

Smoothing the Way to College: Impact of Early College High Schools



SERVE Center • The University of North Carolina at Greensboro

To increase the number of students graduating from high school who enroll and succeed in college, North Carolina has established the largest number of Early College High Schools (early colleges) in the United States. This brief presents results from a longitudinal experimental study of early colleges in North Carolina. Specific findings include:

- More early college students take and succeed in the courses they need for college.
- Early college students earn an average of 22 college credits while they are in high school compared to an average of 3 college credits received by students in the control group.
- Early college students graduate from high school at a slightly higher rate than the control students.
- More early college students enroll in college.
- Early colleges create an environment explicitly focused on college readiness.

“I think it was an eye opener to the real world and what we were going to be dealing with when we went to a college. And I think I feel more prepared now than ... just coming out of a regular high school.”

- early college participant

This brief overviews the early college model as implemented in North Carolina, the study design, and early colleges' impacts on students.



The Problem

Most jobs today require some sort of education beyond high school. Yet students face many challenges enrolling in college. Many students have not taken the courses they need to take in high school or are unclear about the college application process.¹ Even when students do enroll in college, less than half complete some sort of postsecondary credential within six years of starting.² To smooth the transition to college, researchers have recommended that schools ensure students take the courses needed for college, create a college-oriented culture for students, and provide assistance with the specific tasks required to select, apply to, and enroll in college.³ Early college is a model of schooling that incorporates components capturing those recommendations.

Early Colleges

Since 2005, early colleges have been one of the ways in which North Carolina has sought to improve the economic competitiveness of the state. Led by North Carolina New Schools and supported by the North Carolina General Assembly, the Early College High School Initiative has created over 75 early colleges with 15,000 students.⁴ Serving students in grades 9-12 or 13, early colleges are small schools, most often located on college campuses, that blur the lines between high school and college. Students concurrently experience high school and college, and at the end of their high school experience, students are expected to graduate with a high school diploma and an associate's degree or two years of transferable college credit. Despite the rigorous academics, these schools are not focused on gifted students; instead target populations for these schools are students who might traditionally face challenges making the transition to college. These groups include students who are low-income, are the first in their family to go to college, or are members of a minority group underrepresented in college.



In North Carolina, early colleges are required to follow a set of six core design principles.

- **Ready for College** – Schools establish an environment that supports college readiness for all students. They do this through a required college preparatory curriculum, access to college courses, counseling for college admissions, and other college readiness activities, such as explicit instruction in college behavior and expectations.
- **Powerful Teaching and Learning** – Schools incorporate rigorous and relevant instructional and assessment practices.
- **Personalization** – Schools foster strong and positive relationships between students and staff and provide individualized academic and social support to help students achieve in a more challenging academic environment.
- **Professionalism** – Schools create an environment that empowers teachers and supports professional development and collaboration.
- **Leadership** – The entire faculty work toward a common vision of a college-focused environment.
- **Purposeful Design** – Schools use resources, time, and space to support the other design principles.⁵

Early colleges implement the design principles in a comprehensive manner to help more students stay in school and graduate ready for college.



The Study

Funded through federal grants from the Institute of Education Sciences, this eleven-year study is the first to rigorously examine the impact of the early college high school model. This is an independent study led by the SERVE Center at the University of North Carolina at Greensboro, partnering with researchers at Abt Associates, RTI International, and Duke University.

The study is looking at the impact of the model on a variety of student outcomes including: achievement, attendance, suspensions, attainment of college credits in high school, graduation from high school, enrollment in postsecondary education, and, ultimately, graduation from postsecondary education.

Methods

In this longitudinal experimental study, participating early colleges used a lottery to select students from the applicant pool. The North Carolina Department of Public Instruction collected data on all applicants who entered the lottery, examining high school outcomes, North Carolina Community College System data on college credit attainment during high school, and data from the National Student Clearinghouse on postsecondary enrollment and persistence after high school.

THE STUDY: COMPARING APPLES TO APPLES

It is often hard to determine the impact of a program like an early college because the students who apply or are selected to go there might be very different than regular high school students. Just looking at a school's outcomes might not tell you how well the school is doing because any better results might simply be due to better prepared students entering the schools.

This study uses an experimental design – frequently called the “gold standard” in education research – to address this concern.

To be in the study, schools had to use a lottery to select students. Students applied and then became part of a pool of eligible applicants. Within that pool, some students were randomly assigned to attend the early college and some were randomly assigned not to attend.

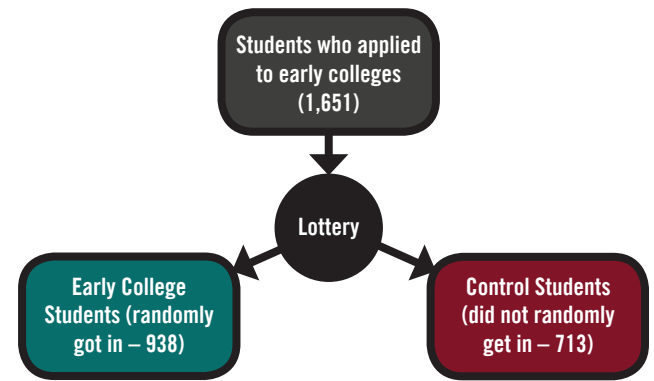
The study compares the results for the students who applied and were randomly chosen to get in to the results for the students who applied and were not randomly chosen. This means the two groups are the same and we are comparing apples to apples.

