Transforming Comprehensive High Schools into Early Colleges

The Implementation and Impacts of the Early College Expansion Partnership

Executive Summary

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Executive Summary

Overview

Currently, jobs in the U.S. that pay a living wage are more likely to require some form of postsecondary education (Carnevale & Desrochers, 2003; Carnevale, Smith, & Strohl, 2010). In response to concerns that too few students are successfully earning postsecondary credentials, educators and policymakers have been exploring various efforts at the high school level to increase students' likelihood of enrolling and succeeding in postsecondary education. One of the most successful of these models has been the Early College.

As originally conceptualized, Early Colleges were small schools focused on college readiness for all students. Frequently located on college campuses, Early Colleges targeted students who might face challenges in postsecondary education, including students who were the first in their family to go to college, economically disadvantaged students, English Language Learners (ELL), or students who are members of racial or ethnic groups underrepresented in college. Early colleges served students starting in 9th grade and the goal was to have students graduate in four or five years with a high school diploma and a postsecondary credential (an associate degree) or two years of transferable college credit. Supported by an initial investment by the Bill and Melinda Gates Foundation, the small Early College Model expanded across the country.

Rigorous experimental research conducted on Early Colleges found that the model has had positive impacts on a variety of outcomes, including staying in school, progressing in college preparatory courses, graduating from high school, and enrolling in and graduating from college (Berger et al., 2013; Edmunds, Bernstein, Unlu, Glennie, & Smith, 2013; Edmunds et al., 2012; Edmunds et al., 2017; Edmunds, Willse, Arshavsky, & Dallas, 2013).

Although early colleges have been successful, practitioners have been concerned about whether a model structured as small schools on college campuses could be expanded to serve large numbers of students. As a result, there have been increasing efforts to explore the possibility of transforming regular comprehensive high schools into Early Colleges. The Early College Expansion Partnership (ECEP) is among the first large-scale efforts to apply Early College strategies in comprehensive high schools.

Supported by a $15 million grant from U.S. Department of Education's Investing in Innovation (i3) program, ECEP was designed to increase the number of students graduating from high

school prepared for enrollment and success in postsecondary education. The project sought to blend high school and college by applying strategies from the successful Early College High School Model to 14 middle schools, 12 high schools, and two 6-12 schools in three districts in two states: Colorado and Texas.

ECEP implemented an adapted version of the Early College Model. Key adaptations from the original design included the following:

- ECEP implemented the model in existing comprehensive high schools. In the schools included in the experimental studies, the model has only been implemented in small schools, almost all of which were new and most of which were on college campuses.
- Original Early College High Schools were schools of choice to which a student had to apply. All schools engaged in some level of screening of applicants. In addition, most schools had substantial control over hiring of staff. This was not the case with the traditional high schools implementing ECEP.

ECEP was a collaborative effort, involving Jobs for the Future (JFF), Educate Texas (EdTX), and the school districts of Denver, Colorado, and Pharr-San Juan-Alamo and Brownsville Independent School District, both in the Rio Grande Valley area of Texas. The program provided a set of services that supported implementation of a whole-school reform model emphasizing the creation of a college-preparatory school environment.

SERVE Center at UNCG has prepared two final evaluation reports for ECEP. One report presents findings on the ECEP implementation supports and is entitled *Implementation Supports of the Early College Expansion Partnership*. The other report presents findings on the outcomes of the intervention and is entitled *Transforming Comprehensive High Schools into Early Colleges: The Impacts of the Early College Expansion Partnership*. This executive summary provides an overview of findings from the two reports and is divided into six sections: (1) the ECEP Model, (2) evaluation methodology, (3) implementation of the activities designed to support the model, (4) program impacts at the school level, (5) program impacts on student outcomes, and (6) conclusions and lessons learned related to replicating the program.

The ECEP Model

ECEP is intended to increase the number of students graduating from high school who enroll and are successful in college by implementing Early College strategies. A primary emphasis of the program is to increase the number of students who participate in college credit-bearing courses while in high school.

In the current study, each participating school was expected to implement four Early College Design Elements, as articulated by JFF:

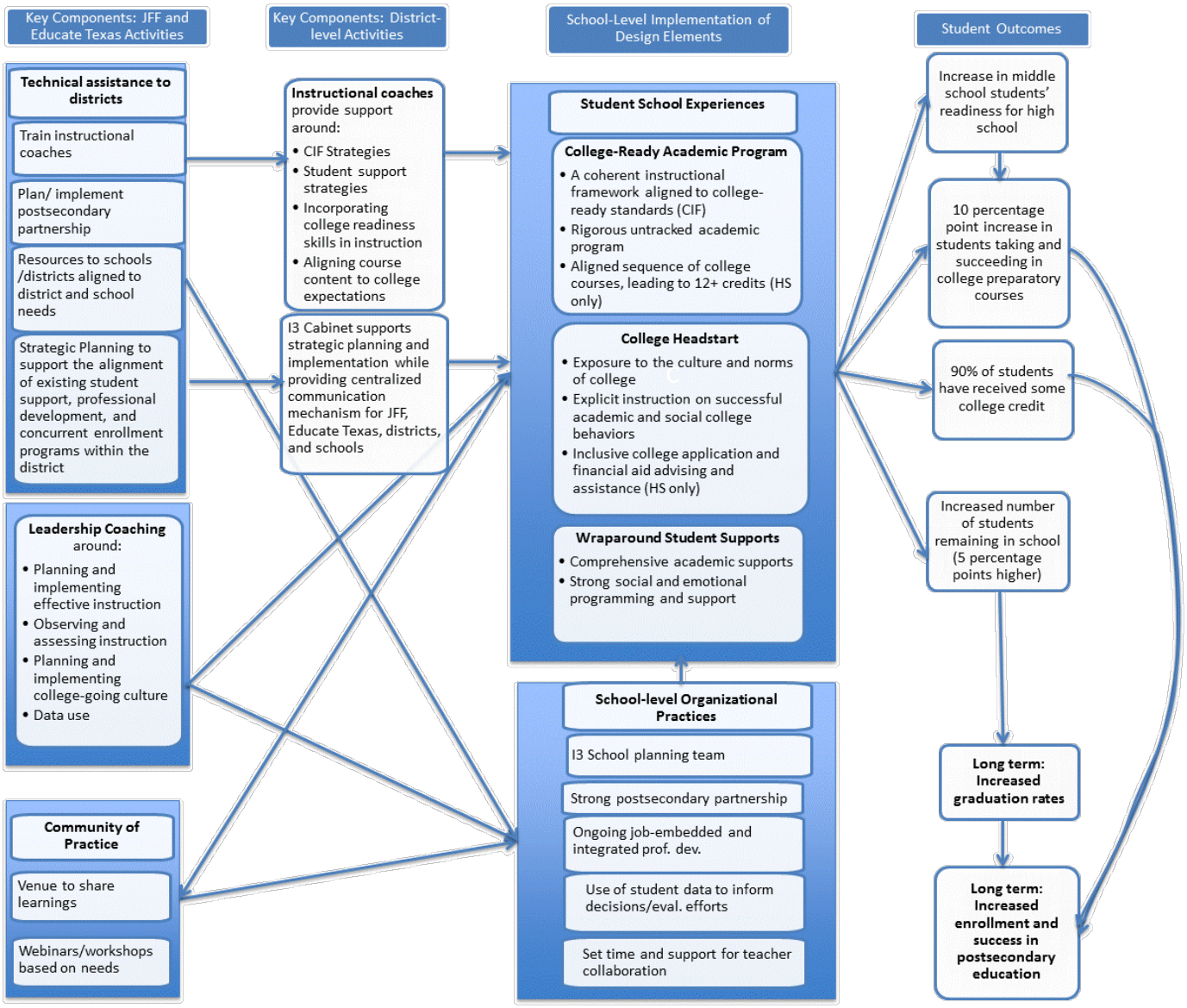
1. A College Ready Academic Program. This included implementation of a high school academic curriculum designed to prepare students for postsecondary education; a set of six student-centered instructional practices, called the Common Instructional Framework (CIF); and early access to college courses.
2. College Headstart, which included explicit instruction in college readiness behaviors, exposure to the culture and norms of college in both middle and high school, and support in high school for enrolling in college.
3. Wraparound Student Supports. Because the model would result in increased student expectations, schools were expected to implement both academic and affective supports.
4. School-Level Organizational Practices. To support implementation, schools were expected to have postsecondary partnerships in place, provide opportunities for teachers to learn through professional development and collaboration with each other, and use data to inform instruction.

To support schools in this work, the ECEP partners provided a series of implementation supports. These included:

1. technical assistance to districts around strategic planning, alignment of resources and the creation of postsecondary partnerships that provide access to dual credit courses;
2. on-site leadership coaching (provided by JFF) for administrative teams around the ECEP Design Elements;
3. an online Community of Practice;
4. on-site instructional coaching emphasizing the CIF; and
5. an i3 Cabinet that coordinates the work at the district level.

Figure 1 presents the different model components and their relationship to each other and to student outcomes.

Figure 1. ECEP Logic Model



Evaluation Methodology

The evaluation was designed to examine the impact of the project on targeted outcomes and to explore changes occurring in the traditional schools as they sought to transform themselves into Early Colleges. The impact study utilized a quasi-experimental design in which ECEP schools were matched to similar comparison schools that were not receiving services from ECEP. Once comparison schools were identified, student-level data from the baseline year were used to compare students in ECEP schools to students in comparison schools; this was done to establish that both groups were similar before ECEP schools began receiving support. In Texas, the

comparison schools were in the Rio Grande Valley but outside of the ECEP districts. In Denver, the comparison schools were located within the same district.

The impact evaluation looked at the impact of the program on student outcomes in three areas:

1. enrolling in, and successfully completing, a college preparatory course of study in 9thgrade;
2. dropping out of school; and
3. enrolling in, and receiving credit for, college credit-bearing courses.

These outcomes are defined in more depth in the results section. In Texas, all data used for student outcomes were collected from schools by the Texas Education Agency. In Colorado, student outcome data were provided directly by Denver Public Schools, collected as part of its regular administrative data collections.

In terms of analysis, students in ECEP schools were compared to students in comparison schools using hierarchical linear modeling (HLM). A benefit of HLM is that it takes into account that students are clustered within schools when estimating program impacts. To improve the statistical precision, we included characteristics of the schools in the analyses (e.g., students' standardized reading and math achievement, percentage of students eligible for free or reduced-price lunch). We also included characteristics of the students themselves in the analyses (e.g., baseline reading test scores, underrepresented-minority status, poverty status, gender).

To evaluate the implementation supports and examine changes at the school level, we used the following data sources: (1) an annual school staff survey, which measured implementation of the Design Elements in schools; (2) annual site visits to districts to conduct interviews with district-level personnel responsible for ECEP implementation; and (3) biennial visits to schools to conduct interviews with staff and classroom observations.

Implementation Supports

JFF (in Colorado and Texas), EdTX (in Texas), and the districts provided the following supports to help schools implement the Early College Model: technical assistance, leadership coaching, an online Community of Practice, instructional coaching, and establishment of an i3 Cabinet to guide the work. Here we describe these supports and highlight key findings.

Technical Assistance to Districts

JFF and EdTX worked with the districts to provide *assistance in strategic planning*, *training of district-based instructional coaches*, *assistance in implementing postsecondary partnerships*, and *resource materials*.

With assistance from JFF and EdTX, all three districts developed *strategic plans* that delineated how they would implement ECEP. One of the primary lessons learned from this effort was the need to purposefully align the ECEP work with other district initiatives. For example, in Denver, district and JFF staff created a crosswalk between a new district teacher evaluation system and the ECEP instructional practices to show how the initiatives were complementary. Similarly, in Brownsville, EdTX staff worked with district leaders to align ECEP with a literacy grant to create a common terminology.

To support instructional change in schools, each district hired and *trained instructional coaches* with assistance from JFF and EdTX. In Denver, JFF provided a senior-level instructional coach who worked with the district-based instructional coaches at least once a month face-to-face and continuously via email and text. In both Texas districts, EdTX staff provided training and reflection opportunities during regularly scheduled meetings.

JFF and EdTX staff also worked with the districts on improving or establishing *postsecondary partnerships* to support expanding college course enrollments. For example, EdTX assisted Brownsville in developing its partnership with a newly formed two-year college. EdTX also worked with the college partners in South Texas as they built a data dashboard to track how the high school students were doing in their college classes. Similarly, JFF staff worked with Denver staff on infrastructure needed to support Denver's multiple college partnerships.

JFF and EdTX also *provided resource materials* to the districts including extensive implementation guides around the CIF. Collaborations between project and district staff also contributed to the development of tools to assist districts in making implementation decisions, aligning grant initiatives with other district initiatives, and developing data dashboard systems. For example, JFF and Denver staff developed College and Career Readiness Curriculum Modules that could be implemented in middle and high schools.

Leadership Coaching

ECEP partners provided coaching to school administrators to assist in implementation of the Early College Design Elements. Initially, the goal was to guide the principals in developing their leadership skills and support the implementation of CIF strategies and college coursetaking. As the project matured, the focus evolved toward greater use of accountability data to inform administrative actions. In general, leadership coaches met face-to-face with school administrators at least once a month and continuously via email and text. In all three districts, the coaches debriefed district leaders after each visit.

Over time, the leadership coaching evolved in two important ways. First, it was recognized that it was important to work with school leaders beyond the principal. As such, greater efforts were made to work with other leaders, including assistant principals or early college administrators, as a critical step in implementing and sustaining the work. Second, because school leaders

needed more supports than a single coach could provide, ECEP and district partners collaborated to supplement the coaching with additional professional development for school leaders. For the last two years of the project, EdTX also funded a CIF Implementation Facilitator who worked with Texas school leaders to support implementation of the CIF.

Community of Practice

To promote learning and communication among ECEP partners, an online Community of Practice (COP) went live during the second year of the project. Originally, the COP was conceptualized as a space for each district to develop its own content. However, project staff learned that it functioned better if one entity maintained ownership of the site; thus, JFF began organizing the content. As part of the COP, a total of 33 webinars were hosted on various topics. Although additional materials were added, a relatively low level of site participation remained a concern throughout the grant. Nevertheless, the COP will continue after the i3 grant ends and is currently serving districts involved in other, similar efforts.

Instructional Coaching

To build instructional capacity and move the i3 work forward in general, the project funded two types of instructional coaches: 1) JFF and EdTX provided instructional coaches who worked directly with teachers and also trained and supported district-funded coaches; and 2) all three districts hired coaches that either worked with multiple schools or were housed at individual schools. Both types of instructional coaches generally followed a coaching cycle consisting of pre-meetings, focused observations, and then debriefs with teachers. Initially, coaches worked to promote ECEP goals, build relationships with school staff, and understand the needs of individual schools and districts. Over time, instructional coaches worked more closely with school leaders, particularly teacher departmental leaders, to facilitate instructional monitoring efforts that were consistent with the CIF. Helping school leaders build the capacity for such instructional monitoring was seen as important to sustaining the work.

In Denver, ECEP funded three district-wide instructional coaches who worked with school-based instructional coaches who were already in place (these latter coaches were not funded by the grant and represented an effort to leverage and redirect existing resources). The initial goal was to have the ECEP district coaches coordinate with the existing school-based coaches to align efforts around instruction. This led to the creation of Instructional Support Personnel Team meetings where coaches periodically convened with school leaders to plan and coordinate efforts. Over time, the focus of the coaching shifted to a train-the-trainer model to assist school personnel in professional development planning and implementation efforts around the CIF.

EdTX provided a total 10 instructional coaches who worked with teachers, principals, and district-funded instructional coaches in both districts. In Year 3, EdTX supplemented the

coaching with a specialist who focused on providing professional development in the schools. The number of coaches were reduced over time in an effort to transfer responsibility for the coaching to the districts.

In Years 2 and 3, all i3 schools were supposed to receive at least 17 coaching days on ECEP instructional practices per school per year, however, the actual number of coaching days provided far exceeded that target. For example, in Year 3, the number of coaching days ranged from a low of 21 in one school to a high of 149 in another.

i3 Cabinet

To manage the work of ECEP, each district was required to set up a governing structure, conceptualized as an i3 Cabinet. In Denver, the i3 work was embedded into the agenda of an already established district group focused on postsecondary readiness. As Early College topics of discussion arose, items were placed on the agenda by the project lead. The higher education partners were not included at the regular district meetings; instead, the project director met with them as needed. Meeting agenda topics varied, but most were focused on college course prerequisites and pathway development.

Both Texas districts established stand-alone i3 Cabinets at the district level that met monthly. Membership varied by district, but both i3 Cabinets generally included superintendents, assistant superintendents, district administrators for various departments, and college partners. Over time, both districts expanded their i3 Cabinets to include additional personnel, particularly principals. Both Texas districts also developed a data dashboard with one of their postsecondary partners to allow for the sharing of student data between the district and postsecondary partner.

Implementation of the Early College Design Elements

The services described above were expected to help schools in implementing the four Early College Design Elements. In this section, we present descriptive results from surveys and site visits around how participating schools (and districts) have changed their practices because of ECEP. We begin by describing participants' overall perceptions of the impact of ECEP on their school and then move to describing changes the schools have made relative to the four Design Elements: (1) College Ready Academic Program, (2) College Headstart, (3) Wraparound Student Supports, and (4) School-level Organizational Practices.

Overall Perceived Impact

On the final survey and on site visits, school staff were asked about the perceived impact of the project. Approximately three-quarters of the staff indicated on the survey that the project had either "some" or "substantial" impact on: the ability of the school to prepare students for college, instruction and supports, and level of expectations staff had relative to students'

postsecondary education. Approximately three-quarters of staff also indicated that the project had "some" or "substantial" impact on professional experiences such as use of data, collaborations in the school, and the quality of postsecondary partnerships. One significant impact of the project was that i3 schools in all three districts received official state designations as Early Colleges. This designation came with certain benefits, such as allowing students to take more college courses. Another impact of the grant in two of the districts has been the formation of governance structures that provide clear coordination between the district and postsecondary partners. College partners also highlighted that the grant had an impact on their institutions, primarily in terms of the expansion of college courses. For one college, the project led them to put positions and infrastructure in place that they would not have otherwise had. The increase in college courses also required colleges to increase the number of instructors available to teach college courses.

College Ready Academic Program

The College Ready Academic Program Design Element focuses on the coursetaking and instructional changes necessary to prepare students for college. In terms of coursetaking, results from the staff survey showed reported increases in students' enrollment in honors courses, STEM pathways, and college-credit-bearing courses. Although this Design Element does include ensuring students take the high school courses they need for college, interviews indicated that the primary emphasis of the coursetaking work centered on expanding access to college courses.

To ensure students had access to college courses, schools supported their students in passing the college placement exams. In the Texas districts, there was a strong emphasis on preparing students to pass the Texas Success Initiative exam, which was required in order to be eligible for college courses. Schools set goals for participation rates and provided tutoring and other supports to assist students in passing placement exams.

All three districts also worked with their postsecondary partners to develop pathways that could guide students' college coursetaking. One of the challenges that Denver faced was working with multiple college partners (a total of 19), which increased the level of communication needed to support these pathways.

Schools and districts modified their practices in other ways to accommodate expanded college coursetaking such as: providing college liaisons to program schools to address logistical issues around course enrollment and incentivizing teachers with advanced degrees to serve as adjunct faculty to meeting the demand for college coursetaking. In addition, some schools merged their dual credit and Advanced Placement courses so that students could meet the requirements of both courses while receiving credit from a local college.

In terms of instructional changes, the ECEP program focused on the six CIF student-centered instructional practices to support college readiness (see box to right). Results from the surveys, interviews, and site visits suggested that changes occurred primarily among individuals or smaller groups of teachers. The survey results showed slight increases over time for most of the CIF practices; however, there was only one statistically significant difference (an increase in use of Collaborative Group Work among middle school teachers). Interviews and site visits suggested that some teachers were making changes but likely not in sufficient numbers to be captured by the survey. Results from classroom observations during Year 4 of the project showed that the most commonly implemented strategies were Scaffolding, Writing to Learn, and Collaborative Group Work.

Staff who saw value in the CIF believed the strategies increased student engagement. As a district representative noted:

> Every class I walked into where the teacher is implementing CIF, the student engagement was way above my expectation. In fact, I would say it was 100% student engagement in all like the five or six classes…. I think that's another very, very positive impact that the grant has had on our district.

Another theme that emerged from our visits was that staff were more likely to buy in and implement the CIF strategies when efforts were made to demonstrate how the CIF was aligned with other initiatives or when the school leadership reinforced their use through monitoring or expectations.

The Six Strategies of the Common Instructional Framework (Jobs for the Future, 2012)

Collaborative Group Work: Collaborative Group Work brings students together in small groups for the common purpose of engaging in learning.

Writing to Learn: Writing to Learn enables students to experiment every day with written language and to increase their fluency and mastery of written conventions.

Scaffolding: Scaffolding helps students connect prior knowledge and experience with new information and ideas.

Questioning: Questioning challenges students and teachers to use good questions as a way to open conversations and further intellectual inquiry.

Classroom Talk: Classroom Talk creates the space for students to articulate their thinking and strengthen their voices.

Literacy Groups: Literacy Groups provide students with a collaborative structure for understanding a variety of texts, problem sets, and documents by engaging in a high level of discourse.

College Headstart

Schools were expected to expose students to the culture and norms of college via explicit instruction on college readiness strategies as well as readiness support activities (e.g., advising

on the courses needed for college). This included the creation of a college-going culture in which schools demonstrated expectations that students go to college.

According to the survey, schools already had a strong college-going culture at the outset of the project, and this did not change substantially over time. Schools that we visited used various approaches to create a college-going culture such as: (1) college spirit days/weeks when students were encouraged to wear college clothing, (2) classrooms and common areas decorated with college-themed materials, (3) daily announcements that included information on college, career days or fairs, and (4) visits to college campuses. Despite the lack of overall significant difference on the survey scales, students in some schools did indicate that their school had developed a more college-oriented culture, at least partly due to the expectation for more students to take college courses.

> **[Taking college courses] has become like a trend. For example, my friends seeing me doing it, they're like, "How can I get there?" They ask. So, it becomes like a trend that everybody wants to follow. I think it's a good trend.**
>
> - High school student

Survey results showed that middle and high schools significantly increased the frequency of activities to support college readiness over the course of the grant. For example, at least two of the schools we visited had dedicated spaces for career and college advisement, called a "Go Center," where students could get help applying for college, scholarships, and financial aid. One high school student commented that the school's emphasis on college appeared to be reaching younger students: "I feel that our school is starting to put the idea of college and postsecondary education in the younger classes. Like, I have a sibling, and they talk more about colleges, they have more meetings, really talks about colleges than we did when we were freshmen."

Part of the College Headstart Design Element involved explicit and focused preparation on college readiness skills. On the survey, staff reported using college readiness instructional activities between once a month and once a week, a level which did not change during the course of the grant. Both middle and high schools sought to increase the soft skills needed for college, including encouraging students to take more ownership of their learning. For example, one middle school implemented a portfolio project where students were responsible for selecting their best work over the year to include in the portfolio. Additionally, the observations suggested that schools have been emphasizing writing as a key college readiness skill but that there was not regular explicit instruction in other college readiness skills such as time management or study skills.

Wraparound Student Supports

In order for students to be successful, the ECEP model calls for increased academic and affective supports for students' high school and college work through various activities such as

college placement exam preparation, extra supports in high school and college classes, and a strong emphasis on improving staff-student relationships. Results from the staff survey showed a statistically significant increase in the frequency of academic and affective supports provided to students, but there were no changes on scales related to relationship building with students or families. Our interviews with school staff indicated that all schools we visited provided Wraparound Student Supports to meet students' needs. These services came primarily in the form of general academic tutoring or tutoring around test preparation (i.e., Texas Success Initiative exam in Texas; SAT, ACT, Accuplacer in Denver). In addition, many of the schools we visited had data teams in place to monitor students' progress in middle school, high school, and college courses and to identify students who were in need of additional academic support.

School-Level Organizational Practices

ECEP schools were expected to have organizational practices in place to support implementation of the Design Elements including: *strong postsecondary partnerships*, *ongoing and job-embedded professional development*, *ongoing teacher collaboration*, and *use of data to inform instruction*.

All districts had formal *postsecondary partnerships* in place. In the Texas districts, partners were active members of the i3 Cabinet, attending monthly meetings and participating in problem-solving discussions. In Denver, while the district project lead held weekly conversations with the postsecondary partners, there were no regularly-scheduled meetings. As of the end of the grant period however, the team was looking at modifying their structure to establish standing meetings, as in the Texas districts. Overall, the project has resulted in improved relationships between the districts and postsecondary partners. One college representative said that the district's embrace of the i3 grant helped facilitate collaboration by saying, "We've been wanting and trying to push this but we've not been able to until [having] a district partner who is willing to do it." Many partners believed that these relationships would continue to develop after ECEP.

In terms of *ongoing and job-embedded professional development*, the survey showed that staff increased their participation in various professional development activities such as coaching, joint planning, professional learning communities, and webinars. Regarding *ongoing teacher collaboration*, middle school staff members reported significantly higher levels of collaboration on lesson planning, logistical issues, assessments, peer observation, and instructional strategies. High school staff also reported increases in collaborative activities, but the only statistically significant increase was in the area of collaboration around logistical issues (not an emphasis of the grant). Interviews indicated that staff engaged in various collaborative efforts prior to the grant, but the introduction of instructional rounds was a result of ECEP. During instructional rounds, teachers observed other teachers in small teams, collected data on a

previously established area of focus, and then debriefed with the teacher they observed about what they saw. This was seen as a way of supporting instructional change. One teacher noted:

> You learn so much from each other. Especially because math, math we have an awesome Algebra I team. It's always like, "What is it that you do? How do you do that?' You go in there like, 'Wow. I could do that in English".

The *use of data* was one of the areas showing the most substantial change from the start to the end of the project, even though both middle and high schools had high levels of data use at the outset. Middle schools had an increase in data use across all indicators assessed and high schools showed an increase in data use across three of the five indicators assessed. All of the schools we visited were involved in discussions around data. Staff used data from a variety of sources including instructional coaches, administrator walkthroughs, state assessments, college placement assessments, and student progress monitoring data from high school and college courses. Most of the individuals we interviewed discussed using data to identify and work with struggling students and to improve college and career readiness.

Overall, the survey and site visit data suggested that, as a result of the project, participating comprehensive high schools began to incorporate more Early College strategies, but that this is part of a longer, ongoing process.

Impact on Student Outcomes

The survey and site visit data showed that the largest areas of change in the schools occurred in the areas of college coursetaking, supports (primarily for college readiness exams), and in teacher practices such as professional development and the use of data. This section describes the extent to which these school-level changes resulted in positive student impacts.

College Preparatory Coursetaking

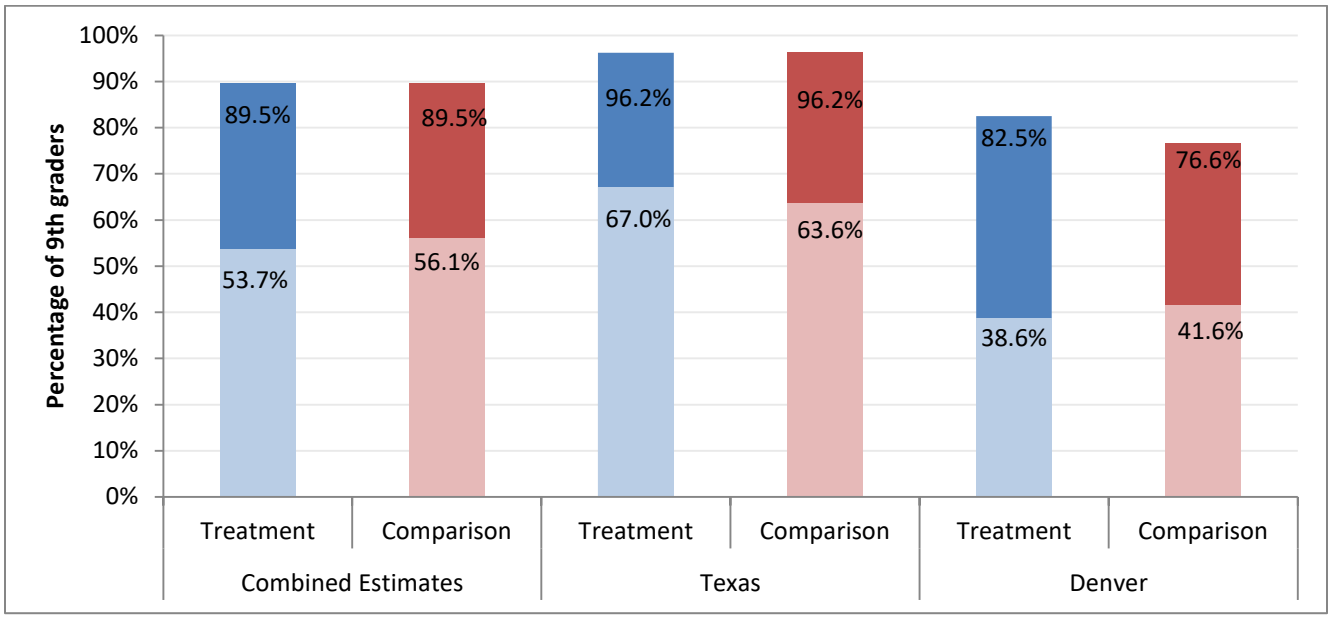
One of the goals of ECEP is to ensure students are better prepared for college. As a result, the evaluation examined the project's impact on students' enrollment in and successful completion of the high school courses needed for college. Specifically, the evaluation looked at the impact of ECEP on the percentage of 9th graders who enrolled in a college preparatory course of study as well as the percentage of 9th graders who successfully completed a college preparatory course of study. A college preparatory course of study was defined as Algebra I or higher and English I or higher, while successful completion was defined as taking the course and earning a "C-" or higher. The analytic sample was 9th graders in schools in their second and third year of ECEP implementation.

To provide context for the impact findings, we first looked at the percentage of all students (in both treatment and comparison schools) who enrolled in and successfully completed the targeted courses. Approximately 97% of 9th graders in Texas treatment and comparison schools

took Algebra I and English I or higher, indicating that schools already had policies in place to ensure college preparatory coursetaking. As such, we would not expect any impact on enrollment in college preparatory courses in Texas. In Denver, approximately 76% of treatment and comparison students took college preparatory courses, thus leaving some room for potential impact. In terms of successfully completing college preparatory courses, approximately 66% of Texas students and 40% of Denver students successfully completed these core courses, which indicated that many students were not on track for college by the end of 9th grade.

Looking at the differences between the treatment and comparison schools, the impact results (Figure 2) showed that there were no statistically significant impacts of ECEP on college preparatory coursetaking nor on successful completion overall [the combined results] nor by state. In Figure 2, the total height of the bar (dark and light bars taken together) reflects the percentage of 9th graders *who took* the course. The height of the *light bar only* is the percentage of 9th graders *who took and successfully completed* the courses.

Figure 2. Percentage of 9th-Grade Students Taking and Succeeding in a College Preparatory Course of Study



In Texas, the lack of an impact in college preparatory coursetaking was expected given initial coursetaking rates of close to 100%. The percentage of students successfully completing the college preparatory courses was descriptively higher in treatment schools than in comparison schools, and appeared to be driven primarily by more students successfully completing a college preparatory math course (not shown). In Denver, the percentage of students taking a college preparatory course of study was descriptively higher in the treatment schools than in

comparison schools although the percentage of students successfully completing those courses was lower (neither difference was statistically significant). The positive coursetaking rates appeared to be driven by a larger percentage of students taking college preparatory math courses while the lower completion rate appeared to be driven by lower completion rates in English courses (not shown).

We also conducted analyses on two primary sub-groups—English Language Learners (ELL) and students who had baseline performance below grade level[1]. There was a statistically significant ($p \leq .05$) negative impact on successful course completion for both of those sub-groups in Denver, results which drove a negative impact (significant at $p \leq .10$) for the combined impacts for ELL students.

Staying in School

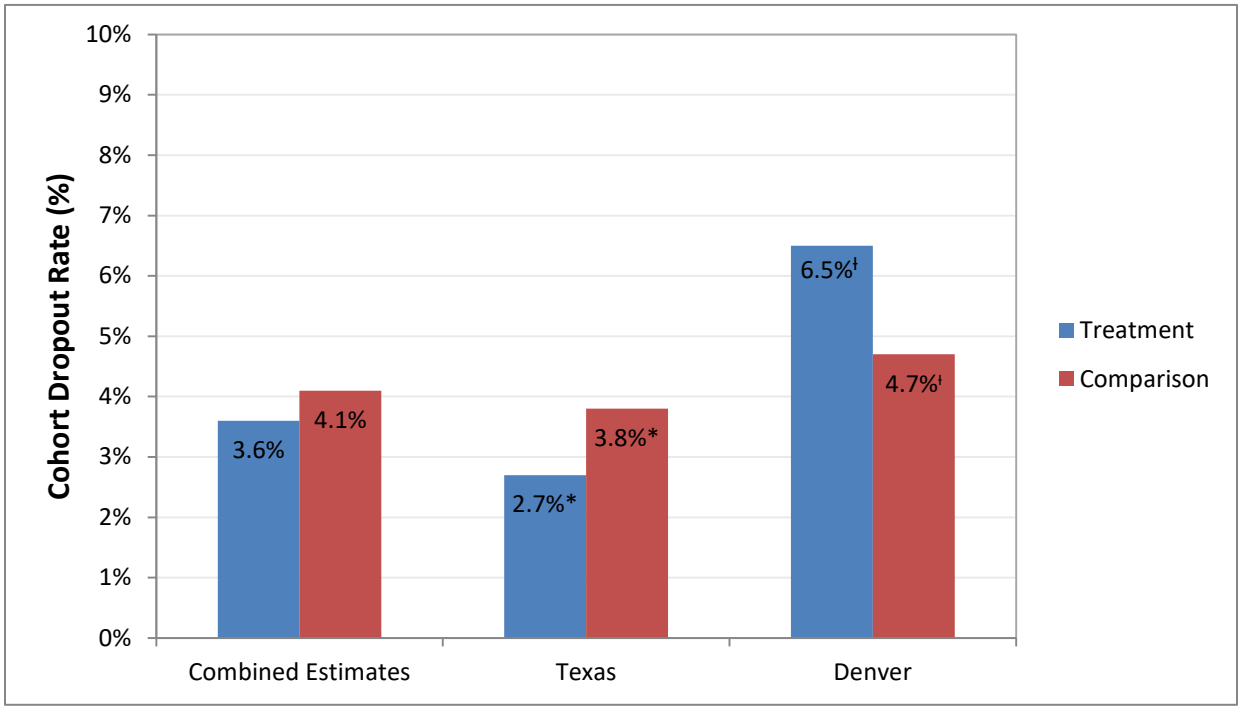
The Early College theory of change posited that the increased access to college courses as well as academic and affective supports provided to students would keep more students in school. To test this premise, the evaluation looked at the impact of ECEP on the cohort dropout rate. We began with a cohort of students who were in 9th grade in 2013-14 (Year 1) and identified whether those students had dropped out of school within three years (through the start of 2015-16). Approximately 3% of the full sample (both treatment and comparison) had dropped out by the beginning of 11th grade in Texas and about 5.8% in Denver.

Figure 3 shows the impact of ECEP on cohort dropout rate. Results indicated that, when results were combined for the two states, treatment schools had a slightly lower dropout rate compared to comparison schools (3.6% vs. 4.1%, respectively), but this difference was not statistically significant.

There were, however, substantial differences by state. In Texas, students in the treatment group had a statistically significantly ($p \leq .05$) lower dropout rate compared to students in comparison schools (2.7% vs. 3.8%, respectively). Follow up analysis indicated that ELLs and low-performing students[2] in Texas treatment schools were less likely to drop out than their counterparts in comparison schools. In Denver, students in the treatment schools dropped out at a rate that was significantly higher ($p \leq .10$) than students in the comparison schools (6.5% vs. 4.7%, respectively), with ELL students dropping out at a statistically significantly higher rate in treatment schools than in comparison schools.

[1] The schools in Texas were almost 100% low-income and 100% free and reduced-price lunch; as such, we did not look at impacts for those common sub-groups.
[2] Defined as students who were below grade level at baseline.

Figure 3. Cohort Dropout Rate for 11th-Grade Students



Note. * p ≤.05; ǂ p ≤.10

College Credit Coursetaking

A key part of the ECEP model is expanding high school students' access to college courses to facilitate the transition to college by giving students credit they can apply to a degree and by exposing students to the expectations of college. In this study, we looked at students who were in 11th grade in 2015-16 and 12th grade in 2016-17. We looked at the percentage of students who had ever taken a potentially college credit-bearing course including three types of courses: (1) transferable dual credit/concurrent enrollment courses, (2) Advanced Placement (AP) courses, and (3) Career/Technical Education (CTE) courses.

We also looked at two outcomes related to these types of courses. The first outcome was *enrollment* in a potentially college credit-bearing course at any point over a student's high school career. We looked at enrollment in any of those three categories and then enrollment only in courses that were potentially transferable (dual credit and AP) to a four-year postsecondary institution. The second outcome was the number of *Carnegie units* earned in these courses (equivalent to the number of high school credits earned by students in these three categories of courses). A unique feature of this analysis was that we looked at these outcomes using a cohort approach to capture courses taken by students over the duration of their high school career, as opposed to an annual college coursetaking rate that only captures coursetaking over one year.

Across all the schools in our study (both treatment and comparison schools), 85% of 12th graders in Texas and 87% of 12th graders in Denver had enrolled in at least one potentially college credit-bearing course at some time over their high school career. Overall, more Carnegie units were earned in AP and CTE courses than in dual credit courses across treatment and comparison schools. On average, students in Texas accrued 2.6 Carnegie units of credit from potentially college credit-bearing courses whereas, in Denver, the average was 2.2 credits. In Texas, the highest proportion of credits came from CTE courses and in Denver, the highest came from AP courses.

Evaluation results showed that ECEP attained its goal of having over 90% of students take some sort of college credit-bearing courses. Overall, 94.8% of students in treatment schools enrolled in some sort of a college credit-bearing course compared to 86.0% of students in comparison schools, although the difference was not statistically significant (see Figure 4). In Texas treatment schools, almost 96% of students enrolled in a college credit-bearing course compared to almost 86% in comparison schools. However, this difference was also not statistically significant. In Denver schools, the percentage of students taking college credit-bearing courses was similar between treatment and comparison schools (approximately 86% and 87%, respectively). Because credits earned for non-CTE college courses (AP and dual credit) are transferable to four-year institutions, we also looked at the percentage of students enrolled in those types of courses. Figure 5 shows the difference between treatment and comparison schools on the percentage of students taking college credit-bearing courses when CTE courses were excluded.

Figure 4. Percent of 12th Grade Students Who Have Taken at Least One College Credit-Bearing Course

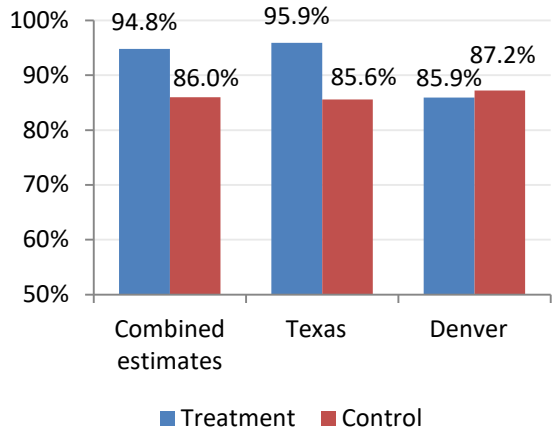
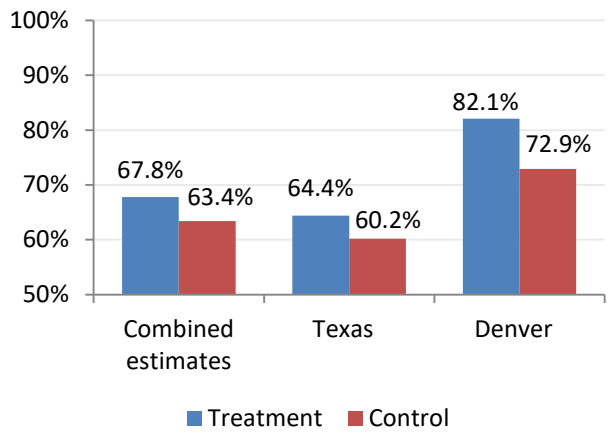


Figure 5. Percent of 12th Grade Students Who Have Taken at Least One College Credit-Bearing Course (non-CTE)



Because we sought to understand why some enrollment impacts were not statistically significant, despite large differences between treatment and comparison schools (10 percentage points), we conducted post-hoc power analyses. Results indicated that the difference in enrollment outcome would have had to be approximately 14 percentage points to attain statistical significance, which would have been difficult to attain, particularly in Texas, because it would require close to a 100% enrollment rate. Thus, the sample size may have led to the lack of statistically significant findings.

When we looked at the number of Carnegie units earned in potentially college credit-bearing courses (see Table 1), no statistically significant differences were detected overall, nor when results were broken down by type of credit (i.e., dual credit, AP, and CTE). When looking by state, students in Texas treatment schools earned over half as many credits in dual credit (non-CTE) courses as students in the comparison schools (0.37 Carnegie units vs. 0.24 Carnegie units), although the difference was not statistically significant. In Denver, treatment students earned over double the number of CTE credits than students in comparison schools (0.61 Carnegie units compared to 0.28 Carnegie units), a difference that was statistically significant.

Table 1. Average Number of College-Bearing Credits Earned by 12th Grade

	Pooled Estimate		Texas		Denver	
Outcome	**Treatment**	**Comparison**	**Treatment**	**Comparison**	**Treatment**	**Comparison**
Average # of Carnegie units from all potentially college credit-bearing courses	3.74	3.73	3.99	4.26	2.32	2.28
Average # of Carnegie units from dual credit (non-CTE) courses	0.40	0.27	0.37	0.24	0.2	0.36
Average # of Carnegie units from AP courses	1.5	1.57	1.47	1.57	1.57	1.56
Average # of Carnegie Units from CTE courses	2.1	1.89	2.14	2.44	0.61*	0.28*

Note. * $p < .05$

The lack of statistically significant positive impacts for college coursetaking and credit accrual is surprising given the program's emphasis on expansion of college credits. We believe that part of the explanation lies in the experiences of the comparison schools. First, the Rio Grande Valley of Texas, where both the treatment and comparison schools were located, has a history of emphasizing college coursetaking as shown by the high percentage of 12th graders in the comparison schools who were also enrolled in college credit-bearing courses. In Denver, the comparison schools were also part of the same district and could have benefited from the changes that ECEP was making at the district level. Second, at least in Texas, is that there was

evidence suggesting that expansion of dual credit courses may have occurred at the expense of credits that might otherwise have been earned through AP or CTE courses. Treatment schools in Texas had 150% as many Carnegie units earned in dual credit courses as the comparison schools did, but they had fewer units earned from AP and CTE courses. Finally, in Denver, the explanation for higher CTE credits may have been related primarily to the workforce themes pursued by some of the treatment schools that would likely have led to more students taking career-oriented college credit-bearing courses.

A final note is that the study was limited in the type of data we could use. For example, we did not have access to AP exam scores, which would have given a clearer picture of the number of potential college credits that students could have earned. Instead, we needed to use Carnegie units, which do give an indication of prevalence but do not necessarily present a clear picture of the actual number of college credits earned while in high school.

Conclusions

The small Early College Model has been shown to be successful at improving student outcomes in high school and postsecondary education. Despite the strong evidence of success within small schools, there was an open question as to the extent to which the Early College Design Elements could be implemented in comprehensive high schools and whether these schools would see similar impacts as the small Early Colleges. ECEP can be thought of as an attempt to test that possibility. Results from this evaluation suggest that comprehensive high schools can begin the process of transforming themselves into Early Colleges but that the road is long and challenging.

