key challenges encountered thus far during program implementation, if any?
   1. How were those challenges addressed and by whom?

**Meeting Student and Community Needs (~3 minutes)**

1. From your perspective, to what extent is the pathway program meeting the college and career readiness needs of students?
2. *What about the college and career readiness needs of students at a high need (e.g., students with disabilities, economically disadvantaged students, English Language Learners)?*
3. To what extent is the pathway program meeting community needs related to the pathway (e.g., need to create a pipeline for jobs in a certain industry, need to provide greater college opportunities for target populations)?

**Perceptions of the Pathway (~5 minutes)**

1. How would you assess the quality of the pathway program thus far?
2. How effective is the pathway program in preparing students for college and career?
3. *What are your perspectives on working with the other stakeholders to develop the pathway program?* 
   1. *What is the nature of the working relationship?*
   2. *Has your organization’s contribution/involvement in the pathway program been worthwhile so far? How so?*

**Facilitators and Barriers (~5 minutes)**

1. What school or community elements have helped to facilitate your role in program implementation?
2. What school or community elements have hindered your role in program implementation?

**Potential Best Practices (~3 minutes)**

1. What advice would you give to other organizations interested in serving as partners of this or another similar pathway program?

**Massachusetts New Skills for Youth Grant Evaluation**

**Adult Interview/Focus Group Consent, Winter 2018/2019**

The Massachusetts Department of Elementary and Secondary Education (DESE) has contracted with ICF to evaluate statewide performance on the New Skills for Youth Grant. As part of this effort, we are hoping to learn about grantees’ experiences encountered implementing their Early College Pathway/Innovative Pathway program. The purpose of this interview/focus group is to learn about the activities and strategies implemented in the 2018–19 school year, as well as key successes and major challenges encountered during the implementation phase. This session will take approximately 30–60 minutes. Please consider the details below prior to deciding to participate in this interview:

• **Confidentiality**: The session will be recorded either by audio files or written notes. The recordings of what you share will only be used by the researchers. Data will be stored in a secure area accessible only to the researchers. Your answers to these questions will be kept confidential to the extent permitted by law and all findings will be reported in an aggregate manner to preserve participant identity. Summary reports may indicate particular organizations or individuals by the roles they describe but challenges and successes will be reported confidentially to the extent permitted by law. *For focus group participants*: Please keep in mind that what individuals talk about during the focus group is confidential and you should not discuss it with anyone after the session is finished.

• **Risks**: The study presents minimal risk to you. You will not be required to answer any questions that you do not wish to answer and reports will not identify you by name. *For focus group participants:* While we will ask all focus group participants to not discuss any of the information after the session is finished, we cannot guarantee that information will be kept confidential by others participating in the group.

• **Benefits**: Study participation helps build knowledge in the state and nationally about best practices and lessons learned for establishing college and career pathway programs. Where appropriate, other program grantees can use the information learned to adjust their programming.

• **Voluntary** **Participation**: Your participation is voluntary meaning that you do not have to participate in this interview if you do not want to; you can stop participating at any time. We hope you will participate in the conversation, but you do not have to share information that makes you feel uncomfortable. Your decision to participate or withdraw from the study at any time will not affect your relationship with ESE, your school district/organization, your employment status or performance review. By answering questions, you are consenting to participate.

If you have any questions about the study or your rights as a study participant, you can call Samantha Spinney at (703) 272-6681.

**Massachusetts New Skills for Youth Grant Evaluation**

**Parent Permission Slip for Student Focus Groups, Winter 2018/2019**

<Date>, 2018

Dear Parent or Guardian:

Your child’s school has received New Skills for Youth grant funding from the Massachusetts Department of Elementary and Secondary Education (DESE) to develop and implement a college and career pathway program, referred to as either an Early College Pathway or an Innovation Pathway. DESE hired an external evaluator, ICF, to measure the implementation and impact of the pathway programs at all participating schools. As part of the evaluation, ICF will be conducting a focus group (i.e., a group interview) with student leaders participating in the pathway program at your child’s school to learn more about the program from a student perspective. Specifically, in this focus group, ICF staff will ask questions about how the pathway program is working, whether the pathway is meeting student needs, and how the program could be improved.

Please consider the details below prior to deciding to allow your child to participate in the focus group:

* **Confidentiality**: All information about your child will remain confidential to the extent permitted by law. The focus group discussion will be recorded either by audio files or written notes. All recordings and notes will only be used by the ICF research team. Any transcripts or notes from the focus group will only refer to your child by their first name or initials only. In written reports, the data collected by researchers will be reported in a manner that summarizes across students. We will not include student names or any other personally identifiable information about you or your child in written reports.
* **Risks**: The study presents minimal risk to your child. Researchers will not identify specific children in order to maintain confidentiality. Data will be stored in a secure area accessible only to the researchers during the study. While we will ask all focus group participants to not discuss any of the information after the session is finished, we cannot guarantee that all focus group participants will keep information private.
* **Benefits**: Study participation helps build knowledge in the state about best practices for implementing college and career pathway programs as well as the impact of these programs.
* **Voluntary** **Participation**: Participation in this study is voluntary. If a student does not participate in the study, he or she will not be impacted. If you agree that your child may participate in the focus group, your child will still have the chance to decide if they want to participate. Your child will be able to decline to answer any question that he or she does not wish to answer and withdraw at any time.

If you have any questions about the study, please contact Samantha Spinney at ICF at (703) 272-6681 or [samantha.spinney@icf.com](mailto:samantha.spinney@icf.com).

Please complete the form on the following page and turn in the completed form to *<School Designee>* by *<date>.* **Your child will not be able to participate in the focus group without your signed consent to do so.**

Sincerely,

Samantha Spinney

**Massachusetts New Skills for Youth Grant Evaluation**

**Parent Permission Slip for Student Focus Groups, Winter 2018/2019**

**To indicate your consent to have your child participate in this student focus group in winter 2018/2019, please sign your name below in black/blue ink pen.**

YES, I will allow my child, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

[Please Print Full Student Name]

to participate in this student focus group.

NO, I do not want my child, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

[Please Print Full Student Name]

to participate in this student focus group.

Your name (Please Print): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Your signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_

**Massachusetts New Skills for Youth Grant Evaluation**

**Student Focus Group Assent, Winter 2018/2019**

Dear Student,

Your school has received New Skills for Youth grant funding from the Massachusetts Department of Elementary and Secondary Education (DESE) to develop and implement a college and career pathway program, referred to as either an Early College Pathway or an Innovation Pathway. DESE hired an external evaluator, ICF, to measure the implementation and impact of the pathway programs at all participating schools. You are being asked to participate in a focus group (i.e., group interview) with approximately 6–8 other high school students to share your experiences as a student leader participating in the pathway program. A focus group involves you participating in a classroom-like discussion with other students led by questions from the ICF evaluation team. The focus group discussion will include questions about your overall opinions and experiences with the pathway program, how the pathway program is working, whether the pathway is meeting student needs, and how the program could be improved. The focus group is expected to take approximately 30–45 minutes.

Please consider the details below prior to deciding to participate in the focus group:

• **Confidentiality**: Your answers during the focus group will be kept confidential to the extent permitted by law. The focus group discussion will be recorded either by audio files or written notes. The recordings of what you share will only be used by our research team. In written reports, the data collected by researchers will be reported in a manner that summarizes across students. We will not include student names or any other personally identifiable information about you in written reports. Please keep in mind that what individuals talk about during the focus group is private and you should not discuss it with anyone after the session is finished.

• **Risks**: The study presents minimal risk to you. You will not be required to answer any questions that you do not wish to answer and reports will not identify you by name. If at any time you feel uncomfortable while answering questions or want to talk with someone after the discussion please let the focus group leader know or see your guidance counselor. While we will ask all focus group participants to not discuss any of the information after the session is finished, we cannot guarantee that focus group participants will keep information private. We will be working with your school to establish an appropriate time and place at the school for the focus group.

• **Benefits**: Study participation helps build knowledge in the state about best practices for implementing college and career pathway programs as well as the impact of these programs.

• **Voluntary** **Participation**: Your participation is voluntary meaning that you do not have to participate in this focus group if you do not want to. If you decide to participate then change your mind, you can stop participating at any time. We hope you will participate in the conversation, but you do not have to share information that makes you feel uncomfortable. Your decision to participate or withdraw from the study, at any time, will not affect you at school or in your pathway program. By answering questions and signing below, you are assenting to participate.

If you have any questions about the study or your rights as a study participant, you or your parent/legal guardian may contact Samantha Spinney at ICF at (703) 272-6681 or [samantha.spinney@icf.com](mailto:samantha.spinney@icf.com). In order to participate in the student focus group, we must also have signed consent from your parent/legal guardian agreeing to your participation.

**To indicate your consent to participate in this focus group, please sign your name below in black/blue ink pen and return the form to the ICF focus group leader.**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Sign your name here Date**

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Clearly print your name here**

## Student Survey Instrument and Parent Permission

**MA New Skills for Youth Student Survey**

**Student Survey (Spring 2019)**

**1) By selecting “I agree to take this survey,” you agree that you understand the purpose of the study and agree to take the online survey. If you select “I do not agree to take this survey,” you will not be presented with the option to take the survey. If you need to stop the online survey before completing it and return to it later, you will be able to do so.\***

( ) I read the above instruction and agree to take this survey.

( ) I do not agree to take this survey.

**Introduction**

**2) In the space below, please include your student ID code.\***

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**3) Please indicate which school you are enrolled in during the 2018–19 school year.\***

( ) Burncoat Senior High School

( ) Charlestown High School

( ) Chelsea High School

( ) Claremont Academy

( ) Doherty Memorial High School

( ) High School of Commerce

( ) Holyoke High School

( ) Lawrence High School

( ) Nantucket High School

( ) New Heights Charter School of Brockton

( ) North High School

( ) Northampton High School

( ) Roger L. Putnam Vocational Technical High School

( ) Salem High School

( ) South High Community

( ) University Park Campus

( ) Uxbridge High School

( ) Westfield High School

( ) Westfield Technical Academy

( ) Worcester Technical High School

**Introduction**

**4) Please select the pathway program in which you are participating:\***

( ) Innovation Pathway

( ) Early College Pathway

**Introduction**

**5) What is your current grade?**

( ) 9th grade

( ) 10th grade

( ) 11th grade

( ) 12th grade

**6) Does your pathway program have an industry or other theme?**

( ) Yes

( ) No

( ) I don't know

**Introduction**

**7) If so, what is the industry or theme?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Participation In and Perceptions Of Pathway**

**8) For the following activities, first indicate whether you participated in the activity by using the drop-down menu to select Yes, No, or I don’t know. If you did participate in the activity, use the second drop-down menu to indicate how effective it was in preparing you for college and/or a career.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Have you participated in this activity during this school year (2018–19)? | | | If you did participate, how helpful was this activity in preparing you for college and/or a career? | | | | |
|  | Yes | No | I don't know | Not helpful | Slightly helpful | Somewhat helpful | Mostly helpful | Very helpful |
| Participated in college or career advising (e.g., a college and career readiness class, an advising program, etc.) | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Started creating your own personalized college and career plan | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Learned information about the availability of jobs and employment related to one or more industries (e.g., information regarding the need for different careers, salaries, and other related information) | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Took one or more technical courses (related to an industry) | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Took one or more college-level courses (AP, IB, or dual credit) | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Took one or more dual-credit courses (courses offering both high school and college credit) | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Listened to a guest speaker present on career information | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Conducted labor market research | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Attended a career day or job fair event | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Participated in a job site visit or company tour | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Participated in job shadowing experience | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Participated in an internship | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Participated in a capstone project | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Learned about options after high school graduation, such as earning a certificate, Associate's degree, Bachelor’s degree or other credential | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Visited a college campus | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Learned about the costs of college and options for paying for college (e.g., financial aid, scholarships) | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Learned what it takes to succeed in college | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |

