

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:

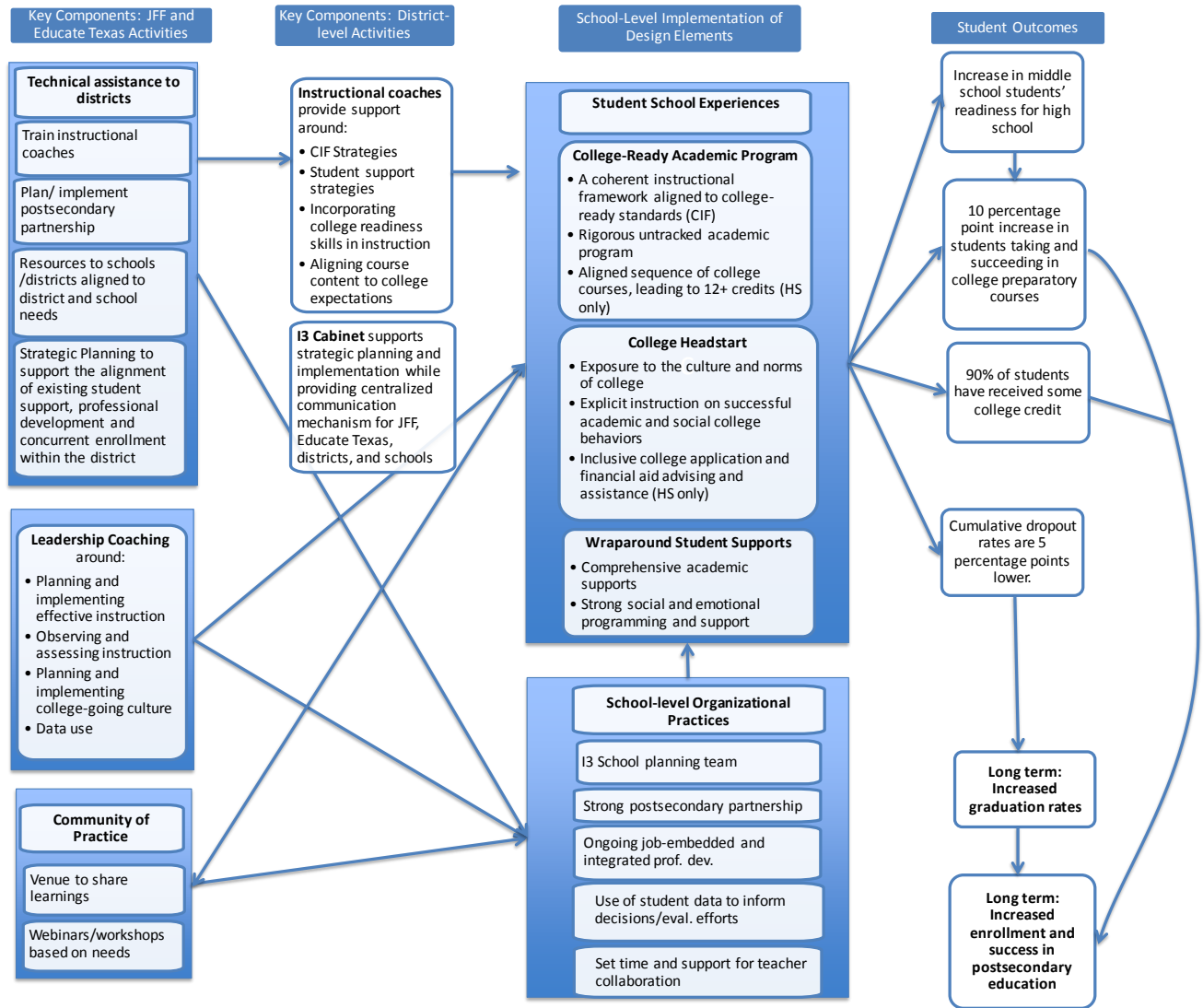
1. A College Ready Academic Program. This included implementation of a high school academic curriculum designed to prepare students for postsecondary education; a set of six student-centered instructional practices, called the Common Instructional Framework (CIF); and early access to college courses.
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 9th grade;
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 13 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.

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

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.

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

[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

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.