In their pure form, Early Colleges represent a comprehensive re-envisioning of high school, an environment focused on college for all, in which the secondary and postsecondary experiences are merged. Existing comprehensive high schools have evolved over time, adding a multitude of programs and approaches in an attempt to meet the needs of all of their students (Murphy, 2016). A long history of school reform work suggests that it is extremely challenging to change the culture and environment of existing comprehensive high schools (American Institutes of Research & SRI International, 2008; Mazzeo, Fleischman, Heppen, & Jahangir, 2016). The original Early Colleges were at an advantage in that they were new schools created from scratch with a clear focus and purpose (Edmunds, 2012). Implementing the Early College Model thus requires high schools to make a number of substantive changes, including creating a more college-going culture, implementing college readiness activities, modifying instruction to be more rigorous and student-centered, providing student supports, and fostering increased learning and collaboration for school staff. Results from the evaluation suggest that changes have been made in some of these areas but that there are also issues associated with implementing the Early College Model in comprehensive settings that still need to be fully addressed.

One of the challenges with the implementation of Early Colleges in comprehensive high schools is distinguishing what separates an Early College from a regular high school with dual enrollment options (as many high schools already have across the country). Based on results from this evaluation and evaluations of other efforts, we argue that Early College is not just "dual enrollment on steroids;" instead, Early Colleges share a core set of common ideas including: (1) all students, not just a subset, should be expected to prepare for some sort of postsecondary education (two-year or four-year or technical credentials); (2) all students should have the opportunity to attain some sort of a postsecondary credential as part of their high school experience; and (3) college courses should not be just an add-on to the school, rather, the focus on postsecondary readiness requires schools to reconsider how all aspects of the school (e.g., instruction, supports, high school coursetaking, the professional working environment) can support the common goal of postsecondary readiness for all.

Overall, this evaluation shows that the Early College can serve as a model for districts on which they can focus and direct their work. The evaluation also suggests that, while increasing access to college courses is important, this access is most effective when it is part of a broader effort to more comprehensively improve high schools, ensuring that all students are prepared for further education.

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Transforming Comprehensive High Schools into Early Colleges: The Impacts of the Early College Expansion Partnership

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TRANSFORMING COMPREHENSIVE HIGH SCHOOLS INTO EARLY COLLEGES: THE IMPACTS OF THE EARLY COLLEGE EXPANSION PARTNERSHIP

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Disclaimer:

The opinions expressed in this report are reflective of the authors and do not represent the views or opinions of other individuals within the SERVE Center, the University of North Carolina at Greensboro, the University of Denver or Jobs for the Future.

Background Information about the SERVE Center

The SERVE Center at the University of North Carolina at Greensboro (UNCG) is a university-based research, development, dissemination, evaluation, and technical assistance center. Its mission is to support and promote teaching and learning excellence in the education community.

Since its inception in 1990, SERVE has been awarded over $200 million in contracts and grants. It has successfully managed 14 major awards including four consecutive contracts for the Regional Educational Laboratory for the Southeast (REL-SE) funded by the Institute of Education Sciences (IES) at the US Department of Education (USED) and four awards from USED for the National Center for Homeless Education (NCHE). In addition, past SERVE awards include a five-year Technology Grant for Coordinating Teaching and Learning in Migrant Communities, three consecutive contracts as the Eisenhower Consortium for Mathematics and Science Education for the Southeast, and two consecutive Regional Technology in Education Consortium grants.

At the national level, SERVE operates the National Center for Homeless Education (NCHE), USED's technical assistance and information dissemination center in the area of homeless education. NCHE uses state-of-the-art technology for web communication and online professional development and for supporting state coordinators of homeless education, local program coordinators, educators, parents, and advocates in all 50 states and in 15,000 school districts.

In addition to national-level NCHE activities, SERVE currently conducts research studies and evaluations under grants and contracts with federal, state, and local education agencies. Examples of SERVE's grant-funded research work include three federally funded studies of the impact of Early College high schools. Contract work includes evaluations of five Investing in Innovation (i3) projects, the Winston-Salem/Forsyth County Magnet Program in North Carolina, the Guilford County Schools teacher incentive program (Mission Possible), the USED-funded Bridges to Early Learning Project in South Carolina, and North Carolina's Race to the Top Initiative. The *Guiding Principles for Evaluators* (American Evaluation Association, 2004) and the *What Works Clearinghouse Standards* (Institution of Education Sciences, March, 2014) guide the evaluation work performed at the SERVE Center.

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TRANSFORMING COMPREHENSIVE HIGH SCHOOLS INTO EARLY COLLEGES: THE IMPACTS OF THE EARLY COLLEGE EXPANSION PARTNERSHIP

Section I: Introduction and Overview

The changing U.S. economy means that jobs that pay a living wage are more likely to require some form of postsecondary education (Carnevale & Desrochers, 2003; Carnevale, Smith, & Strohl, 2010). Yet, concerns remain that too few students are successfully earning postsecondary credentials. In response to these concerns, educators and policymakers have been exploring a variety of efforts at the high school level to increase students' likelihood of enrolling and succeeding in postsecondary education. One of the most successful of these models has been the Early College.

As originally conceptualized, Early Colleges were small schools focused purposefully on college readiness for all students. Frequently located on college campuses, Early Colleges targeted students who might face challenges in postsecondary education, including students who were the first in their family to go to college, economically disadvantaged students, English Language Learners (ELL), or students who are members of racial or ethnic groups underrepresented in college. Early Colleges served students starting in 9th grade and the goal was to have students graduate in four or five years with a high school diploma and a postsecondary credential (an associate degree) or two years of transferable college credit. Supported by an initial investment by the Bill and Melinda Gates Foundation, the small Early College Model expanded across the country.

This model has been the subject of three rigorous longitudinal experimental studies funded by the U.S. Department of Education and led by SERVE Center at UNCG and an experimental study conducted by the American Institutes of Research. These studies found that the Early College Model had positive impacts on a variety of outcomes, including staying in school, progressing in college-preparatory courses, graduating from high school, and enrolling in and graduating from college (Berger et al., 2013; Edmunds, Bernstein, Unlu, Glennie, & Smith, 2013; Edmunds et al., 2012; Edmunds et al., 2017; Edmunds, Willse, Arshavsky, & Dallas, 2013).

Although the model has been successful, practitioners have been concerned about the extent to which a model composed of small schools on college campuses could be expanded to serve large numbers of students. As a result, there have been increasing efforts to explore the possibility of transforming regular comprehensive high schools into Early Colleges. The Early College Expansion Partnership (ECEP) is among the first large-scale effort to apply Early College strategies into comprehensive high schools.

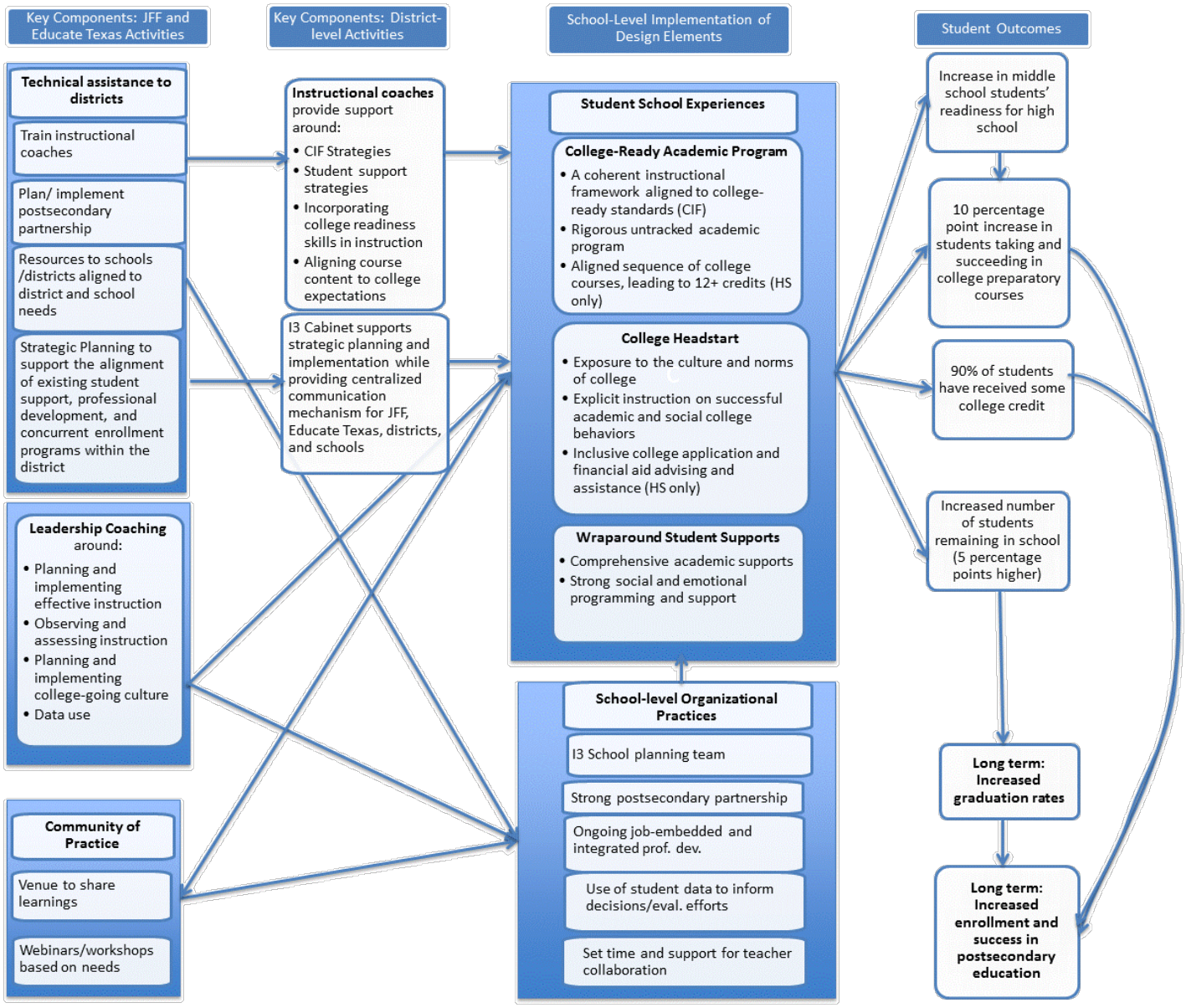
Supported by a $15 million grant from U.S. Department of Education's Investing in Innovation (i3) program, the ECEP was designed to increase the number of students graduating from high school prepared for enrollment and success in postsecondary education. The project sought to blend high school and college by applying strategies from the successful Early College high school model to 14 middle schools, 12 high schools, and two 6th-12th-grade schools in three districts in two states: Colorado and Texas.

ECEP implemented an adapted version of the Early College High School Model. Key adaptations from the original design included the following:

- ECEP implemented the model in existing comprehensive high schools. In the schools included in the experimental studies, the model has only been implemented in small schools, almost all of which were new and most of which were on college campuses.
- Original Early College High Schools were schools of choice to which a student had to apply. All schools engaged in some level of screening of applicants. In addition, most schools had substantial control over hiring of staff. This was not the case with the traditional high schools implementing ECEP.

ECEP was a collaborative effort, involving Jobs for the Future (JFF), Educate Texas (EdTX), and the school districts of Denver, Colorado, and Pharr-San Juan-Alamo (PSJA) and Brownsville Independent School District, both in the Rio Grande Valley area of Texas. The program provided a set of services that supported implementation of a whole-school reform model emphasizing the creation of a college-preparatory school environment. The services provided included: (1) technical assistance to districts around strategic planning, alignment of resources, and the creation of postsecondary partnerships; (2) on-site leadership coaching for school administrative teams around the ECEP Design Elements; (3) an online Community of Practice organized by JFF; (4) on-site instructional coaching with an emphasis on a core set of instructional practices; and (5) an i3 Cabinet or district-level coordinating body to guide the work. As a result of these services, each school was expected to implement four Early College Design Elements. These Early College Design Elements, as articulated by JFF, are as follows: (1) a College Ready Academic Program, (2) a College Headstart, (3) Wraparound Student Supports, and (4) School-Level Organizational Practices that support implementation. A primary emphasis of the program was increasing the number of students who participated in college-credit-bearing courses while in high school. Figure 1 is the the ECEP logic model, which graphically represents the program's implementation supports ("Key Components") as well as the anticipated school-level and student-level outcomes.

Figure 1. ECEP Logic Model



This report presents findings relative to the outcomes of the intervention (the last two columns in the logic model). Findings relative to the Key Components (the first two columns of the logic model) are included in a separate report entitled *Implementation Supports of the Early College Expansion Partnership*. This impact report is organized as follows:

- Section II: Evaluation Methodology. This section describes the approach used to assess student impacts and to track changes over time.

- Section III: Changes at the District and School Levels. In this section, we use survey and site visit data to describe key changes that have been made at the district and school levels. The Early College Design Elements are defined in more detail in this section.
- Section IV: Impact on Student Outcomes. This section presents the impact estimates for the core student-level outcomes.
- Section V: Discussion. In this section, we place the findings in context and we discuss the broader implications of this work.
- Section VI: Conclusions. This final section summarizes the overall findings.

Sections II-V begin with key highlights of the content in each section.

Section II: Evaluation Methodology

The evaluation was designed to examine the impact of the project on targeted outcomes and to explore changes occurring in the traditional schools as they sought to transform themselves into Early Colleges. The methodology section is divided into two different sub-sections: (1) Changes in Schools and Districts and (2) Impact on Student Outcomes.

Key Points

- The evaluation used mixed methods to assess the implementation and impact of the model.
- To examine the implementation of the model and changes that occurred at the district and school levels, the evaluation used data from surveys, site visits, annual interviews, and program materials.
- The impact study used a quasi-experimental design in which schools were matched on baseline measures of the outcomes and key demographic characteristics. Baseline equivalence was then assessed at the student level.

Changes in Schools and Districts

We used two primary approaches to explore the extent to which schools and districts were changing their practices: (1) a survey that measured implementation of the Design Elements in schools and (2) annual site visits to districts and biennial visits to schools. The methodology for each of these is described separately.

Survey

The implementation supports provided by the grant were designed to prepare participating schools to implement the four ECEP Design Elements. These Design Elements were expected to lead to improved student outcomes.

To measure implementation of the Design Elements, we developed a survey that was administered to school staff. The survey included a variety of scales that were indicators of the different Design Elements (a copy of the survey is provided in Appendix F). Table 1 provides a summary of the scales, sample questions, and the reliability of each scale.

Table 1. ECEP Implementation Survey Scales

Design Element	Indicator	Number of Items	Cronbach's Alpha Reliability: Middle School Respondents	Cronbach's Alpha Reliability: High School Respondents	Sample Question	Response Scale
College Ready Academic Program	CIF[a]-Collaborative Group Work	4	0.76	0.76	Had students work together on projects or assignments	1=Never 2=A few times this year 3=Once or twice a month 4=Once or twice a week 5=Almost every day
	CIF-Writing to Learn	4 (HS) 3 (MS)	0.74	0.75	Asked students to defend their own ideas or point of view in writing or in a discussion	
	CIF-Scaffolding	4	0.81	0.83	Made connections between what's covered in your class and what's covered in other classes	
	CIF-Questioning	3	0.87	0.87	Taught or modeled for your students how to ask good questions	
	CIF-Classroom Talk	4	0.78	0.81	Asked students to explain their thinking	
	CIF-Literacy Group	4	0.81	0.82	Asked students to read difficult or complex texts	
	Assessment	6	0.87	0.88	Used rubrics to grade students' work	
College Headstart	College-Going Culture	6 (HS) 5 (MS)	0.92	0.94	The faculty and staff in this school expect every student to receive postsecondary education or training	1=Strongly Disagree 2=Disagree 3=Agree 4=Strongly Agree

Design Element	Indicator	Number of Items	Cronbach's Alpha Reliability: Middle School Respondents	Cronbach's Alpha Reliability: High School Respondents	Sample Question	Response Scale
College Headstart (cont'd)	College Readiness Instructional Activities	6 (HS); 5 (MS)	0.83	0.84	Worked with students on time management and study skills	1=Never 2=A few times this year 3=Once or twice a month 4=Once or twice a week 5=Almost every day
	High School/ College Readiness Support [b]	9 (HS); 4 (MS)	0.90	0.95	Advising on courses to take to get ready for college	1=0% 2=less than 25% 3=26-49% 4=50-75% 5=greater than 75%
Wraparound Student Supports	Student Supports	5 (HS); 3 (MS)	0.80	0.93	Sessions or classes to help students cope with social or emotional issues	
	School Relationships	5	0.83	0.85	The family and home life of each student is known to at least one faculty or staff member in this school	1=Not true at all 2=Somewhat true 3=Mostly true 4=Entirely true
	Family Relationships	6	0.84	0.89	School faculty and staff meet or talk with parents	1=Never 2=A few times this year 3=Once or twice a month 4=Once or twice a week 5=Almost every day

[a] Common Instructional Framework

[b] Middle school staff received high school readiness support questions and high school staff received college readiness support questions.

The survey also included a set of questions that focused on "Organizational Supports," that is, participants' experiences with professional development, collaboration, and use of data. These questions were analyzed as individual items.

The survey was administered to schools in fall 2013 (baseline) and again in spring 2014, 2015, 2016, and 2017. Early analyses showed that there was a decline in the survey scale values between the surveys administered in fall 2013 and spring 2014 (within the same school year)

that appeared to be driven more by the timing of the survey administration than the program. As a result, we treated spring 2014 as our baseline. The analyses included in this report therefore focus on changes made between spring 2014 and spring 2017 (between the first and fourth years of implementation). Such an approach might help reduce the likelihood that results are driven by the timing of the survey administration; further it allows us to look at changes over three years. In order for a school to be included in the analyses, at least 50% of the staff at the school had to have completed the survey.

A total of 22 schools completed the survey in spring 2014 and 28 schools completed the survey in spring 2017. For analyses involving both spring 2014 and spring 2017 survey data, schools with less than 50% participation in either survey administration were excluded from the analytic sample. A total of 8 high schools and 12 middle schools met the participation requirements at both time points. It should be noted that the high schools that were included in this analysis varied in size. Given the small number of high schools that completed the survey at both spring administrations and the uneven size of the schools, any results showing changes for high schools should be interpreted with caution.

To analyze the difference in scales between 2014 and 2017, we used mixed-effects ANOVAs. One analytic challenge was that, because the survey was anonymous, we do not know if the same teachers responded at the different time points, making it impossible to link the survey results to an individual participant across time. Thus, we were unable to account for the correlation between survey responses across the two administrations as is typically the case with repeated-measures analysis. However, because survey responses were tracked at the school level, we were able to control for the fact that respondents were nested within schools. To account for the fact that respondents were nested within schools, we used mixed-effects ANOVAs for analysis of scales where survey administration (spring 2014 vs. spring 2017) was entered into the model as a fixed effect and school ID was entered as a random effect. It should be noted that results may have been impacted by issues related to staff turnover and/or different staff members taking the survey between both administrations.

Site Visits

To further explore changes that were occurring at the district and school levels, we conducted annual visits to the districts, supplemented by biennial visits to selected schools. During the annual visits to the districts, we interviewed key district-level personnel responsible for ECEP implementation, instructional and leadership coaches, and representatives from the higher education partners. Table 2 presents the district-level interviews conducted annually.

Table 2. District-Level Interviews

Level	Role	Year 1	Year 2	Year 3	Year 4	Year 5
District	District representatives	7	7	4	5	4
	External (JFF or EdTX) instructional coaches	8	11	7	4	--
	Internal (district or school) instructional coaches	--	12	10	8	--
	JFF leadership coaches	3	2	3	3	1
	CIF[a] Implementation Facilitator (EdTX)	NA	NA	1	1	--
	Professional Development Specialist (EdTX)	NA	NA	1	1	--
	District individual working with college credit	--	4	--	4	1
Project	JFF/EdTX staff	5	5	5	6	6
Higher Education	Postsecondary representative	1	3	3	3	3
	College faculty member	--	--		6	--
	Adjunct faculty (housed at high school)			3	4	--
	College liaison	--	--	2	2	2

[a] Common Instructional Framework.

Note that the positions of CIF Implementation Facilitator and Professional Development Specialist did not exist in the first two years of the project. Dashes indicate that we did not interview those individuals at that given time point.

The interviews focused on implementation of the various project activities as well as individuals' perceptions of how the schools were implementing the Design Elements. We also collected data on lessons learned and plans for sustainability.

In Years 2 and 4, we also conducted site visits to three schools in Denver (one high school, one middle school, and one 6-12 school) and two schools each in Brownsville and PSJA (one high school and one middle school). We were able to visit the same set of schools in Year 4 as in Year 2. During these site visits, we conducted interviews and observations. Table 3 summarizes the data collected during the school visits.

Table 3. Data Collected from Site Visits

Level	Role	Year 2	Year 4
High School	Administrators	11	7
	Counselor	4	4
	Teachers	7	5
	Students (in focus groups)	25	24
	Classroom observations	7	8
Middle School	Administrators	8	7
	Teachers	7	7
	Classroom observations	7	6
	Students (in focus groups)	--	24

Note: Dashes indicate that we did not interview those individuals at that given time point.

The interviews focused on implementation of the various Design Elements and included questions around college credit coursetaking, creating a college-going culture, supports for students, changes in instruction, and the organizational structures in place to support the work. The observations focused on the extent to which targeted instructional practices, including the Common Instructional Framework and other college readiness strategies, were being implemented in the classrooms. A typical interview protocol is provided in Appendix E and the observation protocol is available upon request.

All interviews were transcribed and observation notes were entered into an online data collection system. We then reviewed the transcripts and observation data to describe the specific actions that districts were taking to support the project activities and that schools were taking to implement the Design Elements.

Impact on Student Outcomes

Overview

The core question for the impact study was:

> To what extent does participation in ECEP result in improved student outcomes, including increased college preparatory coursetaking and success, increased numbers of students staying in school, and increased enrollment and success in college-level courses?

This general research question was further broken into three specific *Primary (Confirmatory) Research Questions*:

1. To what extent does a school's participation in more than one year of ECEP result in increased enrollment and success in a college preparatory course of study in the 9th grade?
2. To what extent does a school's participation in more than two years of ECEP result in fewer students dropping out by the beginning of their third year in high school?
3. To what extent does a school's participation in at least three years of ECEP result in improved student enrollment and success in college-level courses by the end of 12th grade?

The impact study also examined the impacts on college credit coursetaking for 11th graders. Further, we conducted exploratory analyses that examined project impact on key sub-groups of students including those who were: (1) an under-represented minority, (2) economically disadvantaged, (3) English Language Learners, and (4) initially low-performing.

Research Design

The impact study utilized a two-level quasi-experimental design in which ECEP schools were first matched to similar schools not participating in ECEP. Baseline equivalence was then established on the students in those schools; if the students were not equivalent, we conducted additional matching. Results were then compared for students within those two sets of schools.

The goal of this quasi-experimental design was to compare outcomes for students in schools that received the ECEP intervention with outcomes for students in other schools that did not receive the ECEP intervention. This kind of research design is stronger than designs that only look at changes in participating schools over time because it can account for any other changes that may also cause the outcomes to improve over time. For example, during the period of the ECEP intervention, there might also have been state policies expanding student access to dual enrollment. In this situation, it might be possible that ECEP schools expanded their college enrollment because of the state policies and not because of the project. Thus, we compared the ECEP schools to other schools that were experiencing the same changes in state policies.

Outcomes and Data Sources

The core outcomes examined in the impact evaluation fell into three primary domains: (1) college preparatory coursetaking, (2) staying in school, and (3) experience in courses potentially bearing college credit. The measures in each domain are described below.

For the outcome analysis, we relied exclusively on administrative data that districts finished compiling in the summer following each academic year (later in the case of dropout data). In Texas, all data used for student outcomes were collected from schools by the Texas Education Agency as part of regular administrative data collections; we were thus able to use state-wide administrative records housed at the Education Research Data Center at the University of Texas in Dallas. In Colorado, student outcomes data were provided directly by Denver Public Schools, which collected these data as part of their regular administrative data collection protocol. Students were included in the sample only if they had non-missing values for all variables used in the analysis.

Domain 1: Enrollment and Success in a College Preparatory Course of Study

This domain included two separate, yet tightly related, outcomes.

Confirmatory Outcome A: College Preparatory Coursetaking. This measure looked at the proportion of students taking a core set of college preparatory courses at the 9th-grade level. In 9th grade, the two courses were the equivalent of English I or a higher-level English course and one college preparatory mathematics course (i.e., Algebra I, Geometry, Algebra II, Integrated Math I or higher). “Taking a course” was defined as a student being enrolled in at least one Carnegie unit of relevant coursework during the academic year. Because it is

extremely challenging for students who are off-track for college in 9th grade to catch up (Finkelstein & Fong, 2008), this measure assessed the extent to which schools provided access to the courses needed to enter college.

Confirmatory Outcome B: College Preparatory Course Success. This measure was very closely related to the first measure; the percentage of students taking and succeeding in English I and at least one college preparatory math course in the 9th grade. "Successful completion" was defined as earning high school credit for at least one Carnegie unit of relevant coursework with a grade of C- or higher.[1] While the first measure spoke to access, this second measure of successful course completion captured both access and success in school.

Domain 2: Staying in School

This domain included one outcome.

Confirmatory Outcome C: Cohort Dropout Rate. This measure reflected the percentage of students who were 9th graders in 2013-14 who dropped out by the start of their third year in high school. If a student was no longer enrolled in school, schools confirmed whether they were enrolled somewhere else (including a GED program), left the country, or were being home schooled. Students who could not be located elsewhere were identified as dropping out. These data were reported at the student level in state leaver files in Texas and in district exit codes in Denver.

Domain 3: Enrollment and Success in College-Level Courses

This domain included two outcomes.

Confirmatory Outcome D: College-Level Coursetaking. This measure examined the percentage of students who had enrolled in at least one college-level course (any number or fraction of Carnegie units) by the end of 12th grade, excluding developmental courses. For this outcome, we looked at three different types of courses that had the potential to provide students with college-level credit: (1) transferable dual credit courses, defined for this study as courses offered by a two- or four-year institution for which a student can receive college credit upon successful completion of the course and for which that credit could transfer to another college; (2) Advanced Placement (AP) courses, which are college-level courses taught at the high school and which require students to pass an external exam to receive college credit; and (3) college-level Career and Technical Education (CTE) courses, a large portion of which are articulated courses in which a student can receive college credit only if they enroll in the postsecondary

[1] A C- is the cut-off used to determine successful completion of a course by Texas and the administrative data only include an indication of whether the student's grade was a C- or higher, not the actual grade. As a result, we applied the same standard for successful completion to both the Texas and Colorado data.

institution that originally offered the course.[2] A primary goal of the ECEP intervention was to increase the number of students who have access to college-level courses. Thus, this measure was designed to look at the percentage of the student body given access to these courses. A student was coded as taking a college-level course if they had enrolled in at least one AP, dual enrollment, or college-level CTE course by the end of 12th grade. Data were collected at the student level and included the name of the course and whether it was AP, dual enrollment, or college-level CTE.

Confirmatory Outcome E: High School Credits Received for College-Level Courses. This measure captured the average number of high school credits earned in college-level courses students had taken and passed with a grade of C- or higher by the end of 12th grade. Just as with Confirmatory Outcome D, we excluded developmental courses. This measure was designed to assess not only access to college-level courses, but success in those courses. Students were identified as having taken and earned high school credit with a grade of C- or higher in any of the three types of potentially college credit-bearing courses, as described above.

We acknowledge that students taking AP courses can only earn college credit if they pass the exams associated with the courses. Unfortunately, we did not have AP exam performance data. As a result, as noted above, we used passing the course as a proxy for passing the exam. We recognize that many students who pass the AP course may not pass the exam and therefore may not earn college credit. We acknowledge that the number of credits earned through this calculation could be considered the upper bound on the total number of actual college credits earned by students. In recognition of this issue, we supplemented the primary outcome of all credits received with a sensitivity analysis that looked at the number of credits earned through only dual enrollment courses, which served as a lower bound estimate of the total number of college credits earned.

The same logic applied to the CTE courses, the vast majority of which were articulated courses that gave students the opportunity to earn college credit in only limited instances. Thus, the high school credits that included Carnegie units earned for the CTE courses could be considered an upper bound on the total number of college credits that a student actually earned.

The number of credits received represented the cumulative number of credits awarded in courses taken in the 12th grade and three years prior with a grade of C- or higher. Data were collected at the student level and included the name of the course, whether it was AP, dual

[2] As an example of an articulated course: a student could take a college-level welding course from community college X. Upon successful completion of the course, the student receives high school credit for the course. If the student enrolls in community college X, he or she will receive college credit for the course. If the student enrolls in another institution, he or she would not receive college credit and would only have the high school credit.

enrollment, or college-level CTE, the credits earned, and whether a student earned credit with a grade of at least a C-.

Table 4 summarizes the outcomes that were examined, the time points at which they were examined, and the sample for each outcome.

Table 4. ECEP Evaluation Outcomes

Outcome	Definition	Time Point	Sample
A. Enrollment in a college preparatory course of study	Percentage of students taking English I and Algebra I or higher	2014-15 2015-16	9th graders
B. Enrollment and success in a college preparatory course of study	Percentage of students taking and passing English I and Algebra I or higher	2014-15 2015-16	9th graders
C. Staying in school	Percentage of 9th graders who had dropped out of high school by the start of 11th grade	Beginning of 2015-16 school year	9th graders from 2013-14
D. Enrollment in college courses	Percentage of 12th graders ever enrolled in college-level (dual credit (both transferable and CTE) and AP) courses	2016-17	12th graders (11th graders as exploratory)
E. College credit attainment	Number of college-credit-bearing courses ever taken and number of high school credits earned in college-level classes	2016-17	12th graders (11th graders as exploratory)

As Table 4 shows, the student sample varied depending on the outcome. We next discuss creation of the overall school sample and then the analytic sample for each outcome.

Sample

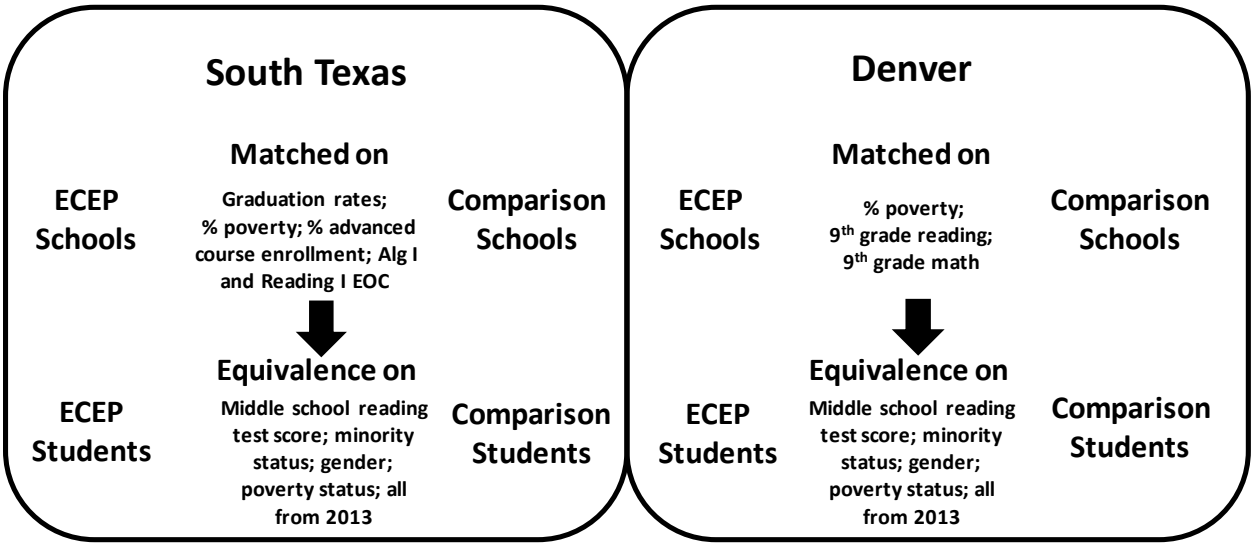
JFF recruited three districts to be part of the i3 proposal. The two Texas districts—PSJA and Brownsville, both located in the Rio Grande Valley—were chosen because of their interest in Early Colleges. One district, PSJA, had already committed to creating a district-wide Early College and had implemented the model in most district high schools. The i3 grant supported implementation of the model in the two remaining high schools. The second district, Brownsville, had one Early College high school and wanted to expand the model to more schools. However, familiarity with the instructional and structural components of the Early College Model was much less widespread. Brownsville selected schools for participation based on enrollment size and experience offering dual credit courses.

JFF chose the third district, Denver Public Schools, to take advantage of Colorado's recent policy changes creating a good environment for growth of dual enrollment as well as the district's leadership and commitment to college access and success. In Denver, participating schools were chosen through a district-wide RFP process. In addition to proposals for providing ECEP course offerings and support services, applicant schools were judged on their history of providing dual enrollment opportunities and a commitment to providing a school culture

conducive to ECEP implementation. Fifteen schools submitted RFPs and nine were chosen. Three of the ECEP high schools in Denver were recently opened and only served a subset of grades as of the baseline year. Two schools served grades 6-12. Three schools, including one of the 6-12 schools and one of the recently opened schools, self-identified as early or middle colleges but had not historically received services from JFF or a similar provider. Thus, at the start of the evaluation, it was unclear the extent to which these schools exhibited the desired Early College Design Elements. Three schools were classified as Innovation Schools, which afforded them many of the same flexibilities as charter schools.

These treatment schools were then matched to a set of similar comparison schools. The strength of a quasi-experimental design relies on the extent to which the students in the two sets of schools—treatment (ECEP) and comparison—are similar to each other in terms of their characteristics and initial level of the outcomes. Although the analyses compared students, we began by matching the ECEP schools to comparison schools. We used slightly different procedures in Texas and Denver to identify a strong set of comparison schools. Figure 2 presents an overview of the matching process.

Figure 2. Comparison Sample Construction



In Texas, we started with the pool of all non-Early College, non-charter schools in the Rio Grande Valley that had at least 50 students in 9th grade. We used 3-nearest-neighbor propensity score matching with replacement using the following school-level variables: (1) percentage of 11th- and 12th-grade students passing AP, IB, dual credit, or other challenging courses as defined by the state; (2) four-year cohort graduation rate; (3) percentage of students passing the Algebra I end-of-course exam and the percentage of students passing the Reading I end-of-course exam; and (4) percentage of students eligible for free or reduced-price lunch.

This process resulted in a total of six comparison schools, each in a different district, for the five treatment schools in Texas.

In Denver, the school-level matching occurred entirely within the district. Several ECEP schools enjoyed much of the same flexibility as charter schools through state-designated Innovation Status, so we included charter schools in the potential comparison pool. Because three treatment schools were newly formed and did not have 11th and 12th graders in the baseline year, we were unable to match on the percentage of students taking advanced courses nor on graduation rates. As a result, we used the following variables from 2012-13 for school-level matching: (1) percentage of students eligible for free or reduced-price lunch, (2) percentage of students passing the 9th-grade state standardized math test, and (3) percentage of students passing the 9th-grade state standardized reading test. Propensity score matching did not identify matches that were equivalent for the targeted variables, so we elected instead to conduct 1:1 matching which minimized the Euclidean distance between treatment and comparison schools on the three variables. In this way, we were able to find nine comparison schools, one for each of the nine treatment schools. It is important to note that the comparison schools were subject to the same district-wide policies as the treatment schools. Given that ECEP worked with district-level staff, it is possible that the comparison schools may have received some of the benefit of the intervention as well.

The previous description applies to the selection of schools. Within the schools, we utilized sub-populations of students that varied depending on the proposed outcomes. For each separate analysis, we assessed baseline equivalence on the analytic sample of students. We evaluated whether the students in our samples in these schools were similar on the following student-level measures: (1) scores on the middle school state standardized reading test, (2) gender, (3) underrepresented minority, and (4) eligibility for free or reduced-price lunch. For all variables, we used data from 2012-13, the year prior to the intervention starting. Table 5 shows baseline equivalence for the students in each of our three analytic samples. In Texas, the school-level matching led to student populations that were equivalent on all of the baseline measures; the only exception was the proportion of underrepresented minority students in Texas for Outcomes A and B, which had a non-substantive difference of only 0.4 percentage points but a large effect size because of the lack of variability across sites. In Denver, the school-level matching led to student populations that were mostly comparable except in the samples for the sub-group analyses where there was a higher percentage of minority students enrolled in treatment schools. As a result, we dropped randomly selected students who were both minority and ELL from the treatment group full sample until we attained baseline equivalence for the sub-group samples in addition to the full sample. As the table shows, the final student samples were equivalent in the baseline year for the pooled sample, with any differences

between the two populations having effect sizes of less than 0.25, which met the What Works Clearinghouse standards for baseline equivalence.

Table 5. Baseline Student Characteristics, by Sample*

Sample	Sample Definition	Characteristic	Treatment Mean (SD)	Comparison Mean (SD)	Treatment-Comparison Difference (Effect Size)[3]
Analytic Sample for Outcomes A and B (9th-grade college prep coursetaking)	Cross-sectional sample of 9th graders in schools in their second and third years of implementation (2014-15 and 2015-16)	Panel A: Pooled	(N=7,723)	(N=6,797)	
		Baseline reading z-score	0.011 (0.954)	0.002 (1.052)	0.009
		Eligible for free or reduced-price lunch	88.1%	88.1%	0.00
		Underrepresented minority	92.6%	92.3%	0.03
		Female	49.4%	49.6%	-0.01
		Panel B: Texas	(N=4,917)	(N=4,673)	
		Baseline reading z-score	0.012 (0.958)	-0.013 (1.041)	0.026
		Eligible for free or reduced-price lunch	93.2%	94.0%	-0.09
		Underrepresented minority	99.3%	98.9%	0.29
		Female	49.9%	49.4%	0.01
		Panel C: Denver	(N=2,806)	(N=2,124)	
		Baseline reading z-score	0.009 (0.946)	0.036 (1.076)	-0.03
		Eligible for free or reduced-price lunch	79.3%	75.1%	0.14
		Underrepresented minority	80.9%	77.8%	0.12
		Female	48.5%	50.2%	-0.04
Analytic Sample for Outcome C (persistence)	Longitudinal sample of 9th graders from 2013-14 followed through 2015-16	Panel A: Pooled	(N=4,192)	(N=3,438)	
		Baseline reading z-score	0.012 (0.874)	0.007 (1.132)	0.01
		Eligible for free or reduced-price lunch	87.5%	89.6%	-0.128
		Underrepresented minority	92.5%	93.7%	-0.111
		Female	48.6%	48.9%	-0.007
		Panel B: Texas	(N=2,511)	(N=2,363)	
		Baseline reading z-score	-0.001 (0.799)	0.001 (1.177)	0.00

[3] To calculate effect sizes for continuous variables, we used Hedge's *g*, which is calculated using the standard deviation pooled between treatment and comparison groups. For dichotomous variables, we calculated Cox's *d*.

Sample	Sample Definition	Characteristic	Treatment Mean (SD)	Comparison Mean (SD)	Treatment-Comparison Difference (Effect Size)[3]
		Eligible for free or reduced-price lunch	94.1%	94.6%	-0.06
		Underrepresented minority	99.3%	99.4%	-0.11
		Female	49.3%	48.2%	0.03
		Panel C: Denver	(N=1,681)	(N=1,075)	
		Baseline reading z-score	0.032 (0.987)	0.021 (1.034)	0.01
		Eligible for free or reduced-price lunch	77.6%	78.6%	-0.034
		Underrepresented minority	82.3%	81.0%	0.053
		Female	47.5%	50.4%	-0.07
Analytic Sample for Outcomes D and E (college credit courses)	12th graders enrolled in 2016-17	Panel A: Pooled	(N=2,756)	(N=2,380)	
		Baseline reading z-score	0.006 (0.849)	0.008 (1.152)	-0.002
		Eligible for free or reduced-price lunch	88.2%	88.6%	-0.019
		Underrepresented minority	94.3%	93.9%	0.052
		Female	50.1%	51.5%	-0.032
		Panel B: Texas	(N=1,984)	(N=1,842)	
		Baseline reading z-score	-0.002 (0.805)	0.002 (1.175)	0.00
		Eligible for free or reduced-price lunch	93.3%	93.4%	-0.01
		Underrepresented minority	99.5%	99.3%	0.22
		Female	49.3%	50.3%	-0.03
		Panel C: Denver	(N=772)	(N=538)	
		Baseline reading z-score	0.025 (0.983)	0.028 (1.039)	0.00
		Eligible for free or reduced-price lunch	75.6%	71.9%	0.10
		Underrepresented minority	81.0%	75.1%	0.21
		Female	52.3%	55.4%	-0.07

*Baseline year for administrative data is 2012-13 school year, the year prior to the intervention starting.

Baseline equivalence for sub-groups was established at the student level using the same baseline measures and analytic procedures described above. These baseline tables for the subgroup analyses are provided in Appendix A.

Analysis

We examined the difference between ECEP and comparison schools using hierarchical linear modeling (HLM) (Raudenbush & Bryk, 2002), which accounts for the fact that students are nested within schools. The models included all the student-level variables listed in Table 5 as well as student-level baseline math z-scores and ELL status, and school-level variables for the percentage of students in poverty, passing the 9th-grade standardized test in English, and passing the 9th-grade standardized test in math in the baseline year. School-level variables were limited to those that could be measured in the 9th-grade year because several treatment high schools were new at baseline and had yet to serve all grade levels. For this reason, it also was not possible to calculate pre-post changes analogous to the targets represented in the student outcomes column of the logic model in Figure 1 for dropout and college-level coursetaking outcomes.

In general, the HLM models sought to answer the question, "Is there an overall treatment effect of the ECEP intervention on relevant student outcomes for schools that implement the model relative to their comparison school counterparts?" We therefore estimated the parameters for a random intercept at the school level (Level 2) and clustered standard errors at the school level. The treatment effect was adjusted for school-level variables measured during the baseline year (Bloom, Richburg-Hayes, & Black, 2007). Although debate exists about whether the analysis needs to account for matched pairs, Stuart (2010) argued that it is not necessary to account for matched pairs when variables used in the matching process are included in the model. Therefore, we chose not to model matched pairs but to include all covariates upon which schools matched in our analytic models (see matching discussion above).

All models were estimated in the latest available version of STATA. To facilitate interpretation, all variables were centered around their grand mean. The statistical model is shown in Appendix B with all covariates included in every model regardless of statistical significance.

These analyses were conducted initially by state and then pooled to determine the overall programmatic impact of the initiative. The combined treatment effect was calculated as a weighted average of the individual state estimates with weights proportional to the inverse variance of each estimate. This strategy gave greater weight to the more precise estimate, just as would occur if parameters were estimated from a single combined sample. It is important to note that, for some outcomes, this approach resulted in one state being weighted substantially more than the other. The weights are provided in Appendix C.

We also conducted exploratory analyses to examine whether programmatic impacts on all relevant outcomes varied for three theoretically relevant sub-groups of interest: (1) economically disadvantaged students, (2) English language Learners, and (3) under-performing students (i.e., those who did not meet the Level II recommended score on reading in middle

school). We also added two analyses related to exposure to the intervention. One examined the impacts on 9th-grade college preparatory coursetaking outcomes for students who participated in the middle school component of the intervention, and the other looked at the impact on college credit coursetaking outcomes for students who were enrolled in a treatment high school for the full three years. The impacts on each sub-group were estimated separately so that estimated intercepts and slopes were allowed to vary. The estimated model was identical to that for the relevant confirmatory analysis, with only the stratifying variable removed due to lack of variation.

