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This chapter provides an overview of recent literature on college readiness and the emergence of the early college model. Using quantitative and qualitative data from an experimental study of early colleges in North Carolina, researchers describe the positive effects found on various indicators of college readiness.

Early Colleges: A New Model of Schooling Focusing on College Readiness

Julie A. Edmunds

Postsecondary educators have expressed concerns for many years about how prepared high school students are for college (American Diploma Project 2004). As a result, states and organizations have launched a variety of initiatives designed to increase high school students' readiness for college, including increased access to college-level courses. One of the most promising initiatives has been the early college high school model—an innovative high school–college blend that is purposefully designed to ensure that students are ready for college. Early colleges, as they are often called, expand the model of dual enrollment by incorporating dual enrollment courses into the whole structure of the school.

This chapter presents an overview of early colleges and their results, focusing particularly on how early colleges support the goal of college readiness. The first section briefly explores the concept of college readiness. The second section describes the early college high school model, and the final section highlights the impact of the model on different indicators of college readiness.

College Readiness

College readiness is a complex and multifaceted concept that includes students' knowledge and skills, behaviors, attitudes, and awareness of specific college processes (Conley 2007). A key component of college readiness is academic preparation: learning the content and academic skills that are necessary for success in college (American Diploma Project 2004). Studies have shown that the single most important predictor of college success is the

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rigor of the courses that students take in high school (Adelman 2006). Taking the necessary courses needs to start in ninth grade. A study looking at high school transcripts in California found that only an estimated 6 percent of the students who did *not* complete Algebra I by the end of ninth grade completed the courses necessary for college by the end of senior year (Finkelstein and Fong 2008). Therefore, schools that want to increase students' college readiness must pay attention to the courses the students take starting in ninth grade to ensure course content is aligned to a high school curricular sequence that ends where postsecondary expectations begin.

In order for students to succeed in challenging courses, they need academic and social support (Swanson, Mehan, and Hubbard 1995), as well as emotional support (Savitz-Romer, Jager-Hyman, and Coles 2009). Academic behaviors such as study skills, time management, and the ability to self-monitor the quality of work are other core components of college readiness. Nonacademic behaviors, which include the ability of students to interact successfully with college professors and with their college peers, are also beneficial (Conley 2007).

A final key aspect of college readiness is awareness and knowledge of the specific procedural steps that students need to take to apply for and enroll in college (Tierney et al. 2009). This includes activities such as selecting schools of interest, taking the appropriate entrance exams, completing college applications, and completing financial aid forms—steps that have historically been challenging for low-income and minority students or students whose parents have never been to college (Roderick et al. 2008).

Ensuring that students are ready for college is thus more complicated than simply making sure that students take the right courses or take the SAT or ACT at the right time. Schools working on college readiness should focus specifically on developing college-ready academic behaviors and skills. Truly ensuring that a student is ready for postsecondary education requires a comprehensive effort.

The Early College Model

Early colleges are small schools that merge aspects of the high school and college experiences in order to create a new environment dedicated to increasing the number of students who graduate from high school and enroll and succeed in postsecondary education. The target population for these schools is students for whom the entrance into college has historically been more challenging, including students who are low income, the first in their family to go to college, or members of minority groups that are underrepresented in college.

The early college model as it is currently conceived owes its existence to seed money provided by the Bill and Melinda Gates Foundation, which started the Early College High School Initiative in 2002. Through the initiative,

more than 230 early colleges in 28 states and the District of Columbia have been established (Jobs for the Future n.d.). Many more have been established outside the auspices of the initiative. The national initiative, which is supported by the nonprofit organization, Jobs for the Future, has established a set of core principles to guide the implementation of the early colleges. Early colleges that are part of this national initiative are expected to include the following core components (Jobs for the Future 2008):

A commitment to serving students underrepresented in higher education;
A partnership between school districts and institutions of higher education;
A coherent, integrated academic program that helps students get their high school diploma and 1-2 years of college credit;
Comprehensive academic and social support, coupled with college readiness activities; and
A commitment to advocating for policies that support early colleges.

