

An Introduction to “Early College”

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Abstract

Several national and international assessments have demonstrated that there has been little improvement in the performance of American high school students in recent decades. High school students are increasingly under prepared for transition into college level coursework. One new approach to high school redesign, “early college”, seeks to address these issues. The model features a rigorous academic course of study that engages students in college level work in grades nine through 14. Early college is a subset of dual enrollment programs that provides opportunities for students to complete high school and college credits with the same courses. The goal is to prepare students academically for college level coursework while easing the transition to higher education. Early college offers promise in directly addressing student academic performance, attrition rates, and readiness for college, but further research is needed to determine its efficacy and scalability.

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Introduction

Education reforms come and go with great frequency, but the latest one to capture the imagination of policymakers, philanthropists and educators - high school reform – seems more promising. There are certainly few other areas of public education that need more attention: the nation's more than 15,000 high schools are widely recognized as the “Achilles’ heel” of the educational system. Recent evidence suggests low levels of performance in core subjects, and huge numbers of students (particularly low income and minority) drop out before graduation, dramatically reducing the likelihood that they will attend and complete college. At a time when some postsecondary education is arguably critical for labor market success and the college-age population is at an all time high, the need for creative solutions to improve high school performance is imperative.

In this paper, we review the need for high school reform, specifically in the areas of academic preparedness, student attrition rates, and the transition to success in college. We then examine one model, “early college”, that provides opportunities for participating students to complete high school and college credits with the same set of courses, easing the transition into higher education. We review the design and discuss some implementation issues that must be tackled for the model to succeed.¹

The Evidence on High School Performance, Dropouts and College Preparedness

Three significant factors that plague high schools are poor student performance, high student drop out rates, and lack of preparation for college or university.

¹ A longer version of this article, *The Promise of “Early College” as a High School Redesign Model*, Dominic J. Brewer and Stephanie Stern (2005), containing historical background as well as a glossary of terms may be found at http://www.usc.edu/dept/education/cegov/Early_College_A_High_School_Redesign_Model.pdf

First, academic performance of students is poor, exhibits wide disparity among students, and at best has been flat for a generation. The main evidence comes from the National Assessment of Educational Progress (NAEP). For example, only 36 percent of 12th graders read at or above proficient level and 26 percent write at proficient level. In mathematics the figure is 17 percent and in science it is 18 percent. In terms of differences among students, with low-income and minority students significantly lag the performance of their higher income and non-minority peers. Although there have been signs of progress at lower grade levels, there has been little change in this picture for some time. There was no statistically significant difference between the national average score of 17-year-olds in reading in 2004 and 1971, and in mathematics, there was no improvement from 1973 to 2004 (NAEP 2005).

Additionally, only 22 percent of the 1.2 million high school graduates tested in 2004 met ACT's three college readiness benchmarks, which "represent the level of achievement required for students to have a high probability of success (a 75 percent chance of earning a course grade of C or better, a 50 percent chance of earning a B or better) in such credit bearing courses as English Composition, Algebra, and Biology" (ACT 2004). This conclusion is particularly striking because of the significant improvement in course taking patterns since 1983's *A Nation at Risk* began to focus attention on school performance (Jennings and Rentner 1998).

Second, large numbers of students drop out before the end of 12th grade. The poor academic picture is compounded by the fact that a significant number of students do not successfully complete high school. Although statistics on the extent of the problem are difficult to interpret because of differing definitions, the proportion of students who graduate on time from high school is generally estimated at 68-75 percent but for poor and minority children the figure is closer to 50 percent. Although there may have been some improvement in high school dropout rates during the 1970s and 1980s, the evidence is one of stagnation since the mid 1980s. The United States has slipped to 16th place in the world on high school completion

rates, following countries such as Denmark, Germany, Poland, Greece, France, and the Czech Republic (SHEEO 2005, p.10). A recent analysis concluded that the high school graduation and college readiness rates differ dramatically among types of students, where college readiness was “designed to reproduce the minimum standards of the least selective four year colleges” (graduation from high school, a minimum set of course requirements and to be able to read at a basic level). For example, 40 percent of White students, 23 percent of Black students and 20 percent of Hispanic students who started public high school graduated college ready (see Figure 1) (Greene and Winters 2005).