We planned to adjust for multiple comparisons for only confirmatory outcomes for the pooled sample within each of the three domains, as appropriate. The two-college preparatory coursetaking outcomes fell within the same domain and were subject to adjustment, as were the two outcomes that fell under the college credit coursetaking domain. The dropout outcome was the only outcome in that domain and was not subject to adjustment. Although the plan was to use significance tests that accounted for the potential false discovery rate (Benjamini & Hochberg, 1995), no confirmatory outcomes that would have been subject to adjustment were statistically significant so adjustments were not needed. Exploratory analyses, including sub-group and state-level analyses, were not subject to adjustment.

Section III: Implementation of the Early College Model

The expectation of the Early College Model is to change the teaching and learning environments in schools. In this section, we present descriptive results around how participating schools have changed their practices because of the ECEP project. The section begins with a description of the extent to which schools were supportive of the Early College work and then describes participants' overall perceptions of the impact of the project. The remainder of the section integrates data from surveys and site visits to describe changes the schools made relative to the four Design Elements: College Ready Academic Program, College Headstart, Wraparound Student Supports, and School-level Organizational Practices. As appropriate, we include information about how districts have changed their practices, however, the majority of information about how districts have supported the Early College work can be found in the accompanying report, *Implementation Supports of the Early College Expansion Partnership.*

Key Points

- All three districts remained committed to the goals of the grant over the duration of the project. Buy-in varied at the school level.
- When asked about project impact, approximately three-quarters of survey respondents indicated that the project had some or a substantial impact on the ability of the school to prepare students for college, on instruction and supports, and on the level of expectations for students going to college. Approximately three-quarters also indicated that the project had some or substantial impact on the professional experience including the use of data, the level of collaboration in the school, and the quality of the postsecondary partnership.
- Across all three districts, the project increased the number of officially recognized as Early Colleges by their states.
- School staff reported expanding access to college courses.
- All three districts developed pathways to guide students' college coursetaking.
- All three districts moved to incentivize more high school teachers to become credentialed to teach college courses.
- Site visit data suggested that there were instructional changes occurring, but that this might be occurring primarily in pockets. Survey results showed the same, suggesting that instructional change were not widespread across the schools.
- Schools significantly increased their support for college readiness activities, including an emphasis on increasing the number of students completing college placement exams.

- In focus groups, students reported an increased college-going culture in their school.
- Over the course of the grant, teachers reported increases in professional development and use of data to inform instruction.

Buy-In at the School Level

Research on effective implementation suggests that one of the most important factors affecting quality of implementation and sustainability of project activities is the extent to which participants believe in or "buy in" to the intervention (Durlak & Dupre, 2008; Meyers, Durlak, & Wandersman, 2012). All three districts began the grant with a commitment to the Early College work and this commitment remained throughout the project. Much of the buy-in at the district level stemmed from the belief among district staff that the ECEP grant aligned with other district initiatives related to college and career readiness. For example, PSJA was awarded two Early College High School Demonstration Site grants, all Brownsville high schools were designated as Early Colleges, and in Denver, school and district leaders mentioned the push toward the Denver 2020 goal of graduating every student "college and career ready," with an emphasis on students entering postsecondary environments "remediation free."

Although buy-in is important at the district level, it is particularly important for school leadership given that the changes that directly impact students occur at the school level. In the first year of the project, buy-in at the school level was reported as mixed. A number of participating schools were immediately on board with adopting the college readiness goals, instructional strategies, and the need to get more students taking college classes. Alternatively, other schools seemed somewhat unclear about the intervention. For example, in one district, an instructional coach described how implementation varied across the sites with which she worked, "One particular campus…really supports the process. The other two, I am not sure that campus leadership really understands the process enough to trust." Starting in the second year of the project and continuing throughout the project, however, buy-in at the school leadership level was seen as strong, driven by a sense of alignment between the ECEP work and the other work of the district. As one principal described in the second year of implementation:

> The grant and the initiatives to the district seem to have slowly overlapped much better now, and so they seem to be working more in conjunction than in separation, and so now when we're approached to start a new initiative or to follow up on something that they would like to see implemented in our school, it's always through that lens of Early College and postsecondary readiness.

One of the challenges that we observed around buy-in was the issue of leadership turnover. All districts experienced some level of school leadership turnover over the course of the grant. For example, one of the high school principals that we interviewed in Year 4 was starting his second year at the school and stated that the ECEP grant had been less of a priority for him than other

things in his first year as he navigated his new position. In his first year he delegated much of the responsibility for project implementation to the internal instructional coach assigned to the school and to the assistant principals.

At the teacher level, our interviews suggested that most were generally supportive of the goals of the grant, but that buy-in varied. A high school principal in Year 2 estimated about 75% of his staff were on board. In Year 4, a different high school principal estimated buy-in to be at 50% among his staff. Qualitative data suggested that buy-in among teachers seemed to be related to exposure to ECEP professional development activities and working directly with an instructional coach. If the ECEP practices were not regularly reinforced in the school, awareness and buy-in dropped. For example, one high school teacher that we interviewed in Year 4 indicated that some teachers in her school had forgotten about the program because ECEP concepts were not incorporated into professional development and that instructional rounds did not focus on observing Common Instructional Framework strategy implementation.

Although teacher buy-in varied within and across schools, there was some suggestion that, by the end of the grant, sustained efforts were winning over previously resistant teachers within participating schools. Specifically, some staff members mentioned an observed change in veteran teachers, often perceived to be more difficult to change. For example, a teacher at one middle school said,

> I mentioned at the beginning of our interview also the naysayers; the teachers that have been here for over, and I'm not saying this is every teacher, because we have teachers that have been here for 30 years and say, we need change! But the other ones that are stuck and are not willing to put in the extra time that lesson planning takes, and they are slowly coming along, but it has been a challenge to get them to see the light.

A similar perspective was offered by a high school principal around slowly winning over some of the more veteran teachers:

> The i3 comes with training teachers. A whole mind shift type of going, "I'm an experienced teacher, so why am I going through this training?" That type of deal. Now, my teacher leaders are like, "When are we going to start the instructional rounds again? When are we doing the team teaching again, cross-curricular?" Those are the conversations that we're having. It's taken us a while.

As with school leadership buy-in, buy-in among teachers faced challenges due to turnover too, which gave teachers uneven exposure to the ECEP grant. Additionally, across all three districts, there was a reduction in instructional coach availability. This issue was particularly acute in Denver where one coach returned to the classroom and the remaining two coaches had to pick up project management responsibilities after the sudden death of the project lead. This loss of coaching availability did not go unnoticed by some of the staff that we interviewed. For

example, one high school teacher said,

> I think it has changed this year.... I don't feel that we are as involved with it as we were.... Okay, so the two middle years, Year 2 and Year 3, we were pretty connected and pretty involved. The first year, I think it was just kind of introduced to us and there wasn't as much involvement. And I feel like this Year 4, there's hardly any involvement. So, I think it's just a few of us, who have worked closely with [the instructional coach] and have the rubrics and know what they are and believe in them, [who] are still carrying those through.

The data collected on buy-in suggests that staff were generally supportive of ECEP but that there might be uneven implementation of the Design Elements.

Perceived Impact

At the end of the project, faculty and project staff were asked to reflect on the extent to which the project had an impact on their district, their school, or their postsecondary institution. On the staff survey, we asked school staff to indicate the level of impact that the project had on various aspects of their school. As shown in Table 6, approximately 75% of respondents indicated that the project had some or a substantial impact on the ability of the school to prepare students for college, on instruction and supports, and on the level of expectations. Approximately three quarters also indicated that the project had some or substantial impact on the professional experience including the use of data, the level of collaboration in the school, and the quality of the postsecondary partnership.

Table 6. School Staff Perceptions of Project Impact

	% Agreeing that ECEP has impacted the school					
Because of the i3 Early College work…	No Impact	Minimal Impact	Some Impact	Substantial Impact	% Indicating Some or Substantial Impact	Mean
Our school is better able to prepare students for college.						
Middle Schools	10.6%	14.2%	53.5%	21.7%	75.2%	2.86
High Schools	10.4%	10.4%	50.5%	28.7%	79.2%	2.98
We have improved the instruction in our school.						
Middle Schools	10.1%	16.0%	50.9%	23.0%	73.9%	2.87
High Schools	10.3%	12.8%	48.8%	28.1%	76.9%	2.95
The staff in our school have higher expectations for all students.						
Middle Schools	10.5%	15.7%	49.7%	24.1%	73.8%	2.87
High Schools	10.7%	13.0%	46.3%	30.0%	76.3%	2.96
We have improved the academic and affective supports that are in place for our students.						
Middle Schools	10.1%	17.6%	48.5%	23.8%	72.3%	2.86
High Schools	10.3%	12.7%	48.5%	28.5%	77.0%	2.95
Our staff are using student data more frequently.						
Middle Schools	10.4%	15.1%	50.5%	24.0%	74.5%	2.88

Because of the i3 Early College	% Agreeing that ECEP has impacted the school					Mean
High Schools	10.8%	12.8%	47.6%	28.7%	76.3%	2.94
Our faculty are more likely to work collaboratively to improve instruction.						
Middle Schools	10.3%	14.8%	49.0%	25.9%	74.9%	2.90
High Schools	11.3%	12.9%	48.4%	27.3%	75.7%	2.92
We have a stronger partnership with a postsecondary institution.						
Middle Schools	NA	NA	NA	NA	NA	NA
High Schools	11.0%	12.0%	47.8%	29.2%	77.0%	2.95

Interviews and site visits provided additional information about perceived impacts of the grant. An overview of these impacts is presented here; a more detailed discussion of findings is also presented, as appropriate, by individual Design Element.

One of the most significant impacts of the project was that, across all three districts, i3 schools received official state designations as Early Colleges. Early College designation came with certain requirements and benefits, which allowed students to take more courses as described in more depth under the College Ready Academic Program discussion below.

In Texas, these designations occurred toward the beginning of the project and in Denver, they occurred toward the end. One district staff member described the impact:

> The state designation would be, I think, one of the largest outcomes of the grant. I know it was never really a part of our plan in [Denver] to turn all our schools into state-designated Early Colleges, and so we really focused a lot on increasing concurrent enrollment, increasing the number of courses, access, pass rates, and then a positive side-effect, I think, of that concentration and the redesign of the high school experience, our new state graduation guidelines, has been this interest in state designation. And so, four of our participating schools got their state designation and then two additional schools. So, I think that state designation has been the [greatest] impact of the grant; [a] mind-shift to yes, we do want to do this.

Another impact of the grant in two of the districts has been the formation of governance structures providing for clear coordination between the district and postsecondary partners. Staff in one district noted that the district had been doing a lot of work related to Early College and dual enrollment prior to the grant but "there weren't systems really in place to help us or guide us with the work as much as there has been with the i3 now…. So that's how it's helped our district a lot."

Another significant area of impact has been on college readiness and college coursetaking. One staff member noted:

> It's put an emphasis on college readiness, on the wall-to-wall model of Early College high school, on college, on TSI prep, and TSI passing rates. I mean, we track data continuously

having to do with TSI, having to do with numbers of students involved, having to do with the number of students taking dual enrollment courses and when they take it.

In Denver, a district staff member described how ECEP has caused district-wide growth in college coursetaking:

> I would say that this grant was the impetus for the exploding growth that we've seen in concurrent enrollment. And concurrent enrollment programs have been around…for a long time and under-utilized. And then, the laws changed, and things like that. So, I would say that one of the things that the grant was able to do is to give us the supports and the capacity to be able to really grow [the rate of concurrent enrollment].

Most interviewees also noted that there were changes in instruction as a result of the project, with shifts toward more student-centered instructional practices.

> I think the teachers are getting used to letting the kids do more. It's hard, I talked for 18 years. It's difficult to let go of the classroom…. The rigor of the lessons I think have stepped up more than what they were before. It's hard for the teachers that have been here for a long time because I know some teachers that have been here really long. It's hard for them to let go and let the kids do more and be just be a guide, just monitor the kids and walk around and help them, not so much do more. It's more about letting the kids do and guiding them as a teacher. Planning those rigorous lessons and.... They're working on it. It has changed and it is getting better.

Some interviewees also acknowledged, however, that it was hard to make instructional change. One principal did not believe there had been any change and a coach noted, "The instructional change is slow moving." More information on instruction is provided under the College Ready Academic Program Design Element.

College representatives also highlighted that the grant had had impacts on their postsecondary institutions, primarily because of the expansion of college courses. For one college, it forced them to put positions and infrastructure in place that they would not have otherwise had. The increase in college courses also forced colleges to expand the numbers of teachers, which resulted in challenges related to staffing.

At two of the partner colleges, representatives indicated that the Early College work had an impact on the instruction. As one college instructor said,

> The biggest impact I've seen is me working closely with the high school teachers and knowing some of their background with pedagogy and bringing that pedagogy back to the college, because so many of us at the college are just trained in content [specialties] and not necessarily in pedagogy.

The next sections of the report describe some of these impacts in more depth, organized by the four Early College Design Elements.

College Ready Academic Program

One of the core Design Elements is a College Ready Academic Program. This Design Element focuses on the coursetaking and instructional changes seen as necessary to prepare students effectively for college.

Coursetaking

Regarding coursetaking, in order to implement a College Ready Academic Program, schools are expected to implement an academic program of study that allows almost all students to be prepared for college and to attain at least some college credits. A College Ready Academic Program also includes access to, and success in, the courses needed for entrance into college as well as courses that can provide students the opportunities to earn college credit while in high school. The ECEP impact study looked at the extent to which the program was increasing the number of 9th graders successfully completing a college preparatory course of study as well as the impact of the program on college coursetaking.

In addition to collecting data on college preparatory coursetaking, we also collected data around advanced coursetaking. Table 7 shows the percentage of respondents indicating high school students' enrollment in different types of advanced courses across the six schools for which administrator data were available for spring 2014 and spring 2017. The table suggests that high schools generally increased their enrollment in honors courses, pathways, and college credit-bearing courses over the course of the grant.

Table 7. Percentage of High Schools Indicating Specific Levels of Students' Enrollment in Advanced Courses—Spring 2014 and Spring 2017

	Level of High School Students' Participation				
Type of Class	0-25% Students Enrolled	25-49% Students Enrolled	50-74% Students Enrolled	75-99% Students Enrolled	100% Students Enrolled
Honors					
Spring 2014	33.3%	50.0%	0.0%	0.0%	16.7%
Spring 2017	0.0%	50.0%	16.7%	33.3%	0.0%
STEM pathways					
Spring 2014	83.3%	16.7%	0.0%	0.0%	0.0%
Spring 2017	50.0%	33.3%	16.7%	0.0%	0.0%
Career and Technical Education (CTE) pathways					
Spring 2014	33.3%	16.7%	0.0%	33.3%	16.7%
Spring 2017	33.3%	0.0%	0.0%	33.3%	33.3%
On track to earn 12+ college credits					
Spring 2014	50.0%	16.7%	16.7%	16.7%	0.0%
Spring 2017	33.3%	33.3%	16.7%	16.7%	0.0%

Note. Six high schools have administrator reports for spring 2014 and spring 2017.

The primary emphasis of the coursetaking work centered on expanding access to college courses. In the spring 2017 interviews, staff agreed that more students were taking college courses as a result of the project. For example, an administrator at one high school reported,

> We have a huge increase, like I said, in our concurrent enrollments. We can't just count students, because some students might be taking more than one, but I think we increased from last year to this year from 217 enrollments to 453 enrollments.

A principal at another high school discussed how almost half of the students were taking a college course. In particular, this principal mentioned how the 2017 graduating seniors compared to previous cohorts,

> It's a huge difference. We can even prove it with data, because this group is going to graduate with…just certificates alone we're already projecting about 135 professional certificates from [IHE].... That means that they've excelled. Those certificates require anywhere from 15 to 36 hours. That's just the group right there. Then we're looking at our students with Associate's degrees. This is going to be the class that will have the most Associate's degrees.... We're projecting about 70 right now, 70 students.

Data from the site visits provided additional detail about how the districts and schools were able to expand opportunities to earn college credit.

One of the primary factors affecting the rollout of college coursetaking in Texas was whether a school was designated as an Early College or not. In Texas, the state's Early College designation dictates when students can take courses and how many courses students can take. For example, students who are part of a designated Early College can take college courses starting in 9th grade, as opposed to students who are not part of the designated Early College, who must wait until 11th grade. In addition, designated Early College students can take up to four transferable college courses if they attempt the state's college readiness exam (even if they do not pass it), while students who are not part of the designated Early College can take only one transferable college course. In both Texas districts, all of the i3 schools became designated as schoolwide Early Colleges over the course of the grant, which made all students eligible for college coursetaking in 9th grade. In Denver, on the other hand, while students could take dual enrollment courses in 9th grade, they had to apply and be accepted into the college where the course was offered.

In Texas, prior to taking any college classes, students needed to take the Texas Success Initiative (TSI) exam, which was designed to assess college readiness. As a result, the two Texas districts had a very explicit focus on increasing the number of students who were passing the state college readiness exam. Each school was expected to set a target for the number of students

who were taking and passing the exam, and they reported on these targets in monthly i3 Cabinet meetings.

Individual schools developed support structures to assist students in passing the state college readiness exam. For example, one school focused on removing barriers to college enrollment by offering the state college readiness exams on campus every Saturday, requiring 8 hours of TSI prep before taking the test and providing tutoring on demand for students struggling in classes. In this school, students who did not pass the placement exam would also be encouraged to take dual credit Career and Technical Education courses to build their confidence. Students in one high school commented on the emphasis on the college readiness exam:

> Every single day you'll hear in the announcements about the TSIs. The conference tutorials.... And what they do is, you have to attend so many hours of tutorials so you'll be able to take the TSI. Because they don't want to push you in there and for you not to know what you're doing then take the test and fail it.

Participating Texas middle schools also administered the TSI exam to their 8th graders. In two of those schools, students who passed could take college courses in 8th grade. If the students did not pass, the principal of one school noted that they offered a summer bridge program, "which is also a college preparedness class that helps them to get that tutoring and the help they need."

In Denver, students were required to take the Accuplacer exam in order to qualify for college courses. At the beginning of the grant, students who did not take the exam were eligible to take developmental education classes. These classes were offered only for high school seniors but were also paired with a credit-bearing college class (such as English). The theory was that students could graduate from high school with any remediation out of the way and have received at least one course's worth of college credit. Over the grant period, the district began reconsidering the developmental education options and their partner community colleges began the process of phasing out those courses.

As additional students began qualifying for college courses, all three districts more actively guided students' coursetaking. One district staff person explained how the i3 grant helped to focus students' college coursetaking:

> [Students] were [initially]…taking pretty much classes and no direction. For instance, they probably were taking maybe an engineering class as an example, a criminal justice class, a medical terminology class. There was no degree planned out. Now the i3 grant, what I would say is, it has helped with aligning degree plans and all of that…we have had these conversations of how important it is to make sure that students stay on a career path.

By the end of the project, all three districts were implementing pathways to guide students' college coursetaking. Both of the Texas districts were required to develop pathways due to state policy. The pathways were developed by the Texas Education Agency (TEA) and postsecondary institutions could choose which pathways to offer. Students and parents were expected to select these pathways in 8th grade, although they could change pathways if the students' interests changed. The two districts, however, discouraged students from taking college courses that were not part of a meaningful sequence. In PSJA, there were multiple pathways available, and students had to be enrolled in one of these pathways to take courses through their primary postsecondary partner. In Brownsville, where the primary college partner was newly accredited, the college focused on developing course sequencing that allowed students to complete an Associate's degree in general studies, with a goal of offering more pathways in the future. In Denver, the former project lead created a number of pathway templates that were shared with district staff and college partners. One of the challenges Denver faced was the number of college partners (19) working with the school system, which increased the level of communication required to develop these pathways. One of the college liaisons that we interviewed said that the Denver schools varied in their implementation of specific pathways as a result of some of the logistical challenges associated with being a large district.

In addition to having students enrolled in pathways, some schools also merged their dual enrollment and AP courses. An adjunct faculty member described how five out of the six classes she taught were considered both AP/Dual Credit. Students were taught the content necessary for both courses, and at the end of the year, they received credit from the local college and also took the AP exam.

To help coordinate the expansion of coursetaking, all three districts provided college liaisons to all program schools. These liaisons helped facilitate logistical issues that arose with the increase in student enrollments. One liaison described her job:

> If the school has a need to contact somebody from the college, they reach out to me with the concern and then I reach out to the IHE with the concern and get them the feedback.... For instance, this morning we had one of our schools call in that one of the portals at the college was not working. I had to make the call and see what's happening. We're able to keep everything running smoothly.

As the number of students taking dual credit courses increased, districts and postsecondary partners sometimes struggled to ensure that they had the capacity to meet the demand. One postsecondary partner described the different approaches they have used to offer more courses to students:

> We have the courses at the campus, we have the adjunct professors, we have the online courses…we're also offering and have offered evening courses at the campus level, so the students who maybe can't fit it into their schedule during the evening, they can do it. We have also offered, and we're going to offer this next semester, Saturday dual enrollment courses, so that students can have that as an option to take the dual enrollment course.

A key approach to meeting the increased rate of enrollment was to have high school instructors with advanced degrees serve as adjunct faculty. The two Texas districts moved to incentivize teachers with advanced degrees, or teachers who were willing to continue their education, to become adjunct faculty by offering educational assistance and salary stipends. Denver started a pilot program in three schools to incentivize teachers to complete a "mini masters" program but the initiative was not district-wide and it was unclear at the time of our 2017 interviews whether this program would be scaled up at the district level. In Denver, however, the primary strategy to increase the number of adjunct faculty was to hire teachers who already had advanced degrees. More detail on how the capacity issue was being addressed is available in a monograph from JFF entitled, *Solving the Dual Enrollment Staffing Puzzle* (Hooker, November, 2017).

Overall, the quantitative and qualitative data indicated that the i3 grant led to an expansion in college coursetaking and that the various entities involved in the project had to modify their practices to accommodate this expansion.

Instructional Change

The College Ready Academic Program also includes an emphasis on instructional improvement. The ECEP program focuses on a set of six student-centered instructional practices, called the Common Instructional Framework (CIF, shown in the box to the right). We collected data around changes in implementation of these practices via the ECEP Staff Implementation Survey and through interviews and site visits.

On the survey, we asked teachers to report on the frequency with which they used specific

The Six Strategies of the Common Instructional Framework (Jobs for the Future, 2012)

Collaborative Group Work: Collaborative Group Work brings students together in small groups for the common purpose of engaging in learning.

Writing to Learn: Writing to Learn enables students to experiment every day with written language and to increase their fluency and mastery of written conventions.

Scaffolding: Scaffolding helps students connect prior knowledge and experience with new information and ideas.

Questioning: Questioning challenges students and teachers to use good questions as a way to open conversations and further intellectual inquiry.

Classroom Talk: Classroom Talk creates the space for students to articulate their thinking and strengthen their voices.

Literacy Groups: Literacy Groups provide students with a collaborative structure for understanding a variety of texts, problem sets, and documents by engaging in a high level of discourse.

instructional practices aligned with the CIF as well as their use of high-quality assessment practices. The response scale ranged from "never" (1) to "almost every day" (5). Results showed that teachers reported using the practices somewhere between once a month and once a week (scores between 3 and 4) across both survey administration time points. Although middle and high school staff reported slightly higher levels of CIF implementation for almost all scales in 2017 than in 2014, with the exception of an increase in middle schools' reported use of Collaborative Group Work, the differences were not statistically significant.

Table 8 shows the mean score on instructional practices scales in spring 2014 and spring 2017, broken out by high schools and middle schools.

Table 8. Use of Instructional Practices Aligned with CIF—Spring 2014 to Spring 2017

	Overall Mean					
	Middle Schools		High Schools			
Indicator	Spring 14	Spring 17	Spring 14	Spring 17	Sample Question	Response Scale
CIF-Collaborative Group Work	3.64	3.70†	3.47	3.56	Had students work together on projects or assignments	1=Never 2=A few times this year 3=Once or twice a month 4=Once or twice a week 5=Almost every day
CIF-Writing to Learn	3.29	3.35	3.30	3.31	Asked students to defend their own ideas or point of view in writing or in a discussion	
CIF-Scaffolding	3.89	4.00	3.93	3.89	Made connections between what's covered in your class and what's covered in other classes	
CIF-Questioning	3.70	3.76	3.51	3.62	Taught or modeled for your students how to ask good questions	
CIF-Classroom Talk	3.61	3.66	3.61	3.66	Asked students to explain their thinking	
CIF-Literacy Group	3.53	3.58	3.44	3.54	Asked students to read difficult or complex texts	
Assessment	3.76	3.83	3.71	3.74	Used rubrics to grade students' work	

† $p < .10$

While survey results indicated that significant instructional change was not occurring across all teachers, data from the interviews and site visits suggested that individual teachers were making large and significant changes in their instruction. For example, when one high school principal was asked about implementation of the CIF, the principal answered using a 10-point rating scale to sum up implementation in his school:

> I'd say about a 7[or a] 6, [a] 7. We're not a perfect 10, but teachers are doing more. They know more about it than they would have in the past. We're like, "Okay. Those six strategies we know about, implementing the collaborative group." When we go in there,

> they know the lingo. We do send out information in the newsletter. I'll put stems for questioning on the newsletter.

One adjunct faculty member noted that the impact on her instruction has been "huge:"

> I'm old school. In the Catholic school I taught in, it was just lecture, lecture, lecture. It was mostly upper middle-class kids. I did that all through the '90s and that's just how I taught. Now, going through this program here, where the kids have some socioeconomic and educational disadvantages, the whole lecture structure is stupid. It just wouldn't work. I have to change how I am doing it so that they can be more successful. You can't change unless people are pushing you to change.

One of the themes that emerged from our visits was that staff were more likely to buy in and implement the CIF strategies when efforts were made to demonstrate how the CIF was aligned with other initiatives in the school and district. For example, one administrator explained how they were working with the instructional coaches around alignment by saying,

> So, we've been working with [the instructional coach], who is kind of helping us piece all of those [initiatives] together and [making] sure that our staff sees the connection between "Teach Like a Champion" strategies, between Early College strategies, and also our LEAP framework, which is how teachers are evaluated…But we really want to show staff that it's not competing, because sometimes they feel like things can be. So, we're trying to shine a light on things that show how they all work together.

Another theme that emerged from site visits throughout the project was the need to improve rigor in the classroom. Although some teachers were implementing the CIF strategies, there was concern that they were doing so in ways that did not always improve rigor. Several school leaders and coaches that we interviewed mentioned focused efforts on helping staff improve implementation of strategies with rigor. As one instructional coach said,

> I think there is a shift. When we started the work and we started talking to people about Writing to Learn or Classroom Talk in the beginning we got, yes, yes, yes, I do that, yes, yes, yes, I do that, yes, yes, yes, I plan for writing. And so this idea of let's take it one step deeper and look at what behaviors are inside the Common Instructional Framework that show us that our students are doing Writing to Learn or that our students are using Classroom Talk for a purpose. [This] has really allowed us to re-engage with things that people already felt that they were doing and I'm not going to say they were or weren't, but really to push the effectiveness of yes, you understand that students need to be talking, let's take a deeper look at what behaviors go with that.

This concern was echoed by two principals in different districts when asked about challenges that teachers were experiencing around implementation. One principal shared how teachers were not necessarily implementing the strategies at the desired level,

> Questioning is one, I'll tell you that. You're still asking a lot of recall questions. Teacher answers their [own] questions sometimes. The Writing to Learn because kids need to be able to articulate what they're learning, whether it be here or here.... They're trying to implement a lot of the Collaborative Group Work. That, they find okay. "You know what? I'm going to have them work in pairs." They think pair [and] share. They're doing this, but I think the Questioning within the actual teacher-to-student or student-to-student.... It's still kind of like, "What did so-and-so do in 1948?" It's very recall.

Another principal shared a similar perspective around Collaborative Group Work by saying,

> That's the one that is, I think most commonly just, let's just put the desks together and that's Collaborative Group Work. Right? I think that's the one that teachers feel is the easiest to do but sometimes it's the most difficult one because you're the facilitator and you've gotta make sure that you've assigned roles and that the students are doing their active learning.

In terms of student responses to the CIF strategies, staff indicated that students enjoyed the benefits of being in a classroom where CIF strategies were being implemented, whereas other students struggled in these classrooms. As one teacher put it,

> It's hard for them. They're used to sitting down, not participating in things, not getting up from their chair as a lesson. They're so used to sitting down and just copying notes or reading something from the book, so when you ask them to do an activity and work together with someone and discuss.... It's been hard.... That's been my challenge. Trying to get these kids to open up and participate.

However, another teacher observed that students were more engaged in the process by saying, “I've seen that change, where the kids are more engaged and excited about being more in groups versus just walking in and always being in rows and just listening to the teacher all the time.” A district representative agreed that engagement had improved because of the CIF strategies:

> Every class I walked into where the teacher is implementing CIF, the student engagement was way above my expectation. In fact, I would say it was 100% student engagement in all like the five or six classes…I think that's another very, very positive impact that the grant has had on our district.

To provide a snapshot of implementation of the CIF in schools, we conducted classroom observations. In the fourth year of the project, the evaluation team observed classrooms of 13 teachers who were working with instructional coaches. We assessed the level of implementation of various CIF practices on a scale of 1-4, with 1 meaning “not observed” and 4 meaning “very descriptive of the observation.” Table 9 shows the frequency of the ratings for the different CIF practices. The cells with the highest frequency of ratings are shaded.

Table 9. Ratings of CIF Practices

CIF Practices	Not Observed	A Little Descriptive	Descriptive	Very Descriptive	Mean
Students worked collaboratively in teams or groups.	3	1	3	7	3.00
Students used writing to communicate what they had learned.	3	0	3	8	3.14
Students participated in guided reading discussions.	8	1	1	4	2.07
Teachers asked open-ended questions that required higher-level thinking.	1	3	10	0	2.64
Teachers provided assistance/scaffolding when students struggled.	0	2	7	5	3.21
Students engaged in content-based discussion with each other.	1	4	6	3	2.79
Summary: Quality of CIF Implementation	0	3	8	3	3.00

Note: The mean is between 1 and 4 with 1 being not observed and 4 being very descriptive of the observation.

As the table shows, teachers implemented many of the CIF practices. The most commonly implemented ones were Scaffolding, Writing to Learn, and Collaborative Group Work. The least frequently implemented practice was Literacy Groups or, guided reading discussions. Here is a sample from the observation write-up of a highly-rated science lesson, which used several CIF strategies while teaching a concept about ecosystems:

> Prior to reading, students were put into pairs, purposefully. The teacher guided students to read the passages to learn about succession. She walked around, assessing comprehension and scaffolding as needed (e.g., "what vocabulary words are common between primary and secondary succession?"). She differentiated instruction depending on the needs of the students. For example, she provided guidance to a struggling student and used a pencil to point out ideas, but did not read for him. She made sure that he was on the right track.

Taken together, data from the surveys, interviews, and observations provided clear evidence that there were teachers making changes in their instructional practice; however, as of the end of the project, these changes were not yet widespread across all schools.

College Headstart

Under the College Headstart Design Element, schools were expected to provide students with early exposure to the culture and norms of college. These included activities such as explicit instruction on college readiness strategies in the classroom as well as college readiness support activities (e.g., advising on the courses needed for college, taking students to visit college campuses). It also included the creation of a college-going culture in which the school clearly demonstrated expectations that students go to college.

We asked staff, via the survey, to report on the implementation of the various components of a College Headstart. Results showed that faculty reported that the schools started with a generally strong college-going culture and that this did not change substantially over the course of the project. Further, faculty reported that they utilized college readiness instructional activities between once a month and once a week, a level which also remained constant over the course of the grant. One area where there was significant change was in the schools' provision of college readiness activities. Across time, middle and high school staff reported a statistically significant increase in the amount and frequency of college readiness support activities. Table 10 shows the mean scores on the three indicator scales that were designed to measure the extent to which schools provided a College Headstart.

Table 10. College Headstart—Spring 2014 to Spring 2017

	Overall Mean					
	Middle Schools		High Schools			
Indicator	Spring 14	Spring 17	Spring 14	Spring 17	Sample Question	Response Scale
College-Going Culture	3.32	3.39	3.26	3.27	The faculty and staff in this school expect every student to receive postsecondary education or training	1=Strongly Disagree 2=Disagree 3=Agree 4=Strongly Agree
College Readiness Instructional Activities	3.15	3.17	3.13	3.18	Worked with students on time management and study skills	1=Never 2=A few times this year 3=Once or twice a month 4=Once or twice a week 5=Almost every day
High School/ College Readiness Support[a]	3.82	3.94†	3.88	4.01*	Advising on courses to take to get ready for college	1=0% 2=less than 25% 3=26-49% 4=50-75% 5=greater than 75%

[a] Middle school staff received high school readiness support questions and high school staff received college readiness support questions.

** $p < .01$; * $p < .05$; † $p < .10$

The site visit data provided additional details around the work schools were doing relative to a College Headstart. One of the primary approaches to changing the culture of the high school was offering college courses to students. One high school counselor described how provision of the college courses had changed the school's atmosphere by the second year of implementation:

> The kids know that they want to enroll in the upper-level courses, or pre-AP, or AP classes to eventually get into a [dual credit]class, and that was something that was very different before. Many times, kids would just want the minimum, but now that they see other students wanting to take college classes, they're motivating each other saying, 'Oh, I want to do what he's doing. How are they doing that?' Just the culture in general. Now, parents call constantly wanting to know, 'How can I get my son or daughter in a college class?' when before, it wasn't really too much.

In Year 2, students had also started to notice a change in the culture of their school. One high school student commented that the school's emphasis on college was starting to apply to younger students,

> I feel that our school is starting to put the idea of college and postsecondary education in the younger classes. Like, I have a sibling and they talk more about colleges, they have more meetings, really [talk more] about colleges than we did when we were freshmen."

Another described how more and more students were taking college courses:

> It's like it has become like a trend. For example, my friends seeing me doing it, they're like, "How can I get there?" They ask. So, it becomes like a trend that everybody wants to follow. I think it's a good trend.

These perceived changes in college readiness continued throughout the grant. In all the student focus groups we conducted during Year 4 of implementation, students perceived that their schools were placing greater attention on college. For example, a high school student commented,

> I also think that the new staff members have more of a college mindset when they teach. I noticed this year, I've encountered a lot of people, or teachers, that are talking more about, this is how you're going to learn because this is how it's going to be in college.

Every school that we visited used a variety of approaches to create a college-going culture. Schools conducted specific activities designed to encourage students to go to college such as: (1) college spirit days/weeks when students were encouraged to wear college clothing; (2) classrooms and common areas decorated with college-themed materials (e.g., pennants, information sheets); (3) daily announcements, including information on college (e.g., college trivia questions); (4) career days or fairs; and (5) visits to college campuses.

At one of the high schools we visited, students mentioned a "lock-in" where students came together to work on applications, personal statements, and other documentation related to applying to college. Another school developed close ties with a number of local business and industry leaders who agreed to come to the school to conduct mock interviews so that students

could have an opportunity to practice their interviewing skills. At least two schools that we visited set up dedicated space for career and college advisement. As one principal described it,

> We do have our "Go Center," which is a big support for students. They help them out with providing them the help with scholarships, help with filling out their college university applications, filling out their FAFSA. Help is provided there. They need to work with the college that they're thinking of going to. Then they get help with their essays. It's a big variety of help that they do get through the Go Center. Then we have our [test support] lab, which provides the help and support as far as getting them ready with the [college placement] exam.

Students at another school mentioned a similar resource center at their school and how this center served, formally, as a place to access career and college information, but also, informally, as a place where students, particularly seniors, could gather and check in with each other and share their experiences around preparing for college.

Part of a College Headstart involves explicit and focused preparation on college readiness skills. Both middle and high schools sought to increase the soft skills needed for college, including encouraging students to take more ownership of their learning. For example, one middle school had implemented a student portfolio project where students selected pieces of their best work throughout the year to include in a portfolio. The school organized student-led conferences where students could share their work with other students. In another middle school, all students were required to maintain a binder in which they made notations of their work-progress, homework, activities, etc. At one of the 6-12 schools we visited, students prepared presentations for their parents about their academic performance. The teacher described how this work arose out of ECEP:

> We sat down with the laptops. The students presented their work to their parents. Then the students fully led that and discussed, "Here's what I'm working on. Here's what I've been doing in all my classes. This is why my grades are the way they are." It definitely held them accountable for what's going on. That's been a huge shift and neat thing for students to take more responsibility for their education, which I think is an obvious direct result of grant and the Early College initiative.

In another school, a teacher discussed how students were now required to track their own academic performance,

> You know, I think it's really helped my students be more confident and truly think about what the purpose is of the work they're doing. One of the things, so, aside from the reading strategies, the other big thing were the rubrics that we use to have students kind of, track themselves on how they are communicating, how they are collaborating, how they're owning their learning, all of that stuff. And I think that has really

> empowered the students to reflect on their own learning and to say, wait a minute. I didn't do so well with this today.

Our interviews with students themselves suggested that they were mindful of this shift in accountability. As one student put it,

> Also, they try not to hold our hand as much as we're used to. Specifically, one of our teachers, he'll warn us once about something, then he won't say anything for the rest of the semester. If you messed up, that's you, it's on you.

Although there was an effort to increase student accountability, particularly in the college courses, students reported that they understood why this emphasis was put in place, and they still felt supported. As one student said,

> I feel like there's no hand holding, but you're not on your own, either. You have faculty and staff who care about you, but they're also going to let you know you have to do things on your own. Because that's the way the college life is going to be. They're never going to leave you like, "Oh, you failed, I'm sorry."

While schools were encouraging students to take on more responsibility, one principal, from a school with a low graduation rate, mentioned that this shift became a source of tension. This principal discussed how holding students accountable to deadlines has been important, but because this school struggles with graduating students, there was also a need to remain flexible with students to make sure that more of them graduate, even if that meant a deadline is extended or a "re-do" is allowed from time to time. Because we only heard this from one principal, however, we do not know whether other staff perceived the same issue.

We also looked at teachers' explicit instruction of targeted college readiness skills in our observations. Table 11 shows the ratings of 14 classrooms across the seven schools we visited in Year 4 of implementation. It should be noted that we did not expect to see all of these practices in any given classroom; instead, these should be considered examples of practices teachers might use if they were integrating college readiness skills into their instruction. The cells with the highest frequency of ratings are shaded.

Table 11. College Readiness Practices Ratings

Practices	Not Observed	A Little Descriptive	Descriptive	Very Descriptive	Mean
Students used writing to communicate what they have learned.	4	2	4	4	2.57
Students were asked to write something lengthy and complex.	6	4	4	0	1.86
The teacher provided explicit instruction in writing or oral communication skills.	2	1	7	4	2.93

Practices	Not Observed	A Little Descriptive	Descriptive	Very Descriptive	Mean
The teacher provided clear feedback on students' writing or presentation.	4	2	7	1	2.36
Students had to present or explain results of a project or activity.	8	0	2	4	2.14
The teacher encouraged students to elaborate upon their answers (oral or written).	2	2	6	4	2.86
The teacher provided explicit instruction in note-taking or students practiced note-taking skills.	12	0	2	0	1.29
The teacher provided explicit instruction in study skills.	12	0	2	0	1.29
Students were required to read complex texts.	10	3	1	0	1.36
Students were asked to plan out their time to accomplish tasks (inside or outside of the classroom).	12	0	2	0	1.29
The teacher encouraged students to seek help from different sources when they need it.	4	3	4	3	2.43

Note: The mean is between 1 and 4 with 1 being not observed and 4 being very descriptive of the observation.

The table shows that the most common readiness skill implemented was that of the teacher providing explicit instruction in or feedback on writing or oral communication skills. This is not unexpected as this is the area that closely aligns with the targeted CIF strategy of Writing to Learn. Although writing was common, few observers reported that students were asked to write anything lengthy or complex. This may be because longer writing activities occur less frequently and it happened not to have occurred during our observation days. There was also less of an emphasis in the classroom on strategies such as time management, note-taking, or organizational skills.

In addition, the survey and interview data showed that the schools put a relatively high emphasis on college readiness at the outset of the grant and that this only increased over time through the provision of additional college readiness support activities. Students in the focus groups also reported increased college-going expectations. The classroom observations suggest that schools have been emphasizing writing as a key college readiness skill but that there still remain opportunities for improvement in explicit preparation of other college readiness skills.

Wraparound Student Supports

The Early College Model can result in dramatically increased expectations for many students. In order for these students to be successful, the model calls for increased academic and affective supports to be provided to students in terms of their high school work as well as their college work. This can take the form of helping students prepare for college placement exams or

providing them with extra supports in their high school or college classes. In addition, the original Early College Model had a strong emphasis on improving the quality of staff-student relationships. The staff survey included three scales related to Wraparound Student Supports. One scale ("Student Supports") captured the extent to which students were provided academic and affective supports. "School Relationships" captured the extent to which there were high-quality staff-student relationships. The "Family Relationships" scale looked at the extent to which the schools had structures in place to build relationships with families. Table 12 shows changes over time for these three scales. High schools had a statistically significant increase in the frequency of academic and affective supports provided to students, but there were no changes in any of the other scales.

Table 12. Wraparound Student Supports—Spring 2014 to Spring 2017

	Overall Mean					
	Middle Schools		High Schools			
Indicator	Spring 14	Spring 17	Spring 14	Spring 17	Sample Question	Response Scale
Student Supports	3.72	3.78	3.67	3.81†	Percentage of students participating in sessions or classes to help students cope with social or emotional issues	1=0% 2=Less than 25% 3=26-49% 4=50-75% 5=Greater than 75%
School Relationships	2.96	3.01	2.96	2.98	The family and home life of each student is known to at least one faculty or staff member in this school	1=Not true at all 2=Somewhat true 3=Mostly true 4=Entirely true
Family Relationships	3.35	3.40	3.05	3.15	School faculty and staff meet or talk with parents	1=Never 2=A few times this year 3=Once or twice a month 4=Once or twice a week 5=Almost every day

** $p < .01$; * $p < .05$; † $p < .10$

The interviews and site visits provided additional detail about the types of supports that the district and schools offered. These data showed that the increase in supports was primarily in the areas of increasing students' college readiness and providing support to students in college classes.

As described earlier, one of the primary emphases in Texas was increasing the number of students who were testing as college ready, which would make them eligible for college

courses. As a result, the two districts dramatically expanded their support around preparation for Texas' college readiness exam, the TSI. For example, one district offered a TSI pre-assessment, TSI classes in 8th-grade, TSI tutoring, and recently purchased TSI tutoring software. A district academic services representative stated,

> We have come up with an entire procedure and protocol for TSI testing that has now pushed it down to the 8th-grade level as well as up to the high school level. We have prioritized what students should be TSI testing and when they should take the TSI test, so I think that was one of our big initiatives that we've been implementing in our district to try to get more and more students eligible to take these dual enrollment courses so, yes, that is a very high expectation…. All of our campuses, high schools, and middle schools are TSI testing sites.

In both of the Texas districts, principals were given goals relative to the number of students who should be taking and passing the TSI and they were asked to report on progress toward those goals in the i3 Cabinet meetings. A coach described the work occurring in one high school:

> There is a huge push for getting children TSI ready and TSI tested…so they have seen some great success in TSI numbers and students actually passing the math TSI portion. The reading TSI portion still has a lot of work to be done but they have designated some teachers that are purposefully trying to prepare children for TSI. They have TSI tutoring sessions. They have TSI reviews. They have "TSI Try 1, 2, 3."

In Denver, there was a significant emphasis on getting students to graduate "remediation free," a definition that has been widely adopted for college readiness. To that end, the district undertook the development of high school transition courses in English and math that were designed to better prepare students for the rigors of college-level work. These courses were designed in collaboration with postsecondary partners by aligning regular 11th-grade English and math competencies with the prerequisites for college-level English and math at two of the local postsecondary institutions. Students who successfully completed these courses were considered exempt from needing remediation. At the end of the grant, four schools were piloting these courses with the goal of district-wide scale up.