The study uses a methodology known as ‘Intent-to-treat,’ which means that all students who were initially assigned to the early college remain in the treatment group, even if they did not end up going to the early college or if they left the school at some point. The advantage to this approach is that attrition, or students leaving the school, is not a possible explanation for impacts. The disadvantage is that all impact estimates are likely to be smaller because they include results from students who are no longer in the early college.

Sample

For the results presented in this brief, analyses were conducted on a total of 1,651 students who applied to attend 12 early colleges and went through a lottery process (see Figure 1). 938 were randomly chosen to attend and 713 were randomly chosen not to attend and went to a different school. Results compared the early college sample with the control sample.

Figure 1: The Sample



Results

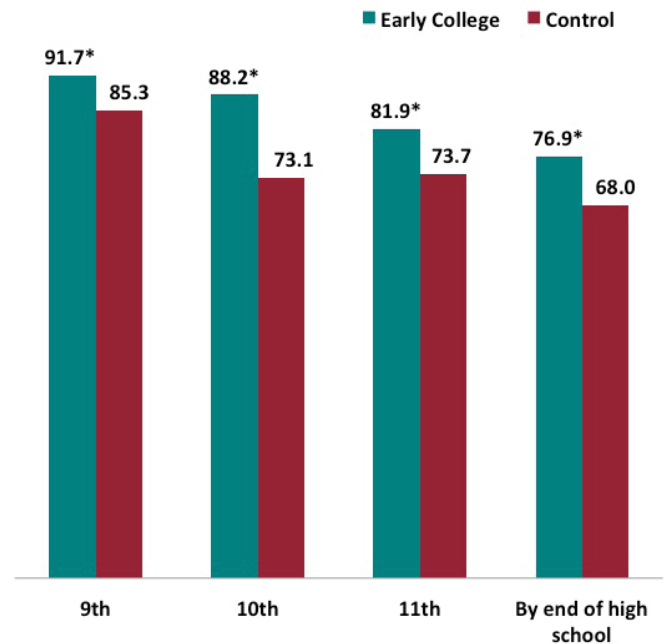
According to the findings, early colleges are succeeding in their goal of expanding access to postsecondary education. Specifics on key findings appear below.

Finding 1: More early college students were on-track for college.

Four year-colleges require that students successfully complete a specific set of courses by the time they graduate from high school, including four years of English and four years of college preparatory math courses. For this study, we looked at the extent to which students were on-track for college in each grade. In 9th grade, on-track meant having taken and passed at least one English course and at least one college preparatory math course (Algebra I or higher). In 10th grade, it meant taking and passing at least two English courses, at least two college preparatory math courses, and at least one science course. In 11th grade, it meant taking and passing three English courses, three college preparatory math courses, two science courses, and one social studies course.

The study found that early college students were more likely to be on-track for college than the control students. As shown in Figure 2, 92% of early college students were on-track in 9th grade compared to 85% of the control group, a 7% difference. In 10th grade, the difference was an estimated 15 percentage points and by the end of high school, it was 9 percentage points. This figure shows that more early college students will be eligible for entrance to four-year colleges.

Figure 2: On-track for College (%)



Finding 2: Early college students earned an average of 22 college credits while they were in high school compared to an average of less than 3 college credits received by students in the control group.

Early college students in the study earned 7.8 times as many college credits as students in the control group – 22.4 college credits compared to 2.9 credits. This suggests that students in the control group either do not have the same options for college credit or are not able to take advantage of any options they do have. Students who are members of groups underrepresented in college also earned many more college credits than their counterparts in the control group. We looked specifically at groups of students for whom, on average, access to college has been problematic historically, including members of minority groups underrepresented in college (African-American, Hispanic/Latino, and Native American), students who are the first in their family to go to college, students who are eligible for free and reduced price lunch, and students who enter high school below grade level (defined as not passing their 8th grade reading and/or math exams). As Table 1 shows, members of these groups earned less than 2 college credits on average in the control setting, compared to over 12 credits on average in the early college setting.

Table 1: College Credits Earned, by Sub-Group

Sub-group	Early College	Control	Ratio of Credits Earned Early College : Control
Underrepresented minority	16.7	1.5	11:1
First generation college-goers	19.5	1.4	14:1
Eligible for free/reduced price lunch	17.2	1.8	10:1
Entering high school below grade level	12.3	0.7	17:1

Finding 3: Early college students graduated from high school at a slightly higher rate than the control students.

The study also looked at the percentage of students who graduated from high school within five years. As many early college programs are five years in duration, this is the appropriate time period for graduation analysis even though it gives the control group an extra year to graduate. The impact estimates for this outcome should be considered very conservative. Results show that early college students are graduating at a rate that is approximately 4 percentage points higher than the control group, with 83% of early college students graduating in five years compared to 79% of the control group. This difference was statistically significant.