Although many early colleges combine these components with a particular emphasis on early access to a college experience, schools across the country may vary in their structure and implementation of the model. For example, some of these schools across the United States begin in sixth or seventh grade whereas others start in ninth grade. It appears that the most successful of early colleges are using the notion of accelerating students' performance to reenvision the entire high school experience.

One such comprehensive model is being implemented in North Carolina, where more than seventy early colleges are in existence. The vast majority of North Carolina's early colleges are located on college campuses, and the college experience, including dual enrollment courses, is a critical component of the model. Beginning in the ninth grade, students begin taking college credit courses, starting with courses such as computer science, study skills, or physical education. Although many schools provide college classes in the ninth grade in which only high school students are enrolled, by the time students are in the tenth grade, they are often enrolled in college classes with other college students.

In North Carolina's model, the emphasis on getting students ready for college classes drives all of the other school components. As an early college teacher said, the school's mission is to "graduate students ready for college, career, and life. And you see it everywhere, and . . . so it's not even a motto anymore. It's ingrained in you, and that almost seems like your first response for what are you doing." Schools are thus expected to take a comprehensive approach to creating an environment that supports college readiness, including changing course-taking requirements, improving teaching and learning, building high-quality staff–student relationships, and providing academic and affective supports to students.

Key Research on Early Colleges

Early colleges are a fairly recent innovation; as a result, the research base is somewhat limited, but it is growing quite rapidly. In general, recent studies find positive outcomes for early-college students on a range of dimensions. This chapter focuses on two key studies: a national evaluation of early colleges and the first large-scale experimental study of the impact of the early college model. I spend more time on the second study, which has a rigorous design and establishes the most accurate estimate of the impact of the model.

National Evaluation. The largest study to date has been the national evaluation of the Early College High School Initiative. Funded by the Bill and Melinda Gates Foundation and conducted jointly by the American Institutes of Research and SRI International (2009), this ongoing evaluation primarily describes the implementation of the model and summarizes student outcomes associated with the model. According to the study, most early colleges were created as entirely new schools, were located on a college campus, and were partnered with two-year colleges. The early colleges were also enrolling the target populations, with two-thirds of the students representing racial or ethnic minorities and 59 percent from low-income households.

The national evaluation found that early college students did better overall than the other students in the district in which they were located. These impacts varied by the structure of the school, however, with higher impacts for those early college students who were in schools located on college campuses.

The national evaluation also found that early college graduates had accrued an average of 23 college credits by the end of their senior year in high school (approximately seven to eight college classes). After graduation, more than 40 percent of the students enrolled in a four-year university. The study team also conducted interviews with some students; they reported that early exposure to the college classes and the college readiness activities provided by the early colleges led them to feel more prepared for life at a postsecondary institution.

Although the national evaluation offers a broad examination of the program, the study team was unable to take into account students' incoming academic preparation or their motivation. For example, it is possible that early colleges were enrolling students who were already more academically prepared or who were more motivated and, therefore, would have done just as well in a traditional school setting. The next study addresses this concern.

Experimental Study of North Carolina's Early College Model

Working with colleagues at SERVE Center at the University of North Carolina, Greensboro, Abt Associates, and RTI International, I am leading a longitudinal,

experimental study looking at the impact of North Carolina's early college model. Funded by the Institute of Education Sciences, this experimental study relies on the use of a lottery to select students for schools that have more applicants than seats. The study compares educational results for students who applied through the lottery system and were selected with those who applied but did not get in through the lottery. A lottery supports fairness and allows for a rigorous research design that suggests the two groups are comparable on characteristics such as incoming achievement and motivation.