In addition to providing more rigorous high school courses aligned with college-level courses, a potential benefit of these newly-developed high school transition courses is that they may reduce the number of students needing to take a developmental education course. According to a college representative, in the early years of implementation, much of the focus was placed on enrolling students in developmental education or courses without college prerequisites; however, the shift to the newly-designed high school transition courses was seen as an important improvement for the district. The representative said,

> We won't use the [transitions course] outcomes to place students into college-level classes, but the courses themselves will be high school courses, not transcripted by the college, so there won't be pre-reqs to [enroll]. We won't have to look at teaching credentials for those teachers. We've aligned it to the high school curriculum, which is what it is anyways, and we'll use authentic assessments for placement of those students into college classes.

This representative also indicated that an additional benefit of this strategy was that it allowed students to have extra supports for acclimating to the college environment without having poor grades from a developmental course appearing on their college transcript, which could have negative future consequences for students.

Ensuring that students can pass college placement exams and take college credit courses was seen as one of the first steps to moving toward an Early College. Schools also provided a variety of supports when students took college courses. For example, high schools in PSJA provided tutorials and supports so students were successful in their college courses. In Denver, tutors were on-site at the high schools. One community college sent tutors to the high schools. In addition, there were volunteer organizations that provided tutoring and other assistance.

Students who were enrolled in college courses also had access to services on the community college campuses, although it was not clear how many students took advantage of these opportunities. One college representative stated,

> They have access to...every student service that we offer here on campus, ... We have trips to, not only our student services center, we call it the one stop shop, where we have advising, testing, admissions office... [but also] a veteran's office. So [the students] visit, so that they know it's all in one place. Everything that we have. Tutoring labs, computer labs, that's open for you as well as the students...so every single service that we have here for the students you will also have access to.... They tour our library as well, so that they know they have an online service.

Our interviews with school staff indicated that all schools we visited were providing Wraparound Student Supports to meet students' needs. These services came primarily in the form of general academic tutoring or tutoring around test preparation (i.e., TSI in Texas; SAT, ACT, Accuplacer in Denver). In addition, many of the schools we visited had data teams in place to monitor students' progress in middle school, high school, and college courses and to identify students who were in need of additional academic support. The two Texas districts also engaged in regular discussions of student readiness data during their Cabinet meetings.

School-Level Organizational Practices

This Design Element includes a set of School-Level Organizational Practices that are expected to be in place to assist in implementing the other Design Elements. These practices include: (1) a strong postsecondary partnership, (2) ongoing and job-embedded professional development, (3) ongoing teacher collaboration, and (4) use of data to inform instruction.

Postsecondary Partnerships

One organizational structure that needs to be in place for the Early College Model to succeed is a strong postsecondary partnership between the schools, districts, and postsecondary institutions. All three districts had formal agreements with postsecondary partners that delineated responsibilities relative to college coursetaking, although the partnerships were in very different stages at the start of the grant. One district had a long-standing partnership with a postsecondary institution that has been a leader in the Early College movement. The postsecondary partnership in another district got off to a slow start because the primary partner, a two-year college, had just split off from a four-year institution and was undergoing accreditation. The third district had a large number of partnerships that were negotiated with individual schools. Despite the differences, a senior project staff member commented that the postsecondary partners have overall been very supportive of this work:

> Frankly speaking, without this grant bringing a lot of big new resources to the table other than expertise, goodwill and a shared interest, the college partners have leapt right in. They haven't said, 'I don't want to play because where's my money?' They have stepped up; but I do think it is when they see that vested shared interest and have some history and some trust there.

The three districts structured their partnership coordination efforts differently. In the two Texas districts, the postsecondary partners were active members of the districts' i3 Cabinet (the local decision-making structure), attended the monthly meetings, and participated in problem-solving discussions. In Denver, there were no standing meetings but rather, weekly conversations between the district project lead and the postsecondary partners. At the end of the project, however, the team was looking at modifying that structure so as to have regularly scheduled meetings as in the Texas districts.

The key goal of the postsecondary work was to increase the number of students taking college courses while still in high school. The partnerships recognized that it was necessary to focus, not just on getting students more credit, but on getting college credit that would lead to something tangible. As described under the College Academic Program, all three districts focused on creating pathways for students. One district staff member stated,

> The focus really has been…around creating intentional pathways in the schools and making sure that those intentional pathways are aligned with other

initiatives across the district. Rather than just building up concurrent enrollment programs, it's really about how you develop scopes and sequences of courses that go through the 9th-grade all the way in until a kid graduates and has credits for college.

Also, as described under the College Ready Academic Program, the expansion in the number of students taking college courses has led to a need for more faculty to teach those courses. The districts and partners worked together to develop creative solutions to solve these problems.

Overall, the project has clearly resulted in improved relationships between the districts and their neighboring institutions. One college representative said that the district's embrace of the i3 grant has helped them do something they have been trying to do for a while: "We've been wanting and trying to push this but we've not been able to until we recently [had] a district partner who is willing to do it." All representatives believed that these relationships would continue developing even after the grant ended.

Ongoing and Job-Embedded Professional Development

To support school staff in making the changes necessary for an Early College, the expectation was that schools would provide ongoing professional development that was embedded in their daily work. Survey results showed that school staff increased their participation in a variety of professional development activities over the course of the grant. Table 13 shows the percentage of staff who responded that they engaged in specific activities at least once a month or more frequently. The table also includes the mean score for each item from the spring 2014 and spring 2017 survey administrations. As the table shows, there were increases in participation levels for coaching, collaboration, professional learning communities, and webinars.

Table 13. Embedded and Integrated Professional Development—Spring 2014 to Spring 2017

	% Indicating at Least Once a Month		Item Mean	
Professional Development Activity	Spring 14	Spring 17	Spring 14	Spring 17
On-site coaching				
Middle Schools	58.9%	64.7%	2.93	3.04
High Schools	53.5%	60.0%	2.81	2.95†
Joint planning or collaboration with other staff at my school				
Middle Schools	80.4%	83.7%	3.66	3.79†
High Schools	75.0%	78.2%	3.42	3.55
Professional learning communities (e.g., data teams, critical friends, study groups)				
Middle Schools	72.9%	74.6%	3.29	3.38†
High Schools	64.3%	73.4%	3.06	3.30**
Observing other classrooms in my school				
Middle Schools	49.2%	51.1%	2.70	2.74
High Schools	40.0%	43.5%	2.46	2.57
Workshop/institutes				

Professional Development Activity	% Indicating at Least Once a Month		Item Mean	
	Spring 14	Spring 17	Spring 14	Spring 17
Middle Schools	44.0%	46.5%	2.65	2.72
High Schools	38.0%	43.5%	2.52	2.65*
Joint planning or collaboration with individuals outside of my school				
Middle Schools	44.0%	44.2%	2.63	2.68
High Schools	38.9%	40.4%	2.47	2.54
Online communities of practice				
Middle Schools	34.4%	35.1%	2.21	2.28
High Schools	35.6%	34.6%	2.21	2.27
Webinar				
Middle Schools	23.8%	32.3%	1.97	2.26**
High Schools	27.9%	31.4%	2.06	2.25**
Graduate courses				
Middle Schools	24.8%	25.8%	1.91	1.96
High Schools	29.0%	29.4%	2.09	2.09

Note. Response options and values are: Never = 1; A few times this year = 2; Once or twice a month = 3; Once or twice a week = 4; Almost every day = 5; ** $p < .01$; * $p < .05$; † $p < .10$

It is important to note that these professional development activities (coaching, workshops and webinars) were generally supported by the grant; as such, it is likely that collaborative teacher activities (described next) would be a more sustainable strategy for professional growth.

Teacher Collaboration

Staff are also expected to collaborate on an ongoing basis. Overall, middle school staff reported higher levels of collaboration on most indicators compared to high school staff. There was also a statistically significant increase in middle school teachers' collaboration levels from baseline to Year 4. High school staff reported increased levels of collaboration from spring 2014 to spring 2017 in joint lesson planning, logistical issues, peer observation and feedback, and instructional strategies, although logistical issues were the only change that was statistically significant (possibly because of the small number of schools). Table 14 shows the frequency of collaboration around different topics. The first set of columns show the percentage of respondents who indicated that they engaged in these specific aspects of collaboration at least once a month. The second set of columns shows the means at both time points.

Table 14. Frequency of Teacher Collaboration on Specific Topics—Spring 2014 to Spring 2017

Topic of Collaboration	% Indicating At Least Once a Month		Item Mean	
	Spring 14	Spring 17	Spring 14	Spring 17
Lesson or unit planning				
Middle Schools	84.3%	89.4%	3.81	4.04**
High Schools	76.1%	78.4%	3.51	3.66
Logistical issues (e.g., planning field trips, ordering materials)				
Middle Schools	58.2%	68.0%	2.96	3.20**
High Schools	50.3%	56.8%	2.76	2.96*

Topic of Collaboration	% Indicating At Least Once a Month		Item Mean	
	Spring 14	Spring 17	Spring 14	Spring 17
Student behavior				
Middle Schools	92.6%	93.1%	4.14	4.21
High Schools	78.5%	78.3%	3.60	3.60
Assessments				
Middle Schools	86.5%	90.4%	3.70	3.86*
High Schools	77.9%	78.4%	3.50	3.54
Peer observations and feedback				
Middle Schools	70.9%	79.4%	3.31	3.54**
High Schools	63.1%	68.9%	3.11	3.25
Content learning				
Middle Schools	82.8%	85.9%	3.79	3.92†
High Schools	74.5%	75.7%	3.51	3.56
Instruction/instructional strategies				
Middle Schools	84.8%	90.0%	3.83	3.99*
High Schools	77.1%	79.6%	3.57	3.66
Individual student needs				
Middle Schools	89.8%	91.4%	3.99	4.11†
High Schools	79.3%	81.0%	3.65	3.71

Note. Response options and values are: Never = 1; A few times this year = 2; Once or twice a month = 3; Once or twice a week = 4; Almost every day = 5; ** $p < .01$; * $p < .05$; † $p < .10$

The data in the table suggest that most of the schools were already engaged in collaborative efforts, such as Professional Learning Communities, prior to the project; however, there was an increase at the middle school level. A new type of collaboration introduced as part of the grant was instructional rounds, which was being supported by instructional coaches across all the schools in the two Texas districts.

In instructional rounds, teachers went in teams to observe another teacher, often in a subject other than their own. The team would collect data on an area of focus identified by the teacher being observed and then debrief with the teacher about what they saw. This was seen as a powerful way of supporting and sustaining instructional change. One teacher noted the value of seeing teachers in other subjects:

> You learn so much from each other. Especially because math, math we have an awesome Algebra I team. It's always like, “What is it that you do? How do you do that?” You go in there like, “Wow. I could do that in English”.

Use of Data

Another organizational practice involved the use of data to drive instruction; using data was also a focus of many of the teachers’ collaborative activities. Survey data showed that the use of data was one of the areas showing the most substantial change from the start to the end of the project. Table 15 shows the frequency with which school staff engaged in specific uses of data to inform decisions. The first set of columns shows the percentage of respondents who

indicated that they engaged in these specific aspects of data use at least once a month. The second set of columns shows the change in means for each item.

Table 15. Data Use—Spring 2014 to Spring 2017

	% Indicating At Least Once a Month		Item Mean	
Data Use Activity	Spring 14	Spring 17	Spring 14	Spring 17
Communicate with other school staff on data use				
Middle Schools	72.8%	78.6%	3.28	3.51**
High Schools	65.6%	70.7%	3.10	3.30*
Communicate with leadership on data use				
Middle Schools	68.0%	73.6%	3.14	3.34**
High Schools	60.0%	68.8%	2.94	3.18**
Analyze student progress or performance data				
Middle Schools	80.3%	83.5%	3.48	3.67**
High Schools	70.7%	77.5%	3.28	3.48**
Utilize results of assessments				
Middle Schools	81.5%	83.0%	3.56	3.70*
High Schools	75.1%	78.1%	3.39	3.47
Use data to make decisions about modifying instructional practices				
Middle Schools	81.1%	84.2%	3.59	3.75*
High Schools	75.1%	78.6%	3.45	3.53

Note. Response options and values are: Never = 1; A few times this year = 2; Once or twice a month = 3; Once or twice a week = 4; Almost every day = 5; ** $p < .01$; * $p < .05$; † $p < .10$

Survey data also indicated that the staff in these schools were engaged in a substantial amount of the targeted behaviors related to data use. Overall, middle school staff reported higher levels of data use on most indicators compared to high school staff; middle schools also showed an increase in data use across all indicators from spring 2014 to spring 2017. High schools showed statistically significantly higher data use around communication with other school staff, communication with leadership, and analysis of student progress or performance data.

All the schools we visited were involved in engaging in discussions around data. School staff used data from a variety of sources, including instructional coaches, administrator walkthroughs, state assessments, college placement assessments, and student progress monitoring data in high school and college courses. Most of the individuals we interviewed discussed using data to identify and work with struggling students. As one high school administrator said,

> When we look at benchmarks, when we assess, we're able to, through the data, find those students and really target those students who are having difficulty. We have different academies for them. We have different STAR [state test] academies on the weekends where they can come in. That's just for the STAR accountability. We also have academies for the TSI, which are the courses, the tests they need to get into the college classes.

One teacher that we interviewed discussed how data-driven discussions happened in a variety of ways, both formally and informally:

> We do a few different things. Every week we have a lot of collaborative sessions with other teachers where we talk about classroom data, classroom plans. Sometimes it'll happen in those sessions. Then other times, it is that one-on-one, [or] I'll…be in a lesson and I'll get immediate feedback, like a note on my desk of things that can be improved and things that are going well. Or, because I have instructional coaching once a week, …that's kind of when that happens.

Some of this data monitoring involved improving college and career readiness. For example, a high school administrator at one school mentioned how the school and district collaborated by saying,

> We partner with our future center and talk about what our goals are with the [district] scholarship foundation around what percentage of students do we expect to complete a FAFSA? What percentage of students do we expect to apply to at least one scholarship, to at least one college? We set goals around that and review them as a department, use that data.

One of the most promising practices around data use was the data sharing that occurred between postsecondary institutions and districts in Texas, which allowed these districts to track progress toward TSI readiness and college credit accumulation. EdTX staff facilitated conversations between the districts and postsecondary partnerships to develop a common understanding of data definitions and to help ensure that the quality of the data was high. A representative from PSJA described how the data were used:

> The data dashboards [were] set up because of the i3 grant and because we wanted to look at data. The dashboards really allowed us to track the college course information and matriculation of students while in high school and then after high school…. And so [the IHE staff] place the data into our Sharepoint as to the number of kids that finish, that enrolled college, the number of students that finish the semester, their GPAs and so on and so forth and then our staff sets up the dashboard and breaks it down by campus..., filtering that information as to look who finished.

Implementation at the School and District Levels

Overall, data collected around implementation at the school and district level showed that, while changes can occur, changing existing comprehensive schools is a slow process. Results showed that most schools were expanding access to college courses and were expanding their college readiness supports to students. In Texas, this included a significant emphasis on preparing students for the state college readiness exam. In our focus groups, students reported feeling more of an emphasis on college, creating an environment where it was “trendy” to take

college courses. Results also suggested that instructional change was occurring with some teachers but was not necessarily widespread throughout the school.

The data also suggested that schools were changing their organizational structures in ways that would allow increased sustainability of the ECEP practices that were implemented as part of the grant. For example, one of the areas that saw the highest reported change was in data use. Middle schools also showed positive changes in the amount of collaboration.

The next section describes the student-level impacts of the supports and the school-level changes that occurred.

Section IV: Impact on Student Outcomes

The ECEP project was focused on impacting student outcomes in three primary areas: (1) college preparatory coursetaking, (2) staying in school, and (3) college credit coursetaking. Impacts in each of these outcome domains are discussed separately below.

Key Points

- Impacts were analyzed separately by state and then pooled together to look at overall program impact. Results are presented for the full sample and then for specific sub-groups and the individual states.
- There were no statistically significant impacts on the percentage of students taking or successfully completing a college preparatory course of study overall or for each individual state.
- There was no statistically significant overall impact on the dropout rate, although there were statistically significant results for specific sub-groups and for the individual states. For the pooled results, fewer ELL students dropped out, a result that was statistically significant. In Texas, treatment students had statistically significantly ($p \leq .05$) lower dropout rates overall and for ELL and initially low-performing students. In Denver, dropout rates were higher overall and for ELL, this increase was statistically significant ($p \leq .10$).
- The program reached its goal of having 90% of students taking some sort of college credit-bearing course. Enrollment was descriptively higher in the treatment schools than in the comparison schools, although the difference was not statistically significant.
- There were no statistically significant differences in the number of Carnegie units earned by treatment students in college credit-bearing courses overall. Denver treatment schools did have a statistically significantly ($p \leq .05$) higher number of credits earned in college credit CTE courses than comparison schools.

Outcomes A and B: College Preparatory Coursetaking

Past research conducted on small, stand-alone Early Colleges showed positive impacts on successful completion of a college preparatory curriculum in 9th grade and throughout high school (Edmunds et al., 2012; Edmunds et al., 2015). The current evaluation looked at the impacts on two outcomes for schools in their second and third years of implementation (2014-15 and 2015-16).

The first outcome was the percentage of 9th graders enrolled in a college preparatory course of study, defined for 9th grade as including college preparatory mathematics (Algebra I or higher) *and* English. This measure was designed to examine the extent to which students had access to

a college preparatory curriculum, an indicator of whether coursetaking policies were in place to ensure that students have the opportunities necessary to be ready for college.

The second outcome was the percentage of 9th graders who had successfully completed college preparatory mathematics *and* English as defined by the percentage who enrolled in and passed both of these courses. This measure was designed to capture whether students had access to the courses and whether they were successful in those courses, an indicator of coursetaking policies as well as the extent to which students were provided instruction and support that allowed them to succeed.

To provide context for the impacts, Table 16 presents the overall frequencies, by state, for the full college preparatory coursetaking sample including both treatment and comparison schools. As the table shows, nearly all (97%) of the 9th graders in Texas took Algebra I and English I or higher, indicating that all schools had policies in place to ensure that students took a college preparatory course of study at the outset of the grant. As a result, we would not expect any change in enrollment in college preparatory courses in Texas. In Denver, approximately 76% of students took college preparatory courses, thus leaving room for potential impact. The table also shows, however, that about 66% of Texas students and 40% of Denver students had taken and passed at least one English **and** one math college preparatory course. These results indicate that between one-third and more than one-half of students across the two states were not on track for college.

Table 16. Descriptive Statistics—Course Enrollment and Completion

Characteristic	2014-16
Panel A: Texas	(N=9,590)
% 9th graders enrolled in college preparatory course, English **and** math	96.6%
% 9th graders successfully completing at least one English **and** one math college preparatory course[4]	66.0%
% 9th graders enrolled in at least one college preparatory course, English	97.7%
% 9th graders successfully completing at least one college preparatory course, English	76.0%
% 9th graders enrolled in at least one college preparatory course, math	97.5%
% 9th graders successfully completing at least one college preparatory course, math	72.6%
Panel B: Denver	(N=4,930)
% 9th graders enrolled in college preparatory course, English **and** math	75.7%
% 9th graders successfully completing at least one English **and** one math college preparatory course	40.0%
% 9th graders enrolled in at least one college preparatory course, English	78.8%
% 9th graders successfully completing at least one college preparatory course, English	54.2%

[4] It is important to note that the outcome entitled "percentage of students successfully completing" the courses represents the percentage of all 9th graders who took and passed the desired courses. This is not considered a pass rate, which would be calculated only out of the students who took the course. This outcome includes students who did not take the course in the denominator.

Characteristic	2014-16
% 9th graders enrolled in at least one college preparatory course, math	79.0%
% 9th graders successfully completing at least one college preparatory course, math	47.4%

The impact results for two cohorts of 9th-grade students (2014-15 and 2015-16) are presented in Table 17. In the tables that follow, Panel A represents the impact estimates for both states combined. As mentioned in the methodology section, the pooled impact estimate is a weighted average of each state estimate with greater weight given to the more precise estimate (weights provided in Appendix C). We selected this method because it approximates the results we would have gotten had we run the analysis on the combined sample. With these data, the approach resulted in disproportionate weighting on one state or the other for the 9th-grade outcomes. For example, even though the Texas impact estimate for 9th-grade coursetaking was a precisely estimated zero with a p-value near one, it got a dramatically higher weight than the Denver estimate due to the relatively small variance of the estimate. Conversely, the Denver impacts were weighted much more heavily in the calculation of the combined impact for the successful completion outcome.

Because of the variability in implementation and impact by state, results are summarized here separately. Panel B includes the results for the Texas districts and Panel C presents the findings for Denver. As shown in the table, there were no statistically significant impacts on college preparatory coursetaking or successful completion for the pooled estimates or for the individual states.

In Texas, there were no differences in college preparatory coursetaking, which was expected given that coursetaking rates were already so close to 100%. The percentage of students successfully completing college preparatory courses was descriptively higher in treatment schools than in comparison schools and appeared to be driven primarily by more students successfully completing a college preparatory course in math.

In Denver, the percentage of students *taking* a college preparatory course of study was descriptively higher in the treatment schools, although the percentage of students *successfully completing* those courses was lower. Neither difference was statistically significant. The positive coursetaking rates appear to be driven by a larger percentage of students taking college preparatory mathematics courses, while the overall lower successful completion rates were driven by lower completion rates in English courses.

Table 17. Impacts on College Preparatory Coursetaking and Success—Main Sample (for 9th graders in 2014-15 and 2015-16)

Outcome	Treatment N	Treatment Adjusted Mean	Comparison N	Comparison Unadjusted Mean	Adjusted Impact	Standard Error	p-value
Panel A: Pooled Estimates							
% 9th graders enrolled in college preparatory course, English **and** math	7,723	89.5%	6,797	89.5%	0.0%	0.005	0.988
% 9th graders successfully completing at least one English and one math college preparatory course	7,723	53.7%	6,797	56.1%	-2.5%	0.022	0.259
% 9th graders enrolled in at least one college preparatory course, English	7,723	91.9%	6,797	92.2%	0.3%	0.005	0.644
% 9th graders successfully completing at least one college preparatory course, English	7,723	65.3%	6,797	69.3%	-4.0%	0.026	0.133
% 9th graders enrolled in at least one college preparatory course, math	7,723	91.0%	6,797	91.0%	0.0%	0.004	0.990
% 9th graders successfully completing at least college preparatory course, math	7,723	63.5%	6,797	61.7%	1.8%	0.036	0.611
Panel B: Texas							
% 9th graders enrolled in college preparatory course, English **and** math	4,917	96.2%	4,673	96.2%	0.0%	0.005	0.989
% 9th graders successfully completing at least one English and one math college preparatory course	4,917	67.0%	4,673	63.6%	3.4%	0.073	0.641
% 9th graders enrolled in at least one college preparatory course, English	4,917	97.5%	4,673	97.3%	0.3%	0.005	0.615
% 9th graders successfully completing at least one college preparatory course, English	4,917	75.8%	4,673	75.6%	0.2%	0.087	0.983
% 9th graders enrolled in at least one college preparatory course, math	4,917	97.3%	4,673	97.3%	0.0%	0.004	0.950
% 9th graders successfully completing at least college preparatory course, math	4,917	74.3%	4,673	68.9%	5.4%	0.080	0.500
Panel C: Denver							
% 9th graders enrolled in college preparatory course, English **and** math	2,806	82.5%	2,124	76.6%	5.9%	0.097	0.539

Outcome	Treatment		Comparison		Adjusted	Standard	
% 9th graders successfully completing at least one English and one math college preparatory course	2,806	38.6%	2,124	41.6%	-3.0%	0.023	0.184
% 9th graders enrolled in at least one college preparatory course, English	2,806	79.7%	2,124	81.6%	-1.9%	0.051	0.713
% 9th graders successfully completing at least one college preparatory course, English	2,806	52.7%	2,124	57.1%	-4.4%	0.028	0.113
% 9th graders enrolled in at least one college preparatory course, math	2,806	88.9%	2,124	78.6%	10.3%	0.094	0.273
% 9th graders successfully completing at least college preparatory course, math	2,806	48.6%	2,124	47.7%	0.9%	0.041	0.819

We also analyzed the results by sub-groups of interest. For the pooled estimates and for Texas, we examined impacts for English Language Learners and students who entered high school below grade level ("low-performing" students). For Denver, we were able to consider two additional sub-groups—students who were economically disadvantaged and students who also had exposure to the middle school component of the intervention.[5] As Table 18 shows, the only statistically significant differences by subgroup were negative impacts in Denver on successful completion of the college preparatory course of study for ELL students and low-performing students.

Table 18. Impacts on College Preparatory Coursetaking and Success (for 9th Graders in 2014-15 and 2015-16)—by Subgroup

Outcome	Treatment		Comparison		Adjusted Impact	Standard Error	p-value
	N	Adjusted Mean	N	Unadjusted Mean			
Panel A: Pooled Estimates							
*% 9th graders enrolled in college preparatory course, English **and** math*							
English Language Learners	3,587	91.7%	3738	90.6%	1.1%	0.007	0.146
Low-performing students	4,972	91.1%	4530	90.7%	0.3%	0.007	0.658
*% 9th graders successfully completing at least one English **and** one math college preparatory course*							
English-Language Learners	3,587	49.9%	3738	54.0%	-4.1%	0.025	0.105
Low-performing students	4,972	47.2%	4530	51.2%	-4.0%	0.022	0.066^
Panel B: Texas							
*% 9th graders enrolled in college preparatory course, English **and** math*							

[5] As noted under the methodology section, the Texas schools were almost entirely economically disadvantaged so we could not analyze those data separately. Additionally, almost all the students in treatment high schools went to treatment middle schools so we could not run a middle school participation analysis in Texas.

English Language Learners	2,376	96.7%	2,704	95.7%	1.1%	0.007	0.153
Low-performing students	3,586	96.0%	3,544	95.7%	0.3%	0.007	0.669
*% 9th graders successfully completing at least one English **and** one math college preparatory course*							
English Language Learners	2,376	64.8%	2,704	59.0%	5.8%	0.076	0.448
Low-performing students	3,586	63.8%	3,544	58.6%	5.2%	0.074	0.482
Panel C: Denver							
*% 9th graders enrolled in college preparatory course, English **and** math*							
English Language Learners	1,211	84.0%	1,034	79.2%	4.8%	0.111	0.665
Low-performing students	1,386	78.1%	986	75.9%	2.2%	0.100	0.825
Economically disadvantaged	2,244	83.7%	1,595	77.1%	6.5%	0.097	0.501
Middle school treatment	1,086	86.6%	399	76.4%	10.2%	0.106	0.336
*% 9th graders successfully completing at least one English **and** one math college preparatory course*							
English Language Learners	1,211	37.5%	1,034	42.8%	-5.3%	0.027	0.047*
Low-performing students	1,386	24.0%	986	28.8%	-4.8%	0.023	0.033*
Economically disadvantaged	2,244	34.7%	1,595	37.6%	-2.8%	0.022	0.203
Middle school treatment	1,086	46.4%	399	43.6%	2.8%	0.024	0.237

^ identifies impacts that were statistically significant at p≤.10 and *identifies impacts that were statistically significant at p≤.05.

The Early College Model is expected to influence the percentage of students who are on-track for college through two different mechanisms. The first is to change policies and expectations in such a way that more students have access to a college preparatory course of study. As more states move toward having students enroll in a default college preparatory course of study (as Texas has), there is less room for school improvement efforts to effect change through this mechanism.

The second mechanism for increasing the number of students on-track for college is by increasing the number of students who are successfully completing the courses. The Early College Model intends to do this by influencing the quality of instruction in the classrooms and by increasing the amount of academic and affective support that students receive. As is explained in the next section, it appears that these changes may have been made in isolated instances but that this change was not systemic enough to have an impact on student performance.

The results did show a statistically significant negative impact on successful completion of courses for both ELL and low-performing students in Denver. For ELL students, this was driven by lower enrollment and completion rates in English courses. Low-performing students had lower enrollment and completion rates in English and higher enrollment rates but lower completion rates in math. At this point, we do not have a good explanation for why this might be happening, but ELL students in Denver performed worse in treatment schools than in comparison schools across the entire spectrum of outcomes.

Outcome C: Staying in School

One of the expected impacts of the ECEP model is an increased percentage of students staying in school. The Early College theory of change posits that the increased access to college courses

and the increased academic and affective student supports keeps more students in school. To test this premise, the evaluation looked at the impact of ECEP on a single cohort dropout rate. We identified all students in 9th-grade in 2013-14 (Year 1 of the intervention) and followed them to determine whether they dropped out of school within three years (through the start of the 2015-16 academic year). We were also able to look at the impact through four years in Denver (as of the writing of this report, 2016-17 dropout data were not available for Texas). To provide context for the results, Table 19 presents descriptive statistics for the full staying-in-school sample. As the table shows, approximately 3% of the full sample (both treatment and comparison) dropped out within 3 years in Texas and about 6% in Denver.

Table 19. Descriptive Statistics for Full Sample

Characteristic	Percentage
Panel A: Texas	(N=4,874)
% of 9th graders who dropped out of high school within 3 years	3.0%
Panel B: Denver	(N=2,756)
% of 9th graders who dropped out of high school within 3 years	5.8%
% of 9th graders who dropped out of high school within 4 years	7.2%

Table 20 shows the impact of the model on one cohort dropout rate. Students in the treatment group dropped out at a lower, but non-significant, rate than students in comparison schools, but with a statistically significant impact for ELL students. The pooled results masked substantial differences in impacts by state, however. In Texas, students in the treatment group dropped out a rate significantly lower than students in the comparison group (2.7% in the treatment group and 3.8% in the comparison group). The effect was particularly large for ELL students. In the treatment schools, ELL students dropped out at a rate less than one-third that of the comparison group. Low-performing students dropped out at a rate that was slightly more than half that of the comparison group.

In Denver, students in the treatment schools dropped out at a rate that was significantly higher than students in the comparison schools (6.5% in the treatment group compared to 4.7% in the comparison group). ELL students dropped out at a statistically significantly higher rate in treatment schools than in comparison schools. For the remaining sub-groups, the dropout rates were higher for students in the treatment schools than in the comparison schools but the differences were not statistically significant.

Table 20. Cohort Dropout Rate

	Treatment		Comparison				
Outcome	N	Adjusted Mean	N	Unadjusted Mean	Adjusted Impact	Standard Error	p-value
Panel A: Pooled Impact Estimates							
% students dropped out within 3 years—overall	4192	3.6%	3438	4.1%	-0.5%	0.005	0.307
English Language Learners	1553	4.4%	1563	5.2%	-0.8%	0.011	0.490

Outcome	Treatment		Comparison		Adjusted	Standard	
Low-performing students	2610	4.4%	2266	5.9%	-1.5%	0.006	0.023*
Panel B: Texas							
% students dropped out within 3 years—overall	2,511	2.7%	2,363	3.8%	-1.1%	0.005	0.038*
English Language Learners	855	1.5%	1,045	5.2%	-3.6%	0.015	0.014*
Low-performing students	1,661	2.9%	1,656	5.1%	-2.2%	0.007	0.002*
Panel C: Denver							
% students dropped out within 3 years—overall	1,681	6.5%	1,075	4.7%	1.7%	0.010	0.079^
English Language Learners	698	8.1%	518	5.2%	2.9%	0.017	0.081^
Low-performing students	949	8.9%	610	7.4%	1.5%	0.014	0.299
Economically disadvantaged	1,305	6.9%	845	5.9%	1.0%	0.009	0.254
% students dropped out within 4 years—overall	1,681	7.9%	1,075	6.0%	1.8%	0.012	0.131
English Language Learners	698	9.4%	518	6.6%	2.9%	0.018	0.119
Low-performing students	949	10.4%	610	8.9%	1.6%	0.018	0.391
Economically disadvantaged	1,305	8.6%	845	7.2%	1.4%	0.012	0.241

Note: Texas dropout data were not available for the 2016-17 year as of the writing of this report; as a result, the pooled and Texas dropout rates are only reported within 3 years. The Texas schools were 95% economically disadvantaged; as a result, no findings are reported separately for this sub-group for Texas or for the pooled outcome.

^ identifies impacts that were statistically significant at p≤.10 and *identifies impacts that were statistically significant at p≤.05.

College Coursetaking

A key part of the ECEP Model is expanding access to college coursetaking while students are still in high school. The expectation is that early access to college courses will facilitate the transition to college by giving students credit they can apply to a degree and by exposing students to the expectations of college-level courses.

In this study, we looked at students who were in 11th-grade in 2015-16 and 12th-grade in 2016-17. We considered the extent to which they had ever taken a potentially college credit-bearing course. As described in the methodology section, these courses were among three different types:

- *Transferable dual credit/concurrent enrollment courses*, defined for this study as courses offered by a two- or four-year institution for which a student can receive college credit upon successful completion of the course and for which that credit could transfer to another college.
- *Advanced Placement courses* for which students could receive college credit if they passed the associated exam. No exam scores were available for AP so we included any student who received a passing grade in the course, which may not have equated to receiving college credit for the course.
- *Career/Technical Education courses*, the vast majority of which were articulated courses in which students could earn college credit if they completed the course successfully and then enrolled in the postsecondary institution that offered the original course. It

should be noted that credits earned through CTE courses are not necessarily transferable to other institutions.

We examined two outcomes related to these types of courses. The first outcome was *enrollment* in a potentially college credit-bearing course at any point over the previous three years (looking back to Grade 9 for students following a typical grade progression). We looked at enrollment in any of the three categories of courses described above and then enrollment only in courses that were potentially transferable (i.e., dual credit and AP).

The second outcome was the number of Carnegie units earned in potentially college credit-bearing courses. Note that this outcome is not equivalent to the number of college credits actually earned by students in high school because students can only earn college credit in AP courses if they pass the exam (data for AP exam scores were not available) and in articulated CTE courses after they enroll in the postsecondary institution that offered the course in the high school. Carnegie units are based on seat time, and one Carnegie unit is associated with a high school course that meets daily for one hour over the entire academic year. Carnegie units are typically translated into college credits at a rate of six to one. For example, a standard semester-long college course translates to ½ of a Carnegie unit in high school.

It is important to note that we looked at these outcomes using a cohort approach in which our sample was 12th graders for whom we examined their entire high school career. This approach differs from the way that dual enrollment participation rates are usually presented which is the percentage of students in Grades 9-12 who took college credit-bearing courses in a given year.

To provide context for the findings, Table 21 presents descriptive findings for the full sample of treatment and comparison schools combined. As the table shows, 85% of 12th graders in Texas and 87% of 12th graders in Denver enrolled in at least one potentially college credit-bearing course in their senior year or at some time over the previous 3 years. As the number of Carnegie units earned shows, more Carnegie units were earned in AP and CTE courses than in dual enrollment courses. In Texas, the highest proportion of credits came from CTE courses, and in Denver, the highest proportion came from AP courses.

Table 21. Descriptive Statistics for Main Sample—College Credit-Bearing Courses by End of 12th-Grade

Characteristic	Percentage or Mean (standard deviation)
Panel A: Texas	(N=3,826)
% taken at least one college credit-bearing course (any)	90.6%
% taken at least one college credit-bearing course (not CTE)	64.6%
Average # of Carnegie units from all potentially college credit-bearing courses	4.07 (3.22)
Average # of Carnegie units from dual credit courses (not CTE)	0.40 (0.83)
Average # of Carnegie units from AP courses	1.61 (2.07)
Average # of Carnegie Units from CTE courses	2.07 (2.07)
Panel B: Denver	(N=1,310)

Characteristic	Percentage or Mean (standard deviation)
% taken at least one college credit-bearing course (any)	87.1%
% taken at least one college credit-bearing course (not CTE)	73.4%
Average # of Carnegie units from all potentially college credit-bearing courses	2.21(2.13)
Average # of Carnegie units from dual credit courses	0.30 (0.70)
Average # of Carnegie units from AP courses	1.35 (1.90)
Average # of Carnegie Units from CTE courses	0.56 (0.88)

Table 22 shows the difference between treatment and comparison students for the college credit-bearing course outcomes. There was a descriptively positive impact on the percentage of students taking college credit-bearing courses, but this difference was not statistically significant.

In Texas, almost 96% of students in the treatment schools enrolled in some type of potentially college credit-bearing course, a level that was 10 percentage points higher in the treatment group than in the comparison group, although the difference was not statistically significant. Sixty-four percent (64%) of treatment students enrolled in non-CTE college credit-bearing courses, a rate that was approximately 4 percentage points higher than the comparison group. The average number of Carnegie units earned in non-CTE dual enrollment courses was approximately 50% higher in the treatment group (0.37 for the treatment group vs. 0.23 for the comparison group) although the difference was not statistically significant. The number of Carnegie units earned in CTE and AP courses were descriptively higher in comparison schools than in treatment schools, although the difference was not significant.

In Denver, 86% of treatment students were enrolled in some sort of college credit-bearing course, a rate that was slightly (but not significantly so) lower in treatment than in comparison schools. The percentage enrolled in dual credit or AP was 9 percentage points higher although not significant. In terms of Carnegie units earned, the only statistically significant impact was a positive increase in credits earned in CTE courses in treatment schools.

Table 22. Impacts on College Credit-Bearing Courses—12th-Grade

	Treatment		Comparison					
Outcome	N	Adjusted Mean (Standard Deviation)	N	Unadjusted Mean (Standard Deviation)	Adjusted Impact	Standard Error	p-value	Effect Size (Hedge's g)
Panel A: Pooled Estimates								
% taken at least one college credit-bearing course (any)	2766	94.8%	2380	86.0%	8.8%	0.060	0.145	--
% taken at least one college credit-bearing course (not CTE)	2766	67.8%	2380	63.4%	4.4%	0.060	0.468	--

Outcome	Treatment		Comparison		Adjusted	Standard		Effect
Average # of Carnegie units from all potentially college credit-bearing courses	2766	3.74 (2.68)	2380	3.73 (3.22)	0.01	0.317	0.987	0.003
Average # of Carnegie units from dual credit courses (not CTE)	2766	0.40 (0.81)	2380	0.27 (0.73)	0.13	0.103	0.219	0.168
Average # of Carnegie units from AP courses	2766	1.50 (1.91)	2380	1.57 (2.14)	-0.07	0.241	0.777	-0.034
Average # of Carnegie Units from dual credit CTE courses	2766	2.10 (1.25)	2380	1.89 (2.11)	0.21	0.191	0.270	0.117
Panel B: Texas								
% taken at least one college credit-bearing course (any)	1984	95.9%	1842	85.6%	10.3%	0.070	0.137	--
% taken at least one college credit-bearing course (not CTE)	1984	64.4%	1842	60.2%	4.2%	0.062	0.501	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	1984	3.99 (2.94)	1842	4.26 (3.49)	-0.27	0.831	0.746	-0.08
Average # of Carnegie units from dual credit courses (not CTE)	1984	0.37 (0.91)	1842	0.24 (0.69)	0.13	0.105	0.201	0.19
Average # of Carnegie units from AP courses	1984	1.47 (2.02)	1842	1.57 (2.12)	-0.10	0.328	0.759	-0.05
Average # of Carnegie Units from CTE courses	1984	2.14 (1.33)	1842	2.44 (2.59)	-0.31	0.837	0.716	-0.12
Panel C: Denver								
% taken at least one college credit-bearing course (any)	772	85.9%	538	87.2%	-1.2%	0.031	0.699	--
% taken at least one college credit-bearing course (not CTE)	772	82.1%	538	72.9%	9.2%	0.105	0.381	--
Average # of Carnegie units earned across all	772	2.32 (2.02)	538	2.28 (2.20)	0.12	0.287	0.679	0.05

Outcome	Treatment		Comparison		Adjusted	Standard		Effect
potentially college credit-bearing courses								
Average # of Carnegie units from dual credit courses (not CTE)	772	0.20 (.55)	538	0.36 (0.87)	-0.16	0.400	0.692	-0.18
Average # of Carnegie units from AP courses	772	1.57 (1.62)	538	1.56 (2.21)	0.01	0.249	0.980	0.00
Average # of Carnegie Units from CTE courses	772	0.61 (1.03)	538	0.28 (0.47)	0.32	0.149	0.03*	0.68

^ identifies impacts that were statistically significant at p≤.10 and *identifies impacts that were statistically significant at p≤.05.

Overall, results showed that almost every student in ECEP schools in Texas was enrolled in some sort of potentially college credit-bearing course. The majority of those credits were being earned in CTE courses, followed by AP courses. Additionally, the number of credits earned through dual enrollment courses was higher in treatment schools than in comparison schools. In Denver, there was a positive impact on enrollment in AP and dual credit but a negative impact on Carnegie units received from dual credit courses. This suggests that there were enrolled students who might not have successfully completed those courses.

It should be noted that dual enrollment credits can be considered "guaranteed" college credits that will transfer to any college within the state. On the other hand, AP credits reflect only those students successfully completing the AP course; a subset of those students likely took and passed the exam thereby earning some college credit. We did not, however, have data to indicate which percentage of students actually received college credit for the course. Thus, the number of actual college credits earned through AP courses will likely be substantially lower than the number reported in these tables. Similarly, the vast majority of CTE credits will only be receivable as college credits if students enroll in the postsecondary institution that housed the course. These credits can be thought of as potential college credits but are not very transferable. Thus, the total number of college credits earned through all types of dual enrollment courses is likely higher than those earned just in non-CTE dual credit courses.

To test why some of the enrollment impacts were not statistically significant despite their relatively large magnitude (10 percentage points), we conducted post-hoc power analyses. These analyses indicated that the college course enrollment outcome would have had to be approximately 14 percentage points to attain statistical significance. It would have been very hard to attain this kind of impact, particularly in Texas, because doing so would have required an enrollment rate close to 100%. This suggests that lack of variation in the outcome coupled with the size of the sample led to the lack of significance.

In addition to looking at impacts for the full population, we also looked at impacts for 11th graders and various sub-groups; these results are summarized here and the tables are provided in Appendix D. We found statistically significant positive impacts ($p \leq .10$) on enrollment in transferable college credit courses in 11th grade (9 percentage points). There were also overall statistically significant positive impacts on the number of Carnegie units earned from dual credit and CTE courses. However, these impacts were no longer statistically significant in 12th grade.

In looking at the impact on 12th graders for the targeted populations, we saw a statistically significant positive impact on the number of Carnegie units earned in dual credit courses by ELL students at the overall program level as well as in Texas. There was also a statistically significant positive impact on the number of Carnegie units earned by ELL students in CTE courses in Denver. All other impacts were not statistically significant.

For low-performing students, the only statistically significant impact was an increase in the number of Carnegie units earned in AP courses in Denver. There were descriptively positive impacts at the program-level on enrollment and Carnegie units earned in all three types of courses. In Texas, low-performing treatment students earned fewer overall credits, driven primarily by fewer CTE credits.

Finally, we also examined the impact on college coursetaking for students who remained in a treatment school for four years, giving them full exposure to the ECEP intervention. Overall, treatment students enrolled in college credit-bearing courses at a rate that was descriptively higher (8.8 percentage points), but the impact was not statistically significant. There were fewer Carnegie unit credits earned in treatment schools overall. In Texas, there were descriptively higher enrollment numbers and numbers of Carnegie units earned. However, students earned fewer Carnegie units overall, in AP courses, and in CTE courses, which suggests a shift in students from enrolling in other college credit options to dual enrollment. The only statistically significant difference between treatment and comparison schools was in the number of Carnegie units earned in college-level CTE courses in Denver where the number earned in the treatment group was more than double that of the comparison group.

Next, we discuss the context and implications of the impact findings in more depth in the Discussion and Conclusions section.

Section V: Discussion

The ECEP evaluation results suggest that the work of transforming comprehensive high schools into Early Colleges is challenging, involving a reconsideration of many aspects of the high school experience. This section of the report synthesizes impact and implementation findings to identify a set of themes that highlight changes made by schools and, as appropriate, issues for schools to consider as they undertake this work. These themes should be considered along with the conclusions relative to implementation supports that are provided in the accompanying report, *Implementation Supports of the Early College Expansion Partnership*.