**Participation In and Perceptions Of Pathway**

**9) For the following activities, first indicate whether you participated in the activity by using the drop-down menu to select Yes, No, or I don’t know. If you did participate in the activity, use the second drop-down menu to indicate how effective it was in preparing you for college and/or a career.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | Have you participated in this activity during this school year (2018–19)? | | | If you did participate, how helpful was this activity in preparing you for college and/or a career? | | | | |
|  | Yes | No | I don't know | Not Helpful | Slightly Helpful | Somewhat Helpful | Mostly Helpful | Very Helpful |
| Took one or more technical courses (related to an industry) | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Took one or more college-level courses (AP, IB, or dual credit) | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |
| Took one or more dual-credit courses (courses offering both high school and college credit) | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ | \_\_\_ |

**Participation In and Perceptions Of Pathway**

**10) Please rate the degree to which you agree with the following statement:  
  
All of the pathway activities that I participated in seem to be related to one another.**

( ) Strongly Disagree

( ) Disagree

( ) Agree

( ) Strongly Agree

**11) Based on your experience with your pathway program and the support services you have received, please indicate your level of agreement for each of the items listed.  
  
My pathway program has…**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Strongly Disagree | Disagree | Agree | Strongly Agree |
| …helped me improve my grades. | ( ) | ( ) | ( ) | ( ) |
| …helped me stay on track to graduate from high school. | ( ) | ( ) | ( ) | ( ) |
| …encouraged me to enroll in a two-year or four-year college, technical school, or certificate program. | ( ) | ( ) | ( ) | ( ) |
| …raised my awareness of college opportunities that I was not aware of previously. | ( ) | ( ) | ( ) | ( ) |
| …raised my awareness of potential work-related certifications or credentials. | ( ) | ( ) | ( ) | ( ) |
| …provided me with enough advising opportunities to help me make choices after high school that are right for me. | ( ) | ( ) | ( ) | ( ) |
| …motivated me to want to learn the skills needed for a specific job/career. | ( ) | ( ) | ( ) | ( ) |
| …helped me build confidence about my ability to succeed in the future. | ( ) | ( ) | ( ) | ( ) |
| ...helped me take ownership over my high school experience. | ( ) | ( ) | ( ) | ( ) |

**12) Please rate the degree to which your pathway program overall has met your individual needs as a student. (Individual needs could be related to the types of courses offered, the types of supports available [like tutoring or mentoring], the resources and information that you have received, the certifications that are available, or anything else.)  
  
The pathway program has…**

( ) …not met my needs.

( ) …met my needs a little.

( ) …met my needs a lot.

**13) Please explain your answer in the field below.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**14) Please indicate how helpful your pathway program has been in preparing you for the following items.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Not Helpful | Somewhat Helpful | Helpful | Very Helpful |
| Learning new employability skills (e.g., time management, interpersonal communication, etc.). | ( ) | ( ) | ( ) | ( ) |
| Staying on track to graduate on-time from high school. | ( ) | ( ) | ( ) | ( ) |
| Getting ready to apply to college or a university. | ( ) | ( ) | ( ) | ( ) |
| Learning about different career fields. | ( ) | ( ) | ( ) | ( ) |

**Participation In and Perceptions Of Pathway**

**15) Please indicate how helpful your pathway program has been in preparing you for the following items.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Not Helpful | Somewhat Helpful | Helpful | Very Helpful |
| Gaining work experience in an industry I am interested in. | ( ) | ( ) | ( ) | ( ) |

**16) What do you like most about your pathway program?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**17) What would you like to see improved in your pathway program?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**18) Why did you enroll in the pathway program?**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**19) Has your pathway program affected your plans for your future?**

( ) Yes

( ) No

( ) I don't know

**20) Please explain your answer.**

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Background**

**21) What is your gender?**

( ) Male

( ) Female

( ) Other

( ) I do not wish to share

**22) What is the highest level of education achieved by your parent(s)/guardian(s)? (Please answer this question for the parent/guardian who achieved the highest level of education. For example, if your mother has a four-year college degree and your father has a high school diploma, select "four-year college degree.")**

( ) Some high school

( ) High school diploma/GED

( ) Some college (less than a two- or four-year degree, e.g., a certificate)

( ) Two-year college degree (Associate’s)

( ) Four-year college degree (Bachelor’s)

( ) Master’s degree

( ) Ph.D. or higher

( ) Don’t know

**23) If you have brothers or sisters, how many have attended college in the past or are in college now?**

( ) 0

( ) 1

( ) 2

( ) 3 or more

( ) My brothers or sisters are too young to attend college

( ) I don't have brothers or sisters

**24) What is your race/ethnicity?**

( ) American Indian or Alaska Native

( ) Asian

( ) Black or African American

( ) Native Hawaiian or other Pacific Islander

( ) White

( ) Hispanic or Latino

( ) Two or More

( ) Other

( ) I do not wish to share

**Thank You!**

**Massachusetts New Skills for Youth Grant Evaluation**

**Parent Permission Slip for Student Focus Groups, Winter 2018/2019**

<Date>, 2018

Dear Parent or Guardian:

Your child’s school has received New Skills for Youth grant funding from the Massachusetts Department of Elementary and Secondary Education (DESE) to develop and implement a college and career pathway program, referred to as either an Early College Pathway or an Innovation Pathway. DESE hired an external evaluator, ICF, to measure the implementation and impact of the pathway programs at all participating schools. As part of the evaluation, ICF will be conducting a focus group (i.e., a group interview) with student leaders participating in the pathway program at your child’s school to learn more about the program from a student perspective. Specifically, in this focus group, ICF staff will ask questions about how the pathway program is working, whether the pathway is meeting student needs, and how the program could be improved.

Please consider the details below prior to deciding to allow your child to participate in the focus group:

* **Confidentiality**: All information about your child will remain confidential to the extent permitted by law. The focus group discussion will be recorded either by audio files or written notes. All recordings and notes will only be used by the ICF research team. Any transcripts or notes from the focus group will only refer to your child by their first name or initials only. In written reports, the data collected by researchers will be reported in a manner that summarizes across students. We will not include student names or any other personally identifiable information about you or your child in written reports.
* **Risks**: The study presents minimal risk to your child. Researchers will not identify specific children in order to maintain confidentiality. Data will be stored in a secure area accessible only to the researchers during the study. While we will ask all focus group participants to not discuss any of the information after the session is finished, we cannot guarantee that all focus group participants will keep information private.
* **Benefits**: Study participation helps build knowledge in the state about best practices for implementing college and career pathway programs as well as the impact of these programs.
* **Voluntary** **Participation**: Participation in this study is voluntary. If a student does not participate in the study, he or she will not be impacted. If you agree that your child may participate in the focus group, your child will still have the chance to decide if they want to participate. Your child will be able to decline to answer any question that he or she does not wish to answer and withdraw at any time.

If you have any questions about the study, please contact Samantha Spinney at ICF at (703) 272-6681 or [samantha.spinney@icf.com](mailto:samantha.spinney@icf.com).

Please complete the form on the following page and turn in the completed form to *<School Designee>* by *<date>.* **Your child will not be able to participate in the focus group without your signed consent to do so.**

Sincerely,

Samantha Spinney

**To indicate your consent to have your child participate in this student focus group in winter 2018/2019, please sign your name below in black/blue ink pen.**

YES, I will allow my child, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

[Please Print Full Student Name]

to participate in this student focus group.

NO, I do not want my child, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,

[Please Print Full Student Name]

to participate in this student focus group.

Your name (Please Print): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Your signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_

## Student Participation Data Collection Template

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Student ID Number (Required) | School Name | Number of College applications submitted by students participating in the pathway (this may be available in Naviance via the Common Application) | Number of hours of student participation in in-person career/academic advising sessions | Numbers of hours of student participation in online career/academic advising sessions | Types of advising available to students (e.g., workshops, one-on-one, etc.). | Existence of individual career/academic plans (Yes/No) | Number of hours of student participation in internships and/or capstone projects | Number of tutoring/mentoring hours to support students in the pathway program. |
| 12345 | Example High School | 5 | 100 | 0 | Workshops, speakers, class | Yes | 40 | 30 |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |

# Appendix C. Survey Analysis Technical Detail

## Respondent Demographics

Table C.1. Survey Response Rates by School

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| School | Pathway | N | Total N | % |
| Burncoat High School | Innovation | 24 | 24 | 100% |
| Doherty High School | Innovation | 23 | 25 | 92.0% |
| Nantucket High School | Innovation | 16 | 17 | 94.1% |
| Northampton High School | Innovation | 21 | 31 | 67.7% |
| Uxbridge High School | Innovation | 94 | 94 | 100% |
| Charlestown High School | Early College | 31 | 38 | 81.6% |
| Chelsea High School | Early College | 109 | 226 | 48.2% |
| Holyoke High School | Early College | 69 | 114 | 60.5% |
| New Heights Charter School of Brockton | Early College | 100 | 197 | 50.8% |
| Salem High School | Early College | 29 | 43 | 67.4% |
| All schools | **--** | **516** | **809** | **63.8%** |

Table C.2. Final School Composition for Analysis by School

|  |  |  |  |
| --- | --- | --- | --- |
| School | Pathway | N | % |
| Burncoat High School | Innovation | 24 | 4.7% |
| Doherty High School | Innovation | 23 | 4.5% |
| Nantucket High School | Innovation | 16 | 3.1% |
| Northampton High School | Innovation | 21 | 4.1% |
| Uxbridge High School | Innovation | 94 | 18.2% |
| Charlestown High School | Early College | 31 | 6.0% |
| Chelsea High School | Early College | 109 | 21.1% |
| Holyoke High School | Early College | 69 | 13.4% |
| New Heights Charter School of Brockton | Early College | 100 | 19.4% |
| Salem High School | Early College | 29 | 5.6% |
| All schools | **--** | **516** | **100%** |

Note: Percentages may not total 100% due to rounding.

**Table C.3. Parent Level of Education**

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Pathway** | **Don’t Know** | **Some High School** | **High School Diploma or GED** | **Some College** | **Two-Year College** | **Four-Year College** | **Master’s Degree** | **Ph.D. or Higher** |
| What is the highest level of education achieved by your parent? | Early College (*n=*298) | 17.1% | 26.8% | 18.8% | 8.7% | 8.1% | 11.1% | 7.0% | 2.3% |
| Innovation (*n=*168) | 20.8% | 16.1% | 8.9% | 4.8% | 4.2% | 23.2% | 14.9% | 7.1% |
| Overall (*n=*466) | 18.5% | 23.0% | 15.2% | 7.3% | 6.7% | 15.5% | 9.9% | 4.1% |

Note: Percentages may not total 100% due to rounding.