The study investigates a variety of outcomes associated with college readiness, including high school achievement and course-taking, and behaviors associated with graduating from high school, such as attendance and continued enrollment in school. We also collect qualitative data on students' perspectives of the program. Schools enrolled in the study over time; by the end of the study, we will have results from more than 3,000 students in nineteen schools.

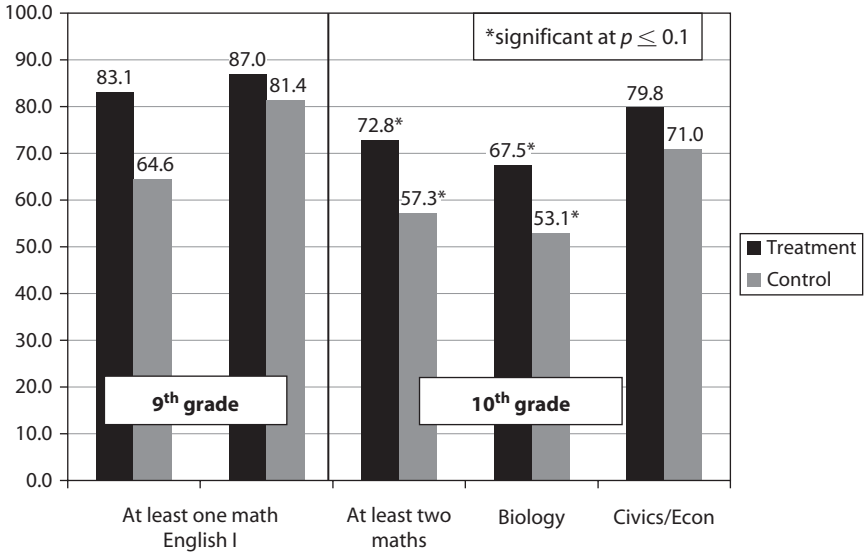
This chapter includes ninth- and tenth-grade results for a sample of a combined 715 students in the treatment and control groups who applied to attend six early colleges. Because we began following students in ninth grade, we do not yet have data on outcomes for large samples in the upper grades. In upcoming years, we will be able to report on outcomes such as graduation rates and enrollment in postsecondary institutions.

Rigorous Course-Taking. Results show that more treatment students are on track for college as measured by taking and succeeding in the core set of college preparatory courses. For ninth grade, we looked at English I and at least one mathematics course from the college preparatory track (that is, Algebra I, Algebra II, or geometry). In tenth grade, these core college preparatory courses include biology, civics, and economics, and at least two college preparatory mathematics courses. For each of these courses, we looked at the percentage of students who took the course *and also passed* the state-mandated test associated with the course, thus allowing us to capture both the proportion of students who had access to the course and how well those students did in the course.

As shown in Figure 9.1, a greater proportion of students in the early colleges (treatment) took core courses and passed the end-of-course test. These results were statistically significant at .10 or less only for the biology and the tenth-grade math course outcomes with this sample. We believe this is primarily due to the sample size, as analyses for our larger ninth-grade sample show that the ninth-grade math outcomes are also significant at *p*-values of 0.05 and lower. The results indicate that early college students are more likely to be taking the courses they need to be college ready (see also Edmunds, Bernstein et al. forthcoming).

Results reported elsewhere indicate that the program has a strong impact on outcomes related to students remaining in high school. For example, early college students were absent an average of 1.3 fewer days

Figure 9.1. Impact on Core College Preparatory Courses



($p \leq 0.001$) and had been suspended half as frequently as control group students (6.5 percent suspension rate in the treatment compared with 13.1 percent in the control, $p \leq 0.001$) (Edmunds, Willse et al. 2011). Students were also much more likely to remain enrolled in school, with 96 percent of treatment students still enrolled in a North Carolina school in tenth grade compared with 89 percent of control group students (Edmunds, Bernstein et al. 2011).

In addition to quantitative data, interviews with students and staff show how the early colleges have increased their students' college-going aspirations and their readiness for college. In addition, these interviews provide some insight into how the model's components are purposefully designed to assist students in becoming ready for college.