Key Points

- Districts and schools made changes to support college readiness, particularly around getting more students to take and pass college placement exams.
    - Issues to consider include ensuring that students are academically prepared to be successful in college courses, including successfully completing the necessary high school courses.
- Districts and schools expanded access to college credit-bearing courses such that, across the entire program, over 90% of 12th graders enrolled in a college credit-bearing course at some point during their high school career.
    - Issues to consider include ensuring that students have access to the type of college credit-bearing course that is most useful for them (CTE, AP, or dual enrollment) and note that increased enrollment in one occurs at the expense of decreased enrollment in another.
- Instructional change appeared to be occurring with individual teachers, and was most evident in places where administrators supported the work.
    - In addition to having leadership reinforce the desired instructional changes, issues to consider include ensuring that instructional changes are aligned with other efforts being undertaken in the district.
- ECEP schools increased their use of data, their collaboration with other teachers, and their participation in professional development activities over the duration of the grant.
- Dropout rates were lower in Texas in treatment schools but higher in Denver treatment schools. In both states, the ELL population was the sub-group most affected. Given the differences across states, it is possible that this was due primarily to significant dropout prevention efforts already in place in the Texas districts and not necessarily to the ECEP model.

- ECEP had substantial impacts on the community and district by expanding the number of schools identified as Early Colleges and by increasing community college-going expectations for their students.

Synthesized Findings

The following discussion is organized into several broad areas of emphasis for the project: (1) college-going culture and college readiness, (2) college coursetaking, (3) modifying instruction, (4) other changes at the school, and (5) other program impacts.

Creating a College-Going Culture Focused on College Readiness for All

The evaluation results provide evidence that the participating schools shifted to placing greater emphasis on college readiness, particularly by expanding the number of students taking and passing exams necessary to qualify for college courses. The Texas schools focused their efforts on preparing students to take the TSI exams, thus opening up a broader range of college courses for students. Based on staff implementation survey results, high schools showed a statistically significant increase on the implementation of college readiness activities from the first to fourth year of ECEP implementation. Further, across all student focus groups conducted in Year 4, students described an increased focus on college in their school.

One important aspect of college readiness is ensuring that students are successfully completing the high school courses they need. This involves two primary strategies: (1) providing access to high school courses designed to prepare students for postsecondary education, and (2) supporting instructional practices and academic/affective supports that allow students to successfully complete those classes. The current quasi-experimental study looked at impacts in both areas. Results showed that access to a college preparatory course of study was not necessarily problematic at the outset, particularly in Texas, where there was already a state-wide expectation that students would take these courses. As such, almost 100% of students in the treatment and comparison groups were taking the 9th-grade English and math courses necessary for college. In Denver, however, there was more room to grow, and the treatment schools did demonstrate descriptively higher enrollment rates in the core English and math courses of 6 percentage points (82.5% treatment vs. 76.6% comparison), although the difference was not statistically significant.

There remained substantial challenges, however, in ensuring that students were successful in these courses. At the program-level, the impact analysis showed an overall lower percentage of students successfully completing the targeted high school courses in treatment schools, although the differences were not statistically significant. In Texas, there was a descriptively higher successful completion rate, driven by higher completion rates in math courses. In Denver, the completion rates were descriptively lower, driven by lower completion rates in

English. There was also a statistically significant negative impact of ECEP on the successful course completion of ELL students.

These findings reinforce results from other studies that have found that providing students access to the right courses is not sufficient; students also need strong instruction and additional academic and affective supports to be successful (Allensworth, Nomi, Montgomery, & Lee, 2009). It is possible that, while some changes in instruction and supports were indeed implemented as part of ECEP, these changes were not implemented at a high enough level to impact course success.

Another possible explanation for these findings is that the primary emphasis for the project was placed on increasing access to college courses, with less attention paid to the students' performance in the high school courses that were necessary for success in college. Further qualitative research could explore whether schools felt a tension between providing access to college courses and ensuring students were successful in core high school courses.

Expanding Access to College Courses While in High School

Providing students with college-level courses is one of the key aspects of the Early College Model in preparing students for postsecondary education. In the current study, the expectation was that college coursetaking would help students see themselves as college students, familiarize them with the norms of college classes, and provide a jump-start on credits needed for a degree or other credential. Increasing the number of students taking college courses was a clear emphasis of the project, with a goal of having 90% of students taking at least one college credit-bearing course by the end of 12th-grade.

In the original small Early College Model, the emphasis was on providing students with college credit that could transfer to a four-year institution. As a result, even if they were associated with two-year colleges, the small Early Colleges emphasized transferable credits and attainment of an associate degree. When considering what college credit might look like for the range of students enrolled in a traditional high school, a broader lens needed to be taken to allow for students to take courses most appropriate for their needs and situation.

For example, there are a variety of mechanisms by which high school students can earn college credit. They can take and pass transferable, dual enrollment courses. They can take an AP course and pass the exam associated with the course. Alternatively, they can enroll in college-level CTE courses and pass the course, or, if the course is considered "articulated," pass the course and receive college credit when they enroll in a specific college. Each option has advantages and disadvantages related to portability of credits and eligibility to take the course.

Under the first option—transferable dual enrollment courses—students earn college credit when they successfully complete the course, credit that can then be applied to any public institution within the two states in our study. These types of courses could be considered the

"surest bet" because passing the course results in college credit; however, these courses are not guaranteed to transfer to private or out-of-state institutions. Additionally, these courses often require students to pass a qualifying exam (such as the Accuplacer or the TSI exam) as a prerequisite. Regarding taking AP courses, there is no qualifying exam, although some schools may require prerequisite courses or a certain level of incoming academic performance. Via the AP course pathway, students can pass the course to receive high school credit but only receive college credit for AP courses if they pass the exam, and many do not. Theoretically, AP credits are the most portable of the different college credits, although institutions vary widely in their acceptance of these credits. Finally, college-level CTE courses do not usually require a qualifying exam as a prerequisite and can lead students to a technical credential. However, these credits are much less portable, particularly if they are articulated credits that a student can only receive after they enroll in the specific institution which offered the course in the high school.

When looking at all three types of college courses in the current study, the project reached its goal, with over 90% of 12th graders participating in some sort of potentially college credit-bearing course, an estimated 9 percentage points higher than the enrollment rate in the comparison schools. However, of note, the comparison schools were also providing substantial access to college courses for their students, with 86% of their students enrolled in some sort of college credit-bearing course.

The patterns of college coursetaking differed by state. Schools in Texas were expanding student access to college courses for virtually all of their students, with 96% of the 12th-grade sample having participated in some sort of potentially college credit-bearing course. The Texas schools emphasized the transferable dual credit option more, which resulted in a 50% increase in the number of Carnegie units earned by treatment students relative to comparison students. However, this expansion of transferable dual credit courses did appear to come at the expense of other college credit options. Treatment students earned fewer Carnegie units in AP and CTE courses, resulting in descriptively fewer Carnegie units earned overall in potentially college credit-bearing courses. When considering these findings, it is important to note that the data we have do not allow us to determine the actual number of college credits received by students taking AP or college-level CTE courses.

In Denver, the percentage of students enrolled in a college credit-bearing course was essentially the same between treatment and comparison schools, although the percentage of treatment students enrolled in dual enrollment and AP courses was 9 percentage points higher. Despite this increase in enrollment, however, the number of Carnegie units earned in dual credit courses was almost half as large in the treatment schools as in the comparison schools. There was no difference in credit earned by AP courses. These results suggest that the expansion in dual credit enrollment may have resulted in more students failing the courses. This

issue was noted in one of the interviews with a Denver postsecondary instructor who said that more students were taking courses but that pass rates had dipped substantially.

It is important to note that Denver treated the grant as an impetus for changing the entire district. Thus, although there were a set of schools identified as ECEP schools and these schools received coaching services and extra focus from college liaisons, other schools in the district may also have been benefiting from the district's focus on college course enrollment. It is therefore possible that the comparison schools in Denver may have benefited from the grant as well, which could minimize the impact shown by the study.

Modifying Instruction

In order to better prepare students for college courses and to help students be successful in college courses, ECEP put a strong emphasis on instructional change supported by onsite instructional coaches. The project targeted six instructional strategies that were intended to increase student involvement in the learning process.

Findings from the evaluation suggest that, similar to other studies, changing instruction is challenging work that takes time. The survey data showed no significant changes in the reported frequency of use of specific targeted instructional practices, with the exception of a statistically significant increase in middle school teachers' use of Collaborative Group Work. Further, results from interviews and observations indicated that instructional change occurred in pockets and was most evident in cases where the administration was supportive and reinforced the instructional practices.

The findings also suggest that instructional change should be supported in the context of broader improvement efforts. For example, participants reported that it was easier to implement the instructional practices when the practices were aligned with other work in the district, particularly if they were embedded in teacher evaluation practices.

Other Changes in Schools

Increasing expectations for students also increases the need for student supports. The staff survey showed a statistically significant increase in schools' provision of academic and affective supports for students. Site visits suggested that this might have been at least partly due to the increase in supports provided to students who were getting ready to take the college placement exams. For example, the schools in Texas emphasized preparing students to pass the TSI placement exam, creating a new suite of activities to support students while they are doing so.

Although the ultimate beneficiary of the Early College Model is students, there were expectations that teachers' working environment should also change. Teachers were expected to participate in more professional development, collaborate more regularly, and use data

more regularly. The staff survey results showed significant increases in all of these areas over the life of the project, and these were all changes that we heard about in the site visits.

Other Program Impacts

When schools changed to a more college-going culture, expanded access to college coursetaking, and increased the supports provided to students, the expectation was that more students would stay in school, reducing the dropout rate and increasing the graduation rate.

Full program results showed a descriptive decline in dropout rates and a statistically significant decline of dropout rates for ELL students. These overall findings mask substantial variation by state. In Texas, the treatment schools had a dropout rate that was 1 percentage point lower than comparison schools. The impact was particularly large for ELL students, whose cohort dropout rate in treatment schools was less than one-third that of the rate in the comparison schools (1.5% for the treatment group vs. 5.2% for the comparison group). In Denver, the opposite occurred with dropout rates significantly higher in the treatment schools than in the comparison schools (6.5% for the treatment vs. 4.7% for the comparison). In Denver, ELL students in treatment schools dropped out a rate significantly higher than ELL students in comparison schools (8.1% for the treatment vs. 5.2% for the comparison).

Given the differences in impacts across states, it is hard to determine the extent to which the overall impacts are due to ECEP. It is possible that the dropout findings are related to other work going on in the district. For example, PSJA has been very active in dropout prevention work, including extensive proactive outreach from counselors; this work is not necessarily conceptualized as part of the Early College Model but certainly would be expected to impact the dropout rates. Future research should consider exploring the reasons behind state-level variation in these outcomes.

ECEP was intended to impact entire school districts, and the evaluation documented such changes as a result of the grant. All three districts used the i3 grant to increase their focus on postsecondary education and to move their district in a direction they wanted to go. All three districts saw an increase in the number of schools officially designated as Early Colleges by the state. By the end of the grant, all of the participating high schools in Texas had been designated as schoolwide Early Colleges. Denver had five of their 56 high schools designated as Early Colleges.

Regarding next steps and sustainability for the participating districts, PSJA continued its district-wide emphasis on Early Colleges, with the ECEP project providing structures to continue the work. Brownsville dramatically increased their Early College emphasis and focus. Denver also used the grant to move its district-wide dual enrollment efforts forward and received substantial community support in the form of $8 million of funding for dual enrollment efforts.

Section VI: Conclusion

The small Early College Model has been shown to be successful at improving student outcomes in high school and postsecondary education. Given the success of the model, there has been interest in scaling it up more broadly, particularly to try and reach students in comprehensive high schools. ECEP was one of the first large-scale efforts in the nation to explore the possibility of transforming comprehensive high schools into Early Colleges. Despite the strong evidence of the small Early College Model, there was an open question as to the extent to which the Early College design elements could be implemented in comprehensive high schools and the extent to which these schools would see similar impacts to the small Early Colleges. ECEP can be thought of as testing the possibility: can comprehensive high schools implement Early College strategies in a way that improves outcomes for all students? The results of the current evaluation suggest that comprehensive high schools can begin the process of transforming themselves into Early Colleges but that the road is long and challenging.

In their purest form, Early Colleges represent a comprehensive re-envisioning of high school, an environment focused on college for all, in which the secondary and postsecondary experiences are merged. Existing comprehensive high schools have evolved over time, adding a multitude of programs and approaches in an attempt to meet the needs of all of their students (Murphy, 2016). A long history of school reform work suggests that it is extremely challenging to change the culture and environment of existing comprehensive high schools (American Institutes of Research & SRI International, 2008; Mazzeo, Fleischman, Heppen, & Jahangir, 2016). The original Early Colleges experienced an advantage in that they were new schools created from scratch with a clear focus and purpose (Edmunds, 2012). Implementing the Early College Model thus requires high schools to make a number of substantive changes, including creating a more college-going culture, implementing college readiness activities, modifying instruction to be more rigorous and student-centered, providing student supports, and fostering increased learning and collaboration for school staff. Results from the evaluation suggest that changes have been made in some of these areas but that there are issues associated with implementing the Early College Model in comprehensive settings that still need to be fully addressed.

One of the challenges with the implementation of Early Colleges in comprehensive high schools is distinguishing what separates an Early College from a regular high school with dual enrollment options (as many high schools already have across the country). Based on this evaluation and others, we argue that Early College is not just “dual enrollment on steroids;” instead Early Colleges share a core set of common ideas:

- All students should be expected to obtain some form of postsecondary education. In many of the original small Early Colleges, this was conceptualized as a four-year degree but expanding the vision to comprehensive high schools requires recognizing that

postsecondary education can include, not only a four-year degree, but also a two-year degree or technical credentials. In traditional high schools, a subset of students are generally expected to go directly into the workforce after they graduate. The majority of participants in the project believed that ECEP resulted in increased expectations for their students and reported an increase in college readiness support activities, although there was no significant change, as reported in the survey, in the extent to which school staff reported changes in a college-going culture.

- All students should have the opportunity to attain some sort of a postsecondary credential as part of their high school experience. Providing early access to college credits is a key part of the model but those credits are expected to lead to a credential. In many of the original small Early Colleges, those credits led to an associate degree or two years of transferable college credit. When expanding the Early College Model to serve a wider range of students, the credentials also need to be more broadly conceptualized as noted above. This means that students will need to have a variety of opportunities for college credit coursetaking (dual credit, CTE, AP) depending on their needs and interests. The study results showed that the vast majority of students in the treatment schools were given access to some sort of college credit-bearing experience. The districts reported that they were trying to focus many of the coursetaking opportunities to be part of pathways to ensure that the courses taken could eventually lead to a meaningful credential. In the Texas schools, students did have the opportunity to earn an associate degree and the schools reported a growing number of students earning those credentials. Unfortunately, the data sources used in this evaluation did not allow for tracking those outcomes.
- College courses are not just an add-on to the school; instead, the focus on postsecondary readiness requires schools to reconsider how all aspects of the school (e.g., instruction, supports, high school coursetaking, the professional working environment) can support the common goal of postsecondary readiness for all. This is one of the key aspects separating an Early College from a high school that is simply adding on college courses. What kind of high school courses do students need to take? How does the content of those courses prepare students for postsecondary education? How does the instruction prepare students for further education? What kinds of supports do students need to be successful in this environment? How do teachers need to work together to reach the school's goal? We acknowledge that this is something that is easier for newly created schools to do than for comprehensive schools. The evaluation survey results showed that these changes were occurring in some areas but that there were also areas in which there was not significant movement, highlighting the challenges in moving large institutions.

Overall, this evaluation study shows that the Early College Model can serve as a focal point for districts that can guide and direct their work. The evaluation results also suggest that increasing access to college courses is important but that it will be most effective when it is part of a broader effort to more comprehensively improve high schools to ensure that all students are prepared for further education.

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Appendix A: Baseline Equivalence for Sub-Groups

Table A-1. Baseline Student Characteristics, by Sample—Economically Disadvantaged Students, Denver Only*

Sample	Sample Definition	Characteristic	Treatment Mean (SD)	Comparison Mean (SD)	Effect size of Difference
Analytic Sample for Outcomes A and B (9th-grade college prep coursetaking)	Cross-sectional sample of 9th graders in schools in their second and third years of implementation (2014-15 and 2015-16)	Denver	(N=2,224)	(N=1,595)	
		Baseline reading z-score	-0.143 (0.922)	-0.228 (1.019)	0.09
		Underrepresented minority	89.7%	90.0%	0.05
		Female	48.7%	49.3%	-0.01
Analytic Sample for Outcome C (dropout)	Longitudinal sample of 9th graders from 2013-14 followed through 2015-16 and 2016-17	Denver	(N=1,305)	(N=845)	
		Baseline reading z-score	-0.140 (0.955)	-0.194 (0.939)	0.07
		Underrepresented minority	89.7%	90.2%	-0.03
		Female	47.7%	48.9%	-0.02
Analytic Sample for Outcomes D and E (college credit courses)	12th graders enrolled in 2016-17	Denver	(N=581)	(N=387)	
		Baseline reading z-score	-0.134 (0.933)	-0.267 (0.929)	0.14
		Underrepresented minority	89.5%	88.4%	0.07
		Female	53.4%	54.3%	-0.02

*Baseline year is 2012-13 school year. Because the population of the Texas sample is almost entirely economically disadvantaged, there was no separate analysis run for economically disadvantaged students.

Table A-2. Baseline Student Characteristics, by Sample—English Language Learners*

Sample	Sample Definition	Characteristic	Treatment Mean (SD)	Comparison Mean (SD)	Effect size of Difference
Analytic Sample for Outcomes A and B (9th-grade college prep coursetaking)	Cross-sectional sample of 9th graders in schools in their second and third years of implementation (2014-15 and 2015-16)	Panel A: Pooled	(N=3,587)	(N=3,738)	
		Baseline reading z-score	-0.130 (0.972)	-0.159 (1.103)	0.03
		Eligible for free or reduced-price lunch	96.5%	96.1%	0.06
		Underrepresented minority	NA	NA	NA
		Female	48.6%	49.0%	-0.01
		Panel B: Texas	(N=2,376)	(N=2,704)	
		Baseline reading z-score	-0.110 (0.998)	-0.114 (1.134)	0.00
		Eligible for free or reduced-price lunch	97.9%	97.4%	0.11
		Underrepresented minority	NA	NA	NA
		Female	49.2%	48.2%	0.02
		Panel C: Denver	(N=1,211)	(N=1,034)	
		Baseline reading z-score	-0.169 (0.919)	-0.276 (1.023)	0.11
		Eligible for free or reduced-price lunch	93.7%	92.6%	0.10
		Underrepresented minority	90.0%	87.7%	0.14
		Female	47.6%	51.1%	-0.08
Analytic Sample for Outcome C (dropouts)	Longitudinal sample of 9th graders from 2013-14 followed through 2015-16	Panel A: Pooled	(N=1,553)	(N=1,563)	
		Baseline reading z-score	-0.149 (0.898)	-0.079 (1.149)	-0.07
		Eligible for free or reduced-price lunch	95.1%	96.2%	-0.16
		Underrepresented minority	NA	NA	NA
		Female	48.0%	46.4%	0.04
		Panel B: Texas	(N=855)	(N=1,045)	
		Baseline reading z-score	-0.189 (.863)	-0.023 (1.270)	-0.17
		Eligible for free or reduced-price lunch	97.5%	98.4%	0.25
		Underrepresented minority	NA	NA	NA
		Female	45.8%	45.2%	0.02
		Panel C: Denver	(N=698)	(N=518)	

Sample	Sample Definition	Characteristic	Treatment Mean (SD)	Comparison Mean (SD)	Effect size of Difference
		Baseline reading z-score	-0.100 (.941)	-0.190 (.905)	0.10
		Eligible for free or reduced-price lunch	92.1%	91.9%	0.02
		Underrepresented minority	89.4%	88.2%	0.07
		Female	50.7%	48.8%	0.05
Analytic Sample for Outcomes D and E (college credit courses)	12th graders enrolled in 2016-17	Panel A: Pooled	(N=982)	(N=1,024)	
		Baseline reading z-score	-0.168 (0.924)	-0.082 (1.189)	-0.081
		Eligible for free or reduced-price lunch	95.6%	95.8%	-0.027
		Underrepresented minority	NA	NA	NA
		Female	49.4%	50.9%	-0.036
		Panel B: Texas	(N=608)	(N=760)	
		Baseline reading z-score	-0.183 (0.926)	-0.021 (1.274)	-0.16
		Eligible for free or reduced-price lunch	97.5%	97.8%	-0.06
		Underrepresented minority	NA	NA	NA
		Female	45.4%	48.9%	-0.09
		Panel C: Denver	(N=493)	(N=391)	
		Baseline reading z-score	-0.102 (0.922)	-0.195 (0.914)	0.10
		Eligible for free or reduced-price lunch	92.1%	91.0%	0.08
		Underrepresented minority	89.7%	87.0%	0.16
		Female	53.3%	52.4%	0.02

*Baseline year is 2012-13 school year.

Note: The underrepresented minority population in Texas in this sample is over 99% of the population and results in a cell size of less than 5 for the non-underrepresented population. As a result, the data were not released.

Table A-3. Baseline Student Characteristics, by Sample—Low Performing Students*

Sample	Sample Definition	Characteristic	Treatment Mean	Comparison Mean	Effect size of Difference
Analytic Sample for Outcomes A and B (9th-grade college prep coursetaking)	Cross-sectional sample of 9th graders in schools in their second and third years of implementation (2014-15 and 2015-16)	Panel A: Pooled	(N=4,972)	(N=4,530)	
		Baseline reading z-score	-0.332 (0.905)	-0.358 (0.925)	0.03
		Eligible for free or reduced-price lunch	93.6%	95.0%	-0.16
		Underrepresented minority	97.3%	97.0%	0.05
		Female	46.9%	47.4%	-0.01
		Panel B: Texas	(N=3,586)	(N=3,544)	
		Baseline reading z-score	-0.192 (0.957)	-0.228 (0.936)	0.04
		Eligible for free or reduced-price lunch	94.8%	95.9%	-0.16
		Underrepresented minority	99.6%	99.3%	0.34
		Female	48.6%	48.3%	0.01
		Panel C: Denver	(N=1,386)	(N=986)	
		Baseline reading z-score	-0.695 (.771)	-0.827 (.886)	0.16
		Eligible for free or reduced-price lunch	90.3%	91.7%	-0.10
		Underrepresented minority	91.3%	89.0%	0.16
		Female	42.4%	43.8%	-0.03
Analytic Sample for Outcome C (dropout)	Longitudinal sample of 9th graders from 2013-14 followed through 2015-16	Panel A: Pooled	(N=2,610)	(N=2,266)	
		Baseline reading z-score	-0.359 (0.818)	-0.353 (1.054)	-0.01
		Eligible for free or reduced-price lunch	92.5%	94.8%	-0.24
		Underrepresented minority	96.4%	97.0%	-0.11
		Female	45.7%	44.2%	0.04
		Panel B: Texas	(N=1,661)	(N=1,656)	
		Baseline reading z-score	-0.211 (.850)	-0.238 (1.160)	0.03
		Eligible for free or reduced-price lunch	95.3%	96.1%	-0.12
		Underrepresented minority	99.4%	99.3%	0.11
		Female	45.9%	44.6%	0.03
		Panel C: Denver	(N=949)	(N=610)	
		Baseline reading z-score	-.619 (0.762)	-.664 (0.766)	0.06

Sample	Sample Definition	Characteristic	Treatment Mean	Comparison Mean	Effect size of Difference
		Eligible for free or reduced-price lunch	87.6%	91.3%	-0.24
		Underrepresented minority	91.1%	90.7%	0.04
		Female	45.3%	43.3%	0.05
Analytic Sample for Outcomes D and E (college credit courses)	12th graders enrolled in 2016-17	Panel A: Pooled	(N=1,591)	(N=1,429)	
		Baseline reading z-score	-0.366 (0.808)	-0.379 (1.107)	0.01
		Eligible for free or reduced-price lunch	92.3%	94.3%	-0.19
		Underrepresented minority	97.6%	97.3%	0.08
		Female	47.1%	46.9%	0.00
		Panel B: Texas	(N=1,221)	(N=1,188)	
		Baseline reading z-score	-0.246 (0.857)	-0.272 (1.186)	0.03
		Eligible for free or reduced-price lunch	94.3%	95.1%	-0.09
		Underrepresented minority	NA	NA	NA
		Female	45.2%	46.5%	-0.03
		Panel C: Denver	(N=370)	(N=241)	
		Baseline reading z-score	-0.763 (.643)	-0.903 (.714)	0.21
		Eligible for free or reduced-price lunch	85.7%	90.0%	-0.25
		Underrepresented minority	91.1%	87.6%	0.23
		Female	53.2%	48.5%	0.11

*Baseline year is 2012-13 school year

Note: The underrepresented minority population in Texas for Outcomes D and E is over 99% of the population and results in a cell size of less than 5 for the non-underrepresented population. As a result, the data were not released.

Exposure Sub-Groups

Table A-4. Baseline Student Characteristics, by Sample—Middle School Participants, Denver only*

Sample	Sample Definition	Characteristic	Treatment Mean	Comparison Mean	Effect size of Difference
Analytic Sample for Outcomes A and B (9th-grade college prep coursetaking)	Cross-sectional sample of 9th graders in schools in their second and third years of implementation (2014-15 and 2015-16)	Panel B: Denver	(N=1086)	(N=399)	
		7th-grade reading z-score	0.077 (0.959)	0.264 (1.136)	-0.19
		Eligible for free or reduced-price lunch	75.0%	65.7%	0.27
		Underrepresented minority	76.1%	63.9%	0.35
		Female	47.9%	48.9%	-0.02

*Baseline year is 2012-13 school year

Table A-5. Baseline Student Characteristics, by Sample—Students in Same High School for Three Years*

Sample	Sample Definition	Characteristic	Treatment Mean	Comparison Mean	Effect size of Difference
Analytic Sample for Outcomes D and E (college credit courses)	12th graders enrolled in 2016-17	Panel A: Pooled	(N=2,455)	(N=2,170)	
		7th-grade reading z-score	0.000 (0.835)	0.006 (1.142)	-0.01
		Eligible for free or reduced-price lunch	87.9%	88.8%	-0.05
		Underrepresented minority	93.9%	93.9%	0.00
		Female	50.2%	51.1%	-0.02
		Panel B: Texas	(N=1,738)	(N=1,693)	
		7th-grade reading z-score	-0.011 (.782)	-0.005 (1.159)	-0.01
		Eligible for free or reduced-price lunch	93.1%	93.7%	-0.06
		Underrepresented minority	99.6%	99.5%	0.10
		Female	49.6%	49.8%	-0.01
		Panel C: Denver	(N=717)	(N=477)	
		7th-grade reading z-score	0.029 (0.965)	0.046 (1.08)	-0.02
		Eligible for free or reduced-price lunch	75.3%	71.1%	0.13
		Underrepresented minority	80.1%	74.0%	0.21
		Female	51.7%	55.3%	-0.09%

*Baseline year is 2012-13 school year

Appendix B: Analytic Model

Below is the core analytic outcome model. A similar model was run for the sub-groups with the stratifying variable removed from the model.

Level 1 (student level):

$$y_{ij} = \beta_{0j} + \beta_{1j} Year_{ij} + \sum_{s=2}^{S} \beta_{sj} X_{sij} + e_{ij}$$

where:

y_{ij} = outcome of interest for student *i* in school *j*;

$Year_{ij}$ =cohort indicator;

X_{sij} = s-th student-level variables for low income, underrepresented minority, ELL, gender, standardized reading score at baseline, and standardized math score at baseline.

β_{0j} = adjusted mean outcome of interest for school j controlling for differences in student-level covariates;

β_{sj} = the association between the sth student-level covariate and outcome of interest;

e_{ij} = random effect of student *i* in school *j* assumed to be distributed with a mean of zero and variance of σ_e^2 ;

Level 2 (school level):

$$\beta_{0j} = \gamma_{00} + \gamma_{01} ECEP_j + \gamma_{02} State_j + \sum_{k=1}^{K} \gamma_{0(k+2)} B_{kj} + u_{0j}$$

where:

$ECEP_j$ = 1 if school *j* an ECEP (treatment) school, 0 otherwise;

$State_j$ =1 if school j located in Colorado, 0 if Texas;

B_{kj} = kth (k=1,2,…,K) school-level measures at baseline: percent passing 9th-grade standardized reading test, percent passing 9th-grade math test, and percent all students low income;

γ_{00} = adjusted mean of the outcome of interest in comparison schools in Texas;

γ_{01} = overall fixed treatment effect adjusted for the baseline matching variables and other covariates;

γ_{02} = association between schools located in Colorado and the outcome measure controlling for other covariates in the model;

u_{0j} = random effect of school j, assumed to be distributed with a mean of zero and variance of σ_u^2. Note that this term is also assumed to be independent of the student-level error term, e_{ij}.

Appendix C: Weights for Pooled Analysis

	Texas				Denver			
Outcome	Standard Error	Variance	Inverse Variance	Weight	Standard Error	Variance	Inverse Variance	Weight
% 9th graders enrolled in college preparatory course, English **and** math	0.005	0.000	45755.811	0.998	0.097	0.009	107.179	0.002
% 9th graders successfully completing at least one English **and** one math college preparatory course	0.073	0.005	188.101	0.088	0.023	0.001	1945.503	0.912
% dropout	0.005	0.000	36740.214	0.783	0.010	0.000	10159.687	0.217
% taken at least one college credit-bearing course	0.070	0.005	206.949	0.867	0.031	0.001	31.870	0.133
% taken at least one college credit-bearing course (not CTE)	0.062	0.004	256.463	0.964	0.105	0.011	9.493	0.036
Average # of Carnegie units earned across all potentially college credit-bearing courses	0.831	0.691	1.447	0.293	0.287	0.082	3.488	0.707
Average # of Carnegie units from dual credit courses	0.105	0.011	90.452	0.973	0.400	0.160	2.497	0.027
Average # of Carnegie units from AP courses	0.328	0.108	9.275	0.698	0.249	0.062	4.012	0.302
Average # of Carnegie Units from CTE courses	0.837	0.701	1.426	0.175	0.149	0.022	6.714	0.825

Appendix D: College Credit-Bearing Courses—Detailed Findings

Table D-1. Impacts on College Credit-Bearing Courses—11th-Grade

Outcome	Treatment N	Treatment Adjusted Mean (Standard Deviation)	Comparison N	Comparison Unadjusted Mean (Standard Deviation)	Adjusted Impact	Standard Error	p-value	Effect Size (Hedge's g)
Panel A: Pooled Estimates								
% taken at least one college credit-bearing course	3169	84.3%	2696	78.2%	6.1%	0.222	0.050	--
% taken at least one college credit-bearing course (not CTE)	3169	61.7%	2696	52.7%	9.0%	0.085^	0.052	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	3169	2.39	2696	2.21	0.18	0.421	0.228	0.09
Average # of Carnegie units from dual credit courses	3169	0.31	2696	0.16	0.14	0.034*	0.133	0.24
Average # of Carnegie units from AP courses	3169	0.97	2696	0.94	0.04	0.770	0.134	0.03
Average # of Carnegie Units from CTE courses	3169	1.37	2696	1.11	0.26	0.052^	0.068	0.21
Panel B: Texas								
% taken at least one college credit-bearing course	2101	92.3%	1928	78.0%	14.3%	0.167	0.104	--
% taken at least one college credit-bearing course (not CTE)	2101	56.5%	1928	47.8%	8.7%	0.166	0.063	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	2101	2.60 (2.08)	1928	2.44 (2.21)	0.16	0.761	0.532	0.07
Average # of	2101	0.25	1928	0.10	0.16	0.023*	0.069	0.46

Outcome	Treatment		Comparison		Adjusted	Standard	p-	Effect
Carnegie units from dual credit courses		(0.67)		(0.34)				
Average # of Carnegie units from AP courses	2101	0.89 (1.35)	1928	0.84 (1.20)	0.06	0.775	0.201	0.05
Average # of Carnegie Units from CTE courses	2101	1.45 (1.09)	1928	1.50 (1.71)	-0.05	0.924	0.553	-0.03
Panel C: Denver								
% taken at least one college credit-bearing course	1,068	82.4%	768	78.8%	3.6%	0.525	0.057	--
% taken at least one college credit-bearing course (not CTE)	1,068	73.1%	768	63.5%	9.6%	0.303	0.093	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	1,068	1.89 (1.92)	768	1.70 (2.09)	0.19	0.456	0.252	0.09
Average # of Carnegie units from dual credit courses	1,068	0.14 (0.51)	768	0.29 (0.76)	-0.15	0.637	0.323	-0.20
Average # of Carnegie units from AP courses	1,068	1.18 (1.48)	768	1.16 (1.97)	0.02	0.891	0.177	0.01
Average # of Carnegie Units from CTE courses	1,068	0.53 (0.94)	768	0.25 (0.43)	0.28	0.04*	0.138	0.64

^ identifies impacts that were statistically significant at p≤.10 and *identifies impacts that were statistically significant at p≤.05.

Table D-2. Impacts on College Credit-Bearing Courses—12th-Grade—ELL Students

Outcome	Treatment N	Treatment Adjusted Mean (Standard Deviation)	Comparison N	Comparison Unadjusted Mean (Standard Deviation)	Adjusted Impact	Standard Error	p-value	Effect Size (Hedge's g)
Panel A: Pooled Estimates								
% taken at least one college credit-bearing course	982	91.7%	1024	81.3%	10.4%	0.068	0.124	--
Average # of Carnegie units from all potentially college credit-bearing courses	982	3.33	1024	3.23	0.10	0.323	0.759	0.04
Average # of Carnegie units from dual credit courses	982	0.34	1024	0.20	0.14	0.069	0.040*	0.23
Average # of Carnegie units from AP courses	982	1.24	1024	1.29	-0.04	0.232	0.853	-0.02
Average # of Carnegie Units from CTE courses	982	1.93	1024	1.74	0.19	0.193	0.33	0.10
Panel B: Texas								
% taken at least one college credit-bearing course	608	91.6%	760	78.0%	13.6%	0.085	0.108	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	608	3.55 (2.39)	760	3.84 (3.40)	-0.29	0.790	0.710	-0.09
Average # of Carnegie units from dual credit courses	608	0.23 (0.62)	760	0.08 (0.43)	0.15	0.070	0.036*	0.35
Average # of Carnegie units from AP courses	608	1.17 (1.57)	760	1.34 (2.01)	-0.17	0.318	0.604	-0.08
Average # of Carnegie Units from CTE courses	608	2.14 (1.27)	760	2.42 (2.75)	-0.28	0.820	0.730	-0.10
Panel C: Denver								
% taken at least one college credit-	374	86.0%	264	88.3%	-2.2%	0.029	0.433	--

Outcome	Treatment		Comparison		Adjusted	Standard		Effect
bearing course								
Average # of Carnegie units earned across all potentially college credit-bearing courses	374	2.19 (2.11)	264	1.91 (1.87)	0.28	0.295	0.335	0.15
Average # of Carnegie units from dual credit courses	374	0.28 (0.61)	264	0.45 (0.98)	-0.17	0.367	0.647	-0.17
Average # of Carnegie units from AP courses	374	1.42 (1.67)	264	1.18 (1.70)	0.23	0.229	0.308	0.14
Average # of Carnegie units from CTE courses	374	0.57 (1.09)	264	0.28 (0.43)	0.29	0.149	0.050*	0.68

^ identifies impacts that were statistically significant at p≤.10 and *identifies impacts that were statistically significant at p≤.05.

Table D-3. Impacts on College Credit-Bearing Courses—12th-Grade, Economically Disadvantaged Students—Denver Only

Outcome	Treatment N	Treatment Adjusted Mean (Standard Deviation)	Comparison N	Comparison Unadjusted Mean (Standard Deviation)	Adjusted Impact	Standard Error	p-value	Effect Size (Hedge's g)
Denver								
% taken at least one college credit-bearing course	581	81.8%	387	84.5%	-2.7%		0.446	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	581	1.88 (2.01)	387	1.62 (1.73)	0.26		0.326	0.15
Average # of Carnegie units from dual credit courses	581	0.22 (0.57)	387	0.39 (0.90)	-0.17		0.648	-0.19
Average # of Carnegie units from AP courses	581	1.18 (1.54)	387	0.94 (1.54)	0.24		0.133	0.16
Average # of Carnegie Units from CTE courses	581	0.55 (1.09)	387	0.29 (0.46)	0.26		0.085^	0.58

^ identifies impacts that were statistically significant at p≤.10 and *identifies impacts that were statistically significant at p≤.05.

Table D-4. Impacts on College Credit-Bearing Courses—12th-Grade, Low-Performing Students

Outcome	Treatment N	Treatment Adjusted Mean (Standard Deviation)	Comparison N	Comparison Unadjusted Mean (Standard Deviation)	Adjusted Impact	Standard Error	p-value	Effect Size (Hedge's g)
Panel A: Pooled Estimates								
% taken at least one college credit-bearing course	1591	92.9%	1429	81.2%	11.7%	0.081	0.149	--
Average # of Carnegie units from all potentially college credit-bearing courses	1591	3.28	1429	3.13	0.15	0.263	0.565	0.06
Average # of Carnegie units from dual credit courses	1591	0.24	1429	0.16	0.08	0.062	0.169	0.15
Average # of Carnegie units from AP courses	1591	0.94	1429	0.81	0.13	0.167	0.438	0.09
Average # of Carnegie Units from CTE courses	1591	2.29	1429	2.16	0.13	0.170	0.450	0.07
Panel B: Texas								
% taken at least one college credit-bearing course	1,221	97.0%	1,188	82.3%	14.7%	0.096	0.128	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	1,221	3.60 (2.21)	1,188	3.66 (3.26)	-0.06	0.872	0.948	-0.02
Average # of Carnegie units from dual credit courses	1,221	0.21 (0.56)	1,188	0.12 (0.49)	0.09	0.062	0.157	0.18
Average # of Carnegie units from AP courses	1,221	0.99 (1.55)	1,188	0.90 (1.43)	0.09	0.234	0.698	0.06
Average # of Carnegie Units from CTE courses	1,221	2.41 (1.26)	1,188	2.64 (2.57)	-0.23	0.815	0.773	-0.09

Outcome	Treatment		Comparison		Adjusted	Standard		Effect
Panel C: Denver								
% taken at least one college credit-bearing course	370	73.2%	241	76.8%	-3.6%	0.048	0.457	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	370	1.24 (1.55)	241	1.02 (1.18)	0.21	0.224	0.342	0.18
Average # of Carnegie units from dual credit courses	370	0.14 (0.44)	241	0.30 (0.64)	-0.16	0.271	0.567	-0.24
Average # of Carnegie units from AP courses	370	0.68 (1.15)	241	0.47 (0.95)	0.22	0.125	0.081^	0.23
Average # of Carnegie Units from CTE courses	370	0.46 (0.85)	241	0.26 (0.43)	0.20	0.128	0.121	0.46

^ identifies impacts that were statistically significant at p≤.10 and *identifies impacts that were statistically significant at p≤.05.

Table D-5. Impacts on College Credit-Bearing Courses—12th-Grade, Students with Four Years of Exposure

Outcome	Treatment N	Treatment Adjusted Mean (Standard Deviation)	Comparison N	Comparison Unadjusted Mean (Standard Deviation)	Adjusted Impact	Standard Error	p-value	Effect Size (Hedge's g)
Panel A: Pooled Estimates								
% taken at least one college credit-bearing course	2455	95.1%	2170	86.3%	8.8%	0.062	0.158	--
Average # of Carnegie units from all potentially college credit-bearing courses	2455	3.78	2170	3.79	-.01	0.347	0.988	-0.00
Average # of Carnegie units from dual credit courses	2455	0.41	2170	0.28	0.13	0.106	0.239	0.27
Average # of Carnegie units from AP courses	2455	1.55	2170	1.61	-0.05	0.254	0.839	-0.02
Average # of Carnegie Units from CTE courses	2455	2.13	2170	1.90	0.23	0.193	0.231	0.13
Panel B: Texas								
% taken at least one college credit-bearing course	1738	96.1%	1693	85.7%	10.4%	0.072	0.148	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	1738	4.04 (2.92)	1693	4.31 (3.51)	-0.26	0.831	0.751	-0.08
Average # of Carnegie units from dual credit courses	1738	0.38 (0.92)	1693	0.25 (0.71)	0.13	0.108	0.704	0.19
Average # of Carnegie units from AP courses	1738	1.51 (2.03)	1693	1.59 (2.12)	-0.08	0.344	0.813	-0.04
Average # of Carnegie Units from CTE courses	1738	2.15 (1.33)	1693	2.47 (2.60)	-0.32	0.836	0.704	-0.12
Panel C: Denver								

Outcome	Treatment		Comparison		Adjusted	Standard		Effect
% taken at least one college credit-bearing course	717	86.3%	477	87.8%	-1.5%	0.033	0.649	--
Average # of Carnegie units earned across all potentially college credit-bearing courses	717	2.41 (2.06)	477	2.30 (2.32)	0.12	0.326	0.721	0.05
Average # of Carnegie units from dual credit courses	717	0.18 (0.54)	477	0.38 (0.90)	-0.20	0.451	0.653	-0.23
Average # of Carnegie units from AP courses	717	1.66 (1.66)	477	1.65 (2.26)	0.02	0.275	0.952	0.01
Average # of Carnegie Units from CTE courses	717	0.62 (1.03)	477	0.27 (.45)	0.35	0.150	0.02*	0.78

^ identifies impacts that were statistically significant at p≤.10 and *identifies impacts that were statistically significant at p≤.05.

Appendix E: Sample Interview Protocol

Principal/ECHS Director

1. How long have you been principal at this school?
    a. (If new): How were you made aware of the goals and activities of this project?
2. What is the role of your district in the Early College grant (Denver)/i3 grant (Texas)?
    a. ECHS Director Only
        i. Describe your role in the school.
        ii. Describe your role in relation to the principal.
    b. Brownsville HS Principal Only
        i. Describe your role in relation to the ECHS Director.
3. Are there other initiatives taking place in your school? How does your work on the Early College initiative align with your other work?
4. Describe your experience with the leadership coaching (*Denver – Accountability and implementation consultant; TX – CIF Implementation Facilitator*). What does the leadership coach/accountability and implementation consultant do?
    a. In your school, who does the leadership coach/accountability and implementation consultant work with?
    b. *Brownsville/PSJA only* – What is the focus of your work with the CIF implementation Facilitator? The JFF Leadership Coach?
    c. What has been the impact of the coaching?
        i. What has been the influence, if any, of the leadership coach on your school's organizational capacity (i.e. leadership skills, examining data, school culture, school improvement planning, etc.)?
5. Describe your experience with the instructional coaching. What do the instructional coaches do?
    a. With whom do the instructional coaches work?
        i. How were those individuals selected?
        ii. Have all staff members had an opportunity to be coached?
    b. What has been the impact of the instructional coaching?

c. What seems to be the difference between teachers who are more responsive to the instructional coaching and those who are less responsive?

6. Related to this initiative, what other services/tools have your and your staff received? Were there services you wish were included?
7. The Early College grant (Denver)/i3 grant (Texas) focuses on six instructional practices (Common Instructional Framework): Collaborative Group Work, Writing to Learn, Scaffolding, Questioning, Classroom Talk, and Literacy Groups.
    a. To what extent have these practices been implemented in your school?
        i. What has been the impact of the Common Instructional Framework in your school?
    b. Which practices have proved challenging?
    c. In classrooms where there have been changes, what have been the students' reactions to the change in instruction?
8. A core aspect of the model is providing a College Headstart, including access to college courses, creating a college-going culture, and providing assistance with college applications. What strategies is your school using to provide a College Headstart?
9. *Denver Only* – We know that your school participated in the Middle School Curriculum Training/Work Session. What aspects of the middle school curriculum have been implemented in the school?
10. What type of work have you done with the middle school/high school (i.e., vertical alignment, joint planning, etc.)?
    a. Describe any communication between the middle and high school around preparing middle school students to succeed in high school (i.e. study skills, pre-college prep courses, etc.).
11. What partnerships (postsecondary institutions, business) does your school have in place? What programs do your partners assist with?
12. What kinds of conversations are you having around student data?
    a. Is it a part of the Early College professional development?
    b. Are the conversations across content area and/or grade level?
    c. What kind of data do you receive from your college partners?