**Table C.4. Student Gender**

|  |  |  |  |
| --- | --- | --- | --- |
| Gender | Early College (n=298) | Innovation (n=166) | Overall (n=464) |
| Male | 45.0% | 63.9% | 51.7% |
| Female | 52.0% | 30.7% | 44.4% |
| Other | 0.7% | 0.6% | 0.6% |
| I do not wish to share | 2.3% | 4.8% | 3.2% |

Note: Percentages may not total 100% due to rounding.

**Table C.5. Student Race/Ethnicity**

|  |  |  |  |
| --- | --- | --- | --- |
| Race/Ethnicity | Early College (*n*=298) | Innovation (n=168) | Overall (n=466) |
| Asian | 2.3% | 4.2% | 3.0% |
| Black or African American | 24.8% | 8.9% | 19.1% |
| Latinx | 45.3% | 14.3% | 34.1% |
| White | 13.1% | 61.3% | 30.5% |
| Other | 14.5% | 11.3% | 12.9% |

Note: Percentages may not total 100% due to rounding.

## Student Participation in Activities

Table C.6. Student Participation in Activities (Overall)

| Have you participated in this activity during this school year (2018–19)? | Pathway | Yes | No | I don’t know |
| --- | --- | --- | --- | --- |
| Participated in college or career advising (e.g., a college and career readiness class, an advising program) | Early College (*n=*336) | 73.8% | 16.1% | 10.1% |
| Innovation (*n=*176) | 43.8% | 47.2% | 9.1% |
| Overall (*n=*512) | 63.5% | 26.8% | 9.8% |
| Started creating your own personalized college and career plan | Early College (*n=*334) | 61.4% | 25.1% | 13.5% |
| Innovation (*n=*177) | 35.0% | 54.2% | 10.7% |
| Overall (*n=*511) | 52.3% | 35.2% | 12.5% |
| Learned information about the availability of jobs and employment related to one or more industries (e.g., information regarding the need for different careers, salaries, and other related information) | Early College (*n=*330) | 66.1% | 22.1% | 11.8% |
| Innovation (*n=*178) | 69.1% | 18.5% | 12.4% |
| Overall (*n=*508) | 67.1% | 20.9% | 12.0% |
| Listened to a guest speaker present on career information | Early College (*n=*328) | 69.5% | 19.5% | 11.0% |
| Innovation (*n=*178) | 70.2% | 22.5% | 7.3% |
| Overall (*n=*506) | 69.8% | 20.6% | 9.7% |
| Conducted labor market research | Early College (*n=*328) | 18.0% | 56.7% | 25.3% |
| Innovation (*n=*177) | 16.4% | 64.4% | 19.2% |
| Overall (*n=*505) | 17.4% | 59.4% | 23.2% |
| Attended a career day or job fair event | Early College (*n=*327) | 38.5% | 52.6% | 8.9% |
| Innovation (*n=*176) | 50.0% | 43.8% | 6.3% |
| Overall (*n=*503) | 42.5% | 49.5% | 8.0% |
| Participated in a job site visit or company tour | Early College (*n=*326) | 26.1% | 64.7% | 9.2% |
| Innovation (*n=*174) | 28.2% | 67.2% | 4.6% |
| Overall (*n=*500) | 26.8% | 65.6% | 7.6% |
| Participated in a job-shadowing experience | Early College (*n=*329) | 21.3% | 70.2% | 8.5% |
| Innovation (*n=*174) | 13.8% | 78.7% | 7.5% |
| Overall (*n=*503) | 18.7% | 73.2% | 8.2% |
| Participated in an internship | Early College (*n=*327) | 15.6% | 72.8% | 11.6% |
| Innovation (*n=*175) | 11.4% | 81.1% | 7.4% |
| Overall (*n=*502) | 14.1% | 75.7% | 10.2% |
| Participated in a capstone project | Early College (*n=*323) | 41.5% | 42.4% | 16.1% |
| Innovation (*n=*176) | 4.5% | 74.4% | 21.0% |
| Overall (*n=*499) | 28.5% | 53.7% | 17.8% |
| Learned about options after high school graduation, such as earning a certificate, Associate’s degree, Bachelor’s degree, or other credential | Early College (*n=*324) | 75.0% | 16.7% | 8.3% |
| Innovation (*n=*177) | 65.0% | 22.0% | 13.0% |
| Overall (*n=*501) | 71.5% | 18.6% | 10.0% |
| Visited a college campus | Early College (*n=*324) | 78.7% | 17.0% | 4.3% |
| Innovation (*n=*175) | 32.6% | 62.9% | 4.6% |
| Overall (*n=*499) | 62.5% | 33.1% | 4.4% |
| Learned about the costs of college and options for paying for college (e.g., financial aid, scholarships) | Early College (*n=*326) | 81.0% | 9.8% | 9.2% |
| Innovation (*n=*175) | 53.1% | 37.1% | 9.7% |
| Overall (*n=*501) | 71.3% | 19.4% | 9.4% |
| Learned what it takes to succeed in college | Early College (*n=*327) | 77.4% | 9.2% | 13.5% |
| Innovation (*n=*176) | 46.0% | 34.1% | 19.9% |
| Overall (*n=*503) | 66.4% | 17.9% | 15.7% |
| Took one or more technical courses (related to an industry) | Early College (*n=*--) | -- | -- | -- |
| Innovation (*n=*174) | 62.6% | 29.9% | 7.5% |
| Overall (*n=*342) | 62.6% | 29.9% | 7.5% |
| Took one or more college-level courses (AP, IB, or dual credit) | Early College (*n=*--) | -- | -- | -- |
| Innovation (*n=*174) | 21.3% | 71.8% | 6.9% |
| Overall (*n=*174) | 21.3% | 71.8% | 6.9% |

Note: Percentages may not total 100% due to rounding.

**Table C.7. Student Participation in Activities by School (Early College)**

|  | **All Schools (n=323-336)** | **Charlestown (n=30-31)** | **Chelsea (n=103-108)** | **Holyoke (n=65-69)** | **New Heights (Brockton) (n=94-100)** | **Salem (n=26-29)** |
| --- | --- | --- | --- | --- | --- | --- |
| Participated in college or career advising (e.g., a college and career readiness class, an advising program) (*n=*248)\* | 73.8% | 80.6% | 48.6% | 91.3% | 83.0% | 86.2% |
| Started creating your own personalized college and career plan (*n=*205)\* | 61.4% | 54.8% | 49.5% | 76.5% | 65.7% | 62.1% |
| Learned information about the availability of jobs and employment related to one or more industries (e.g., information regarding the need for different careers, salaries, and other related information) (*n=*218)\* | 66.1% | 90.3% | 48.1% | 62.7% | 74.7% | 86.2% |
| Listened to a guest speaker present on career information (*n=*228)\* | 69.5% | 90.3% | 40.6% | 80.6% | 78.1% | 100% |
| Conducted labor market research (*n=*59)\* | 18.0% | 23.3% | 13.9% | 13.8% | 20.6% | 28.6% |
| Attended a career day or job fair (*n=*126)\* | 38.5% | 83.9% | 24.3% | 18.2% | 49.5% | 53.8% |
| Participated in a job site visit or company tour (*n=*85)\* | 26.1% | 77.4% | 15.1% | 24.2% | 21.6% | 30.8% |
| Participated in a job-shadowing experience (*n=*70)\* | 21.3% | 74.2% | 19.8% | 7.5% | 16.5% | 17.9% |
| Participated in an internship (*n=*51) | 15.6% | 40.0% | 18.9% | 3.0% | 14.4% | 10.7% |
| Participated in a capstone project (*n=*134)\* | 41.5% | 6.5% | 74.3% | 24.6% | 37.2% | 10.7% |
| Learned about options after high school graduation, such as earning a certificate, Associate’s degree, Bachelor’s degree, or other credential (*n=*243)\* | 75.0% | 77.4% | 60.2% | 78.8% | 83.3% | 89.3% |
| Visited a college campus (*n=*255)\* | 78.7% | 90.3% | 52.4% | 83.3% | 97.9% | 85.7% |
| Learned about the costs of college and options for paying for college (e.g., financial aid, scholarships) (*n=*264)\* | 81.0% | 71.0% | 70.5% | 84.8% | 88.5% | 96.4% |
| Learned what it takes to succeed in college (*n=*253)\* | 77.4% | 77.4% | 62.9% | 80.3% | 85.6% | 96.4% |

Note: Percentages may not total 100% due to rounding. The *n*s reported in each row indicate the total number of respondents across all schools who reported that they participated in the activity. In each school column, the *n*s represent the total number of respondents who answered either “Yes,” “No,” or “I don’t know” for the activity. This fluctuated slightly among the schools depending on the activity being observed. For items marked with an asterisk, student responses differed significantly across race/ethnicity: Participated in college or career advising: X²(8)=55.43, p<.001; Started creating your own personalized college and career plan: X²(8)=21.92, p<.05; Learned information about the availability of jobs and employment related to one or more industries: X²(8)=34.74, p<.001; Listened to a guest speaker present on career information: X²(8)=72.25, p<.001; Conducted Labor market research: X²(8)=25.18, p<.05; Attended a career day or job fair event: X²(8)=66.81, p<.001; Participated in a job site visit or company tour: X²(8)=56.57, p<.001; Participated in job shadowing experience: X²(8)=78.10, p<.001; Participated in an internship: X²(8)=36.06, p<.001; Participated in a capstone project: X²(8)=98.46, p<.001; Learned about options after high school graduation: X²(8)=25.36, p<.05; Visited a college campus: X²(8)=72.05, p<.001; Learned about the costs of college and options for paying for college: X²(8)=21.81, p<.05: Learned what it takes to succeed in college: X²(8)=23.18, p<.05.