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

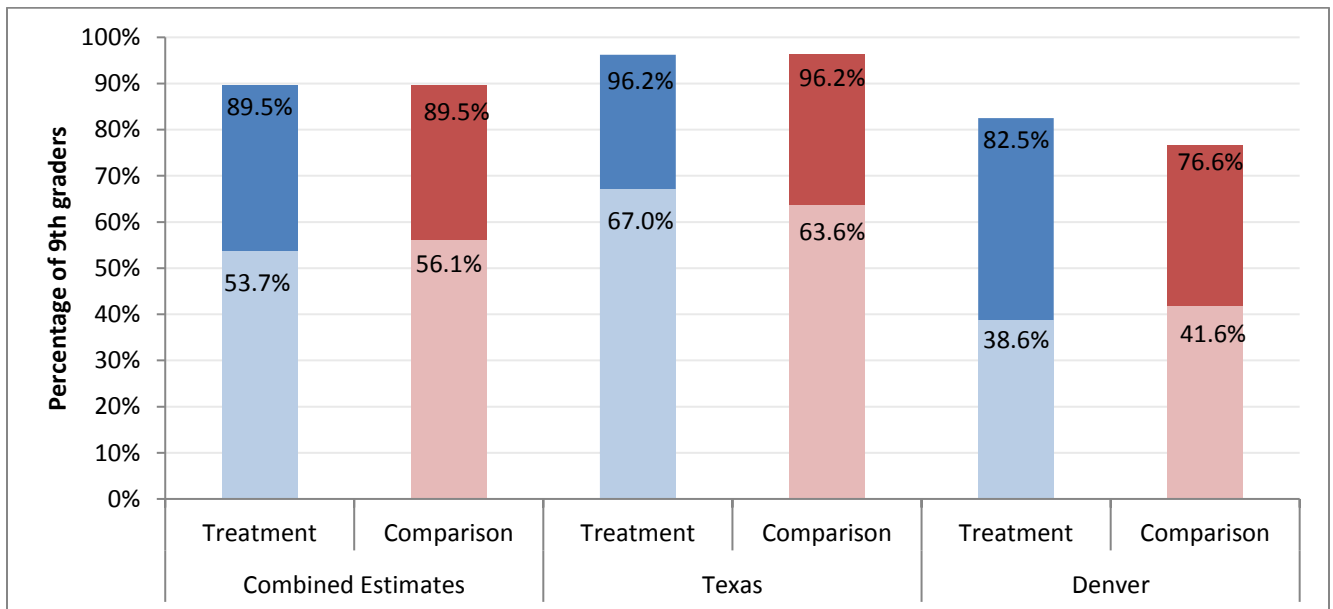
One of the goals of ECEP is to ensure students are better prepared for college. As a result, the evaluation examined the project's impact on students' enrollment in and successful completion of the high school courses needed for college. Specifically, the evaluation looked at the impact of ECEP on the 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 level¹. 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.

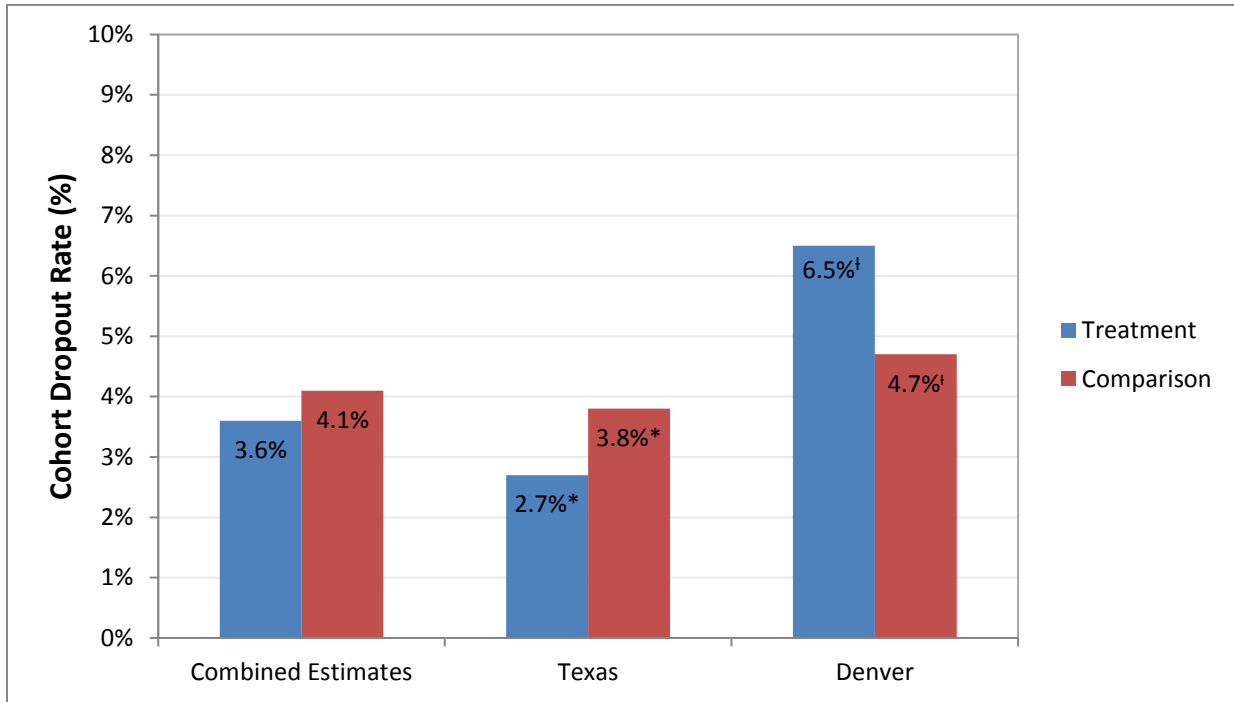
Figure 3 shows the impact of ECEP on cohort dropout rate. Results indicated that, when results were combined for the two states, treatment schools had a slightly lower dropout rate compared to comparison schools (3.6% vs. 4.1%, respectively), but this difference was not statistically significant.