13. What changes have occurred in your school so far as a result of the Early College grant (Denver)/i3 grant (Texas)?
14. What challenges have you faced in implementing the Early College grant (Denver)/i3 grant (Texas) so far? How have you been able to resolve them or what help do you need in resolving them?
15. As you know this is the last year of the grant, what parts of the work do you think will continue after the grant ends?
    a. What do you see schools/districts doing to prepare themselves to sustain the work of the grant moving forward?
    b. What parts do you think won't continue? Why?
    c. What is the role of the external partners in sustainability?
16. What lessons have you learned from implementing the project so far?
    a. Reflecting back on the last three years, what recommendations do you have for improving the program?

Appendix F: ECEP Implementation Survey

School: _____ Date: _____

Your school is participating in a project led by the Early College Expansion Partnership (ECEP). This survey is designed to measure your school experiences in areas that the project is designed to influence. We will use this information to describe what schools are doing. We also hope to connect this information to student outcomes and determine which aspects of the program are most critical. As a result, we ask you to be very honest in reporting what is actually happening in your school.

Please do your best to answer questions based on your knowledge; if there is a question you absolutely cannot answer, please skip that question.

We will also share a summary of the results of this survey with your individual school for school improvement planning. However, the results will not be broken out by position. As a result, this survey is anonymous and will not be traced back to you.

Thank you very much for your time.

For comparison group:

Your school is participating in a study designed to understand the implementation of a specific reform effort. Your school is not participating in this reform effort but your school is similar to other schools that are. This survey is designed to measure your school's experiences in a variety of areas that are targeted by the reform we are studying. We will use the survey information to understand if the reform is working. If it is working, we want to understand which aspects are most critical. As a result, we ask you to be very honest in reporting what is actually happening in your school.

Please do your best to answer questions based on your knowledge; if there is a question you absolutely cannot answer, please skip that question.

We will also share a summary of the results of this survey with your individual school for use in your school improvement planning. However, the results will not be broken out by position. As a result, this survey is anonymous and will not be traced back to you.

Thank you very much for your time.

1. What is your role in this school? *(Please choose the ONE that <u>most</u> applies.)*

- ○ Administrator (go to Q2)
- ○ Support Staff (skip to College Readiness)
- ○ Teacher (skip to College Readiness)
- ○ Instructional Coach (skip to College Readiness)
- ○ Counselor (go to Q2)
- ○ Other_____(skip to College Readiness)

College Headstart

2. Below is a list of courses. Please identify the kinds of courses that would be on a typical class schedule for two sets of first-time 9th-grade students: those students who are below grade level and those students who are on grade level. (In cases of a structured sequence of courses or a bridge course leading to a higher level course in the same year, please mark the highest level course a typical student could expect to take in 9th grade.)

	<u>A below-grade-level</u> 9th grader would have:	*<u>An on-grade-level</u> 9th grader would have:*
a. English/Language Arts: Remedial English/English I or a higher course	○	○
b. Mathematics: Introductory Mathematics/ Algebra I or Integrated Mathematics I or higher	○	○
c. Science: Biology, a Physical Science, or Earth/Environmental Science/ No science	○	○
d. Social Sciences: World History, Civics and Economics, or US History/No Social Studies	○	○
e. Foreign Language: Foreign language/ No foreign language	○	○

3. This year, what percentage of your students *(Mark <u>one</u> for each question.)*:

	Less than 25%	26-49%	50-74%	75-99%	100%
a. Were enrolled in honors courses?	O	O	O	O	O
b. Were enrolled in Advanced Placement courses?	O	O	O	O	O
c. Were enrolled in dual enrollment courses?	O	O	O	O	O
d. Were enrolled in college-credit earning courses?	O	O	O	O	O
e. Were enrolled in STEM pathways?	O	O	O	O	O
f. Were enrolled in Career and Technical Education (CTE) pathways?	O	O	O	O	O
g. Were on track to meet minimum admission standards for the university system?	O	O	O	O	O
h. Were on track to earn 12+ college credits?	O	O	O	O	O

College Readiness

The following questions concern curriculum and instruction in your school.

4. This question asks you to report on your instructional practices. **Note: If you are an administrator please answer this question relative to the teaching practices of most teachers in your school *(Mark <u>one</u> for each question.)***

This school year, how frequently have you…	*Never*	*A few times this year*	*Once or twice a month*	*Once or twice a week*	*Almost every day*
a. Asked students to solve problems based on life outside of school?	O	O	O	O	O
b. Had students work together on projects or assignments?	O	O	O	O	O
c. Emphasized making connections between what goes on inside and outside of school?	O	O	O	O	O
d. Made connections between what's covered in your class and what's covered in other classes?	O	O	O	O	O
e. Asked students to defend their own ideas or point of view in writing or in a discussion?	O	O	O	O	O
f. Asked students to write more than 5 pages on a topic?	O	O	O	O	O
g. Asked students to explain their thinking?	O	O	O	O	O
h. Asked students to apply what they have learned to solve a new problem?	O	O	O	O	O
i. Asked students to engage in in-depth discussions about what they have read or learned?	O	O	O	O	O

This school year, how frequently have you…	*Never*	*A few times this year*	*Once or twice a month*	*Once or twice a week*	*Almost every day*
j. Asked students to analyze or interpret documents or data?	○	○	○	○	○
k. Asked students to do a formal oral presentation?	○	○	○	○	○
l. Expected students to take detailed notes on a lecture or presentation?	○	○	○	○	○
m. Worked with students on time management and study skills?	○	○	○	○	○
n. Asked students to communicate what they had learned in writing?	○	○	○	○	○
o. Asked students to read difficult or complex texts?	○	○	○	○	○
p. Used rubrics to grade students' work?	○	○	○	○	○
q. Explained your expectations for an assignment up front?	○	○	○	○	○
r. Given students feedback or comments on their work **before** they turned it in for a grade?	○	○	○	○	○
s. Provided models or exemplars so students could see high-quality work?	○	○	○	○	○
t. Taught students note-taking skills and/or note-taking strategies?	○	○	○	○	○

This school year, how frequently have you…	*Never*	*A few times this year*	*Once or twice a month*	*Once or twice a week*	*Almost every day*
u. Asked students to assess their own work?	○	○	○	○	○
v. Asked students to assess their peers' work?	○	○	○	○	○
w. Modeled questioning for students?	○	○	○	○	○
x. Encouraged students to ask good questions?	○	○	○	○	○
y. Used student-developed questions to guide discussions?	○	○	○	○	○
z. Grouped students based on data?	○	○	○	○	○
aa. Modeled the different types of questions particular to your subject and when to use them?	○	○	○	○	○
bb. Create literacy groups that match students with the appropriate text?	○	○	○	○	○

Student Supports

The next set of questions focus on aspects of personalization and affective and academic supports for students.

5. Please estimate the percentage of students for whom the school provides the following services. *(Mark <u>one</u> for each question.)*

	0%	*Less than 25%*	*26-49%*	*50-75%*	*Greater than 75%*
a. Advising on courses to take to get ready for college	O	O	O	O	O
b. Advising on choosing college classes	O	O	O	O	O
c. College exam preparation (test-taking skills for SAT/PSAT, ACT, Accuplacer or other college placement exams)	O	O	O	O	O
d. Advising on skills students need in college (e.g. notetaking skills, time management, self-advocacy, etc.)	O	O	O	O	O
e. Have college faculty present about expectations in college	O	O	O	O	O
f. Tours of college campuses	O	O	O	O	O
g. Advising parents about college admissions and financial aid	O	O	O	O	O
h. Helping students through the college admissions process.	O	O	O	O	O
i. Helping students through the financial aid process	O	O	O	O	O
j. Sessions or classes to help students cope with social or	O	O	O	O	O

	0%	Less than 25%	26-49%	50-75%	Greater than 75%
emotional issues					
k. Academic tutoring connected to a specific class	O	O	O	O	O
l. Small-group and individualized instruction	O	O	O	O	O
m. Summer orientation or bridge sessions for entering students	O	O	O	O	O
n. Other: _____	O	O	O	O	O

6. Please mark the extent to which the following statements about the relationships in this school are true.

	Not true at all	Somewhat true	Mostly true	Entirely true
a. The family and home life of each student is known to at least one faculty or staff member in this school.	O	O	O	O
b. Faculty or staff members follow up when students miss their classes.	O	O	O	O
c. Faculty and staff members respect all the students in this school.	O	O	O	O
d. Students respect all the faculty and staff members in this school.	O	O	O	O
e. Faculty and staff in this school care whether or not students come to school.	O	O	O	O
f. Other:_____	O	O	O	O

7. How often do the following events around students and their families take place?

	Never	*A few times a year*	*About once or twice a month*	*About once a week*	*More than once a week*
a. Mentors or advisers meet with students	O	O	O	O	O
b. School faculty and staff meet with each other to discuss students.	O	O	O	O	O
c. School faculty and staff meet or talk with parents.	O	O	O	O	O
d. School faculty and staff visits the homes of students.	O	O	O	O	O
e. Parents meet with each other in groups established by the school.	O	O	O	O	O
f. Attempts are made to communicate with parents who do not speak English.	O	O	O	O	O

8. How much do you agree with the following statements? *(Please choose the ONE that <u>most</u> applies.) Please note - we define postsecondary education or training as: 2-year college, 4-year college, technical college, or postsecondary credential.*

	Strongly Disagree	*Disagree*	*Agree*	*Strongly Agree*
a. The faculty and staff in this school expect every student to receive postsecondary education or training.	O	O	O	O
b. All faculty and staff in this school believe that, if given enough support, all students can successfully complete college preparatory courses.	O	O	O	O

	Strongly Disagree	*Disagree*	*Agree*	*Strongly Agree*
c. The faculty and staff at the school explicitly and purposefully focus on postsecondary aspirations	O	O	O	O
d. The faculty and staff at the school focus on specific activities that lead to enrollment in a postsecondary institution.	O	O	O	O
e. The vision of this school is tied to preparing every student for postsecondary education without remediation.	O	O	O	O
f. The school does activities designed to get all students to think of themselves as students who can succeed in a postsecondary institution.	O	O	O	O

Professional Working Environment

These set of questions cover issues such as collaboration and professional development.

9. How frequently do you collaborate with other school staff on the following: *(Mark <u>one</u> for each question.)*

	Never	*A few times this year*	*Once or twice a month*	*Once or twice a week*	*Almost every day*
a. Lesson or unit planning	O	O	O	O	O
b. Logistical issues (e.g. planning field trips, ordering materials, etc.)	O	O	O	O	O
c. Student behavior	O	O	O	O	O
d. Assessments	O	O	O	O	O
e. Peer observations & feedback	O	O	O	O	O

f. Content learning	○	○	○	○	○
g. Instruction/instructional strategies	○	○	○	○	○
h. Individual student needs	○	○	○	○	○

10. How frequently do you participate in the following activities? *(Mark <u>one</u> for each question.)*

	Never	*A few times this year*	*Once or twice a month*	*Once or twice a week*	*Almost every day*
a. On-site coaching	○	○	○	○	○
b. Joint planning or collaboration with other staff at my school	○	○	○	○	○
c. Professional Learning Communities (e.g. data teams, critical friends, study groups, etc.)	○	○	○	○	○
d. Observing other classrooms in my school	○	○	○	○	○
e. Workshops/Institutes	○	○	○	○	○
f. Joint planning or collaboration with individuals outside of my school	○	○	○	○	○
g. Online communities of practice	○	○	○	○	○
h. Webinars	○	○	○	○	○
i. Graduate courses	○	○	○	○	○
j. Other professional development_____	○	○	○	○	○

11. How much professional development have you received in the following areas over the past year?

	None	*A single presentation*	*Multiple sessions*	*Multiple sessions with on-site follow-up*
a. General instructional strategies	○	○	○	○
b. Leadership practices	○	○	○	○
c. Data-driven instruction	○	○	○	○
d. College and career readiness (e.g. course selection, time management, etc.)	○	○	○	○
e. Peer collaboration	○	○	○	○
f. Other: _____	○	○	○	○

Data Use

12. How frequently do you participate in the following activities?*(Mark <u>one</u> for each question.)*

	Never	*A few times this year*	*Once or twice a month*	*Once or twice a week*	*Almost every day*
a. Communicate with other school staff on data use.	○	○	○	○	○
b. Communicate with leadership on data use.	○	○	○	○	○
c. Analyze student progress or performance data.					
d. Utilize results of assessments	○	○	○	○	○

e. Use data to make decisions about modifying instructional practices.	○	○	○	○	○

Postsecondary Partnerships

The following questions concern any postsecondary partnerships your school may have.

13. Do you have a formal relationship with your local postsecondary institution? *If the answer is "YES," then the participant is led to the next question. If NO, then question #14 is skipped.*

14. Please check the services your local postsecondary institution provided you last year.

	Financial Support	*Provide internships*	*Mentor or tutor*	*Serve as guest speakers/guest instructors*	*Provide curriculum materials*	*Provide access to dual credit/college-credit courses*	*Provide other resources*
a. 4-year institutions	○	○	○	○	○	○	○
b. 2-year institutions	○	○	○	○	○	○	○
c. Technical Colleges	○	○	○	○	○	○	○
d. Other_____	○	○	○	○	○	○	○

School Improvement Efforts

15. **(Principals only)** Please list and briefly describe any school-level interventions or other key school improvement efforts occurring in your school. *[Text box]*

Leadership

The following question asks about your schools leadership team practices.

16. Please indicate the extent to which you agree or disagree with the following statements about the leadership team at your school:

The leadership team:	*Strongly Disagree*	*Disagree*	*Agree*	*Strongly Agree*
a. Provides effective leadership at this school.	O	O	O	O
b. Monitors instruction on a regular basis.	O	O	O	O
c. Provides feedback to teachers about instructional practices.	O	O	O	O
d. Creates an environment where all staff are responsible for student learning.	O	O	O	O
e. Communicates high expectations for all students.	O	O	O	O
f. Facilitates using data to improve student learning.	O	O	O	O

Instructional and Leadership Coaches

Have you received services from an **instructional coach**? *If the answer is "YES," then the participant is led to the question. If NO, then question skipped.*

17. Please indicate the extent to which you agree or disagree with the following statements about the role of instructional coaches at your school:

The instructional coaches:	*Strongly Disagree*	*Disagree*	*Agree*	*Strongly Agree*
a. Help teachers incorporate effective instructional practices into the classroom.	O	O	O	O
b. Help teachers and staff implement student support services	O	O	O	O
c. Model effective instructional strategies in the classrooms	O	O	O	O
d. Provide effective professional development in the schools.	O	O	O	O

e. Provide feedback on a regular basis.	O	O	O	O
f. Work with teachers to plan lessons	O	O	O	O

18. What has been the most beneficial aspect of the coaching? Why?

19. What has been the least beneficial aspect of the coaching? Why?

Have you received services from a **leadership coach**? *If the answer is "YES," then the participant is led to the question. If NO, then question skipped.*

20. Please indicate the extent to which you agree or disagree with the following statements about the leadership coaches at your school:

The leadership coaches provide professional development around:	*Strongly Disagree*	*Disagree*	*Agree*	*Strongly Agree*
a. Planning, implementing and managing effective instruction	O	O	O	O
b. Classroom observations and assessing instruction	O	O	O	O
c. Planning, implementing and managing postsecondary partnerships	O	O	O	O
d. Planning, implementing and managing the school's college-going culture	O	O	O	O
e. Using data to improve instruction	O	O	O	O

21. What has been the most beneficial aspect of the coaching? Why?

22. What has been the least beneficial aspect of the coaching? Why?

Demographic Information

Please tell us a bit about your background.

23. Number of years of experience in education: _____

24. Number of years in current role at any school (as administrator, counselor or faculty): _____

25. Number of years in current role at the current school: _____

THANK YOU FOR YOUR TIME!!!

June 2018

Implementation Supports of the Early College Expansion Partnership

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IMPLEMENTATION SUPPORTS OF THE EARLY COLLEGE EXPANSION PARTNERSHIP

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Disclaimer:

The opinions expressed in this report are reflective of the authors and do not represent the views or opinions of other individuals within the SERVE Center, the University of North Carolina at Greensboro, the University of Denver or Jobs for the Future.

Background Information about the SERVE Center

The SERVE Center at the University of North Carolina at Greensboro (UNCG) is a university-based research, development, dissemination, evaluation, and technical assistance center. Its mission is to support and promote teaching and learning excellence in the education community.

Since its inception in 1990, SERVE has been awarded over $200 million in contracts and grants. It has successfully managed 14 major awards including four consecutive contracts for the Regional Educational Laboratory for the Southeast (REL-SE) funded by the Institute of Education Sciences (IES) at the US Department of Education (USED) and four awards from USED for the National Center for Homeless Education (NCHE). In addition, past SERVE awards include a five-year Technology Grant for Coordinating Teaching and Learning in Migrant Communities, three consecutive contracts as the Eisenhower Consortium for Mathematics and Science Education for the Southeast, and two consecutive Regional Technology in Education Consortium grants.

At the national level, SERVE operates the National Center for Homeless Education (NCHE), USED's technical assistance and information dissemination center in the area of homeless education. NCHE uses state-of-the-art technology for web communication and online professional development and for supporting state coordinators of homeless education, local program coordinators, educators, parents, and advocates in all 50 states and in 15,000 school districts.

In addition to national-level NCHE activities, SERVE currently conducts research studies and evaluations under grants and contracts with federal, state, and local education agencies. Examples of SERVE's grant-funded research work include three federally funded studies of the impact of Early College high schools. Contract work includes evaluations of five Investing in Innovation (i3) projects, the Winston-Salem/Forsyth County Magnet Program in North Carolina, the Guilford County Schools teacher incentive program (Mission Possible), the USED-funded Bridges to Early Learning Project in South Carolina, and North Carolina's Race to the Top Initiative. The *Guiding Principles for Evaluators* (American Evaluation Association, 2004) and the *What Works Clearinghouse Standards* (Institution of Education Sciences, March, 2014) guide the evaluation work performed at the SERVE Center.

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IMPLEMENTATION SUPPORTS OF THE EARLY COLLEGE EXPANSION PARTNERSHIP

Section I: Introduction and Overview

The changing U.S. economy means that jobs that pay a living wage are more likely to require some form of postsecondary education (Carnevale & Desrochers, 2003; Carnevale, Smith, & Strohl, 2010). Yet, concerns remain that too few students are successfully earning postsecondary credentials. In response to these concerns, educators and policymakers have been exploring a variety of efforts at the high school level to increase students' likelihood of enrolling and succeeding in postsecondary education. One of the most successful of these models has been the Early College.

As originally conceptualized, Early Colleges were small schools focused purposefully on college readiness for all students. Frequently located on college campuses, Early Colleges targeted students who might face challenges in postsecondary education, including students who were the first in their family to go to college, low-income students, English Language Learners, or students who are members of racial or ethnic groups underrepresented in college. Early Colleges served students starting in 9th grade and the goal was to have students graduate in four or five years with a high school diploma and a postsecondary credential (an associate degree) or two years of transferable college credit. Supported by an initial investment by the Bill and Melinda Gates Foundation, the small Early College model expanded across the country.

This model has been the subject of three rigorous longitudinal experimental studies funded by the U.S. Department of Education and led by SERVE Center at UNCG and an experimental study conducted by the American Institutes of Research. These studies found that the Early College model had positive impacts on a variety of outcomes, including staying in school, progressing in college-preparatory courses, graduating from high school, and enrolling in and graduating from college (Berger et al., 2013; Edmunds, Bernstein, Unlu, Glennie, & Smith, 2013; Edmunds et al., 2012; Edmunds et al., 2017; Edmunds, Willse, Arshavsky, & Dallas, 2013).

Although the model has been successful, practitioners have been concerned about the extent to which a model composed of small schools on college campuses could be expanded to serve large numbers of students. As a result, there have been increasing efforts to explore the possibility of transforming regular comprehensive high schools into Early Colleges. The Early College Expansion Partnership (ECEP) is one of the first large-scale efforts to apply Early College strategies in comprehensive high schools.

Supported by a $15 million grant from U.S. Department of Education's Investing in Innovation (i3) program, ECEP was designed to increase the number of students graduating from high school prepared for enrollment and success in postsecondary education. The project sought to

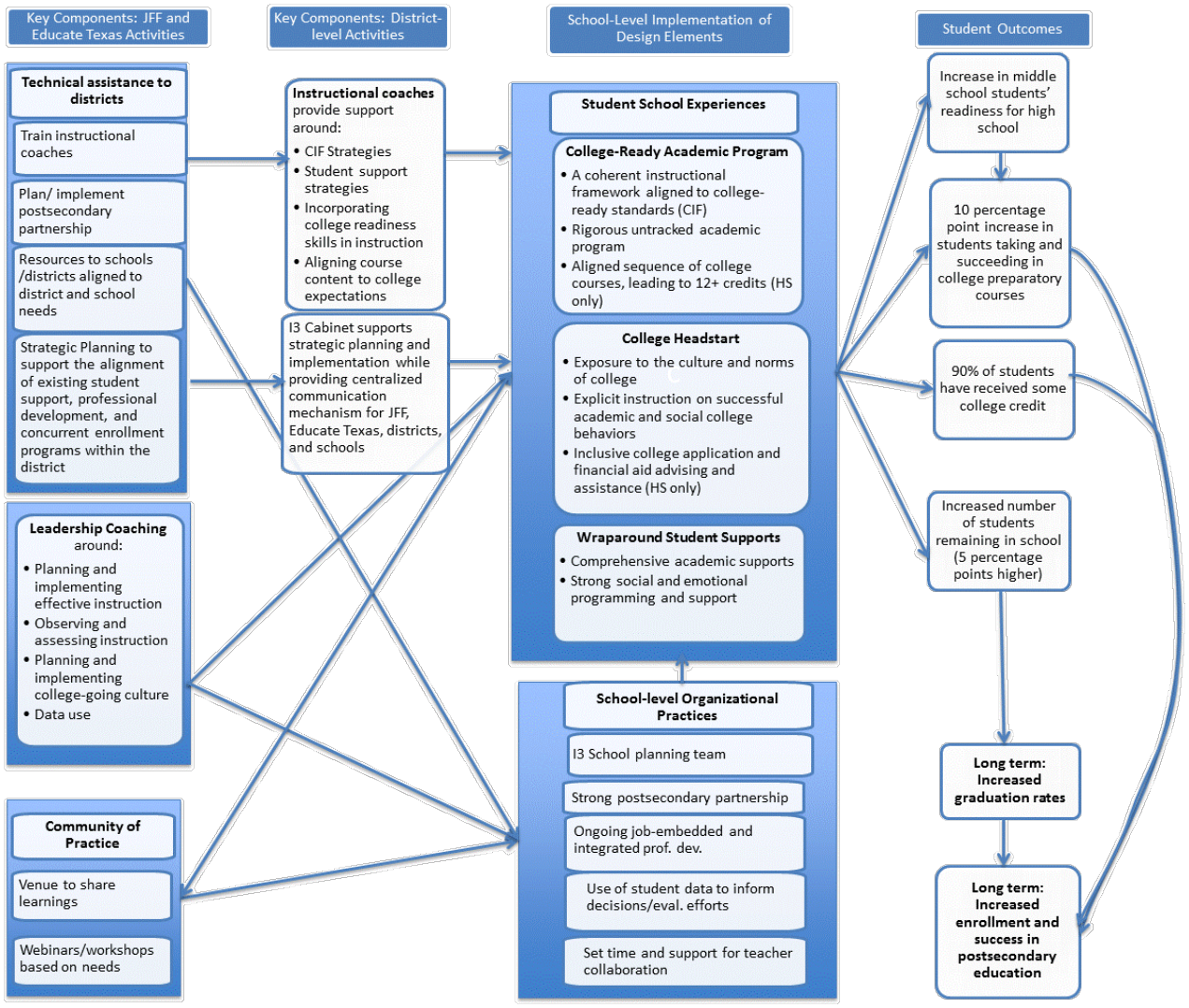
blend high school and college by applying strategies from the successful Early College high school model to 14 middle schools, 12 high schools, and two 6th-12th-grade schools in three districts in two states: Colorado and Texas.

ECEP implemented an adapted version of the Early College model. Key adaptations from the original design included the following:

- ECEP implemented the model in existing comprehensive high schools. In the schools included in the experimental studies, the model has only been implemented in small schools, almost all of which were new and most of which were on college campuses.
- Original Early Colleges were schools of choice to which a student had to apply. All schools engaged in some level of screening of applicants. In addition, most schools had substantial control over hiring of staff. This was not the case with the traditional high schools implementing ECEP.

ECEP was a collaborative effort, involving Jobs for the Future (JFF), Educate Texas, and the school districts of Denver, Colorado, and Pharr-San Juan-Alamo (PSJA) and Brownsville Independent School District, both in the Rio Grande Valley area of Texas. The program provided a set of services that supported implementation of a whole-school reform model emphasizing the creation of a college-preparatory school environment. The services provided included: (1) technical assistance to districts around strategic planning, alignment of resources, and the creation of postsecondary partnerships; (2) on-site leadership coaching for school administrative teams around the ECEP Design Elements; (3) an online Community of Practice organized by JFF; (4) on-site instructional coaching with an emphasis on a core set of instructional practices; and (5) an i3 Cabinet or district-level coordinating body to guide the work. As a result of these services, each school was expected to implement four Early College Design Elements. These Early College Design Elements, as articulated by JFF, are as follows: (1) a College Ready Academic Program, (2) a College Headstart, (3) Wraparound Student Supports, and (4) School-Level Organizational Practices that support implementation. A primary emphasis of the program was increasing the number of students who participated in college-credit-bearing courses while in high school. Figure 1 is the ECEP logic model, which graphically represents the program's implementation supports ("Key Components") as well as the anticipated school-level and student-level outcomes.

Figure 1. ECEP Logic Model



This report presents findings relative to implementation of the activities designed to support the model (the first two columns in the logic model). Findings relative to the program impacts (the last two columns of the logic model) are included in a separate report entitled *Transforming Comprehensive High Schools into Early Colleges: The Impacts of the Early College Expansion Project.* The next section of the report describes the district context in which the program was operating, documenting changes that occurred over the life of the grant.

Sections III-VII describe implementation of the five "buckets" of implementation supports: (1) technical assistance to districts, (2) leadership coaching, (3) the Community of Practice, (4) instructional coaching, and (5) the i3 Cabinet. Each section begins with an overarching description of the common activities occurring across the three districts. This broader description is followed by district-specific write-ups that describe how the supports were

adapted for the specific district context. Each section also includes a measure of the Fidelity of Implementation for that activity. Finally, each section concludes with a description of lessons learned, specific to that activity. The descriptions of program activities and the assessment of Fidelity of Implementation draw on data from annual interviews with project and district staff, observations of project activities, and project tracking data entered into a monitoring tool created by JFF.

Section VIII of this report includes a discussion around the extent to which the different supports will be able to be sustained after the grant ends. The final section of the report provides a synthesis of lessons learned from this work and includes participants' recommendations around how to replicate this work in other settings.

Section II: District Context

ECEP was implemented in three districts, two in the Rio Grande Valley of Texas and one in Denver, Colorado. Each district had a different context that affected implementation. This section describes the three different districts and provides an overview of how the project was structured within that district. Further, because paying for dual enrollment courses—as required by the Early College model—can be potentially expensive, we also describe how each district supported these costs.

Denver, Colorado

District Characteristics

Denver is a large, urban district with approximately 87,000 students, 72% of whom qualify for free and reduced-price lunch. The community is very diverse; 58% of students are Hispanic, 14% are African-American, 21% are white, and 3% are Asian. Approximately one-third of students are identified as English Language Learners. Recently, on-time graduation rates experienced a substantial improvement, however, at the start of the project, the on-time graduation rate, was still very low at 58.8% (Denver Public Schools, 2013). The school board identified an specific set of goals related to postsecondary readiness, which included: (1) increasing the number of students enrolled in AP and dual credit classes, (2) improving students' ACT scores, and (3) increasing the high school graduation and postsecondary enrollment rate (Denver Board of Education, 2009). As a result, Denver engaged in concerted efforts to increase students' options for dual enrollment and the ECEP program was seen as a way of accelerating Denver's work in this area.

State and Local Policies

Denver was one of the districts participating in the state-initiated ASCENT program, which gave qualifying students a fifth year of high school during which they could attend one year of community college for free. Students' eligibility for the program was determined in their senior year and required that they (1) complete and pass 12 credit hours of concurrent enrollment college coursework prior to the end of their senior year, (2) have a 2.75 grade point average, (3) be college-ready as determined by SAT/ACT/ACCUPLACER, and (4) submit a one-page essay response and letter of support from a school and/or community leader.

In addition to the ASCENT program, Colorado also created a statewide Early College program in which targeted funds for state-designated Early College High Schools were provided. With those supplemental funds, students could stay in high school for an additional three years as long as they were taking college courses on a college campus. Schools had to apply to be an Early College and had to meet certain criteria in order to be officially designated an Early College High School. The first school in Denver to receive this designation was their existing

Early College. Subsequently, in Year 4 of the project, seven Denver schools applied for Early College designation, five of which were i3 schools. Three of these i3 schools had successful applications and received state designation. As of the end of the current project, district staff indicated plans to scale up Early College designation efforts each year (adding approximately 5 schools each year for the next two years).

Also in Year 4 of ECEP, there were additional statewide changes that impacted the district. Colorado enacted new graduation requirements and the district also made adjustments; beginning in the 2017-18 school year, students had to demonstrate competency in both English and math before they could graduate. The state also started requiring students to take the PSAT in 10th grade and the SAT in 11th grade as a measure of college readiness. Finally, the School Performance Framework was also revised, requiring high schools to be graded on their college and career readiness annually and over time.

There were also local policies that impacted ECEP implementation. In Year 3 of the project, the Denver 2020 Strategic Plan was rolled out by the Board of Education which included a goal relative to college and career readiness. Seven of the i3 schools also had a Youth Career Connect grant; through this award, DPS planned to focus on providing students with STEM pathways that included paid internships or job shadowing opportunities. In addition, beginning in the 2016-17 school year, the district began the process of changing the approach to concurrent enrollment developmental education courses. By 2019-20, developmental education courses will no longer be offered by DPS's largest community college partners. That said, developmental education may still be offered to students who have not met "college-ready" benchmarks, not passed 11th-grade coursework, and have not maintained a 2.75 unweighted cumulative GPA.

Finally, on November 8, 2016, Denver voters approved bond and mill levy measures that would add considerable funding to several educational initiatives. Included in the package was an $8 million investment in college and career readiness opportunities; more specifically,

> [This investment] would provide an opportunity for all students to take one 3-credit hour dual enrollment course, expand student participation by 4,500 students in career pathway programs and over 13,000 in work-based learning opportunities, and provide transportation assistance for low income high school students to access opportunities, such as high-quality schools and internships.[1]

The mill levy also funded concurrent enrollment liaisons; a role that originated with ECEP.

[1] DPS website, http://bond.dpsk12.org//wp-content/uploads/2016/06/2016-Mill-Levy-Ready-for-College-and-Career.pdf

Structure of the Grant

To identify schools for participation in ECEP, Denver requested applications from schools. They selected nine high schools based on their demographics (i.e., whether they served targeted populations) and their readiness to participate in the program (i.e., extent to which they had the systems in place for dual enrollment). For each selected high school, the project also served the middle school most associated with it.[2] According to the initial project director, Denver's goal was to have all its high schools structured as Early College high schools.

Denver's ECEP was a partnership between the district and JFF. The district had a director of Early College, housed in the district's Office of College and Career Readiness. She directly supervised three instructional coaches supported by the district. The director also worked closely with the Director of College Access, who supervised two Early College liaison positions that were supported by the grant. The liaisons were expected to work in the nine i3 schools to get systems in place for concurrent enrollment.

Each district was expected to create an i3 Cabinet to coordinate the work (see Section VII for more information). The i3 Cabinet for Denver fit within the Postsecondary Readiness team within the district, rather than being a standalone committee. The Postsecondary Readiness team consisted of instructional superintendents, the assistant superintendent, and selected executive directors and held monthly meetings. The meetings were expanded once per quarter to include up to 90 additional participants, such as personnel from different post-secondary readiness offices representing programs such as Career Connect, the CTE initiative.

There were also separate concurrent enrollment advisory groups, which included college partners, college liaisons, and high school counselors. These groups focused on systems, structures, and problem-solving (e.g., streamlining the paperwork around taking the Accuplacer exam).

Denver supported three Early College instructional coaches who worked directly with staff in the schools. These coaches visited teachers and were also expected to work with the school-based instructional coaches who were already in place. JFF provided an additional external instructional coach who provided professional development and supported the district coaches. JFF also provided a leadership coach; in DPS, she was called the implementation and accountability coach.

Because Denver had a previously established concurrent enrollment program, postsecondary partnerships were already in place along with college liaisons to help manage those relationships. In fall 2015, the college liaison job description was rewritten to focus specifically

[2] Denver is a fully choice district so traditional middle-high school feeder patterns do not exist.

on the goals of ECEP and new hires were made in 2016. These individuals reported to the concurrent-enrollment manager, and they were responsible for increasing the number of students taking college courses, managing the "flow of information" between DPS and the various partnering Institutions of Higher Education (IHE), and arranging placement testing and assisted with registration issues.

Personnel Changes

Over the course of the grant, Denver experienced substantial turnover in the personnel implementing the project. By Year 2, apart from the project lead/Early College director, there was 100% turnover among the district staff who worked directly with ECEP. Everyone from the assistant superintendent to the executive director of the Office of College and Career Readiness (OCCR) to the Director of College Access Initiatives left the district. There was also turnover at the school level; four i3 schools experienced a change in leadership. DPS also replaced three schools that were initially participating in the grant with three different schools (one middle school and one middle and high school located on the same campus) that were considered more prepared to take advantage of ECEP.

In Year 3, Denver continued to experience changes in personnel and accompanying changes in priorities. The superintendent took a six-month leave of absence. In addition, one of the college liaisons became the concurrent enrollment project manager. That left one full-time college liaison and she was not funded by the i3 grant; therefore, the i3 schools were being served by the concurrent enrollment project manager. Principal turnover also continued, with at least four schools changing principals that year.

As the project continued into Year 4, there were continued changes at the school/campus- and district-levels regarding personnel and organizational structure. At the school/campus-level, there was one new middle school principal and four new high school principals. At the district-level, the superintendent returned from a six-month leave during the summer of 2016. In addition, one of the district's instructional coaches returned to the classroom. The most traumatic occurrence regarding personnel, however, was the unexpected death of the project lead, which occurred as the result of a car accident in August 2016.

After the project lead's passing, some of her responsibilities shifted to one of the instructional coaches, but primary supervision of the project rested with the Executive Director of the Office of College and Career Readiness. In late fall 2016, the position was posted as "Early College Expansion Project Manager-College and Career Readiness Manager" and the instructional coach who had been acting as project lead was hired. By the end of the project, the district had created an Early College Department and hired a new Executive Director. The new department was intended to serve all state-designated Early Colleges and potential Early Colleges (in

addition to the i3 schools). That office now rests underneath the new Division of Secondary Education that serves all middle and high schools.

Paying for College Courses

The funding model in Denver varied depending on whether the instructor was a high school teacher serving as an adjunct for the college versus a full-time college instructor. For cases in which the high school instructor was serving as an adjunct for the college, the state paid the tuition to the higher education institution, which then turned the funds back over to the school district (in accordance with any locally negotiated agreements). For example, community colleges reimbursed tuition at the rate of 105%; however, this was not required. Alternatively, when a student attended a class on a college campus, the district was responsible for the tuition (of note, one of the primary postsecondary partners in the project waived tuition and fees for concurrent enrollment students through 12th grade). For students who were participating in the fifth year ASCENT program or the new seven-year Early College option, the district was responsible for paying that tuition because the schools continued to receive funding from the state for those students, now attending full-time on the college campus. Going forward, the mill levy is expected to cover a substantial portion of the tuition costs.

Brownsville, Texas

District Characteristics

Brownsville, Texas, a district of approximately 50,000 students, borders directly on Mexico. The district is approximately 99% Hispanic with 30% designated as English Language Learners. Brownsville is among the poorest cities in the country with an estimated 96% of its students qualifying for free and reduced-price lunch. Despite its challenges, Brownsville received the 2008 Broad Prize, a $2 million award given to urban districts that improve student achievement and reduce achievement gaps. In 2012, before the ECEP project began, Brownsville's overall cumulative pass rates for the Texas exit exam were very close to the state average, as was its four-year graduation average. That said, Brownsville scored substantially lower than the state average in other assorted measures of college readiness (e.g., the percentage of students completing advanced placement (AP)/dual credit courses, percentage of students passing the AP exams, and the percentage of students graduating college-ready). Brownsville had an Early College high school since 2008, but there was a desire to expand opportunities to more students and create more schools. The assistant superintendent noted that the district's participation in ECEP was driven by the need to do more with rigor and to increase their college-going culture.

State and Local Policies

Texas has a history of being a supportive environment for Early Colleges. According to the Texas Education Agency (TEA) website, their Early College High School model began in 2006, and the

number of schools with the Early College designation has increased annually. In Texas, Early College high schools are "required to serve students who are at risk of dropping out of school, provide an associate's degree or up to 60 hours toward a baccalaureate degree, waive tuition, fees, or required textbooks, comply with all assurances in the application, and adhere to the ECHS Blueprint" (the ECHS Blueprint is a document developed by the TEA to provide Early Colleges with implementation guidance). For a district to operate an Early College, it must apply to the TEA for designation and then reapply each year. The application period is opened each fall, with the TEA sharing information about the application protocol, including deadlines. "Full" (new applicant schools) and "abbreviated" (schools that have previously applied and been designated) applications are typically due in late fall and the results are shared in the spring. Applicant schools are categorized as "Fully Designated," "Provisionally Designated," or "Denied."

Over the years, Texas has continued to enact legislation that supported Early Colleges and provided additional guidance around their implementation. House Bill 5 (passed in 2013) changed the state's graduation requirements and also included policies around CTE pathways, partnerships with institutions of higher education, and graduation plans for all students. The Bill required districts to (1) develop college-preparatory courses in English language arts and mathematics in partnership with at least one institution of higher education (college/university) and (2) develop a course for 12th-grade students who had not met the Texas Success Initiative (TSI) requirements or exemptions. In Year 3 of the project, another legislative change occurred in Texas that benefited both PSJA and Brownsville; the cap was lifted on dual enrollment, meaning any high school student in any grade was eligible to enroll in dual credit courses.

As ECEP was ending, the TEA announced a new ECHS Blueprint, which includes increased expectations for students, to be implemented starting in the 2018-19 academic year. For example, the new Blueprint requires that Early Colleges designated provisionally must have at least 80% of their students completing at least one college-level math and at least one college-level English course and must have 50% of their students earning at least 15 college credits by graduation. The district staff saw these new standards as very challenging and indicated that the changes will likely have an impact on the way in which Early College is implemented in Brownsville.

As a result of the Early College work, there were also two district-level policy changes in Brownsville that provided fiscal support for the Early College work. In November 2016, the school board passed a $1,500 per semester stipend incentive for teaching dual credit courses. In addition, the school board also provided funding flexibility around AP and TSI testing costs.

Structure of the Grant

Brownsville identified three high schools, with their six feeder middle schools, to be served by ECEP. According to the district representative, these three high schools had the highest baseline dual enrollment and the assumption was that they had an infrastructure in place upon which the grant could build. The district also committed its own resources to provide similar services to the other schools in the district, so that all schools would move in a similar direction. By Year 2, all the district's high schools had been officially designated as wall-to-wall Early College High Schools by the state of Texas.

Overall management of the ECEP project was coordinated by the assistant superintendent of curriculum and instruction, a role served by the same individual throughout the life of the project. She also received project management support from additional personnel as described below.

Brownsville established an i3 Cabinet, or central organizing structure, to govern the work. Its initial membership included the superintendent, the area superintendents, representatives from advanced academics, college readiness, the research and data department, the Texas Literacy Initiative, curriculum and instruction, guidance and counseling, special education and bilingual education. Over the course of the ECEP project, membership expanded to include principals, ECHS directors, and postsecondary partners.

Brownsville initially had six external instructional coaches provided by Educate Texas. There were also three district-based instructional coaches that were each assigned to a school cluster (i.e., the high school and its feeder middle schools). Over the life of the grant, the number of external coaches dropped as part of a plan to shift coaching responsibility to the district. More details on the i3 Cabinet and the instructional coaching are provided later in the report.

Brownsville also used some of its grant funds to create a new position—Transition Counselor—in each high school. The role of the Transition Counselor was to promote a college-going culture in the school and to assist students with the college selection and application process. The district also created the role of the lead teacher/dual credit staff person to oversee maintenance of the postsecondary partnerships, monitor TSI testing, and assist the Director of Advanced Academics with other dual enrollment needs.

The college with which Brownsville was primarily partnering underwent a reorganization at the beginning of the grant, with the two-year and four-year programs separating into their own individual institutions. The two-year institution, which was the primary partner for the college courses, had to undergo accreditation as a result of this split. This change caused delays and initial challenges in implementing the program; however, the district also formed partnerships with other colleges in the area and identified online options for students to take college credit courses. In the Year 3, the two-year college attained accreditation.

Personnel Changes

Throughout the life of the ECEP grant, the assistant superintendent of curriculum and instruction (the primary district contact) remained the same, but there were several other leadership changes at both the Central Office and at the school-/campus-level. The superintendent at the outset of Year 1, who introduced the grant to the district, left in Year 2 and an interim superintendent was appointed. Also in Year 2, one high school experienced a complete turnover of their leadership team. In Year 3, the interim superintendent was made permanent. As the district changed leadership, an additional change at the Central Office and school level included the Brownsville ECHS Project Director becoming a principal. In turn, responsibility over the Early College work shifted to the Director of Advanced Academics.

Brownsville's organizational structure also changed; the area superintendents were no longer arranged in clusters (i.e., a high school and its feeder middle schools). They were shifted to area superintendents for each grade span, with two area superintendents having elementary and middle schools alike. In Year 4, there were no district-level changes, however, at the school-/campus-level, there were two new middle school principals as well as new assistant principals and Early College High School Directors.

Paying for College Courses

Brownsville was responsible for paying for tuition, fees, textbooks, and adjunct instructors, although tuition for their primary community college partner was a nominal $5 per student per course. These costs were paid from the district's annual budget. As an additional resource, Texas Southmost College, Brownsville's primary postsecondary partner, committed to utilizing the same textbooks for three years so that the district did not have to pay for new books each year students took courses from that partner; the same agreement was not in place, however, with one of Brownsville's other primary postsecondary partners.

Pharr-San Juan-Alamo District, Texas

District Characteristics

Pharr-San Juan-Alamo (PSJA) is a district of 32,000 students, located in the Rio Grande Valley of Texas. Its population is approximately 99% Hispanic with an estimated 89% qualifying for free and reduced-price lunch. Additionally, 41% of the students are considered English Language Learners. Under the leadership of the superintendent, PSJA had set out to make itself into a district-wide Early College, even prior to the i3 grant. The district's motto is College^3—College Ready, College Connected, and College Completed. Prior to the i3 grant, PSJA had established a strong Early College presence as the key approach to dealing with low graduation rates and low student achievement. District programs that predated the i3 included one stand-alone Early College with a STEM focus (another Early College focusing on teen mothers was established after the grant began), one school-wide Early College in a traditional high school, three Early

College schools-within-schools and two dropout programs with an Early College focus. As a result of their efforts, the four-year graduation rate increased from 62% for the class of 2007 to 90% for the class of 2012. The district's success at increasing graduation rates has been featured nationally including an article in the New York Times and a story on PBS News Hour. JFF created a monograph describing PSJA's efforts to launch the Early College approach district-wide (Le, 2012).