**Table C.8. Student Participation in Activities by School (Innovation Pathway)**

|  | **All Schools (*n*=174–178)** | **Burncoat (*n*=23-24)** | **Doherty (*n*=22–23)** | **Nantucket (*n*=15-17)** | **Northampton (*n*=20–21)** | **Uxbridge (*n*=91–94)** |
| --- | --- | --- | --- | --- | --- | --- |
| Participated in college or career advising (e.g., a college and career readiness class, an advising program) (*n=*77)\* | 43.8% | 95.8% | 72.7% | 87.5% | 28.6% | 19.4% |
| Started creating your own personalized college and career plan (*n=*62)\* | 35.0% | 37.5% | 59.1% | 56.3% | 42.9% | 23.4% |
| Learned information about the availability of jobs and employment related to one or more industries (e.g., information regarding the need for different careers, salaries, and other related information) (*n=*123)\* | 69.1% | 83.3% | 91.3% | 93.8% | 61.9% | 57.4% |
| Listened to a guest speaker present on career information (*n=*125)\* | 70.2% | 95.8% | 95.7% | 100% | 42.9% | 58.5% |
| Conducted labor market research (*n=*29)\* | 16.4% | 43.5% | 39.1% | 12.5% | 4.8% | 7.4% |
| Attended a career day or job fair (*n=*88)\* | 50.0% | 13.0% | 30.4% | 81.3% | 15.0% | 66.0% |
| Participated in a job site visit or company tour (*n=*49) | 28.2% | 40.9% | 30.4% | 43.8% | 5.0% | 26.9% |
| Participated in a job-shadowing experience (*n=*24) | 13.8% | 18.2% | 13.0% | 18.8% | 5.0% | 14.0% |
| Participated in an internship (*n=*20)\* | 11.4% | 9.1% | 4.3% | 12.5% | 57.1% | 3.2% |
| Participated in a capstone project (*n=*8) | 4.5% | 4.3% | 8.7% | 12.5% | 4.8% | 2.2% |
| Learned about options after high school graduation, such as earning a certificate, Associate’s degree, Bachelor’s degree, or other credential (*n=*115)\* | 65.0% | 60.9% | 82.6% | 100% | 38.1% | 61.7% |
| Visited a college campus (*n=*57) | 32.6% | 30.4% | 30.4% | 20.0% | 19.0% | 38.7% |
| Learned about the costs of college and options for paying for college (e.g., financial aid, scholarships) (*n=*93) | 53.1% | 50.0% | 73.9% | 68.8% | 42.9% | 48.4% |
| Learned what it takes to succeed in college (*n=*81) | 46.0% | 60.9% | 78.3% | 68.8% | 33.3% | 33.3% |
| Took one or more technical courses (related to an industry) (*n=*109) | 62.6% | 60.9% | 82.6% | 12.5% | 42.9% | 71.4% |
| Took one or more college-level courses (AP, IB, or dual credit) (*n=*37) | 21.3% | 31.8% | 34.8% | 18.8% | 4.8% | 19.6% |
| Took one or more dual credit courses (courses offering both high school and college credit) (*n=*34) | 19.5% | 21.7% | 13.0% | 25.0% | 0.0% | 24.2% |

Note: Percentages may not total 100% due to rounding. The *n*s reported in each row indicate the total number of respondents across all schools who reported that they participated in the activity. In each school column, the *n*s represent the total number of respondents who answered either “Yes,” “No,” or “I don’t know” for the activity. This fluctuated slightly among the schools depending on the activity being observed. For items marked with an asterisk, student responses differed significantly across race/ethnicity: Participated in college or career advising: X²(8)=75.77, p<.001; Started creating your own personalized college and career plan: X²(8)=23.88, p<.05; Learned information about the availability of jobs and employment related to one or more industries: X²(8)=19.22, p<.05; Listened to a guest speaker present on career information: X²(8)=36.41, p<.001; Conducted Labor market research: X²(8)=32.71, p<.001; Attended a career day or job fair event: X²(8)=51.45, p<.001; Participated in an internship: X²(8)=56.57, p<.001; Learned about options after high school graduation: X²(8)=20.45, p<.05; Learned what it takes to succeed in college: X²(8)=25.95, p<.05.

## Student Perceptions of Pathway Program and Activities

**Table C.9. Helpfulness of Activities**

| **How helpful were the following activities?** | **Pathway** | **Not Helpful** | **Slightly Helpful** | **Somewhat Helpful** | **Mostly Helpful** | **Very Helpful** | **M** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Participated in college or career advising (e.g., a college and career readiness class, an advising program) | Early College (*n=*238) | 0.8% | 12.2% | 32.4% | 35.7% | 18.9% | 3.60 |
| Innovation (*n=*73) | 1.4% | 9.6% | 34.2% | 32.9% | 21.9% | 3.64 |
| Overall (*n=*311) | 1.0% | 11.6% | 32.8% | 35.0% | 19.6% | 3.61 |
| Started creating your own personalized college and career plan | Early College (*n=*189) | 1.6% | 14.8% | 29.6% | 27.5% | 26.5% | 3.62 |
| Innovation (*n=*57) | 3.5% | 1.8% | 40.4% | 36.8% | 17.5% | 3.63 |
| Overall (*n=*246) | 2.0% | 11.8% | 32.1% | 29.7% | 24.4% | 3.63 |
| Learned information about the availability of jobs and employment related to one or more industries (e.g., information regarding the need for different careers, salaries, and other related information) | Early College (*n=*200) | 1.0% | 8.0% | 29.5% | 36.5% | 25.0% | 3.76 |
| Innovation (*n=*113) | 2.7% | 10.6% | 27.4% | 33.6% | 25.7% | 3.69 |
| Overall (*n=*313) | 1.6% | 8.9% | 28.8% | 35.5% | 25.2% | 3.74 |
| Listened to a guest speaker present on career information | Early College (*n=*212) | 2.4% | 14.6% | 31.1% | 27.4% | 24.5% | 3.57 |
| Innovation (*n=*114) | 1.8% | 14.0% | 30.7% | 28.1% | 25.4% | 3.61 |
| Overall (*n=*326) | 2.1% | 14.4% | 31.0% | 27.6% | 24.8% | 3.59 |
| Conducted labor market research | Early College (*n=*55) | 7.3% | 10.9% | 29.1% | 21.8% | 30.9% | 3.58 |
| Innovation (*n=*27) | 3.7% | 18.5% | 25.9% | 25.9% | 25.9% | 3.52 |
| Overall (*n=*82) | 6.1% | 13.4% | 28.0% | 23.2% | 29.3% | 3.56 |
| Attended a career day or job fair | Early College (*n=*114) | 1.8% | 14.0% | 32.5% | 27.2% | 24.6% | 3.59 |
| Innovation (*n=*76) | 7.9% | 21.1% | 30.3% | 26.3% | 14.5% | 3.18 |
| Overall (*n=*190) | 4.2% | 16.8% | 31.6% | 26.8% | 20.5% | 3.43 |
| Participated in a job site visit or company tour | Early College (*n=*78) | 2.6% | 10.3% | 32.1% | 28.2% | 26.9% | 3.67 |
| Innovation (*n=*44) | 2.3% | 4.5% | 25.0% | 40.9% | 27.3% | 3.86 |
| Overall (*n=*122) | 2.5% | 8.2% | 29.5% | 32.8% | 27.0% | 3.74 |
| Participated in a job-shadowing experience | Early College (*n=*64) | 1.6% | 7.8% | 26.6% | 31.3% | 32.8% | 3.86 |
| Innovation (*n=*21) | 14.3% | 4.8% | 28.6% | 28.6% | 23.8% | 3.43 |
| Overall (*n=*85) | 4.7% | 7.1% | 27.1% | 30.6% | 30.6% | 3.75 |
| Participated in an internship | Early College (*n=*47) | 2.1% | 8.5% | 19.1% | 27.7% | 42.6% | 4.00 |
| Innovation (*n=*15) | 0.0% | 0.0% | 33.3% | 13.3% | 53.3% | 4.20 |
| Overall (*n=*62) | 1.6% | 6.5% | 22.6% | 24.2% | 45.2% | 4.05 |
| Participated in a capstone project | Early College (*n=*114) | 6.1% | 15.8% | 28.1% | 25.4% | 24.6% | 3.46 |
| Innovation (*n=*7) | 14.3% | 0.0% | 14.3% | 42.9% | 28.6% | 3.71 |
| Overall (*n=*121) | 6.6% | 14.9% | 27.3% | 26.4% | 24.8% | 3.48 |
| Learned about options after high school graduation, such as earning a certificate, Associate’s degree, Bachelor’s degree, or other credential | Early College (*n=*216) | 2.8% | 8.3% | 20.4% | 30.1% | 38.4% | 3.93 |
| Innovation (*n=*106) | 2.8% | 9.4% | 29.2% | 31.1% | 27.4% | 3.71 |
| Overall (*n=*322) | 2.8% | 8.7% | 23.3% | 30.4% | 34.8% | 3.86 |
| Visited a college campus | Early College (*n=*228) | 3.9% | 10.5% | 17.5% | 21.5% | 46.5% | 3.96 |
| Innovation (*n=*50) | 4.0% | 18.0% | 30.0% | 18.0% | 30.0% | 3.52 |
| Overall (*n=*278) | 4.0% | 11.9% | 19.8% | 20.9% | 43.5% | 3.88 |
| Learned about the costs of college and options for paying for college (e.g., financial aid, scholarships) | Early College (*n=*240) | 1.3% | 7.9% | 17.5% | 2.5% | 50.8% | 4.14 |
| Innovation (*n=*86) | 7.0% | 10.5% | 23.3% | 25.6% | 33.7% | 3.69 |
| Overall (*n=*326) | 2.8% | 8.6% | 19.0% | 23.3% | 46.3% | 4.02 |
| Learned what it takes to succeed in college | Early College (*n=*221) | 0.9% | 10.0% | 18.1% | 24.9% | 46.2% | 4.05 |
| Innovation (*n=*72) | 4.2% | 4.2% | 16.7% | 33.3% | 41.7% | 4.04 |
| Overall (*n=*293) | 1.7% | 8.5% | 17.7% | 27.0% | 45.1% | 4.05 |
| Took one or more technical courses (related to an industry) | Early College (*n=*--) | -- | -- | -- | -- | -- | -- |
| Innovation (*n=*101) | 3.0% | 15.8% | 23.8% | 26.7% | 30.7% | 3.66 |
| Overall (*n=*101) | 3.0% | 15.8% | 23.8% | 26.7% | 30.7% | 3.66 |
| Took one or more college-level courses (AP, IB, or dual credit) | Early College (*n=*--) | -- | -- | -- | -- | -- | -- |
| Innovation (*n=*35) | 0.0% | 20.0% | 22.9% | 34.3% | 22.9% | 3.60 |
| Overall (*n=*35) | 0.0% | 20.0% | 22.9% | 34.3% | 22.9% | 3.60 |
| Took one or more dual credit courses (courses offering both high school and college credit) | Early College (*n=*--) | -- | -- | -- | -- | -- | -- |
| Innovation (*n=*28) | 7.1% | 17.9% | 7.1% | 50.0% | 17.9% | 3.54 |
| Overall (*n=*28) | 7.1% | 17.9% | 7.1% | 50.0% | 17.9% | 3.54 |
| **Across all activities** | Early College (*n=*308) | **0.6%** | **16.2%** | **41.2%** | **35.4%** | **6.5%** | **3.67** |
| Innovation (*n=*164) | **3.7%** | **17.1%** | **42.1%** | **34.8%** | **2.4%** | **3.53** |
| Overall (*n=*472) | **1.7%** | **16.5%** | **41.5%** | **35.2%** | **5.1%** | **3.62** |

Note: Percentages may not total 100% due to rounding. The values of each item originally used the following scale: 1-*Not Helpful*, 2-*Slightly Helpful*, 3-*Somewhat Helpful*, 4-*Mostly Helpful*, 5-*Very Helpful*. When calculating the overall mean helpfulness across all activities, the values of response options across all activities participated in by each student was grouped into the following scale: 1 through 1.99=1, 2 through 2.99=2, 3 through 3.99=3, 4 through 4.99=4, and 5=5.