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 students² 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. * $p \leq .05$; † $p \leq .10$

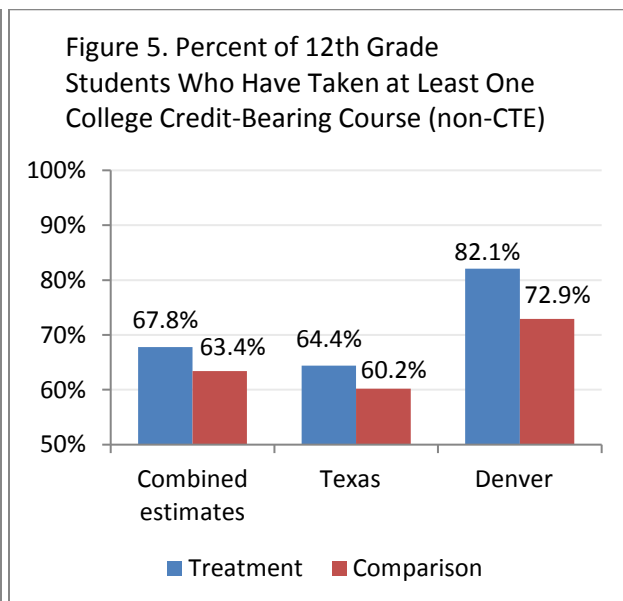
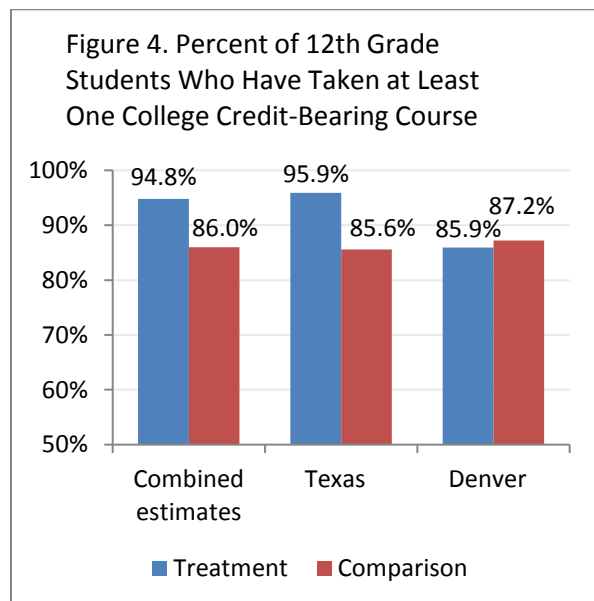
College Credit Coursetaking

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.



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

Outcome	Pooled Estimate		Texas		Denver	
	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
<i>Average # of Carnegie units from dual credit (non-CTE) courses</i>	0.40	0.27	0.37	0.24	0.2	0.36
<i>Average # of Carnegie units from AP courses</i>	1.5	1.57	1.47	1.57	1.57	1.56
<i>Average # of Carnegie Units from CTE courses</i>	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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