State and Local Policies

As noted previously, Texas' policies have been very supportive for Early Colleges in the past and PSJA has been able to take advantage of this.

The PSJA superintendent and Board of Education also enacted other local policies that supported the ECEP initiative. In Year 2, the district supported instructional efforts like *The Fundamental 5* and *Teach like a Champion*. In Year 3, all the 9th-grade classes went "wall-to-wall" Early College; thus, all PSJA high schools had an Early College component. The district also established an early alert system. In Year 4, PSJA was awarded two ECHS Demonstration Site Grants by the Texas Education Agency and Education Service Center Region 13.

Also in Year 4, PSJA received and implemented a Teacher Incentive Fund (TIF) grant, which supported implementation of new principal and teacher evaluation measures. In addition to teacher evaluation work, the district was also implementing the Safe and Civil Schools approach (a project funded by the National Institute of Justice/Department of Justice).

Structure of the Grant

The i3 grant was intended to expand the Early College model into the two remaining high schools in the district that did not have an Early College focus. The grant also served the four feeder middle schools for these high schools.

The PSJA superintendent was the overall leader of ECEP, but he tasked a district-level coordinator with the responsibility of managing the project. They created an i3 Cabinet, or district-level entity that was responsible for coordinating the ECEP efforts within the district. Membership in the i3 Cabinet included key district individuals (e.g., the superintendent; the district coordinator; district administrators in charge of high schools, middle schools, career and technical education, college readiness, public relations; the head of instructional coaching; and a representative from the college partner). The i3 Cabinet also had a set of action groups focusing on topics such as professional development, data, budgeting, rigor, and curriculum and instruction. These action groups included district staff with expertise and responsibilities in these areas.

In terms of the services provided, Educate Texas (EdTX) hired and trained a set of four instructional coaches. These coaches were considered external and worked directly with

teachers. They also provided support to the instructional coaches who had been hired by the district. Each school had at least one school-based instructional coach. Leadership coaching was provided by JFF. More detail on the coaching is provided in a separate section below.

PSJA also created the role of college liaison/transition counselor; these staff members worked as college advisors. They examined students' TSI scores and determined the best college courses for students. They were also in charge of students' degree plans.

Because PSJA was already focused on Early Colleges, it had well-established postsecondary partnerships in place, particularly with South Texas College.

Personnel Changes

Although the superintendent remained throughout the grant, there were numerous other leadership changes at both the Central Office and school-/campus-level. In Year 2, the district hired a new deputy superintendent who became the primary point of contact for the i3 work. He was supported by a new College Readiness Director, who guided the work related specifically to college coursetaking. In the following year, PSJA hired a new director of instructional coaches and director of counseling. In Year 4, the director of college readiness and the director of counseling were reclassified to become the administrator for counseling and college readiness, a single senior-staff position. There was also continuous leadership turnover at the school-/campus-level; changes in principals, deans of instruction, instructional coaches and/or whole leadership teams.

Paying for College Courses

PSJA established an agreement with its primary postsecondary partner (South Texas College), who agreed to waive tuition for courses taught either by district-funded adjunct faculty or on the college campus. The college would then be reimbursed for the tuition expenses from the state in two years, when their state funding is allocated based on the number of students taking courses. However, although the tuition is still waived, if the college sent an instructor to the high school, the district was required to pay for the instructor. The district also paid for textbooks, fees, and transportation for students out of their annual budget.

As described in this section, the district context influenced the implementation of the ECEP project, both in terms of providing support (e.g., via state and/or local policies) and presenting challenges (e.g., staff turnover). The next sections of the report present the implementation supports that were in place for each district.

Section III: Technical Assistance to Districts

Overview

One of the ECEP Key Components was technical assistance provided to aid districts in implementing the model. In Denver, JFF was the primary support provider for technical assistance. While JFF also provided some assistance to the Texas districts, EdTX was the primary technical support provider for Brownsville and PSJA. As shown in the logic model, there were four main activities that fell within the domain of technical assistance to districts: (1) assistance in strategic planning, (2) training of district-based instructional coaches, (3) assistance in implementing postsecondary partnerships, and (4) resources to school and districts.

In the early stages of the ECEP grant, the technical assistance activities were conceptualized as follows:

- Strategic planning would include supporting the alignment of existing district programs around student support, professional development, and concurrent enrollment with the ECEP initiative.
- Training and professional development of district instructional coaches would be led primarily by JFF in Denver and EdTX in Brownsville and PSJA. In Denver, JFF would train instructional coaches that were hired by the district and would provide ongoing consultation. In Brownsville and PSJA, EdTX would do the same and partner with the district instructional coaches in any meetings they facilitated.
- Although the districts had existing postsecondary partnerships, JFF and EdTX would help districts formalize and strengthen those relationships.
- JFF's Early College High School design work would form the basis of the resources and materials provided to the districts and school teams.

Each of the technical assistance activities is described in more depth below.

Strategic Planning

JFF and EdTX provided technical assistance around strategic planning for the grant. All three districts developed plans to implement the ECEP grant and undertook efforts to align this work with other district initiatives. While some districts worked on an i3-specific strategic plan, others worked on a plan that would become a part of their district's overall strategic plan.

Denver

Given the plethora of initiatives present in the district, the initial district project director and JFF staff first worked on aligning the ECEP initiative with Denver's ongoing work. The project director spoke about the importance of alignment to:

> …maximize our resources around people, time, and money.... I think what a lot of districts do is that they'll tend to have a grant and then it's another layer of another thing. Because we have a lot of things going on in the district and I have been a principal before, I understand the importance of alignment and so my mantra has been how do we complement the work rather than compete with the work.

Towards this effort, the project director met with representatives from multiple, ongoing district initiatives and attempted to align the work whenever there was a natural fit. For example, the district was implementing a revised teacher evaluation system in response to new state requirements. The district project director and JFF staff created a crosswalk between the teacher evaluation system and the ECEP instructional strategies; it showed schools how the ECEP grant helped them meet the teacher evaluation requirements. They completed similar crosswalks for other core initiatives in the district, including their work with English Language Learners and another i3 grant on Collaborative Strategic Reading. One of the core goals of the alignment work was to ensure that everyone was using the same language and reduce confusion among teachers.

South Texas

The technical assistance around strategic planning initially differed in Brownsville versus PSJA. When the grant began, PSJA's strategic plan already included a focus on Early College and college readiness and the superintendent had communicated that vision with their stakeholders. Although Brownsville had already developed a district vision around college readiness, which was guiding much of their work, further alignment was still needed. For example, while they had received a literacy grant that included a coaching component, the coaches in that initiative used slightly different terminology from the ECEP coaches. EdTX assisted the district in developing common terminology that could be used by coaches across both grants. In Year 2, the strategic planning discussions occurred during the i3 Cabinet meetings. During those meetings, there were data discussions, strategic plan drafts were shared, and there were opportunities to modify the plans as needed.

Over the duration of the grant, both JFF and EdTX staff continued to communicate with the districts about the ECEP grant's outcomes, alignment between the i3 grant and the district/schools strategic plans, data sharing, and data analysis. Starting in Year 3, those meetings began to include the topic of sustainability and how the district could continue the work after the end of the grant funding.

Training District-Based Instructional Coaches

Each of the three districts hired instructional coaches to work with their teachers around implementation of the Common Instructional Framework (CIF), the instructional practices targeted in the ECEP model. Part of the technical assistance provided was training and support

for those district-based coaches. This training was structured slightly differently in Denver and in the two Texas districts.

Denver

In Denver, JFF provided an instructional coach who worked with the district-based instructional coaches to develop their expertise and help them frame their work. The JFF coach met with the district-based instructional coaches (as a team and individually) at least once a month face-to-face and communicated with them on an ongoing basis via email and text. When on site, she attended the training sessions the district-based instructional coaches provided to the schools and/or other district coaches (e.g., instructional support personnel teams, teacher effectiveness coaches, building facilitators), provided feedback on the sessions the district-based instructional coaches prepared for the college partners, and visited schools with the district-based instructional coaches and JFF implementation and accountability coach. The JFF instructional coach and the JFF implementation and accountability coach also developed sessions for the district-led i3 principal professional development sessions. She also provided leadership coaching, as needed. During Years 3 and 4, she also worked with the district-based instructional coaches to pilot and implement the JFF Middle School Curriculum (see the resources section).

South Texas

In Brownsville and PSJA, the EdTX project lead and external instructional coaches provided training and support for the full-time internal/campus-based instructional coaches who worked directly with teachers. They met collectively at least once a month—in sessions called "Step-Back Meetings"—for ongoing professional development and organizational updates. The EdTX project lead and instructional coaches developed the agenda and facilitated the meetings. In addition, the internal/campus-based instructional coaches also received individual coaching from the EdTX instructional coaches.

In Year 4, the Step-Back Meetings differed between Brownsville and PSJA. In Brownsville, EdTX continued guiding the monthly meetings. In PSJA, however, EdTX only assisted the instructional coaching department with the monthly Step-Back Meetings; PSJA district staff developed and delivered their own PD.

Postsecondary Partnerships

Technical assistance was expected to be provided around the strengthening and formalizing of postsecondary partnerships. Both JFF and EdTX worked with the districts on improving and, in some cases, establishing new postsecondary partnerships. For example, EdTX assisted Brownsville with an issue that arose with their existing college partner regarding accreditation. EdTX facilitated meetings between the community college and the district, worked on MOUs between both entities, and provided the district with options identifying other postsecondary partnerships (i.e., Texas A&M University-Kingsville). In Denver, colleges eventually reached out

to the district and inquired about expanding their partnerships. For example, Metropolitan State University of Denver had experienced success with Denver students in an English course and wanted to pilot the course as a year-long class.

As the ECEP grant progressed, JFF and EdTX continued preparing district leaders for meetings with their community college partners, but they also supported the districts in a variety of ways. JFF staff worked directly with the DPS project lead and other district leaders on the infrastructure needed to support existing and new college relationships; they did not directly work with the IHEs. EdTX worked directly with the college partners in South Texas as they built a data dashboard that provided the district with high school student data regarding how these students were performing in their college classes.

An early lesson learned was the need for professional development or support for faculty members. Many faculty were not prepared to teach college courses to high school students and needed additional support in that area. Similarly, the ECEP grant expanded the need for high school adjunct faculty and, in turn, those teachers also needed support teaching college courses to high school students. With assistance from JFF and EdTX, all three ECEP districts collaborated with their college partners and provided professional development for full-time and adjunct faculty. The college partners also provided training to the adjunct faculty around college expectations, grading, and resources. The districts provided training to the full-time faculty members on the project's instructional strategies (the CIF).

In the early implementation stages, JFF and EdTX stressed the importance of paying attention to students' postsecondary outcomes, including increased graduation rates and enrollment and success in postsecondary education. Reviewing these data led all three districts to work on building college and career pathways ensuring students earned a degree or certificate; the JFF and EdTX staff provided support in the development of these pathways. Additionally, Denver eventually reduced its reliance on developmental courses so their students would be ready for college courses. As the ECEP grant was ending, there were key personnel in all three districts, including college liaisons, who continued to serve as a bridge between the districts/schools and their college partners.

Providing Resources

The fourth component of technical assistance was the provision of resources to participating districts. JFF and EdTX provided extensive resources to the districts (e.g., resource booklets on the CIF, expanding Early College, and implementing instructional rounds in schools). The JFF resources shared included *Initiating, Developing, And Demonstrating The Common Instructional Framework: For Instructional Coaches and Administrators* (May 2013), *The Common Instructional Framework: Rubrics and Guides for Teachers* (September 2012 & May 2013), *Launching Early College Districtwide: Pharr-San Juan-Alamo's "College for All" Strategy* (March

2012), and *Initiating, Developing, And Demonstrating Rounds: A Guidebook for Teachers, Coaches, and Instructional Leaders in Schools Using the Early College Design Common Instructional Framework* (October 2012). The partners also developed specific tools to assist the districts; for example, in Denver, JFF developed a School Assessment Tool and a Roll-Out Decision-Making Tool to guide their conversations and decisions around implementation. The EdTX and Brownsville instructional coaches created a booklet that included a crosswalk between ECEP and TLI, a description of the CIF strategies, and protocols for each strategy. EdTX also provided resources to PSJA and Brownsville as they developed their data dashboards. As the Community of Practice webinars became more established, the schools and district partners also began sharing their tools and materials when they facilitated sessions.

JFF College and Career Readiness Middle School Curriculum

During Year 3, JFF developed an additional resource related to the goals of the grant. JFF's *College and Career Readiness Middle School Curriculum Modules* focused on (1) teaching content and skills associated with college and career readiness and (2) using the CIF strategies. The curriculum serves Grades 6-8 and includes 28 lesson plans designed for use during a 30-45-minute period. The lesson plans are grouped into five units of study:

1. Getting Started (beginning of the school year)
2. School Skills (common knowledge and behaviors of successful students)
3. Motivation (characteristics of resilient, intrinsically-motivated learners)
4. Goals (making plans and measuring progress), and
5. Pathways (career and postsecondary options)

The curriculum also includes resources that enable teachers to extend a lesson and provides guidance on how to work through the curriculum with an advisory team (the recommended implementation model). Throughout the development process, Denver staff reviewed various components of the curriculum and provided feedback to JFF. The feedback received primarily included the need for more attention to English Language Learners; those revisions were addressed in finalizing the curriculum.

During spring 2016, the curriculum was piloted in one DPS middle school. The JFF external instructional coach and DPS instructional coaches worked closely with the school's leadership with regard to implementation. The middle school implemented the curriculum twice a month during their advisory period. However, these efforts resulted in pushback from teachers because the lessons were structured with set content. Early feedback from teachers indicated that they needed more preparation in terms of adapting the curriculum for their classroom setting. DPS acted upon that feedback and held a two-day summer professional development

session in summer 2016, during which school teams worked with instructional coaches to revise the lessons.

At the end of the grant, middle schools were continuing to implement the curriculum and district staff were building on the curriculum to develop a more comprehensive 6th-12th grade advisory curriculum. The district staff noted that an advisory curriculum has to be completely planned ("turn-key") so that teachers do not have to plan for an additional class.

Summary of Implementation

Over the course of the grant, EdTX and JFF expanded their thinking around technical assistance. EdTX and JFF staff members provided a substantial amount of technical assistance to non-coaching district staff including sessions on the Early College High School Design and workshops on institutional data sharing. In addition, while the role/position of the college liaison was not originally envisioned as part of the program, once those individuals were put into place, they also needed additional support.

The technical assistance work was not only about building human capacity; it was also about changing organizational structures. JFF and EdTX began their work with district staff, but gradually the responsibility for some of the work shifted to other entities (e.g., schools, i3 Cabinet, and/or the Community of Practice). For example, while JFF and EdTX may have primarily provided the initial resources, districts began to share the tools they developed through the online Community of Practice.

The organizational structure at some district offices also changed to allow for continued support of the Early College work. For example, DPS created an Early College Department staffed with the ECEP district instructional coaches that not only supported the i3 schools, but all schools applying for Colorado Early College designation. In Brownsville, the Advanced Academics Department took ownership of ECEP, more specifically, the coursetaking, TSI testing, and relationship-building with the college partners.

Table 1 presents an overview of the technical assistance and how that changed over time.

Table 1. Changes Across Project Years

Indicators	Year 1 2013-14	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
Strategic Planning	• JFF and EdTX focused on alignment with other district initiatives	• In Brownsville and PSJA, strategic planning discussions became a part of the i3 Cabinet meetings	• JFF and EdTX continued to have conversations with the districts about the grant's outcomes, alignment between the i3 grant and the districts'/schools' strategic plans, data sharing, data analysis, and sustainability	• DPS schools used JFF template to complete sustainability plan • EdTX provided sustainability proposal to Brownsville and PSJA
Training of District-Based Instructional Coaches	• JFF instructional coach worked with district instructional coaches in Denver • EdTX staff provided training and support through monthly "Step-Back" Meetings	• JFF and EdTX staff continue support to instructional coaches • EdTX and JFF staff provided technical assistance to non-coaching district staff	• JFF coaches developed sessions for the district-led i3 principal PD in Denver • JFF instructional coach worked with the district instructional coaches to **pilot** the JFF Middle School Curriculum	• JFF instructional coach worked with the district instructional coaches to **implement** the JFF Middle School Curriculum • PSJA developed their own PD for campus-based instructional coaches
Postsecondary Partnerships	• JFF and EdTX worked with the districts on improving their postsecondary partnerships • EdTX helped Brownsville develop a formal MOU with its partner	• EdTX facilitated meetings with colleges and identified another postsecondary partner for Brownsville • DPS began training IHE partners on CIF	• Brownsville and PSJA formalized partnerships with additional colleges • DPS approached by college for an expanded partnership	
Resources	• JFF provided all the resources	• EdTX provided data dashboard resources to Brownsville and PSJA	• Districts and schools began sharing resources via their COP presentations • JFF developed the JFF Middle School Curriculum and it was piloted in DPS	• DPS held a 2-day training on the JFF Middle School Curriculum (schools adapted the lesson plans)

Fidelity of Implementation

Fidelity of Implementation (FOI) was assessed for the implementation of technical assistance annually for Years 2-4. It consisted of four indicators: (1) assistance in strategic planning, (2) training of district-based instructional coaches, (3) establishment of postsecondary partnerships, and (4) provision of resources to the districts. The records used to assess FOI were based on the project leads' and JFF and EdTX instructional coaches' entries in an online project tracking tool developed by JFF. During Years 2-3, FOI for training of district-based instructional coaches was met when the districts received 17-22 days of training annually. In Year 4, the FOI definition changed; the minimum range of days was reduced to 8-12 days. FOI for the other three indicators remained the same and was simply an indication of whether the action had occurred. Table 2 below summarizes FOI for Years 2-4.

Table 2. Summary of Technical Assistance to Districts Fidelity of Implementation

Key Component	Definition of High Implementation	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
Technical Assistance to Districts		**Yes**	**Yes**	**Yes**
Strategic Planning	Strategic Planning and alignment of existing initiatives implemented	Yes	Yes	Yes
JFF & EdTX Training of Instructional Coaches	**Year 1-3** - 75% or more of coaches in a district receive 17-22 training days per year **Year 4** - 75% or more of coaches in a district receive 8-12 training days per year	Yes	Yes	Yes
Plan/Implement Postsecondary Partnership	Postsecondary Partnerships in place	Yes	Yes	Yes
Provide Resources	Resources provided to districts	Yes	Yes	Yes

Lessons Learned

Over the course of the grant, the project staff learned several lessons regarding the provision of technical assistance to the districts: (1) the importance of aligning ECEP with other district initiatives, (2) the need to build higher education capacity to deliver college credit courses, and (3) the need for additional resources.

ECEP was implemented in districts that had multiple initiatives occurring simultaneously. As such, across all three districts, district staff prioritized aligning ECEP with other initiatives already in place. Alignment with other district efforts was considered to be particularly important by those in DPS. As previously reported, DPS project staff sought to align the CIF and other strategies with the local teacher evaluation framework. We also learned that strong alignment with state initiatives assisted with the implementation process. For example, Texas's statewide Early College designation process reinforced and accelerated the ECEP work

occurring in the Texas districts. Being designated as an Early College in Texas not only resulted in schools being able to provide expanded access to college courses, but it also required that schools engaged in a certain set of activities, many of which were consistent with the goals of ECEP.

Another lesson learned was that the development of postsecondary partnerships needed to include consideration of how the partner would meet the capacity challenges posed due to rapid expansion of the number of students taking college courses. Some postsecondary partners were not prepared for this quick growth and could not meet the demand. In addition, training needed to happen within both entities (the district and the college partner); college instructors needed training on instructional practices and high school teachers serving as adjunct faculty needed to understand college expectations. As the grant progressed, the partners and districts had to build those support systems. ECEP also brought to light the difficulty of sharing data both within and across organizations.

A final lesson learned was that it would have been helpful to have more instructional resources to share with district staff and coaches at the outset. Although JFF had some initial documents relative to the CIF, the district and school/campus-based instructional coaches needed additional protocols and tools they could immediately use. Everyone eventually developed their own materials, but the instructional coaches shared that having something at the beginning of the project would have also been helpful.

Section IV: Leadership Coaching

Overview

ECEP was expected to provide leadership coaching to school administrators around (1) creating a college-going culture; (2) planning, implementing, and monitoring effective instruction, and (3) data use. Over the course of the grant, the leadership coaching concept evolved. At the start of the project, JFF created a document that detailed the ECEP Logic Model Components, which included how FOI was defined and outlined the specific services that would be provided and the targeted participants. The document articulated that the role of leadership coaches "is to help the school principal and school planning team plan, implement, and manage effective instruction, postsecondary partnership, and the school's college-going culture." The expectation was that the JFF leadership coaches would observe instruction and review data with school leadership. They would also help middle and high school principals create a school planning team that included their postsecondary partner; and when that team was developed, coach them as well. The level of expected implementation was two days of leadership coaching monthly. In Year 1, the JFF coaches met with the principals once a month for approximately 2-4 hours at a time.

Initially, JFF held sole responsibility for the leadership coaching activities; but formative feedback provided during the first year indicated that school leadership was extremely important for the success of the project and that the coaching provided was useful but not sufficient. Given fiscal constraints that restricted the number of days of leadership coaching, it was recommended that the ECEP partners consider other ways of increasing the attention paid to principals. In recognition of the need for expanded support for school leaders, trainings were provided for the ECEP leadership teams in all three districts. While the leadership coaching for principals remained within the purview of JFF, EdTX and the DPS District Lead began providing additional leadership capacity-building work. In Year 3, EdTX created a new coaching position, the CIF Implementation Facilitator; a coach who would assist principals implementing the CIF.

As the project entered its final year, the targeted numbers of coaching consultations (substantive exchanges including in-person, by phone, and via email) were reduced from 17-22 to 8-12. Due to the high rate of turnover, however, the leadership coaches did spend additional time at those schools where leadership had transitioned. The coaching focus continued to be on developing the leadership skills of the principals, assistant principals, and Early College High School Directors. Coaching in Year 4 also addressed sustainability. While only the JFF implementation and accountability coach in Denver expected a formal written plan, all districts received sustainability coaching.

District-Specific Implementation

The sections below describe how leadership coaching changed over the course of the project across the different districts.

Denver

In Denver, the role of the JFF leadership coach was restructured to play more of a monitoring role, examining the FOI of the grant. This was at the request of the district because principals already had district leadership coaches assigned to them. In the first half of Year 1, the leadership coach focused on understanding the schools and doing tours, summarizing observations for the principals. During ensuing visits, the leadership coach and principal discussed the district's postsecondary readiness goals; subsequent walk-throughs were then centered on collecting and analyzing evidence of college readiness. The leadership coach commented that she often tried to embed some leadership coaching into her reports and conversations with the principals; for example, if the school was struggling with attendance, she would provide sample strategies to address that specific issue.

In Year 2, the JFF leadership coach position was renamed the implementation and accountability coach. She began rotating the schools she worked with, seeing about half of the schools each month, allowing for longer visits at each school. During these visits, the coach led strategic discussions with school leaders focused on the grant's student outcomes and conducted classroom walkthroughs. More specifically, the coach and school leadership examined data related to the concurrent enrollment numbers, college course pass rates, coursetaking patterns, and the dropout rate. The Denver coach summarized her observations and debriefed with the ECEP District Lead before the end of her visits. In addition, she stayed in contact with the JFF external instructional coach and they discussed their respective visits and any needs observed.

Also, during Year 2, DPS began providing additional leadership support. The DPS District Lead provided additional coaching to new principals of ECEP schools because they had come into the grant mid-stream. In addition, the Office of College and Career Readiness created quarterly principal/leadership professional development days, entitled "Early College Leadership Professional Development;" these days involved the DPS District Lead, school leadership teams and the JFF implementation and accountability coach.

In Year 3, the JFF implementation and accountability coach continued to meet with the principals to identify the extent to which the school was attaining the targeted student outcomes, but she also started discussing sustainability. As she described in an interview that year:

> Tomorrow they're going to be given three questions that they have to answer…: What three things do you have in place that are working and will lead to sustainability? What

two things are you working on that with a little tweaking will lead to sustainability? And if you're not there yet, where do you need support and from whom?

She assigned the principals homework that formed the basis of the next visit's conversation, provided resources on sustainability via email, and remained available via email and phone. During her visits to the district, she also continued meeting with the district-based instructional coaches, the concurrent enrollment project manager and the Denver project lead.

During Year 3, Denver continued building their internal support system for principals; they created the position of Differentiated Roles teacher leaders. These teacher leaders taught part-time and coached and evaluated part-time, assisting the school leader in conducting the LEAP (Leading Effective Academic Practice) assessment of teachers' practices. In addition, the district continued to provide quarterly professional development days for school leadership. Also during this year, the project lead conducted visioning work with the principals, and the district took selected principals to the PSJA Early College Conference.

In Year 4, the JFF implementation and accountability coach continued to support school principals by monitoring the progress of grant-related activities and supporting the development of school-level sustainability plans. The coach also continued to have strategic discussions with school leaders focused on student outcomes. Due to the sudden death of the initial district project lead, the quarterly principal/leadership PD days did not occur in fall 2016. However, one session was held in spring 2017 and the JFF leadership and instructional coach both assisted with the day-long professional development. In addition, the district supported principals with the Colorado Early College designation applications and brought principals and school teams for an additional learning tour to South Texas in spring 2017.

South Texas

In Brownsville and PSJA, there were two JFF leadership coaches and they visited their respective districts once every month. During this time, they had approximately 2-2.5-hour face-to-face visits with each principal. With each school leader, they started their work with a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis. This was intended to have the principal examine the entire school, capitalize on strengths, and identify possible problem areas. The coaching sessions were usually one-on-one with the principal, although one coach also brought in assistant principals or assessment team members, as appropriate. The coaches described their job as capacity-building; that is, their role was to build the schools' capacity to plan, teach, assess, learn, and work in teams. During the sessions, the coaches usually focused on different types of data and asked questions that would help the principals develop solutions aligned with the needs identified in the data. They also communicated with the principals via e-mail throughout the month. After each visit, the leadership coaches debriefed with district leadership and shared any trends they observed. As the school year went on, some of their

focus began shifting towards developing principals' leadership skills. While the leadership coach set the agenda, the principal "drove" the meeting, at times taking the lead over certain portions. The principals' recommendations also impacted the next meeting's agenda.

Like Denver, both Brownsville and PSJA supplemented the coaching with additional professional development planned specifically for their Early College and i3 leadership teams. Brownsville held a training session with all their Early College principals and directors that focused on their state's Early College designation applications. Similarly, PSJA hosted a three-day leadership residency in June 2014 for the principals from the i3 schools and their other Early Colleges, with a focus on how to be an instructional leader. JFF trainers participated in the residency and provided sessions on the CIF.

The EdTX project lead also began coaching the Early College high school directors. These were leadership positions required in any Texas schools that had been designated as Early Colleges. However, these directors were not initially included as part of the grant proposal and thus, were not targeted to receive any support from the leadership coaches.

In Year 3, the JFF leadership coaches continued to visit monthly and remained in contact with principals throughout the month. The coaches usually left the principals with homework assignments and also made themselves available via email and phone in between visits. When possible, the coaches debriefed with district leadership and shared the topics covered during the visit. In addition to continuing to meet with principals, in Year 3, leadership coaches began to expand their work to begin offering support to the school leadership teams (when agreed upon with the principal). In PSJA, the conversations with school leadership focused on academic data and leading change. In Brownsville, the coach utilized a thematic approach, and the conversations focused on improving student achievement. The Brownsville coach also tried to incorporate the Texas Principal Evaluation & Support System, the new principal evaluation system, into the professional development.

Because the JFF coaches were limited in the amount of on-site time they could spend with principals, EdTX created a supplemental position for principal support around instruction, the role of a "CIF Implementation Facilitator". As a former instructional coach, the individual hired to be the CIF Implementation Facilitator was already familiar with the leadership in the different schools. She began her work in the winter of 2015 with a goal of providing a "deep dive" around the CIF. She also conducted walkthroughs of classrooms with administrators and modeled the evaluation process; for example, what questions to ask, what student behaviors to look for, and how to offer feedback to teachers. In addition, the EdTX District Lead continued to provide coaching to the Early College High School Directors and assistant principals.

Also during Year 4, an increasing number of leadership development opportunities were made available. Principals were included in the i3 Cabinet and became active participants in the

workgroups/subcommittees. Further, PSJA instituted a Principals' Academy and Brownsville included i3-focused sessions during their August 2015 multi-day district-wide leadership professional development.

During Year 4, the JFF leadership coaches and the EdTX CIF Implementation Facilitator worked independently with the school administrators to align the walkthrough rubrics and other CIF materials to state-mandated observation activities, highlighting commonalities among the instruments. The JFF leadership coaches and the EdTX CIF Implementation Facilitator reported little contact or intentional coordination of activities with each other and indicated that they were not supposed to be on the campus at the same time. Project management believed that this separation was necessary for several reasons: (1) they hoped to respect the time of the principals and their leadership team, (2) they saw the role of the CIF facilitator as different than the role of the leadership coach, and (3) they saw the separation as allowing the JFF leadership coaches to maintain the trust and confidentially that they had developed with the principals and their leadership teams. On the other hand, the coaches themselves noted that they would have liked to have coordinated their efforts more.

Summary of Implementation

At the outset of the project, the purpose of leadership coaching was to guide the principals to develop their own personal leadership skills and help support the implementation of CIF strategies and college coursetaking in their schools. As the project matured, the professional development focus evolved toward greater utilization of state accountability data, data trends, and the use of data to inform administrative actions. The leadership coaches used results from state testing to develop coaching session agendas around the use of data to inform the work of the leadership teams.

Eventually, the principals began to take more ownership of their coaching meeting agendas (e.g., the topics to be covered and when members of their leadership teams would be involved). They also advocated for more support; as such, the districts, JFF, and EdTX provided additional leadership development opportunities.

Essentially, the leadership coaches worked on building principals' capacity for sustaining the grant activities. There was also significant attention paid to the leadership teams and their role in sustainability. When the leadership team met with the coaches, they were not only learning more about CIF, but, like the principal, they were also being trained to become instructional leaders. The coaches had the same conversations around data and coursetaking with the school leadership teams as they did with the principals. In some instances, these other school leaders were also coached by the instructional coaches to better understand the coaching cycle and what to look for during walkthroughs.

A key lesson learned was the importance of leadership at all levels. School-level leadership reinforced the importance of ECEP with school staff. However, it took more than one staff person per district to provide meaningful support for principals and their leadership teams. The table below summarizes the evolution of leadership coaching over the life of the grant.

Table 3. Changes in implementation of Leadership Coaching over time

School District	Year 1 2013-14	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
DPS	• JFF leadership coach focused on trying to understand each school and evidence of college readiness • DPS already had leadership coaches and thus requested that coach focus on FOI monitoring • Coach visited each school every month	• JFF coach renamed implementation and accountability coach • Focused on school data and worked with schools on developing student recordkeeping systems • Visited half the schools every month • DPS created principal PD days • DPS lead provided additional coaching to new ECEP principals	• Denver coach began discussing sustainability with principals • DPS created Differentiated Roles teacher leaders • Principals attended PSJA College for All Conference	• Leadership coaching consultations were reduced • JFF external instructional coach also worked with school principals • Schools completed sustainability plan • DPS supported principals with Colorado EC designation applications
South Texas	• JFF leadership coaches conducted SWOT analysis and examined student achievement data • Coaches visited all schools monthly for 2-2.5 hours	• EdTX project lead also worked with high school Early College Directors • Principals began driving meeting agenda	• EdTX added the role of CIF Implementation Facilitator • JFF leadership coaches used assignments to guide meetings • JFF leadership coaches shared documentation with EdTX project lead and CIF Implementation Facilitator • All principals included in i3 Cabinet and workgroups/ subcommittees	• Leadership coaching consultations were reduced • Additional time devoted to new ECEP principals • JFF leadership coaches and CIF Implementation Facilitator worked independently
Brownsville		• District-led Early College Designation Training Session	• District included i3 sessions at district-wide Leadership PD • JFF LC used thematic approach and examined new Texas principal evaluation system	

School District	Year 1 2013-14	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
PSJA		• District hosted 3-day leadership residency	• District developed Principal's Academy • JFF leadership coach focused on examining student data	

Fidelity of Implementation

Measured annually for Years 2-4, FOI for leadership coaching was assessed by counting the number of coaching consultations middle and high school principals received. The target was 17-22 coaching consultations (substantive exchanges including in-person, by phone, and via email) during Years 2 and 3 and 8-12 coaching consultations for Year 4.

As previously noted, principals were initially supported by only a JFF leadership coach who visited monthly for a week and provided support in between on-site visits. Beginning in Year 2, in addition to principals, school leadership teams also received extra support from their districts. Therefore, leadership coaching was redefined as including any direct support provided specifically for school leadership and those professional development experiences are included in our totals.

The data used to measure FOI came from the leadership coaches' entries in the JFF Reporting Tool. According to project records, for the 2014-15 school year (Year 2), participation in leadership coaching averaged 18 coaching consultation exchanges across all three districts. All nine schools in Brownsville received 17 or more coaching consultations. Five of six schools in PSJA received 17 or more coaching consultations. Thirteen of fifteen schools in DPS received 17 or more coaching consultations. In total, only three schools did not attain full implementation.

From 2015-17 (Years 3 and 4), each school attained full implementation. For the 2015-16 school year, each school in PSJA, Brownsville, and DPS received 17 or more days of leadership coaching; across all three districts, participation in leadership coaching averaged 23 coaching consultation exchanges. During the 2016-17 school year, the coaching consultations were reduced and the FOI goal changed to a minimum required 8-12 substantive coaching consultations. All the schools received 8 or more substantive consultations; across all three districts, participation in leadership coaching averaged 18 substantive contacts. Table 4 shows the targeted and the actual number of consultations for Years 2-4 and the extent to which FOI was meet each year.

Table 4. Fidelity of Implementation, Leadership Coaching, 2014-17

FOI Data	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
# of Schools[a]	29	29	29
Average Targeted Coaching Consultations	17-22	17-22	8-12
Average # of Coaching Consultations	18	23	18
Range of Participation (lowest to highest # of consultations)	15-19	17-33	8-30
Range of % of Consultations Received	88%-111%	100%-194%	100%-375%
% of Schools Meeting FOI	90% (3 districts)	100%	100%

[a]Two schools are 6th-12th-grade schools. One of these schools has a single principal and the other school has two principals, one for the middle school grades and one for the high school grades. Each principal is expected to receive the targeted number of days of coaching.

Lessons Learned

One of the key lessons learned from the ECEP project was the importance of school leadership. As stated by one project staff member after Year 1,

> [The number one lesson learned was] importance of leadership, the need to set the right tone. You [need to] have the proper leaders with the skill set that is needed, somebody that can speak and present and sell, can convince, can motivate, can encourage…that knows instruction. Leadership matters…[at] all levels.

Principals are the gatekeepers to the school and if they did not understand the vision and goals of the grant, it would be difficult for the instructional coaches and others to gain entry and provide services.

Just as staff noted the importance of working with school leadership, they also noted that it was important to work with broader school leadership teams, which all three districts ended up doing. For example, in Texas, a project staff member worked with department heads in the high school because they had influence and authority and were critical partners in implementing and sustaining the initiative. EdTX also helped the school-based Professional Learning Communities with lesson planning and worked with teachers beyond just individual instructional coaching. The Denver instructional coaches ended up working with the instructional support personnel teams, teacher effectiveness coaches, Differentiated Roles teacher leaders, and building facilitators, even though these types of personnel were not included in the initial leadership development activities.

Section V: Community of Practice

Community of Practice Implementation

To provide a venue for collaboration and communication among the ECEP partner districts and schools, JFF created an online Community of Practice (COP) as one of its key project activities. The first year of the ECEP project was spent planning the COP. JFF identified the needs and audience for the COP, investigated possible platforms, and drafted an RFP for vendors to design the online system.

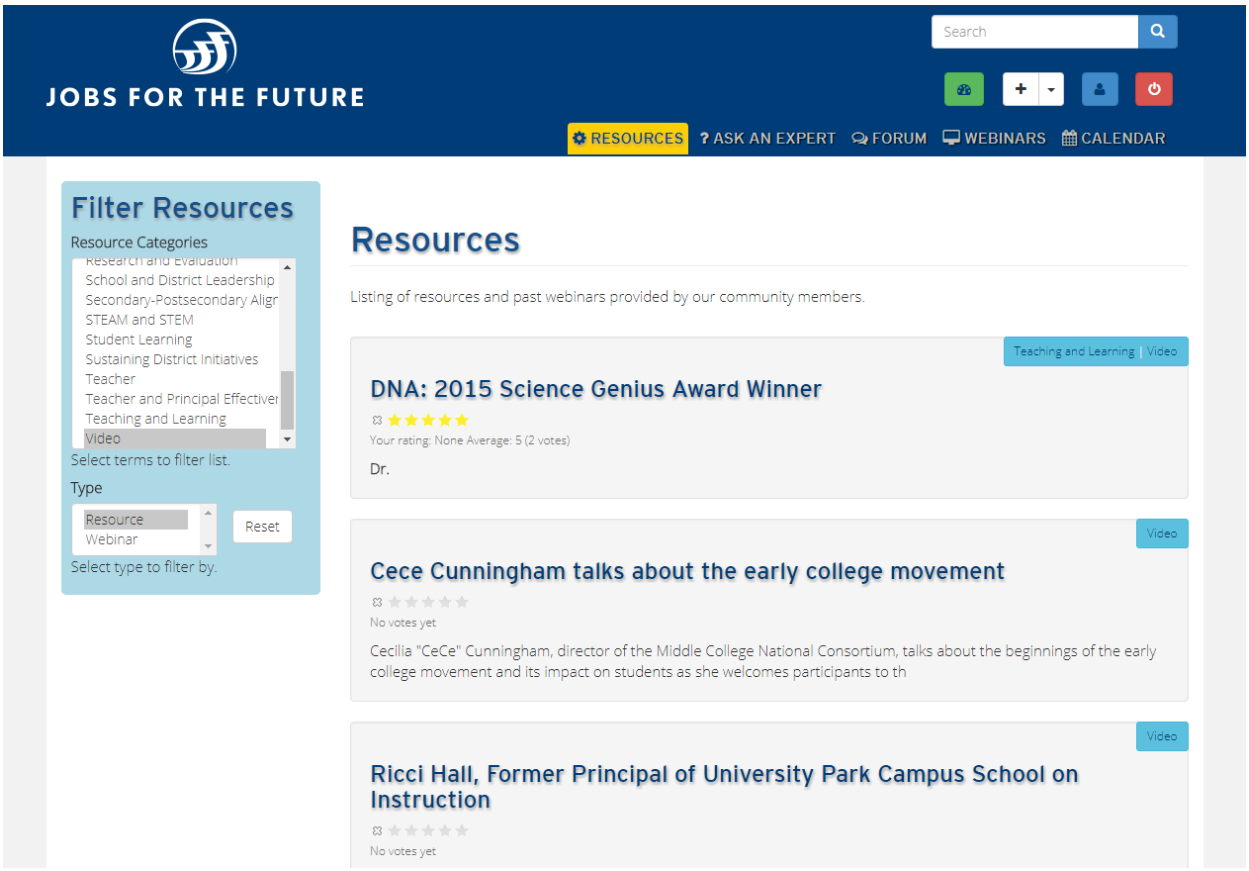
During Year 2, an online system was put in place with access granted to JFF staff (including the instructional and leadership coaches), partnership organizations, and i3-participating districts. The COP included areas where individuals could "ask an expert" or dialogue over various topics ("Forums"). In addition, the intent was that community members would be able to view articles, reports, and past webinars. By the end of Year 2, there were only a limited number of resources available on the COP; it included two policy reports and information about the evaluation design. In its "Tools" section, JFF posted other resources that were primarily related to policy development, needs assessment, and toolkits for use by postsecondary institutions. During spring 2015, additional resources were added, including a toolkit and a newsletter related to the CIF; these resources provided model practices and tools for practitioners. During that same spring, JFF also offered webinars that focused on the instructional coaches' experiences (around CIF implementation) and lessons learned.

In addition to creating an online system, the FOI measures indicated an expectation the offerings of the COP would be guided by a plan. JFF staff distributed a needs assessment survey during the spring of 2015 and the results of that survey were used to develop the 2015-16 COP Implementation Plan. In addition to expanding the professional development offerings, the plan identified five key activities for 2015-16: (1) implementation guidance for LEAs, (2) establishment of a COP Core Planning Team, (3) establishment of a Participant Planning Team, (4) development of a monthly newsletter, and (5) development of an online conference. As of summer 2015, an online network planning group had been identified and an annual plan was established for peer learning.

In the original conceptualization of the operation of the COP, JFF expected that each partnering district would develop their own page and highlight events and resources relevant for their stakeholders. This structure was ultimately seen as too unwieldy and so the COP was redesigned and a new website/portal was launched in fall 2015. The redesigned version of the COP included an overall planning team that organized the webinars and assisted the assigned presenters. This new structure gave everyone the opportunity to upload information; in addition, everyone was able to utilize all the information provided, regardless of the district in which they were employed. The redesigned COP included sections such as resources, webinars,

forum, or Ask the Expert, as well as a suggestion box. The new portal was shared via webinar and each i3 district (including ECEP and other projects) had an opportunity to explore the portal and provide feedback on the system. One webinar, in particular, showcased the redesigned portal and asked participants for feedback on the system, and another webinar trained administrators how to use the portal. These two webinars, as well as a webinar on the JFF Reporting Tool, were the held in fall 2015. As an example of the COP, Figure 2 below presents the Resources page of the COP.

Figure 2. Community of Practice Resources Page



In Year 3, participation in the COP was expanded to additional i3 projects in which JFF was a partner—the STEM Early College Expansion Project, with districts in Connecticut and Michigan, and the College and Career Readiness Expansion Partnership, with districts in Ohio. These projects were also seeking to implement Early College principles in comprehensive high schools; expanding the COP was intended to lead to cross-fertilization of ideas among the different districts.

In Year 4 of implementation, webinars were hosted by project and district staff members across all three i3 projects. By the end of the ECEP project, a total of 33 webinars had been hosted on

numerous topics such as research-based interventions for Algebra success, cooperative learning, and progress monitoring. These webinars were posted on the COP.

Although the COP was up and running, maximizing its potential and creating awareness of the resource among ECEP participants was a challenge. For example, in fall 2016, to assess participants' needs and identify topics for webinars, JFF distributed a survey to potential users across the three i3 projects. The first question asked if they were familiar with the COP website and 36% of respondents (22/61) stated that they were not. This was also expressed during interviews conducted in fall 2016 when a number of district- and school-level participants stated that they were unfamiliar with the COP.

Other participants indicated that, while they were aware of the COP, it was not a regularly visited website for them. Most participants mentioned using CIF-related videos on the Teaching Channel instead, and one instructional coach also mentioned using Edutopia because they offered videos from University Park (a model Early College in Massachusetts, where the CIF was first developed).

An examination of the COP at the end of the project showed that, in addition to the archived webinars, there was a growing collection of resources on topics such as coaching, the CIF, presentation skills, research and evaluation, and sustainability, among others. There was very little activity, however, on the two other interactive components of the site; the "Ask an expert?" portal (only two questions had been posed) and the Discussion Forum (which included a total of 4 posts). Table 5 summarizes the changes in implementation that occurred over the course of the grant.