**Table C.10. Mean Helpfulness of Activities by Grade**

| **How helpful were the following activities?** | **Pathway** | **Grade 9** | **Grade 10** | **Grade 11** | **Grade 12** | **Overall Mean** |
| --- | --- | --- | --- | --- | --- | --- |
| Participated in college or career advising (e.g., a college and career readiness class, an advising program) | Early College (*n=*238) | 3.33 | 3.45 | 3.83 | 3.90 | 3.60 |
| Innovation (*n=*71) | 3.23 | 3.71 | 3.79 | 3.60 | 3.63 |
| Overall (*n=*309) | 3.28 | 3.50 | 3.82 | 3.86 | 3.61 |
| Started creating your own personalized college and career plan | Early College (*n=*189) | 2.86 | 3.66 | 3.54 | 3.73 | 3.62 |
| Innovation (*n=*51) | 3.40 | 3.72 | 3.75 | 3.71 | 3.67 |
| Overall (*n=*240) | 3.18 | 3.67 | 3.61 | 3.73 | 3.63 |
| Learned information about the availability of jobs and employment related to one or more industries (e.g., information regarding the need for different careers, salaries, and other related information) | Early College (*n=*200) | 3.88 | 3.82 | 3.68 | 3.65 | 3.77 |
| Innovation (*n=*90) | 3.55 | 3.63 | 4.38 | 3.60 | 3.81 |
| Overall (*n=*290) | 3.64 | 3.77 | 3.95 | 3.64 | 3.78 |
| Listened to a guest speaker present on career information | Early College (*n=*211) | 3.38 | 3.52 | 3.82 | 3.58 | 3.57 |
| Innovation (*n=*86) | 3.24 | 3.71 | 4.39 | 3.25 | 3.73 |
| Overall (*n=*297) | 3.29 | 3.56 | 4.03 | 3.54 | 3.62 |
| Conducted labor market research | Early College (*n=*55) | 3.00 | 3.48 | 4.00 | 3.56 | 3.58 |
| Innovation (*n=*23) | 3.00 | 3.73 | 4.38 | 3.00 | 3.83 |
| Overall (*n=*78) | 3.00 | 3.55 | 4.16 | 3.50 | 3.65 |
| Attended a career day or job fair | Early College (*n=*113) | 3.56 | 3.58 | 3.55 | 3.65 | 3.58 |
| Innovation (*n=*45) | 2.58 | 3.39 | 4.22 | 2.83 | 3.27 |
| Overall (*n=*158) | 3.00 | 3.54 | 3.76 | 3.43 | 3.49 |
| Participated in a job site visit or company tour | Early College (*n=*78) | 2.50 | 3.68 | 3.92 | 3.71 | 3.67 |
| Innovation (*n=*33) | 3.33 | 3.45 | 4.50 | 3.33 | 3.73 |
| Overall (*n=*111) | 3.08 | 3.64 | 4.17 | 3.65 | 3.68 |
| Participated in a job-shadowing experience | Early College (*n=*64) | 3.40 | 3.97 | 3.50 | 4.00 | 3.86 |
| Innovation (*n=*17) | 2.50 | 4.25 | 3.80 | 3.50 | 3.53 |
| Overall (*n=*81) | 3.00 | 4.00 | 3.60 | 3.89 | 3.79 |
| Participated in an internship | Early College (*n=*47) | 2.67 | 3.78 | 4.73 | 4.10 | 4.00 |
| Innovation (*n=*15) | 4.67 | 3.83 | 5.00 | 4.20 | 4.20 |
| Overall (*n=*62) | 3.67 | 3.79 | 4.75 | 4.13 | 4.05 |
| Participated in a capstone project | Early College (*n=*114) | 3.00 | 3.63 | 3.45 | 3.25 | 3.46 |
| Innovation (*n=*7) | 3.00 | 4.00 | 4.50 | 3.00 | 3.71 |
| Overall (*n=*121) | 3.00 | 3.64 | 3.51 | 3.24 | 3.48 |
| Learned about options after high school graduation, such as earning a certificate, Associate’s degree, Bachelor’s degree, or other credential | Early College (*n=*216) | 3.79 | 3.84 | 4.02 | 4.16 | 3.93 |
| Innovation (*n=*82) | 3.47 | 3.71 | 4.33 | 3.33 | 3.78 |
| Overall (*n=*298) | 3.61 | 3.81 | 4.12 | 4.00 | 3.89 |
| Visited a college campus | Early College (*n=*228) | 3.67 | 3.73 | 4.46 | 4.43 | 3.96 |
| Innovation (*n=*38) | 3.00 | 3.50 | 4.45 | 3.50 | 3.66 |
| Overall (*n=*266) | 3.44 | 3.72 | 4.46 | 4.24 | 3.92 |
| Learned about the costs of college and options for paying for college (e.g., financial aid, scholarships) | Early College (*n=*240) | 3.93 | 3.93 | 4.41 | 4.46 | 4.14 |
| Innovation (*n=*70) | 3.14 | 3.87 | 4.20 | 3.20 | 3.70 |
| Overall (*n=*310) | 3.54 | 3.92 | 4.36 | 4.24 | 4.04 |
| Learned what it takes to succeed in college | Early College (*n=*221) | 3.69 | 4.02 | 4.21 | 4.14 | 4.05 |
| Innovation (*n=*60) | 3.67 | 3.79 | 4.24 | 4.50 | 3.97 |
| Overall (*n=*281) | 3.68 | 3.97 | 4.22 | 4.19 | 4.04 |
| Took one or more technical courses (related to an industry) | Early College (*n=*--) | -- | -- | -- | -- | -- |
| Innovation (*n=*74) | 2.93 | 3.77 | 4.33 | 3.57 | 3.74 |
| Overall (*n=*74) | 2.93 | 3.77 | 4.33 | 3.57 | 3.74 |
| Took one or more college-level courses (AP, IB, or dual credit) | Early College (*n=*--) | -- | -- | -- | -- | -- |
| Innovation (*n=*30) | 3.50 | 3.50 | 3.90 | 3.60 | 3.67 |
| Overall (*n=*30) | 3.50 | 3.50 | 3.90 | 3.60 | 3.67 |
| Took one or more dual credit courses (courses offering both high school and college credit) | Early College (*n=*--) | -- | -- | -- | -- | -- |
| Innovation (*n=*18) | 3.33 | 3.83 | 4.20 | 3.50 | 3.78 |
| Overall (*n=*18) | 3.33 | 3.83 | 4.20 | 3.50 | 3.78 |

Note: For these items, the mean was calculated based on the assigned values for each of the helpfulness response options: 1-*Not helpful*, 2-*Slightly helpful*, 3-*Somewhat helpful*, 4-*Mostly helpful*, 5-*Very helpful*.

**Table C.11. Mean Helpfulness of Activities by Gender**

| **How helpful were the following activities?** | **Pathway** | **Female** | **Male** | **Overall Mean** |
| --- | --- | --- | --- | --- |
| Participated in college or career advising (e.g., a college and career readiness class, an advising program) | Early College (*n=*210) | 3.65 | 3.55 | 3.60 |
| Innovation (*n=*51) | 3.78 | 3.75 | 3.76 |
| Overall (*n=*261) | 3.67 | 3.59 | 3.64 |
| Started creating your own personalized college and career plan | Early College (*n=*168) | 3.68 | 3.63 | 3.65 |
| Innovation (*n=*35) | 3.82 | 3.72 | 3.77 |
| Overall (*n=*203) | 3.70 | 3.65 | 3.67 |
| Learned information about the availability of jobs and employment related to one or more industries (e.g., information regarding the need for different careers, salaries, and other related information) | Early College (*n=*178) | 3.85 | 3.76 | 3.81 |
| Innovation (*n=*60) | 4.03 | 3.86 | 3.95 |
| Overall (*n=*238) | 3.90 | 3.79 | 3.84 |
| Listened to a guest speaker present on career information | Early College (*n=*187) | 3.72 | 3.41 | 3.57 |
| Innovation (*n=*60) | 3.94 | 4.07 | 4.00 |
| Overall (*n=*247) | 3.77 | 3.57 | 3.67 |
| Conducted labor market research | Early College (*n=*49) | 3.53 | 3.65 | 3.57 |
| Innovation (*n=*20) | 3.83 | 4.00 | 3.90 |
| Overall (*n=*69) | 3.45 | 3.64 | 3.53 |
| Attended a career day or job fair | Early College (*n=*100) | 3.48 | 3.71 | 3.58 |
| Innovation (*n=*23) | 3.33 | 3.25 | 3.30 |
| Overall (*n=*123) | 3.45 | 3.64 | 3.53 |
| Participated in a job site visit or company tour | Early College (*n=*70) | 3.63 | 3.91 | 3.76 |
| Innovation (*n=*20) | 4.13 | 3.83 | 3.95 |
| Overall (*n=*90) | 3.72 | 3.89 | 3.80 |
| Participated in a job-shadowing experience | Early College (*n=*51) | 3.97 | 3.85 | 3.92 |
| Innovation (*n=*8) | 5.00 | 3.86 | 4.00 |
| Overall (*n=*59) | 4.00 | 3.85 | 3.93 |
| Participated in an internship | Early College (*n=*40) | 4.24 | 4.05 | 4.15 |
| Innovation (*n=*11) | 4.33 | 4.25 | 4.27 |
| Overall (*n=*51) | 4.25 | 4.11 | 4.18 |
| Participated in a capstone project | Early College (*n=*100) | 3.43 | 3.49 | 3.45 |
| Innovation (*n=*5) | 4.00 | 4.25 | 4.20 |
| Overall (*n=*105) | 3.44 | 3.56 | 3.49 |
| Learned about options after high school graduation, such as earning a certificate, Associate’s degree, Bachelor’s degree, or other credential | Early College (*n=*191) | 3.94 | 3.89 | 3.91 |
| Innovation (*n=*49) | 4.04 | 4.00 | 4.02 |
| Overall (*n=*240) | 3.96 | 3.91 | 3.93 |
| Visited a college campus | Early College (*n=*199) | 4.03 | 3.92 | 3.97 |
| Innovation (*n=*16) | 3.25 | 4.25 | 3.75 |
| Overall (*n=*215) | 3.97 | 3.94 | 3.96 |
| Learned about the costs of college and options for paying for college (e.g., financial aid, scholarships) | Early College (*n=*211) | 4.16 | 4.09 | 4.12 |
| Innovation (*n=*42) | 3.76 | 3.95 | 3.86 |
| Overall (*n=*253) | 4.09 | 4.06 | 4.08 |
| Learned what it takes to succeed in college | Early College (*n=*191) | 4.14 | 4.01 | 4.08 |
| Innovation (*n=*41) | 3.95 | 4.10 | 4.02 |
| Overall (*n=*232) | 4.11 | 4.03 | 4.07 |
| Took one or more technical courses (related to an industry) | Early College (*n=*--) | -- | -- | -- |
| Innovation (*n=*38) | 4.31 | 3.80 | 3.97 |
| Overall (*n=*38) | 4.31 | 3.80 | 3.97 |
| Took one or more college-level courses (AP, IB, or dual credit) | Early College (*n=*--) | -- | -- | -- |
| Innovation (*n=*18) | 4.00 | 3.50 | 3.78 |
| Overall (*n=*18) | 4.00 | 3.50 | 3.78 |
| Took one or more dual credit courses (courses offering both high school and college credit) | Early College (*n=*--) | -- | -- | -- |
| Innovation (*n=*8) | 4.25 | 2.75 | 3.50 |
| Overall (*n=*8) | 4.25 | 2.75 | 3.50 |

Note: For these items, the mean was calculated based on the assigned values for each of the helpfulness response options: 1-*Not helpful*, 2-*Slightly helpful*, 3-*Somewhat helpful*, 4-*Mostly helpful*, 5-*Very helpful*.