Finding 4: More early college students enrolled in college.

More early college students enrolled in college. Early colleges are a unique type of schooling in that they truly merge the high school and postsecondary experiences. Thus, students are enrolled in both high school and college at the same time.

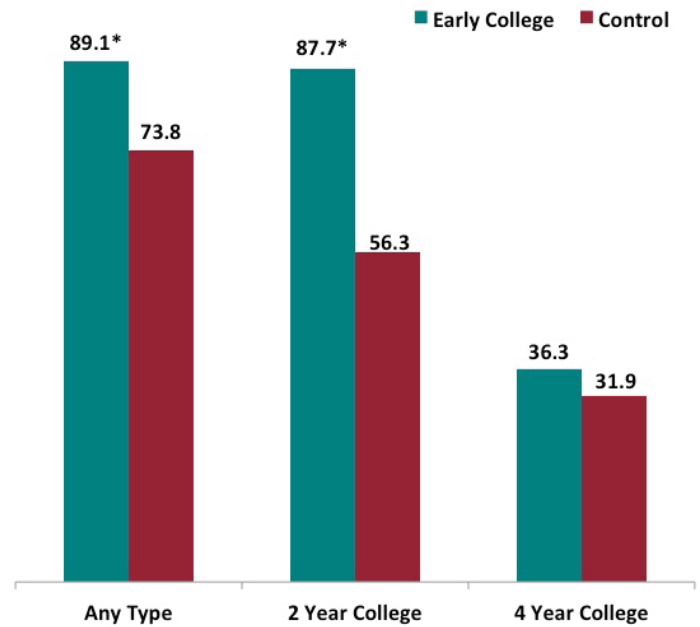
This can make it challenging to think about how success relative to college enrollment should be measured. For example, it is not appropriate to look at only enrollment in postsecondary education while in high school because the students in the control group don't have the same chance to enroll. On the other hand, it is not appropriate to look only at what happens after a student graduates from high school because that would mean discounting all of the experience that occurs while a student was in high school (and many students obtain associate's degrees during that time period).

As a result, the study looks at whether a student was ever enrolled in postsecondary education from the start of 9th grade through the beginning of the sixth year after entering 9th grade (what would be two years out of high school for students in a traditional high school). This provides recognition for the high school-related experiences but also allows students in the control group to “catch up” after graduating from high school.



Figure 3 shows the percentage of students who had ever enrolled in college from the beginning of high school through the beginning of the sixth year after entering 9th grade. This graphic demonstrates that early college students enrolled in college at a rate that was 15 percentage points higher than the control group. The data also show that the biggest impact is on students' enrollment in two-year colleges, which makes sense given that the majority of early colleges are affiliated with community colleges. There could be a concern that the increased community college enrollment would come at the expense of enrolling in four-year colleges or universities. However, we also see a 4 percentage point impact on enrollment in four-year institutions.

Figure 3: Students Ever Enrolled in College (%)



Finding 5: Early colleges create an environment explicitly focused on college readiness.

In addition to the experimental data, this study collects implementation data through surveys and site visits. These data confirm that early colleges are environments explicitly focused on getting all students ready for college – both for the college courses they will encounter in the early college environment and for the transition to further postsecondary education after they leave the early college. Early colleges provide students with explicit instruction on strategies needed in college, such as time management, notetaking for readings and lectures, and advocating for themselves with their professors. The teachers utilize instructional practices designed to prepare students to engage in discussion, think critically, and write well. Finally, early colleges help students through the logistical steps of applying to college and for financial aid. Students reported that they felt very prepared for college because of their early college experiences.

Conclusions

According to the results of this rigorous, experimental study, North Carolina’s early college high schools are smoothing the way to college for their students. The impacts are particularly large in areas that are tightly connected to college readiness. The percentages of students who were on-track for and enrolling in college all increased. Early college students – including those historically underrepresented in college – also received a much higher number of college credits while in high school.

In the light of these large impacts, the 4% increase in high school graduation is smaller than one might expect. The estimate, which resulted from a very conservative analytical method, should be understood in the context that graduation rates are notoriously hard to change, especially when the rates are already relatively high. For example, a similar small schools initiative in New York City had a positive 6.8 percentage point impact on graduation rates but their initial rates were much lower, starting at 61.9 percent.⁶

The ultimate outcome of interest remains graduation from college. As this study progresses, we will continue following students and will look at the impact of the program on students’ performance in postsecondary education post-high school and on their attainment of postsecondary credentials.

“... if I didn’t go to this school, if I were to get out of high school and go to a college, I’d feel like everything is just being bombarded at me... here it’s spaced out. I already have college classes under my belt. Now I can see a schedule. I can see a layout. That’s definitely helped me and I’m not as nervous and I’m not as stressed out ... I’m sitting here junior year about ready to go into college. They’ve prepared me so much. I’m not nervous about the transition or anything. I’m not nervous about classes. I’m not nervous about applications.”
 - early college participant



“I think I’m going to have a better college experience because I’m going to be prepared and know what to expect and be able to keep on track and not have to worry.” - early college participant

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