School–College Alignment. The explicit goal of early colleges is to ensure that every student is ready for college. This has resulted in increased expectations for the early college students and more rigorous high school classes, with all students expected to complete a college preparatory curriculum and all eligible courses taught at the honors level. Students saw the high school classes as being challenging in order to prepare them for the college classes they would be taking. A student at Lawson Early College (all school and college names are pseudonyms) said, "In high school classes, they go harder so when you take the college [classes], it'll go easier, so it'll be much easier for you."

Within the high school classrooms, early colleges tried to align their expectations and actions with college classrooms. The principal at Oak Early College highlighted how the school purposefully set up the teaching and learning in high school classrooms to mirror what happens in the college classroom and better prepare students for what they would encounter in college classes:

> As far as teaching and learning, it's about making sure that we mirror a lot of things that the college do. . . . Every single teacher here has a syllabus; whereas before, teachers just kind of had their pacing guide and their objectives and the students never saw it. But now, we have a syllabus. Students know exactly what they're going to encounter, so students are getting used to seeing what they're going to encounter on the community college side . . . our teachers have access to the syllabus [in the college], especially in the English and math areas, so our teachers know exactly what they're going to encounter.

College Behaviors and Skills. Students also commented that being on a college campus and taking college courses taught them some of the behaviors that were needed in college. A student at Hancock Early College said, "When we go out, you don't want to act like you're in high school. . . . Here [in the high school rooms] I'm a high school student. On campus, I'm a college student and they treat me as such." Students also believed that interacting with older students could provide them with lifelong skills that would allow them to do well in college and careers.

In addition to helping students learn to interact effectively with adults, the early colleges required students to take courses that focused on college-going skills such as study skills and time management. The college liaison at Fairdale Early College taught a college-credit course designed to prepare students for success in the community college. She described some of what she included in this course as follows: "I don't only talk about the study skills that are necessary but also the mind-set and the responsibility that they're going to have to take on their shoulders if they're going to succeed. No one's going to tell them when to get up. No one's going to tell them to go to class. No one's going to tell them to go to the Registrar's office and get their paperwork."

College Logistics. Early colleges also helped students with some of the logistical hurdles of attending college, not the least of which was free college courses for students, an aspect that was highly valued by many students. One student commented, "My family's on an extremely low income compared to most families, and if I hadn't come here, the opportunities for higher education would have been limited. So this school provided me opportunities that wouldn't have been available to my economic status otherwise."

The qualitative data described in this chapter highlight how a clear focus on preparing all students for college requires a rethinking of the basics of the high school experience. This has resulted in a different experience for early college students compared to those in traditional high schools, as shown by survey data we collected on the school experiences of both early college and control students: Early college students reported significantly more positive high school experiences on all of the dimensions we examined, including significantly higher academic expectations on behalf of the teachers, better relationships with their teachers, more rigorous and relevant instruction, and more varied and frequent support activities (Edmunds, Willse et al. 2011).

Conclusion

Early colleges represent an innovative approach to educating adolescents that is purposefully designed to support college readiness while eliminating the boundaries that currently exist between high school and postsecondary education. Because of the partnership between the high school and the college, early college students are simultaneously high school and college students. In one sense, early colleges provide an immediate assessment of whether students are college ready. For example, because the dual enrollment courses and the college experience allow both students and faculty to assess students' readiness for college, schools can, if necessary, revise the design and services to help students be more successful in college. This approach seems to be working well, as early colleges have been having a substantial positive impact on a variety of outcomes associated with college readiness. A student at Grayson Early College highlighted how being in the early college was different from solely taking dual enrollment in high school: "The thing with the high school is . . . you're in high school and you're taking some college classes, too. Here [in the early college] you are in college. This is like the end of the beginning . . . so then it just opens up a new pathway for us to keep going."

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