**Table C.12. Overall Mean Helpfulness of Activities by Race/Ethnicity**

| **How helpful were the following activities?** | **Pathway** | **Asian** | **Black or African American** | **White** | **Latinx** | **Other** | **Overall Mean** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Participated in college or career advising (e.g., a college and career readiness class, an advising program) | Early College (n=212) | 4.00 | 3.37 | 3.48 | 3.63 | 3.94 | 3.60 |
| Innovation (n=67) | 4.33 | 3.75 | 3.59 | 3.59 | 4.00 | 3.67 |
| Overall (n=279) | 4.11 | 3.44 | 3.54 | 3.62 | 3.95 | 3.62 |
| Started creating your own personalized college and career plan | Early College (n=168) | 3.67 | 3.56 | 3.37 | 3.67 | 4.04 | 3.64 |
| Innovation (n=52) | 3.00 | 3.71 | 3.68 | 3.92 | 3.00 | 3.71 |
| Overall (n=220) | 3.57 | 3.58 | 3.53 | 3.71 | 4.00 | 3.66 |
| Learned information about the availability of jobs and employment related to one or more industries (e.g., information regarding the need for different careers, salaries, and other related information) | Early College (n=178) | 3.80 | 3.63 | 3.73 | 3.80 | 4.25 | 3.80 |
| Innovation (n=103) | 3.75 | 4.08 | 3.56 | 3.90 | 3.83 | 3.71 |
| Overall (n=281) | 3.78 | 3.71 | 3.61 | 3.83 | 4.17 | 3.77 |
| Listened to a guest speaker present on career information | Early College (n=184) | 2.40 | 3.32 | 3.41 | 3.69 | 4.04 | 3.54 |
| Innovation (n=106) | 3.75 | 4.38 | 3.43 | 3.65 | 3.83 | 3.62 |
| Overall (n=290) | 3.00 | 3.52 | 3.42 | 3.68 | 4.00 | 3.57 |
| Conducted labor market research | Early College (n=48) | -- | 2.82 | 4.00 | 3.83 | 3.50 | 3.54 |
| Innovation (n=24) | -- | 4.17 | 2.88 | 4.43 | 2.00 | 3.54 |
| Overall (n=72) | -- | 3.29 | 3.25 | 3.97 | 3.15 | 3.54 |
| Attended a career day or job fair | Early College (n=101) | 3.67 | 3.53 | 3.75 | 3.44 | 3.94 | 3.59 |
| Innovation (n=68) | 2.50 | 3.75 | 3.18 | 3.20 | 3.00 | 3.18 |
| Overall (n=169) | 3.20 | 3.55 | 3.26 | 3.39 | 3.68 | 3.43 |
| Participated in a job site visit or company tour | Early College (n=69) | 4.00 | 3.80 | 3.55 | 3.62 | 4.18 | 3.75 |
| Innovation (n=39) | 3.00 | 3.80 | 3.95 | 4.50 | 3.80 | 3.97 |
| Overall (n=108) | 3.50 | 3.80 | 3.82 | 3.78 | 4.06 | 3.83 |
| Participated in a job-shadowing experience | Early College (n=51) | 4.00 | 3.64 | 4.25 | 3.83 | 4.13 | 3.86 |
| Innovation (n=19) | -- | 3.67 | 3.50 | 4.00 | -- | 3.58 |
| Overall (n=70) | 4.00 | 3.65 | 3.67 | 3.85 | 4.13 | 3.79 |
| Participated in an internship | Early College (n=42) | 3.00 | 3.60 | 4.20 | 4.24 | 4.22 | 4.05 |
| Innovation (n=14) | -- | -- | 4.17 | 4.00 | -- | 4.14 |
| Overall (n=56) | 3.00 | 3.60 | 4.18 | 4.21 | 4.22 | 4.07 |
| Participated in a capstone project | Early College (n=99) | 4.00 | 3.30 | 3.67 | 3.31 | 4.15 | 3.45 |
| Innovation (n=6) | -- | -- | 3.75 | 3.50 | -- | 3.67 |
| Overall (n=105) | 4.00 | 3.30 | 3.70 | 3.32 | 4.15 | 3.47 |
| Learned about options after high school graduation, such as earning a certificate, Associate’s degree, Bachelor’s degree, or other credential | Early College (n=191) | 4.00 | 3.64 | 3.52 | 4.05 | 4.41 | 3.91 |
| Innovation (n=96) | 4.25 | 4.14 | 3.59 | 3.94 | 3.83 | 3.74 |
| Overall (n=287) | 4.13 | 3.70 | 3.57 | 4.03 | 4.31 | 3.85 |
| Visited a college campus | Early College (n=201) | 3.20 | 3.51 | 4.08 | 4.25 | 4.32 | 3.97 |
| Innovation (n=45) | 2.00 | 3.67 | 3.71 | 3.50 | 2.00 | 3.60 |
| Overall (n=246) | 3.00 | 3.52 | 3.87 | 4.19 | 4.24 | 3.90 |
| Learned about the costs of college and options for paying for college (e.g., financial aid, scholarships) | Early College (n=212) | 3.83 | 3.75 | 4.04 | 4.33 | 4.41 | 4.12 |
| Innovation (n=79) | 3.50 | 3.75 | 3.73 | 3.81 | 4.00 | 3.75 |
| Overall (n=291) | 3.75 | 3.75 | 3.84 | 4.25 | 4.40 | 4.02 |
| Learned what it takes to succeed in college | Early College (n=192) | 4.25 | 3.97 | 4.05 | 4.07 | 4.44 | 4.09 |
| Innovation (n=70) | 3.67 | 4.33 | 4.05 | 3.80 | -- | 4.01 |
| Overall (n=262) | 4.00 | 4.01 | 4.05 | 4.03 | 4.44 | 4.07 |
| Took one or more technical courses (related to an industry) | Early College (n=--) | -- | -- | -- | -- | -- | -- |
| Innovation (n=91) | 3.33 | 4.00 | 3.69 | 4.08 | 3.25 | 3.75 |
| Overall (n=91) | 3.33 | 4.00 | 3.69 | 4.08 | 3.25 | 3.75 |
| Took one or more college-level courses (AP, IB, or dual credit) | Early College (n=--) | -- | -- | -- | -- | -- | -- |
| Innovation (n=33) | 3.67 | 3.67 | 3.60 | 3.63 | 4.00 | 3.64 |
| Overall (n=33) | 3.67 | 3.67 | 3.60 | 3.63 | 4.00 | 3.64 |
| Took one or more dual credit courses (courses offering both high school and college credit) | Early College (n=--) | -- | -- | -- | -- | -- | -- |
| Innovation (n=27) | 4.00 | 3.25 | 3.53 | 3.33 | 4.00 | 3.52 |
| Overall (n=27) | 4.00 | 3.25 | 3.53 | 3.33 | 4.00 | 3.52 |

Note: For these items, the mean was calculated based on the assigned values for each of the helpfulness response options: 1-*Not helpful*, 2-*Slightly helpful*, 3-*Somewhat helpful*, 4-*Mostly helpful*, 5-*Very helpful*. Original response options for race/ethnicity included the following: “American Indian or Alaska Native”, “Asian”, “Black or African American”, “Native Hawaiian or other Pacific Islander”, “White”, “Hispanic or Latinx”, “Two or more”, “Other”, or “I do not wish to share”. The categories “American Indian or Alaska Native”, “Native Hawaiian or other Pacific Islander”, “Two or more” and “Other” were all merged into one “Other” category. The “I do not wish to share” options were removed from analysis.

**Table C.13. Student Perception of Program Outcomes**

| **My pathway program has…** | **Pathway** | **Strongly Disagree** | **Disagree** | **Agree** | **Strongly Agree** | **M** |
| --- | --- | --- | --- | --- | --- | --- |
| Helped me improve my grades | Early College (*n=*312) | 6.4% | 23.7% | 56.1% | 13.8% | 2.77 |
| Innovation (*n=*171) | 9.9% | 32.7% | 46.2% | 11.1% | 2.58 |
| Overall (*n=*483) | 7.7% | 26.9% | 52.6% | 12.8% | 2.71 |
| Helped me stay on track to graduate from high school | Early College (*n=*311) | 4.5% | 14.8% | 63.3% | 17.4% | 2.94 |
| Innovation (*n=*170) | 7.1% | 24.7% | 54.1% | 14.1% | 2.75 |
| Overall (*n=*481) | 5.4% | 18.3% | 60.1% | 16.2% | 2.87 |
| Encouraged me to enroll in a two-year or four-year college, technical school, or certificate program | Early College (*n=*310) | 2.9% | 14.2% | 60.3% | 22.6% | 3.03 |
| Innovation (*n=*171) | 8.2% | 28.1% | 43.9% | 19.9% | 2.75 |
| Overall (*n=*481) | 4.8% | 19.1% | 54.5% | 21.6% | 2.93 |
| Raised my awareness of college opportunities that I was not aware of previously | Early College (*n=*311) | 3.5% | 11.9% | 57.9% | 26.7% | 3.08 |
| Innovation (*n=*170) | 5.3% | 24.7% | 50.6% | 19.4% | 2.84 |
| Overall (*n=*481) | 4.2% | 16.4% | 55.3% | 24.1% | 2.99 |
| Raised my awareness of potential work-related certifications or credentials | Early College (*n=*310) | 2.9% | 16.8% | 62.6% | 17.7% | 2.95 |
| Innovation (*n=*171) | 4.7% | 18.1% | 58.5% | 18.7% | 2.91 |
| Overall (*n=*481) | 3.5% | 17.3% | 61.1% | 18.1% | 2.94 |
| Provided me with enough advising opportunities to help me make choices after high school that are right for me | Early College (*n=*313) | 4.8% | 15.0% | 60.4% | 19.8% | 2.95 |
| Innovation (*n=*171) | 5.3% | 29.2% | 52.0% | 13.5% | 2.74 |
| Overall (*n=*484) | 5.0% | 20.0% | 57.4% | 17.6% | 2.88 |
| Motivated me to want to learn the skills needed for a specific job/career | Early College (*n=*311) | 3.9% | 18.0% | 55.0% | 23.2% | 2.97 |
| Innovation (*n=*171) | 5.3% | 16.4% | 53.2% | 25.1% | 2.98 |
| Overall (*n=*482) | 4.4% | 17.4% | 54.4% | 23.9% | 2.98 |
| Helped me build confidence about my ability to succeed in the future | Early College (*n=*311) | 3.5% | 17.4% | 57.6% | 21.5% | 2.97 |
| Innovation (*n=*171) | 6.4% | 18.1% | 55.0% | 20.5% | 2.89 |
| Overall (*n=*482) | 4.6% | 17.6% | 56.6% | 21.1% | 2.94 |
| Helped me take ownership over my high school experience | Early College (*n=*310) | 5.2% | 14.5% | 60.3% | 20.0% | 2.95 |
| Innovation (*n=*170) | 5.3% | 22.9% | 52.4% | 19.4% | 2.86 |
| Overall (*n=*480) | 5.2% | 17.5% | 57.5% | 19.8% | 2.92 |
| **Across all outcomes** | Early College (*n=*314) | 3.8% | 38.9% | 51.0% | 6.4% | 2.96 |
| Innovation (*n=*171) | 7.6% | 48.5% | 41.5% | 2.3% | 2.81 |
| Overall (*n=*485) | 5.2% | 42.3% | 47.6% | 4.9% | 2.91 |

Note: Percentages may not total 100% due to rounding. The values of each item originally used the following scale: 1-*Strongly Disagree*, 2-*Disagree*, 3-*Agree*, and 4-*Strongly Agree*. When calculating the overall mean agreement across all activities, the values of response options across all activities participated in by each student was then grouped into the following scale: 1 through 1.99=1, 2 through 2.99=2, 3 through 3.99=3, 4=4.