Table 5. Changes in Implementation of the COP across Project Years

Year 1 2013-14	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
Identified need and audience, developed technical specifications, drafted RFP for vendors	Put initial system in place, added limited number of online resources	Administered needs assessment survey, developed online learning plan, moved from structure with district-specific sections to structure for all participants, started bringing members of other i3 projects into the online community, added resources, conducted webinars to introduce the COP	Administered additional needs assessment survey, conducted webinars on a variety of topics, added resources

Fidelity of Implementation

FOI was assessed annually for Years 2-4 for the COP. It consisted of two indicators: (1) establishment of an online network planning group and annual plan, and (2) provision of online professional development aligned with the annual plan. Table 6 below summarizes FOI for Years 2-4.

Table 6. FOI for the Community of Practice, Years 2-4

Indicator	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
Online planning group and annual plan	In place by summer of 2015	In place for 15-16	In place for 16-17
Provision of online professional development	NA	Webinars delivered in 15-16	Webinars delivered in 16-17

Lessons Learned

Initially, the COP was conceptualized as something that would be managed by the districts themselves, however, this level of commitment proved to be too much, and JFF moved to take primary responsibility for posting content and organizing webinars. This modification suggests that it may be best if a single organization takes initial responsibility for ensuring an online community is up and running prior to "handing it over" to the users to manage.

One of the challenges faced by the COP, as with many online communities, was making potential participants aware of its availability and getting them to engage. A learning community is only successful if individuals actively participate, contribute resources, and engage in dialogue with each other. Over the first three years of the grant, there were limited resources available on the COP, which meant that there was little reason for people to access it. As the amount of resources has increased, staff noted the need to pay more attention to marketing to ensure that more people are aware of the materials offered on the site.

Section VI: Instructional Coaching

Overview

ECEP was expected to provide instructional coaching services to teachers across all participating schools within the three districts. The original goal of the instructional coaching was to train teachers, particularly those who teach the core subjects, to utilize the CIF in their lessons. Although the role of the instructional coaches varied by district, in general, this support to teachers was in the form of coaching cycles (pre-conference, observation, de-brief), leading or assisting with school/district professional development, and/or assisting teachers on an as-needed basis. Across all activities the purpose of the coaching was to build the instructional capacity in each school and move the i3 work forward with all school-level stakeholders.

Early in the project, instructional coaches worked to promote the ECEP goals, build relationships with teachers and administrators, and to understand the needs of the individual schools and districts. As the project matured, the role of the coaches and the frequency of their visits to the schools changed. To build capacity to carry on the work of implementing CIF strategies in the classroom, instructional coaches began working more closely with school leaders, particularly teacher departmental leaders, to lead instructional monitoring efforts that were consistent with the CIF. Helping school leaders build the capacity to provide internal instructional monitoring consistent with the CIF was seen as important to sustaining the work if districts were unable or unwilling to continue instructional coaching in the absence of grant funding.

District-Specific Implementation

The sections below provide a summary of how instructional coaching changed over the course of the project across the different districts.

Denver

During the first three years of the project, the grant supported three district-wide instructional coaches; one coach returned to the classroom in Year 4. In addition, JFF provided an external instructional coach to support the work of the three district coaches as part of JFF's technical assistance to the districts. One issue identified in the Year 1 of the project was that, due to strong union contracts that govern teacher evaluations, instructional coaches had to adhere to certain restrictions such as observation and/or coaching sessions that could not last more than 30 minutes unless the teacher requested the coaching. Each school within the district also had internal instructional coaches supported by other funds so a goal of the first year was to have ECEP-funded district coaches coordinate with school-based coaches to align efforts around improving instruction. As part of this work, the ECEP project director convened school-based

instructional support personnel team meetings whereby instructional coaches met periodically with the principal to plan and coordinate their work.

In terms of the coaching roll-out, each school could decide how to utilize instructional coaches. The majority of schools preferred to engage in a school-wide roll-out, but some schools decided to focus on one particular grade or on teachers of core subjects. In Year 2, the three coaches worked with participating schools and their instructional support teams to plan and coordinate PD and one-on-one coaching. Instructional coaches also focused their time on coaching high school-based adjunct instructors who were teaching dual credit courses.

In Year 3, the instructional coaches continued to provide one-on-one coaching and PD sessions. During this year, coaches also provided one-on-one or group coaching to the Differentiated Roles teacher leaders and adjunct faculty. The instructional coaches also implemented a train-the-trainer model whereby schools became increasingly responsible for their professional development planning. In addition, instead of each coach being assigned to a school, all coaches shared responsibility for all schools. These district-based coaches met with the JFF external instructional coach for PD once a month, and in the schools, continued to provide one-on-one coaching, observations, and walkthroughs using the Early College rubric.

In Year 4, the Denver coaching program was in transition. Of the three district instructional coaches, one returned to the classroom at the beginning of the year and, although another coach was brought onboard in the spring, there was an extensive onboarding process to prepare the new coach. Also, because of the unexpected passing of the project lead, the remaining two district coaches had to assume, for an extended period of time, many of the project management responsibilities that had been under the purview of the project lead. These responsibilities included helping some of the schools complete applications for the Colorado Early College designation, supporting implementation of the JFF Middle School Curriculum, and assisting schools with their sustainability plans. The unexpected passing of the project lead also led to an unplanned suspension of coaching to the 15 program schools for most of the fall 2016 semester as the district coped with the loss of one of its senior staff members.

Given the more limited availability of the two coaches in Year 4, they focused their efforts on continuing to support a train-the-trainer model to help senior teacher leaders disseminate the CIF strategies. The professional development and coaching centered on aligning the application of the CIF strategies into lessons and using the JFF CIF Student Rubric as evidence of fidelity to the CIF model. This extended to coaching around lesson plans that embedded strategies being used in several of the i3 schools. The coaches also continued efforts to demonstrate to teachers how the CIF strategies were aligned to other district and state initiatives. In late spring 2017, a third instructional coach was hired; however, this individual was only able to participate in a limited way as she was learning the position.

South Texas

Because there was overlap in the services provided to both South Texas districts, we begin this section with an overview of findings that were common to both districts followed by a summary of changes that were more unique to PSJA and Brownsville. In both of the Texas districts, EdTX provided external instructional coaches that both worked with teachers directly themselves and also worked with the instructional coaches hired by the districts to develop their expertise. The coaches structured their work with the teachers using a coaching cycle, which included a pre-conference, observation, and de-brief. The coaches also worked with principals to create buy-in for the process; they also provided professional development to the campus and worked with teachers during their planning time.

In Years 1 and 2, EdTX provided ten instructional coaches across the two districts. The number of external coaches was purposefully reduced in Years 3 and 4 as part of a planned transfer of coaching responsibility to the districts. Starting in Year 3, EdTX supplemented the instructional coaching with a specialist who focused on providing professional development, as well as a CIF Implementation Facilitator who worked with principals around instruction (described under the leadership coaching section). The PD Specialist position was designed to reduce the burden of the instructional coaches in trying to provide school-wide professional development. The PD Specialist was expected to accomplish three deliverables every month: a monthly newsletter, webinar, and a PD activity at each of the i3 schools.

Brownsville

In Year 1, EdTX provided six instructional coaches who worked with three district-based coaches. These instructional coaches served 15 teachers who were identified by the principal. While they did work with teachers to implement the CIF through individual coaching and group PD in the first year, the coaches reported that much of their focus was on building relationships with teachers and creating buy-in from the principals.

In Year 2, EdTX continued to provide six coaches who worked with teachers and internal instructional coaches within Brownsville. In addition, Brownsville had three district-based coaches, a TLI coach, and 58 additional coaches in the system with whom the ECEP coaches had to interface.

In Year 3, as part of their planned phase out, EdTX provided three external coaches to Brownsville who each worked with two cohorts of 16 teachers (11th-grade teachers in core subjects and dual enrollment teachers)—a new cohort each semester. This year also posed some challenges for the internal coaching in Brownsville. Two of the internal coaches left and their positions were not filled during the 2016 fall semester, leaving only one internal coach available to coach at two middle schools and leaving four middle schools underserved. Finally,

the work of the coaches was supplemented by the PD specialist who planned and implemented PD across the participating district schools.

In Year 4 of the project, the two EdTX external coaches emphasized sustaining the work past the grant funding period. The external coaches worked primarily on assisting department heads in providing CIF instruction to their department's teachers. These coaches also supported the three internal instructional coaches and worked with district and school administrators to ensure sustainable practices were in place as the grant came to an end. In addition to the external coaches, the district also received services from the EdTX PD specialist who coordinated PD sessions for program schools.

PSJA

In Year 1 of the project, EdTX provided four external instructional coaches that worked both directly with the teachers and also with six school-based coaches who were hired by the district and placed within each school. In this first year, principals were also being prepared to serve as internal coaches (this resulted in some concern from the instructional coaches because principals' observational role has historically been evaluative in nature, running counter to the non-evaluative aspect of the coaching process). Each coach (both internal and external) worked with an estimated 15 teachers, seeing each teacher an estimated two times a month or 18-20 days a year. The instructional coaches worked with teachers around implementation of the CIF through individual coaching and by providing group professional development.

In Year 2, PSJA had four external coaches from EdTX and six district-based coaches who had been trained in the first year and were able to work directly with teachers themselves. Principals were no longer considered to be instructional coaches. The coaches continued to conduct coaching cycles with individual teachers and provide professional development to teams within the schools.

In Year 3, there was a reduction in the number of external coaches. EdTX provided the equivalent of two full-time instructional coaches. Two instructional coaches were part-time; one served two middle schools and one high school. One instructional coach was full-time and served one high school and two middle schools. The EdTX external instructional coaches continued to meet with the district-supported instructional coaches.

In Year 4, instructional coaches continued to coordinate with internal, school-based coaches, but the focus of that year was on sustaining the work past the grant funding period. In PSJA, there was one external EdTX coach for the two i3 high schools and four middle schools in the district. This coach worked with 27 department heads and two district high school instructional coaches. In the final year, the work of the external coach focused on the department heads and coaching them to coach teachers within their departments after the grant ended.

Also in Year 4, there were no middle school internal instructional coaches, and the high school internal instructional coaches took on additional responsibilities around teacher evaluations as their positions were funded by multiple grants. One of the coaches that we interviewed suggested that serving as a coach and evaluator created some problems with teachers as the coaching was meant to be non-evaluative but was being offered by those who had evaluation responsibilities. In addition to the role of the coaches, the district continued to use the services of a PD Specialist who coordinated PD sessions for program schools.

Table 7 provides a summary of major activities of instructional coaches, including changes across time. Because the coaching looked different across districts, the table is broken out by district.

Table 7. Changes in Implementation of Instructional Coaching across Project Years

District	Year 1 2013-14	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
DPS	• 2 district-wide coaches; each school has coaches funded by other projects • District coaches coordinated efforts of school-based coaches to align efforts • Instructional Support personnel teams created so that all coaches could meet with principal at some point to plan their work • Roll-out of coaching scope and focus determined by each school • Union agreements restricted some aspects of instructional coaching • JFF provided one external coach to support the two district ECEP coaches	• 3 district-wide coaches continued to work with school instructional support teams • Focused efforts on working with adjunct high school faculty teaching dual enrollment course	• 3 district-wide coaches continued to provide coaching to adjunct faculty, but also began providing coaching to Differentiated Roles teacher leaders • Implemented train-the-trainer model to build capacity for providing instructional coaching • District coaches continued to meet monthly with JFF external instructional coach for continued PD	• Focus of coaching on train-the-trainer with lead teachers to promote sustainability. • One district coach returned to the classroom, one became the project lead after the original project lead passed away unexpectedly; one full time district coach remaining • Continued focus on demonstrating the alignment between CIF strategies and other district/state initiatives

District	Year 1 2013-14	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
South Texas	• Coaches participated in observation cycles and provide professional development • School principals determined who coaches work with	• Coaches continued observations and professional development • Coordinates work with other district- and school-based instructional coaches	• CIF Implementation Facilitator hired to work with principals around instruction • PD Specialist hired by EdTX to reduce load on instructional coaches to provide PD	• Focus of coaching on sustainability • District continued to use PD Specialist to coordinate and provide professional development to teachers
Brownsville	• 6 EdTX instructional coaches served 15 teachers per school; 3 district-based coaches serving 5 teachers per school • Work with principals to create leadership buy-in	• 6 EdTX instructional coaches and three district-based coaches	• 3 EdTX coaches worked with a cohort of core subject and adjunct teachers using a semester system where two cohorts were trained each semester • 1 district-based coach; 2 internal instructional coaches left the district so no services were provided two 4 middle schools during this semester	• 2 EdTX external coaches • 3 internal coaches
PSJA	• 4 EdTX instructional coaches served 15 teachers per school twice a month • 6 campus-based coaches • Principals trained to be instructional coaches. Concern that they would be seen as more evaluative	• 4 EdTX instructional coaches and 6 campus-based coaches • Coordinated work with other school-based instructional coaches • School principals dictated coaches' scope of work	• 3 EdTX instructional coaches (2 of which worked part-time) and 2 campus-based coaches	• Focus of coaching on sustainability • 1 EdTX external coach and two campus-based coaches • Internal school-based instructional coaches took on more evaluation tasks, which some perceived as creating conflict with coaching responsibilities (that were supposed to be evaluation free)

Fidelity of Implementation

As part of the grant, ECEP partners were required to provide schools with external instructional coaching support with sufficient frequency to meet the goals of the project. FOI relative to

instructional coaching was determined by the number of coaching days provided to the schools. Each school was targeted to receive 17-22 days of instructional coaching over the course of the year. Table 8 shows the target number of coaching days and the actual number of coaching days for the three years assessed in this project.

In Year 2 of the project, Denver schools received an average of 20 days of coaching, and Texas schools received an average of 71 days of coaching. Most coaches were working with more than one school; Denver coaches worked with up to four schools. In addition, for all schools, the number of days each coach spent in a given school was driven by (1) access to the principal, (2) the school's needs, and (3) the teacher's needs and schedule. All Brownsville and PSJA schools exceeded the targeted days of participation and thus, met FOI at the district-level. Five schools in Denver did not reach the targeted days of participation. Only 66% of the Denver schools met the targeted number of days, therefore FOI was not met in that year.

In Year 3, all the schools exceeded the targeted number of days of participation and thus, met FOI. According to project records, Brownsville schools received an average of 57 days and PSJA schools received an average of 61 days of coaching. DPS schools received an average of 45 days of coaching.

During Year 4, the FOI goal was 8-15 coaching days per school; this includes both external and internal/district/campus-based coaching. Brownsville schools received an average of 70 days and Denver and PSJA schools received an average of 36 days of coaching. All schools exceeded the targeted days of participation and thus, met FOI.

Table 8. Fidelity of Implementation, Instructional Coaching, by Year

FOI Data	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
# of Schools[a]	30	30	30
Average Targeted Coaching Consultations	17-22	17-22	8-15
Average # of Coaching Consultations	54	52	47
Range of Participation (lowest to highest # of consultations)	10-86	21-149	9-179
Range of % of Consultations Received	58%-505%	123%-876%	112%-2237%
% of Schools Meeting FOI	83% of schools (2 districts)	100% of schools (3 districts)	100% of schools (3 districts)

[a]Two schools are combination 6th-12th-grade schools.

Lessons Learned

Over the course of the project, our findings indicated that instructional coaching was an integral part of promoting and sustaining the work, particularly among classroom teachers. We found efforts to promote CIF strategies in the classroom were strengthened with increased coach availability, particularly for one-on-one work with teachers. Several project participants

mentioned that there needed to be an appropriate ratio of coaches to schools, with the specific recommendation of one coach for each school. As the FOI results showed, there was substantial variability in the amount of coaching received with some schools receiving a much higher level of coaching than the initial targeted amounts. This suggests that the original planned levels of 17-22 days per school per year are likely not sufficient to result in the desired instructional change.

Also in regard to the role of the instructional coaches, we found that when instructional coaches were tasked with multiple responsibilities beyond coaching, particularly when coaches were asked to serve in an evaluative role, there was concern that these additional (and sometimes conflicting) responsibilities diminished the impact that these coaches may have had in bringing about instructional change.

Participants also reported that aligning and embedding CIF strategies, practices, and protocols within existent local and state initiatives decreased the perception that ECEP created additional burdens for teachers. This was particularly true for schools in Denver, which were involved in multiple district and state initiatives. This alignment work was also seen as an important tool for promoting sustainability through institutionalization of the CIF strategies within school and district practices, particularly in districts with significant leadership and teacher turnover.

One of our most consistent findings was that the effectiveness of instructional coaches was linked to support that they received from school leaders. The work of the instructional coaches was enhanced when coaches coordinated with, and received the support of, school leadership teams. Coordination allowed external coaches to work more efficiently and effectively with internal coaches, school administrators, and teachers. Strong support from school leadership indicated to their personnel that this project was important and that making instructional changes in the classroom was a priority.

Finally, we also found that the way instructional coaching with initially rolled-out had an influence on school teachers' level of buy-in toward coaching and the ECEP program in general. Specifically, several teachers and coaches that we interviewed suggested that the implementation of the instructional coaching would be improved by a more thoughtful and strategic approach regarding who receives the coaching and how the strategies are shared with teachers. In terms of strategy, one suggestion was to initially, identify and work with a cohort of teachers who are more receptive to the project and willing to participate. Early adopters of the coaching are more likely to become champions of the project and promote the project among peers if this "coalition of the willing" sees the coaching as worthwhile.

In terms of how the CIF strategies are shared with teachers, recommendations were diverse. Some of the feedback that we received suggested that teachers would be better served by focusing on one or two CIF strategies at a time, whereas others recommended that covering

multiple strategies at a time would be more efficient at promoting instructional change. Although recommendations around rolling-out CIF strategies were varied, there was considerable agreement among teachers and instructional coaches that buy-in was increased when teachers were fully informed, early in the implementation process, about the purpose of the project, the role of the instructional coach, and the goals for bringing about instructional change. For example, in the first year of the project some teachers in one district believed that they were selected for coaching as a punishment. This initial lack of clarity about the grant and the expectations for the teachers seemed to hamper relationship-building between coaches and teachers at the outset of the project.

Section VII: i3 Cabinet

District-Specific Implementation

To manage the work of ECEP, each district was required to set up a governing structure, conceptualized as an i3 Cabinet. From the beginning of the project, each of the districts implemented the i3 Cabinet differently; thus, the implementation in each district is described separately.

Denver

In Denver, the i3 work was embedded into the agenda of an already-established group focused on postsecondary readiness that consisted of the instructional superintendents, the executive directors, the associate superintendent, the director of Early College, and the director of career and college readiness. A district staff member noted that all the work of high schools was focused on postsecondary readiness, "Postsecondary readiness is really all of our secondary programming." The topic of Early College came up on an "as-needed" basis during meetings, with Early College-related items placed on the agenda by the project lead.

There were additional i3-specific meetings with the instructional superintendents and school leadership. During those meetings, they focused on the schools' vision and the i3 support structures for teachers, staff, and leaders.

The higher education partners were not included at the regular district meetings; instead the project director met with them as needed. During those meetings, the agenda topics ranged from partnerships with local businesses to adjunct professional development to the piloting of courses to pathway development. Most meetings focused on the college course prerequisites and pathway development.

Brownsville

The i3 Cabinet in Brownsville was a district-level entity that met monthly and was responsible for coordinating the ECEP efforts within the district. Its 20 members included the superintendent, the area superintendents, representatives from advanced academics, college readiness, the research and data department, the TLI, curriculum and instruction, guidance and counseling, special education and bilingual education. In the second year of project implementation, all of the high schools in Brownsville received Early College designation. As a result, membership in the Cabinet was expanded to include principals in all the high schools, even if they were not part of the i3 grant.

In Year 1, Educate Texas staff supported and often facilitated the meetings. Starting in Year 2, the district took ownership of the Cabinet meetings with district staff organizing and facilitating the meeting with input from EdTX staff. By Year 3, membership had grown and included principals, Early College high school staff, Early College high school liaisons, the TSC Early

College dual enrollment team, and staff from their other postsecondary partners: University of Texas Rio Grande Valley (UTRGV) and Texas A&M Kingsville. The higher education partners were active participants at the Cabinet meetings.

Data served as the focal point of the meetings. The IHEs had an opportunity to share any issues they were concerned about and school leadership had dedicated time to look at their data relative to the Early College work (e.g., TSI success rates, course enrollment, course completion, student performance).

Based on work completed by PSJA (described below), EdTX developed a data dashboard for Brownsville and their partner, TSC, which could also be utilized to share student data with all 15 of the college's district partners.

PSJA

As in Brownsville, PSJA created an i3 Cabinet the met monthly. Membership in the i3 Cabinet included key district individuals—the superintendent; the district coordinator; district administrators in charge of high schools, middle schools, Career and Technical Education, College Readiness, and Public Relations; the head of the instructional coaching; and a representative from the college partner. The i3 Cabinet also had a set of "action groups," which included district staff with expertise on topics such as professional development, data, budgeting, rigor, and curriculum and instruction. Although postsecondary partners were invited to these meetings, project staff reported sporadic attendance throughout the life of the grant.

EdTX staff assisted with coordinating and facilitating the meetings throughout the first two years of the project. By Year 3, PSJA staff had taken on the responsibility of developing the agendas and conducting the meetings.

Also by Year 3, the meetings were being utilized to accomplish more critical work around implementation, with greater involvement from the principals. The Cabinet had workgroups/subcommittees focused on data, college readiness, scaling up, dual enrollment, and transforming high school into college. A district staff member indicated how the principals had been involved,

> The last year and a half [to] two years, the principals have been engaged around data for TSI, the Texas Success Initiative, college entrance exam, dual- credit, AP, students…so I think that it's been very valuable that we've engaged our i3 principals at the high school in that form and fashion, and we started also including our middle school principals to some extent and now we're going to take it to another level in making sure that we involve all four middle school principals as well.

The i3 Cabinet data subcommittee also developed and released a data dashboard with South Texas College (on which the previously mentioned Brownsville data dashboard was based). Through the data dashboard, the district was able to generate reports that included district and college data. The development came about via collaboration between district and community college leaders, including the college partners' Chief Information Technology Officer and his staff members. Both PSJA and South Texas College wanted real-time actionable data, but recognized the need for a common language. Using resources from ed.gov, they developed guidelines around the data that would be shared, arranged for staff training and created a data sharing agreement. During i3 Cabinet meetings, the dashboard was shared in real-time and school leaders could see how their students were faring in their college classes.

By the end of the project, membership in the i3 Cabinet had expanded to include all middle and high schools, even those who were not in i3. The meetings focused on sharing data (e.g., TSI success rates, course enrollment, course completion, student performance) and updates from schools and various workgroups (e.g., TSI, advising/counseling).

Table 9 documents the changes that occurred relative to the three districts' i3 Cabinets over time.

Table 9. Changes in Implementation Across Project Years

District	Year 1 2013-14	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
DPS	Never a separate ECEP-specific entity that focused only on the Early College work. Cabinet activities embedded in regular meetings, IHE partner meetings held separately			
Brownsville	Cabinet formed, EdTX staff facilitate	Expanded to include all high school principals, Brownsville staff take over facilitation role	Participation expanded to all three postsecondary partners	Cabinet meetings continued
PSJA	Cabinet formed, EdTX staff facilitate	EdTX staff continued facilitating	PSJA staff took over facilitation role, data subcommittee created college-district data dashboard	Membership expanded to all high schools and middle schools

Fidelity of Implementation

FOI for this Key Component was determined by whether or not an i3 Cabinet had been established and was functioning (documented by copies of meeting agendas and minutes). Table 10 summarizes FOI for Years 2-4.

Table 10. FOI for i3 Cabinet, Years 2-4

Indicator	Year 2 2014-15	Year 3 2015-16	Year 4 2016-17
Establishment and regular meetings of an i3 Cabinet or coordinating structure	In place in all three districts	In place in all three districts	In place in all three districts

Lessons Learned

Although the i3 Cabinet was originally conceptualized purely as a district-level coordinating mechanism, the districts recognized that it was important to involve school leadership as well. Having regular participation from postsecondary stakeholders strengthened the relationship with postsecondary partners and allowed for regular opportunities for problem-solving around issues such as students' readiness for college courses and adjunct instructors. For example, Cabinet meetings in Brownsville regularly included discussions regarding how their schools could meet capacity needs for college courses.

The meetings were also seen as more effective when they were centered on data. For example, principals were asked to bring data summarizing how their students were doing on the placement exam. In PSJA (as in Brownsville), the work of the Cabinet led to a data dashboard providing the district with information around how students were doing in college courses.

Finally, it appears that all districts felt the need for some sort of a coordinating structure. Denver, for example, established an Early College office to help administer the growing Early College work in its district.

Section VIII: Sustainability

The intent of the ECEP implementation supports was to build capacity to allow districts and schools to sustain the Early College work after the grant was completed. This section of the report provides information on each Key Component and the extent to which it is expected to be sustained after the funding ends.

Technical Assistance to Districts

Given the purpose of the technical assistance to the district—to build the districts' capacity to do the work—there was never any intention that this support would be continued after the grant was concluded. However, the technical assistance itself has had a focus on working with the districts to sustain the other implementation supports provided by the grant. In November 2016, leadership from the three participating districts met at PSJA after the Early College Conference for a three-hour meeting focused on sustainability. During this meeting, the team discussed the different levers needed for sustaining the work, including maintaining a decision-making structure such as the i3 Cabinet as well as the human capital that needs to be in place (e.g., adjunct faculty for teaching college courses, college liaisons/transition counselors, and instructional coaches).

Additional work around sustainability occurred regularly between EdTX and JFF project staff and district staff; for example, JFF staff had DPS and all participating schools complete a formal, written sustainability plan. For the two South Texas districts, EdTX set aside funds to support sustainability planning and proposed to the districts that EdTX use those funds to hire a consulting firm that could review their resources and help the district align or reallocate resources in a way that would support the grant-related activities that the districts wished to continue. Brownsville participated in this planning activity and PSJA decided to focus instead on internal planning. A district staff member discussed how the technical assistance had been helpful relative to sustaining the work, stating, "…where they've been really helpful is being thought-process partners for me...as I think about…the sustainability piece for our schools and our district."

Leadership Coaching

Under the grant, the leadership coaching was provided by JFF and it does not appear that the districts will cover the costs for individuals specifically tasked with coaching principals to continue working in their schools. However, the districts have provided additional principal support through a variety of approaches, including involving principals in i3 Cabinet meetings and providing principal-specific professional development opportunities. It is likely that these types of activities will continue when the grant concludes.

Community of Practice

The COP is a central repository of resources supported by JFF, and JFF has committed to sustaining this work after the grant ends and will support it across projects. A JFF staff member noted that they needed to work on the marketing and on broadening the content that was offered:

> After this grant we're going to continue the Community of Practice. I think one of the things that we probably need to do is get someone that can be really full-time at crafting this thing.... I think we can get the blog going...ask the expert. We think it needs to be reformulated a little...we need to integrate career pathways.... Everything that we're doing, especially from the other I3 campuses.

As the project was concluding, interviews with staff around sustainability indicated the need for a central repository to house the resources developed as part of the grant. The COP could be a natural fit for this repository.

Instructional Coaching

The goal of the instructional coaching was to support implementation of the CIF in schools. Much of the work to sustain implementation of these CIF instructional strategies began in Year 4. Instructional coaches in all three districts worked with principals, leadership teams, department heads, and teacher leaders with the goal of helping these staff members take ownership for monitoring and encouraging teachers to continue to implement CIF strategies and support activities such as instructional rounds. One of the instructional coaches that we interviewed indicated that teacher leaders were initially resistant to these efforts around sustainability with one coach saying,

> I want to say one was a little resistant last year. The external coach and myself wanted [the department head] to have that awareness of what her teachers were doing and what we were coaching them on and the reason why we were coaching. I think what we did is, we got her onboard this year by having her observe her teachers. She didn't really want to do that either, she just felt like her teachers were going to take that as, she was just kind of like, a negative thing. We didn't give her an option, we said, "You know, this is going to be good for you and your teachers to know that you're there and you're involved." When we did that, I think she was a little aware of what's happening. I think her perception was, they're doing the content area and the way it's being delivered, she thought they were doing it, but in reality, when she actually was there and seeing it, she realized that she didn't see a lot that she expected. That opened her eyes to be like, "Okay, I think I need to see all my teachers now." Now, she's coming to us...and she said, "You know, I want to see all my teachers."

Instructional coaching was deemed expensive for both Texas districts, with district leaders viewing the instructional coach position as one that would be challenging to support without additional funding. Efforts to build internal capacity among school staff around coaching was seen as an alternative strategy for continued focus on the CIF strategies and coaching in general in the face of limited resources for dedicated instructional coaches. Although Denver schools had greater capacity to offer instructional coaching beyond the grant, part of the effort in this district involved instructional coaches reinforcing connections between the CIF strategies and ongoing school, district, and state policies. These discussions around alignment between the Early College Design Elements and local and state initiatives was designed to demonstrate to school and district leaders that the goals of the program were consistent with, and most importantly, did not add to, burdens created by the various ongoing initiatives within the district.

i3 Cabinet

The i3 Cabinet was intended to be the primary organizing structure for the project, what project staff described as "a leadership-level structure to continue to set priorities around a set of instructional changes, Early College structures, career pathways." In both Texas districts, interviewees indicated that the i3 Cabinet would continue. Project staff saw the Brownsville Cabinet meetings as very active and highly likely to continue, saying, "In Brownsville, the Cabinet is functioning at an extremely high level. I'm very proud of that district. They have all of their higher ed partners there…the meetings are very discussion-based." In PSJA, a district staff member commented, "The Cabinet meetings are going to be…maintained or sustained." On the other hand, two project staff members expressed concern over whether the PSJA i3 Cabinet meetings would continue because the higher education partners had stopped attending.

In Denver, because there was never a separate entity that focused only on the Early College work, i3 was embedded in the regular district-wide leadership meetings. Given the establishment of a district office focused specifically on Early College, this entity should be able to ensure the day-to-day management of the work. District staff have also indicated plans to put a structure in place allowing for more regular interaction across the district and with postsecondary partners.

Sustainability Conclusions

Overall, the districts have indicated commitment to sustaining many of the supports that were in place, albeit with a slightly different approach. The next section synthesizes the activities completed, the lessons learned, and the sustainability efforts to create a revised model of implementation supports that can be replicated and sustained as the Early College work moves forward.

Section IX: Lessons Learned around Replication

This report has described the implementation of specific support activities that were originally conceptualized as part of the Early College Expansion Project and articulated in the original logic model (Figure 1). This concluding section revisits these implementation supports, incorporating lessons learned about these activities and insights from project staff around how they would do the work differently if they were to start over. Finally, we also revisit the logic model to provide insights that might help others who seek to replicate this work in other districts.

Implementation supports can be conceptualized at two different levels: (1) the support that a district can and should provide to help schools implement the Early College Model and (2) the support that a district needs to develop the capacity to do this work. This concluding section is organized according to those two levels of implementation supports, but first we start with an important activity that is often not incorporated into program logic models: selecting strong candidates, districts in this case, for participation.

Selection of Districts to do the Work

Although this was not an activity articulated in the logic model, selecting the right districts and schools to engage in the Early College work was critical. Literature on the effective implementation of interventions indicates that a key first step is assessing the capacity and readiness of a host setting (Durlak & Dupre, 2008; Meyers, Durlak, & Wandersman, 2012).

For this project, the districts were selected as part of the i3 application process and included a district that was one of the earliest and most extensive adopters of the Early College work as well as two other districts with a history of commitment to dual enrollment and interest in expanding the work. Also important was a state policy context that allowed for partnerships between districts and postsecondary institutions. Both Colorado and Texas had policies in place that were supportive of dual enrollment and that allowed for schools to be designated Early Colleges.

Another key aspect of identifying districts was ensuring that there was buy-in from the very top. All participants commented on the importance of ensuring that the superintendent (at the district-level) and the principal (at the school level) had a clear understanding of the Early College work and believed in it. The first thing one district staff member said when asked about advice for other districts: “You better have buy in from the top first…. This needs to be a district initiative.” A postsecondary representative from a different district agreed,

> So if the superintendent is there, showing visible support for the program, things will fall into place a lot easier than it will be with people banging the drum from the area

> superintendent and lower levels. I think top level leadership, if it's not absolutely key, it's at least very important.

This commitment and support was also seen as important for the postsecondary partner. A postsecondary partner said,

> Having committed partners, with our hearts in the right place, is also essential. I don't think that this is a business for bean counters or paper pushers, I think there has to be a passion for the work, a passion for students, to make this thing really successful. That's probably it. I would sum it all up with saying there has to be a commitment to making this succeed.

In addition to commitment to the work, a strong postsecondary partner also needed to have experience with dual credit courses and the ability to expand their capacity to serve more students.

One tool we might recommend for projects as they expand this work is a rubric that can be used to assess the readiness of a school system to engage in the Early College work. This type of rubric was not developed as part of this project but it may be useful moving forward.

Implementation Supports for Early Colleges

When schools are implementing the Early College model, they need substantial external support, particularly when the work is conceptualized as a district-wide effort. In the original logic model, some of these supports were provided by the external partners (JFF and EdTX), but if we examine the work through the lens of sustainability, they are actually activities that the district and/or postsecondary partner can, and should, develop the capacity to undertake and continue by themselves. These supports include: (1) clarifying and communicating the vision of the Early College model, (2) aligning the Early College work with other district initiatives, (3) creating and maintaining postsecondary partnerships, (4) creating college liaison positions, (5) creating curriculum pathways, (6) developing capacity to teach college courses, (7) providing coaching and support to school leaders, (8) supporting instructional change, (9) addressing staff turnover, (10) supporting college placement testing, and (11) using data regularly to assess progress. Each of these areas is discussed in more depth below.

Clarifying and Communicating the Vision of the Early College Model

One of the lessons learned from the project was the need to be very clear from the beginning about the vision for Early College and communicate it regularly and frequently. One district staff member commented on the importance of "cohesive messaging," "…truly messaging to everyone, what was Early College, what were we truly trying to accomplish on your campus." A project staff member noted that this communication needed to happen at the beginning of the

work and with multiple audiences: “We should have been telling our story all along. I think it's also setting up better communication plans against the work.”

The partners found that a coordinating *Cabinet structure* could be a very effective way of communicating and ensuring that all stakeholders heard the same message. District staff noted the importance of including all stakeholders from the beginning, including school staff, district staff, and postsecondary partners. By the end of the project, one district was moving to invite their Chief Financial Officer and Director of Human Resources so that they could understand the specific issues related to the Early College work. A district staff member noted,

> I think that's one of our strengths, actually,... the governance structure and the communication between us and our IHE partners. It has to be. I mean, if you don't have that communication then trying to implement something like this is going to be a disaster.

A postsecondary partner noted that the communication needed to be more frequent than monthly meetings:

> Another lesson learned, I think, and it's critical, you need to communicate every day. The partners need to communicate every day. You can't function if you communicate once a month at a formal meeting, or once every couple of weeks at a formal meeting. Communication is daily.

Aligning Early College Work with Other Initiatives

Districts, particularly large, urban districts, often have multiple initiatives going on. One of the early lessons learned from this project was the need to ensure that there was alignment among the different initiatives. One district spent time at the beginning identifying the overlap between the Early College work and other projects. For example, they aligned the instructional expectations of the Early College with the expectations of their teacher evaluation framework. It was seen as important to use the same language to describe similar concepts that might be being implemented under different programs. More information about the alignment work undertaken as part of the i3 grant can be found in the JFF report, Taking the Long View: Sustainability Lessons Learned from the Early College Expansion Partnership (Jobs for the Future, 2018).

Creating and Maintaining Postsecondary Partnerships

As noted earlier, strong partnerships between the district and the postsecondary institution(s) are critical to the success of the Early College model. Although partnerships can be negotiated between individual schools and postsecondary institutions, it can be more efficient to have the district negotiate on behalf of multiple schools.

The expectation in this project, and in all Early College work, is that the postsecondary partnership includes a written Memorandum of Understanding (MoU) that delineates the specific responsibility of each partner, especially with regard to paying for expenses associated with college courses. In some partnerships, the college will initially cover the cost of tuition (to be reimbursed by the state at a later point) or will provide reduced tuition. Some postsecondary partners agree to cost-saving measures including keeping the same textbooks for three consecutive years or waiving fees.

These partnerships are dependent on good relationships and, as described above, regular and ongoing communication.

Creating College Liaison Positions

Although not included initially in the grant plans, all three districts ended up hiring individuals who could focus specifically on the connection between the high schools and colleges. These individuals—titled "college liaisons," "transition counselors," or "college counselors"—were tasked with responsibilities such as advising, registering students for college classes, working on pathways, etc. We have found similar roles across other Early College projects with which we have worked. Expanding access to dual enrollment courses is a complicated endeavor that requires individuals who can dedicate time; it is very challenging to add these responsibilities on top of other responsibilities people, such as counselors, may already have.

Creating Curriculum Pathways

In the early phases of the Early College work, schools often tried to provide as many college courses as possible to students without necessarily restricting the types of courses students can take. As Early College and dual enrollment activities matured, districts and postsecondary partners recognized the importance of guiding students to take courses that would lead them to some sort of postsecondary credential.

All three i3 districts have engaged in curriculum development and alignment work, focusing particularly on the creation of pathways that create an aligned set of high school and college courses that can lead to a credential or an associate degree. One of the postsecondary partners moved to require that all students taking college credits be on a specific pathway. One district is creating a centralized location for pathways that may require specialized equipment or otherwise be too expensive for individual schools to maintain.

Developing Capacity to Teach College Courses

As the number of students taking college courses greatly expanded, postsecondary partners did not always have sufficient capacity to teach those courses. As a result, districts and postsecondary partners worked together to increase the number of adjunct faculty who were available for college courses. Districts described how they modified their recruitment of high

school teachers to emphasize hiring teachers with the educational credentials that allowed them to qualify as adjunct faculty. A district staff member said,

> Human capital is always an issue, especially in this model, so we're constantly looking at that and trying to find qualified teachers that either we can hire or TSC can hire to help us with our needs as far as specific courses.

Districts also supported a grow-your-own approach by subsidizing teachers' attainment of master's credentials. In one district, the district paid a third of the cost, the college paid a third of the cost, and the teacher paid the final third. More detail on how the capacity issue was being addressed is available in a monograph from JFF entitled, *Solving the Dual Enrollment Staffing Puzzle* (Hooker, November, 2017).

Providing Coaching and Support to School Leaders

One of the earliest lessons learned in this project was the need to provide extensive support to school leaders, including the principal as well as the broader administrative team. There was external coaching provided with once monthly check-ins and the districts supplemented this with additional professional development and opportunities for the principals to come together and problem-solve. Involving the principals in the Cabinet and having additional regular meetings allowed principals to gain a better understanding of the initiative and to discuss issues they may have been facing.

Supporting Instructional Change

The Early College model is not just about expanding access to college courses, it is about ensuring that students are ready for college courses, which involves changing instruction. In the ECEP model, teachers were expected to implement the CIF, a set of student-centered practices intended to engage students in more in-depth learning. Support for instructional change was provided by a combination of external and district-based coaches who worked directly with teachers. According to coaches and project staff, an ideal ratio was having one coach for every one or two schools. We recognize, however, that this is a substantial resource commitment that would be hard for many districts to maintain. Districts utilized a variety of other approaches to support instructional change, including providing professional development and targeting coaching to new teachers who had not been exposed to the instructional strategies. As described earlier, districts also integrated the targeted instructional strategies into district-wide policies or worked to align coaching that occurred under the auspices of other projects.

Addressing Staff Turnover

One of the greatest challenges faced by districts was the turnover of staff at multiple levels, particularly at the district and school. In some cases that turnover was helpful to the project, but even then, it meant bringing someone new "up to speed," in turn, delaying the project. As

one district staff member described, they faced “the difficulties of turnover, principal turnover, staff turnover, and maintaining the momentum of the work.”

Districts and postsecondary partners noted the need to address turnover in the planning of their support activities. In general, this meant involving a wider range of individuals in the various aspects of the work. One district staff member described how the people involved in the Cabinet working groups in their district:

> So now when we're really talking about building capacity, it's including other assistant principals that play a role, or bringing them in and shaping them to learn that role of the Early College director…; let's not just have that one Early College director [involved]. Because when they leave, whether it's to get promoted, or move on, then we need to be able to sustain that. And we need to make sure that everybody has the same type of information on hand…

Supporting College Placement Testing

Another early lesson learned was that students who are going to take a significant number of college courses also need to have taken, and passed, college placement exams prior to enrolling in those courses. The participating schools were primarily responsible for ensuring that students took the exam and for thinking about how to prepare students to take the exam; however, districts and postsecondary partners provided support to the schools in a variety of ways. Districts and postsecondary partners worked together to ensure that the cost of any placement exams, such as Accuplacer or the TSI, were covered. One district purchased test-preparation software that was aligned to the TSI. Postsecondary partners also provided support around scheduling the tests.

The district and postsecondary partners also explored alternative ways of assessing students’ readiness. For example, one district and partner worked together to align the high school and college curricula such that the IHE partner agreed that successful completion of key high school courses indicated college readiness. A district staff person described it like this:

> We've done a lot more curricular alignment than ever was done before. Looking at our junior year curriculums and having our college partners say that, yes, these meet the rigor of our expectations, and students who pass these courses with a certain grade level, a certain grade, and a certain GPA, could go right into a 100-level class.

Using Data Regularly to Assess Progress

Districts engaged schools in discussions around data as a way to track progress toward the project’s goals. In two of the districts, schools were required to come to the Cabinet meetings with data about the numbers of students taking, and passing, college readiness exams and the number of students taking, and succeeding in, college courses. Schools shared their data with

each other, which provided a measure of accountability and also led to some friendly competition in terms of improving their outcomes.

In two districts, the postsecondary partner and district worked together to link data systems so that the district could track their students' performance in college courses and more easily determine the extent to which students were making progress toward a certificate or a degree.

Implementation Supports for Districts

It is likely that most districts and postsecondary partners will not initially have the capacity to undertake the work described in the previous section. As a result, it may be necessary for an external, experienced organization to provide supports to the district to help them develop that capacity. In this project, JFF and EdTX provided that support.

The primary supports the ECEP external partners provided were: (1) assisting districts in planning and alignment of work; (2) training instructional coaches to work with teachers; (3) providing assistance in developing postsecondary partnerships; (4) providing resources, such as curriculum or tools around instructional practices; (5) delivering leadership coaching to principals; (6) providing instructional coaching directly to teachers; and (7) creating an online COP. The implementation of these support activities and the lessons learned from each have been described earlier in the report.

A lesson learned, which applies across all of the supports, was the need to consider sustainability from the very beginning. Staff noted the importance of being intentional on the front end of the work, particularly in two areas: (1) encouraging districts to think early on about how they were going to fund the work when the grant ended and (2) having the districts embed the instructional expectations into teacher performance appraisal systems.

Another lesson learned was the need to provide support for postsecondary partners. This project was focused primarily on providing supports at the district-level, but similar work was needed at the postsecondary level as well. As one of the staff members put it, "…as much work as we've done on systems at the [district], that same thing needs to happen at the higher-ed."

Revising the Logic Model

As a way of synthesizing the lessons learned and the activities undertaken by the districts to support the Early College work, we took the opportunity to revisit the original logic model. We found that the original logic model did not clearly capture all of the activities that a district needed to undertake to support this work. To encapsulate the lessons learned from the past five years about the supports that are necessary to implement Early Colleges, we have developed a revised logic model with the goal of providing guidance for Early College replication efforts in other settings. The revised logic model (Figure 3, on the following page) explains the supports that external partners should provide (Column 1) to districts and

postsecondary institutions and who would then develop the capacity to provide the implementation supports (Column 2). These services then support the schools as they implement the Early College design elements (Column 3), which are intended to lead to improved student outcomes (Column 4). We believe that this logic model serves as a summary of the work completed over the past four years, but we also anticipate that it would continue to evolve as additional organizations, districts, schools, and postsecondary institutions further develop this work.