**Table C.14. Met Overall Needs**

|  |  |  |
| --- | --- | --- |
| The pathway program has… | Pathway | % |
| Not met my needs. | Early College (*n=*40) | 12.9% |
| Innovation (*n=*26) | 15.1% |
| Overall (*n=*66) | 13.7% |
| Met my needs a little. | Early College (*n=*190) | 61.5% |
| Innovation (*n=*83) | 48.3% |
| Overall (*n=*273) | 56.8% |
| Met my needs a lot. | Early College (*n=*79) | 25.6% |
| Innovation (*n=*63) | 36.6% |
| Overall (*n=*142) | 29.5% |

Note: Percentages may not total 100% due to rounding.

**Table C.15. Met Overall Needs by Race**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **The pathway program has…** | **Pathway** | **Asian** | **Black or African American** | **White** | **Latinx** | **Other** |
| Not met my needs. | Early College (n=38) | 0.0% | 15.1% | 17.9% | 12.1% | 12.5% |
| Innovation (n=22) | 0.0% | 20.0% | 13.6% | 16.7% | 12.5% |
| Overall (n=60) | 0.0% | 15.9% | 14.8% | 12.8% | 12.5% |
| Met my needs a little. | Early College (n=174) | 71.4% | 74.0% | 56.4% | 59.8% | 43.8% |
| Innovation (n=76) | 66.7% | 40.0% | 53.4% | 33.3% | 37.5% |
| Overall (n=250) | 69.2% | 68.2% | 54.2% | 55.8% | 42.5% |
| Met my needs a lot. | Early College (n=71) | 28.6% | 11.0% | 25.6% | 28.0% | 43.8% |
| Innovation (n=58) | 33.3% | 40.0% | 33.0% | 50.0% | 50.0% |
| Overall (n=129) | 30.8% | 15.9% | 31.0% | 31.4% | 45.0% |

Note: Percentages may n total 100% due to rounding. Original response options included the following: “American Indian or Alaska Native”, “Asian”, “Black or African American”, “Native Hawaiian or other Pacific Islander”, “White”, “Hispanic or Latinx”, “Two or more”, “Other”, or “I do not wish to share”. The categories “American Indian or Alaska Native”, “Native Hawaiian or other Pacific Islander”, “Two or more” and “Other” were all merged into one “Other” category. The “I do not wish to share” options were removed from analysis. Student responses were close to differing significantly across race/ethnicity: X²(8)=15.44, p>.05.

**Table C.16. Perceived Effect of Pathway Program on Students’ Future Plans**

|  |  |  |
| --- | --- | --- |
| Has your pathway program affected your plans for your future? | Pathway | % |
| Yes | Early College (*n=*110) | 39.3% |
| Innovation (*n=*75) | 44.6% |
| Overall (*n=*185) | 41.3% |
| No | Early College (*n=*93) | 33.2% |
| Innovation (*n=*47) | 28.0% |
| Overall (*n=*140) | 31.3% |
| I don’t know | Early College (*n=*77) | 27.5% |
| Innovation (*n=*46) | 27.4% |
| Overall (*n=*123) | 27.5% |

Note: Percentages may not total 100% due to rounding.

**Table C.17. Perceived Effect of Pathway Program on Students’ Future Plans by Race**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Has your pathway program affected your plans for your future?** | **Pathway** | **Asian** | **Black or African American** | **White** | **Latinx** | **Other** |
| Yes | Early College (n=105) | 28.6% | 46.2% | 28.2% | 38.9% | 43.3% |
| Innovation (n=71) | 42.9% | 40.0% | 46.6% | 45.8% | 37.5% |
| Overall (n=176) | 35.7% | 45.0% | 41.5% | 40.0% | 42.1% |
| No | Early College (n=88) | 14.3% | 16.9% | 38.5% | 40.5% | 33.3% |
| Innovation (n=44) | 14.3% | 40.0% | 24.3% | 37.5% | 37.5% |
| Overall (n=132) | 14.3% | 21.3% | 28.2% | 40.0% | 34.2% |
| I don’t know | Early College (n=74) | 57.1% | 36.9% | 33.3% | 20.6% | 23.3% |
| Innovation (n=42) | 42.9% | 20.0% | 29.1% | 16.7% | 25.0% |
| Overall (n=116) | 50.0% | 33.8% | 30.3% | 20.0% | 23.7% |

Note: Percentages may not total 100% due to rounding. Original response options included the following: “American Indian or Alaska Native,” “Asian,” “Black or African American,” “Native Hawaiian or other Pacific Islander,” “White,” “Hispanic or Latinx,” “Two or more,” “Other,” or “I do not wish to share.” The categories “American Indian or Alaska Native”, “Native Hawaiian or other Pacific Islander”, “Two or more” and “Other” were all merged into one “Other” category. Student responses differed significantly across race/ethnicity: X²(8)=15.94, p<.05.

**Table C.18. Helpfulness of Pathway in Preparing Students for Postsecondary Plans**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **How helpful has your pathway program been in preparing you for the following items?** | **Pathway** | **Not Helpful** | **Somewhat Helpful** | **Helpful** | **Very Helpful** | **M** |
| Learning new employability skills (e.g. time management, interpersonal communication) | Early College (*n=*309) | 11.7% | 38.2% | 37.2% | 12.9% | 2.51 |
| Innovation (*n=*172) | 11.0% | 32.6% | 40.1% | 16.3% | 2.62 |
| Overall (*n=*481) | 11.4% | 36.2% | 38.3% | 14.1% | 2.55 |
| Staying on track to graduate on time from high school | Early College (*n=*306) | 6.9% | 20.3% | 51.3% | 21.6% | 2.88 |
| Innovation (*n=*173) | 12.7% | 30.6% | 39.9% | 16.8% | 2.61 |
| Overall (*n=*479) | 9.0% | 24.0% | 47.2% | 19.8% | 2.78 |
| Getting ready to apply to college or a university | Early College (*n=*308) | 7.8% | 29.9% | 41.2% | 21.1% | 2.76 |
| Innovation (*n=*173) | 26.0% | 27.2% | 36.4% | 10.4% | 2.31 |
| Overall (*n=*481) | 14.3% | 28.9% | 39.5% | 17.3% | 2.60 |
| Learning about different career fields | Early College (*n=*307) | 9.1% | 29.3% | 37.8% | 23.8% | 2.76 |
| Innovation (*n=*173) | 10.4% | 19.7% | 42.2% | 27.7% | 2.87 |
| Overall (*n=*480) | 9.6% | 25.8% | 39.4% | 25.2% | 2.80 |
| Gaining work experience in an industry I am interested in | Early College (*n=*--) | -- | -- | -- | -- | -- |
| Innovation (*n=*161) | 18.6% | 24.8% | 37.3% | 19.3% | 2.57 |
| Overall (*n=*161) | 18.6% | 24.8% | 37.3% | 19.3% | 2.57 |
| **Across all pathway preparation topics** | Early College (*n=*310) | 8.7% | 45.8% | 38.1% | 7.4% | 2.73 |
| Innovation (*n=*173) | 17.9% | 43.4% | 35.8% | 2.9% | 2.6 |
| Overall (*n=*483) | 12.0% | 44.9% | 37.3% | 5.8% | 2.68 |

Note: Percentages may not total 100% due to rounding.

# Appendix D. Student Participation Analysis Technical Detail

## Student Participation Data

Table D.1. Extant Student Participation Data Provided by Participating Schools

|  |  |
| --- | --- |
| **School** | **Percentage of Total Students (*n*=772)** |
| ***Innovation Pathway*** | ***(n=192)*** |
| Burncoat High School | 12.5% |
| Doherty High School | 13.0% |
| Nantucket High School | 10.4% |
| Northampton High School | 14.1% |
| Uxbridge | 50.0% |
| ***Early College Pathway*** | ***(n=580)*** |
| Charlestown High School | 6.6% |
| Chelsea High School | 38.6% |
| Holyoke High School | 13.1% |
| New Heights Charter School of Brockton | 34.0% |
| Salem High School | 7.8% |

*Source*: School-provided extant participation data

Table D.2. Student Participation by Grant Program Type

|  |  |
| --- | --- |
| **Grant Program Type** | **(*n*=772)** |
| Innovation Pathway | 24.9% |
| Early College Pathway | 75.1% |

*Source*: School-provided extant participation data

Table D.3. Types of Advising Offered to Students by School

|  |  |
| --- | --- |
| **Types of advising available to students (e.g., workshops, one-on-one, etc.)** | |
| ***Innovation Pathway*** | |
| Burncoat High School | One-on-one advising |
| Classroom lessons |
| Speakers |
| Naviance activities |
| Doherty High School | One-on-one advising |
| Classroom lessons |
| Speakers |
| Naviance activities |
| Nantucket High School | One-on-one advising |
| Classroom lessons |
| Speakers |
| Northampton High School | One-on-one advising |
| Speakers |
| Online |
| Surveys |
| Uxbridge | One-on-one advising |
| Field trips |
| Workshops |
| Speakers |
| Scheduling |
| ***Early College Pathway*** | |
| Charlestown High School | One-on-one advising |
| Small group counseling |
| Speakers |
| Mini-internships |
| Job shadows |
| Chelsea High School | One-on-one advising |
| Small group counseling |
| Field trips |
| Classroom lessons |
| Grade-level assemblies |
| Holyoke High School | Field trips |
| Classroom lessons |
| Workshops |
| Speakers |
| New Heights Charter School of Brockton | One-on-one advising |
| Unique opportunities with college advising and college visits to meet college administrators and current students |
| Project-based learning |
| Salem | One-on-one advising |
| Workshops |
| Speakers |

*Source*: School-provided extant participation data

Table D.4. Student Participation in In-Person and Online Advising by Program and Overall

|  |  |  |  |
| --- | --- | --- | --- |
| **Percent of students who participated in…** | **IP**  **(*n*=192)** | **EC**  **(*n*=580)** | **Overall**  **(*n*=772)** |
| **In-person** career/academic advising sessions. | 98.4% | 100.0% | 99.6% |
| **Online** career/academic advising. | 50.0% | 61.4% | 58.5% |

*Source*: School-provided extant participation data

Table D.5. Average Hours of Student Participation in In-Person and Online Advising by Program and Overall

|  |  |  |  |
| --- | --- | --- | --- |
|  | **IP**  **(*n*=189)** | **EC (*n*=580)** | **Overall (*n*=769)** |
| Average number of hours of student participation in **in-person** career/academic advising sessions | 9.1 | 46.4 | 37.1 |
| Average number of hours of student participation in **online** career/academic advising | 7.0 | 10.3 | 9.5 |

*Source*: School-provided extant participation data

Table D.6. Existence of Individual Career/Academic Plans

|  |  |  |  |
| --- | --- | --- | --- |
|  | **IP**  **(*n*=192)** | **EC (*n*=580)** | **Overall (*n*=772)** |
| Existence of individual career/academic plans (Yes/No) | 97.9% | 100.0% | 99.5% |

*Source*: School-provided extant participation data

Table D.7. Student Participation in Work-based Learning and Social Supports

|  |  |  |  |
| --- | --- | --- | --- |
| **Percentage of students who participated in…** | **IP**  **(*n*=192)** | **EC (*n*=580)** | **Overall (*n*=772)** |
| Internships and/or capstone projects. | 11.5% | 41.7% | 34.2% |
| Tutoring/mentoring to support students in the pathway program. | 79.7% | 99.1% | 94.3% |

*Source*: School-provided extant participation data

Table D.8. Average Hours of Student Participation in Work-based Learning and Social Supports

|  |  |  |  |
| --- | --- | --- | --- |
| **Internships and/or capstone projects** | **IP**  **(*n*=24)** | **EC (*n*=240)** | **Overall (*n*=264)** |
| Average number of hours of student participation | 67.1 | 20.8 | 24.7 |
| **Tutoring/mentoring hours to support students in the pathway program** | **IP**  **(*n*=155)** | **EC (*n*=573)** | **Overall (*n*=727)** |
| Average number of hours of student participation | 15.3 | 98.7 | 81.2 |

*Source*: School-provided extant participation data

# Appendix E. Impact Analysis Technical Detail

Table E.1. Percentage of EC Students Took At Least One Advanced, AP, or Postsecondary Credit Course in 2019

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | EC Students | | Comparison Students | |  |  |  |
|  | **n** | **%** | **n** | **%** | **X2** | **p value** | **Odds Ratio** |
| Advanced Course | 422 | 87.9% | 422 | 59.7% | 86.6 | .000\*\* | 4.9 |
| AP Course | 422 | 41.2% | 422 | 28.8% | 19.6 | .000\*\* | 1.9 |
| Postsecondary Course | 422 | 28.0% | 422 | 3.3% | 97.1 | .000\*\* | 11.3 |

*Source*: DESE-provided extant data (SCS)

Note: \**p*<.05; \*\**p*<.01

Table E.2. SAT Reading and Math Scores by EC Participation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | EC Students | | Comparison Students | |  |  |  |
|  | **n** | **mean** | **n** | **mean** | **t** | **p value** | **Effect size** |
| SAT Reading | 47 | 479 | 47 | 483 | -0.04 | .969 | - |
| SAT Math | 47 | 479 | 47 | 462 | 1.31 | .197 | - |

*Source*: DESE-provided extant data (College Board Data)

Note: \**p*<.05; \*\**p*<.01

Table E.3. Graduation Rates and College Plans by EC Participation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | EC Students | | Comparison Students | |  |  |  |
|  | **n** | **%** | **n** | **%** | **X2** | **p value** | **Odds Ratio** |
| Graduated | 152 | 88.8% | 152 | 92.8% | 1.42 | .234 | - |
| Graduated and Completed the Massachusetts Core Curriculum | 152 | 82.2% | 152 | 70.4% | 5.90 | .015\* | 1.6 |
| 2 or 4 Yr College Plan | 152 | 80.3% | 152 | 72.4% | 2.62 | .105 | - |

*Source*: DESE-provided extant data (SIMS)

Note: \**p*<.05; \*\**p*<.01

Table E.4. Attendance Rate by EC Participation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | EC Students | | Comparison Students | |  |  |  |
|  | **n** | **mean** | **n** | **mean** | **t** | **p value** | **Effect size** |
| Attendance Rate | 422 | 93% | 422 | 88% | 6.0 | .000\*\* | 0.4 |

*Source*: DESE-provided extant data (SIMS)

Note: \**p*<.05; \*\**p*<.01

Table E.5. Disciplinary Incident Rates by EC Participation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | EC Students | | Comparison Students | |  |  |  |
|  | **n** | **%** | **n** | **%** | **X2** | **p value** | **Odds Ratio** |
| Disciplinary Incident Rates | 422 | 2.1% | 422 | 6.6% | 10.2 | .001\*\* | 0.3 |

*Source*: DESE-provided extant data (SSDR)

Note: \**p*<.05; \*\**p*<.01

Table E.6. Percentage of IP Students Took At Least One Advanced, AP, or Postsecondary Credit Course in 2019

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | IP Students | | Comparison Students | |  |  |  |
|  | **n** | **%** | **n** | **%** | **X2** | **p value** | **Odds Ratio** |
| Advanced Course | 147 | 64.3% | 147 | 63.7% | 0.02 | .895 | - |
| AP Course | 147 | 15.3% | 147 | 11.3% | 0.05 | .350 | - |
| Postsecondary Credit Course | 147 | 0.8% | 147 | 1.6% | 0.34 | .561 | - |

*Source*: DESE-provided extant data (SCS)

Note: \**p*<.05; \*\**p*<.01

Table E.7. SAT Reading and Math Scores by IP Participation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | IP Students | | Comparison Students | |  |  |  |
|  | **n** | **mean** | **n** | **mean** | **t** | **p value** | **Effect size** |
| SAT Reading | 22 | 405 | 22 | 423 | -1.12 | .276 | - |
| SAT Math | 22 | 418 | 22 | 433 | 0.64 | .528 | - |

*Source*: DESE-provided extant data (College Board Data)

Note: \**p*<.05; \*\**p*<.01

Table E.8. Graduation Rates and College Plans by IP Participation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | IP Students | | Comparison Students | |  |  |  |
|  | **n** | **%** | **n** | **%** | **X2** | **p value** | **Odds Ratio** |
| Graduated | 12 | 83.3% | 12 | 100.0% | 2.18 | .140 | - |
| Graduated and Completed the Massachusetts Core Curriculum | 12 | 75.0% | 12 | 33.3% | 4.20 | .041\* | 2.1 |
| 2 or 4 Yr College Plan | 12 | 66.7% | 12 | 50.0% | 0.69 | .408 | - |

*Source*: DESE-provided extant data (SIMS)

Note: \**p*<.05; \*\**p*<.01

Table E.9. Attendance Rate by IP Participation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | IP Students | | Comparison Students | |  |  |  |
|  | **n** | **mean** | **n** | **mean** | **t** | **p value** | **Effect size** |
| Attendance Rate | 124 | 95% | 124 | 92% | 2.3 | .023\* | 0.29 |

*Source*: DESE-provided extant data (SIMS)

Note: \**p*<.05; \*\**p*<.01

Table E.10. Disciplinary Incident Rates by IP Participation

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | IP Students | | Comparison Students | |  |  |  |
|  | **n** | **%** | **n** | **%** | **X2** | **p value** | **Odds Ratio** |
| Disciplinary Incident Rates | 124 | 4.8% | 124 | 12.9% | 4.99 | .026\* | 0.4 |

*Source*: DESE-provided extant data (SSDR)

Note: \**p*<.05; \*\**p*<.01

1. Formative, unpublished findings from the implementation study were presented to program leaders at DESE and DHE throughout the duration of the evaluation. Findings from the sustainability study were published in a separate report, accessible at [Massachusetts Pathway Sustainability and Scalability Evaluation Report (ICF, May 2020)](http://www.doe.mass.edu/research/reports/2020/05sustainability-scalability.docx). [↑](#footnote-ref-2)
2. In the SCS data, a course level was determined for each course based on the general nature and difficulty of instruction provided throughout a course. According to the SCS Data Handbook, the definition for the Advanced level is a*n advanced course designed for students who achieve a specified level of academic performance*. The definition for the Postsecondary Credit level is *a course, often taken at or in conjunction with a postsecondary institution, which contains instruction equivalent to a college-level course and for which a student may earn college credits*. For more information, please see the SCS Data Handbook at <http://www.doe.mass.edu/infoservices/data/scs/> [↑](#footnote-ref-3)
3. Formative, unpublished findings from the implementation study were presented to program leaders at DESE and DHE throughout the duration of the evaluation. Findings from the sustainability study were published in a separate report, accessible at [Massachusetts Pathway Sustainability and Scalability Evaluation Report (ICF, May 2020)](http://www.doe.mass.edu/research/reports/2020/05sustainability-scalability.docx). [↑](#footnote-ref-4)
4. [Massachusetts Pathway Sustainability and Scalability Evaluation Report (May 2020)](http://www.doe.mass.edu/research/reports/2020/05sustainability-scalability.docx) [↑](#footnote-ref-5)
5. Note that DESE-provided data excluded New Heights Charter School of Brockton as those data were provided for the impact analysis and New Heights Charter School of Brockton was not part of the impact analysis. As stated in the introduction, New Heights Charter School of Brockton was excluded from the impact analysis as all students from the school participated in the EC program (thus a comparison group could not be assembled from within the school) and it was not possible to find a suitable comparison school, particularly as the high school was an EC charter school. Accordingly, this description of the pathway program population is not complete. As a result of this exclusion, and of differences in how school districts and DESE counted pathway program participants for the EC and IP programs, there are some minor discrepancies in the population of pathway students between DESE-provided data and school-district provided data. [↑](#footnote-ref-6)
6. Employability skills refer to the wide range of soft skills cited by grantees that align with the Massachusetts Work-Based Learning Plan. Grantees described that students developed the following employability skills: professionalism, speaking, writing, listening, motivation, time management and leadership. For more information about employability skills or the Massachusetts Work-Based Learning Plan, please see <http://skillspages.com/masswbl/> and <http://skillspages.com/documents/masswblp.doc>. [↑](#footnote-ref-7)
7. The values of each item originally used the following scale: 1-Strongly Disagree, 2-Disagree, 3-Agree, and 4-Strongly Agree. [↑](#footnote-ref-8)
8. The answer options provided for this question were 1-Not Helpful, 2-Somewhat Helpful, 3-Helpful, and 4-Very Helpful. [↑](#footnote-ref-9)
9. The answer options provided for this question were 1-Not Helpful, 2-Somewhat Helpful, 3-Helpful, and 4-Very Helpful. [↑](#footnote-ref-10)
10. IP students were the only ones presented with the item “gaining work experience in an industry I am interested.” [↑](#footnote-ref-11)
11. In the SCS data, a course level was determined for each course based on the general nature and difficulty of instruction provided throughout a course. According to the SCS Data Handbook, the definition for the Advanced level is a*n advanced course designed for students who achieve a specified level of academic performance*. The definition for the Postsecondary Credit level is *a course, often taken at or in conjunction with a postsecondary institution, which contains instruction equivalent to a college-level course and for which a student may earn college credits*. For more information, please see the SCS Data Handbook at <http://www.doe.mass.edu/infoservices/data/scs/> [↑](#footnote-ref-12)
12. Because GPA was not provided in the data, ICF staff calculated GPA based on course grades for all courses completed in school year 2018–19. The grade of each course was first converted to a 4-point scale GPA. The overall GPA was an unweighted average of GPAs of all courses. The advanced course, AP, and postsecondary credit course GPAs were also unweighted in this calculation and followed the same formula as standard courses (e.g., the AP course GPA was an unweighted average of GPAs of all AP courses). [↑](#footnote-ref-13)
13. Because GPA was not provided in the data, ICF staff calculated GPA based on course grades for all courses completed in school year 2018–19. The grade of each course was first converted to a 4-point scale GPA. The overall GPA was an unweighted average of GPAs of all courses. The advanced course, AP, and postsecondary credit course GPAs were also unweighted in this calculation and followed the same formula as standard courses (e.g., the AP course GPA was an unweighted average of GPAs of all AP courses). [↑](#footnote-ref-14)