[**Figure 1 here**]

Third, while a significant number of students go to college, many are under prepared and do not complete any kind of terminal degree. One of the success stories of the American education system is the high rate of college going – about two-thirds of high school graduates – and the numbers are at an historic high (BLS, 2005, March). This picture, however, belies the fact that many students have already dropped out of high school, and many of those that do attend college do not complete a terminal degree. Of those who attend, “half receive some type of degree within five years of entering postsecondary education, and about one-quarter receive a bachelor’s degree or higher. The most privileged students graduate at much higher rates than their less-advantaged counterparts: better than 40 percent of students in the top socioeconomic quartile graduate with a four-year degree, compared to only 6 percent of students in the lowest quartile. And White students are considerably more likely to receive a bachelor’s degree than Black and Hispanic students” (Kahlenberg 2004, p.22). There is considerable ‘leakage’ from the college pipeline: approximately a quarter of the students who enter four-year colleges and almost half of those who enter two-year colleges do not return for their second year (Education Trust 2003).

Many students require remedial coursework in college – for example, in 2000, 28 percent of college freshmen took at least one remedial course in reading, writing or

mathematics (NCES 2003). The need to take such courses means higher college costs for students and fewer potential slots available at colleges and universities for other students. Time to degree has been lengthening; only 51 percent of those enrolled in four-year institutions complete a degree within five years (Kirst and Venezia 2004).

Lack of academic preparation with rigorous coursework, combined with lack of knowledge about college and how it relates to career options, means a high percentage of high school students are not prepared to do college level work. Students have been shown to have a lot of misconceptions about college, including the extent of financial barriers to entry, and limited knowledge of what it takes to enroll and finish (Kirst and Venezia 2004). Knowledge of how to apply to college is low (Rosenbaum 2001). Finally, the move from high school to college represents a major psychological transition (Noel, et al. 1985).

To summarize, millions of students receive inadequate academic preparation in high school, drop out, and fail to enter college or drop out of postsecondary education. Eighty two percent of all students are “filtered out” before college graduation: 32 percent are screened out in high school, as are 41 percent between high school graduation and the start of college, 32 percent of college freshmen do not return and another 33 percent leave before college graduation. See Figure 2.

[**Figure 2 here**]

The Promise of Early College

One relatively new approach to high school reform is “early college” which blends high school and the first two years of college. It is designed to help poorly prepared students get an associate’s or bachelor’s degree in fewer than the six years it would normally take to get from grades nine through 14 (Hoffman and Vargas 2005). Conceptually, early college makes sense because it directly addresses the issues of academic preparedness, achievement, and transition to college. The aggregate goal is to lower student attrition and guide more students to success

in college graduation. There are now almost 200 early college high schools nationwide and the number is growing every year.

The early college model features rigorous academic basics and a clear career pathway that begins to address the lack of accurate information on student's academic and professional options. Early college aims to be "customized" to students' needs, and it represents a significant break from the "one-size-fits-all" approach in conventional schools. By making the transition from high school to college seamless it, in principle at least, can reduce the likelihood of attrition. Further, by completing college-level work earlier, time to degree and college costs should be reduced. Senior year of high school is fully utilized in this model and students are exposed to college level work reducing the need for costly remediation when students reach college.

The programmatic details of the early college approach differ from school to school, allowing some adaptation to local needs and capacity. Typically, the new high schools are created through formal agreements between secondary and postsecondary institutions. In general, ninth grade students, regardless of their academic preparedness, choose a career and degree "pathway" as part of a motivating course of study, each student's academic skills, aptitudes and interest are evaluated, and students are given realistic insight into career options. An illustrative model includes nine themes: allied health and medicine; biotechnology; engineering; international business; liberal arts; linguistics; mathematics, science and technology; Native American culture; and teacher preparation (See www.earlycolleges.org; Huebner and Calisi Corbett 2004). In the 10th grade, students begin to take college level courses relevant to their chosen path. Courses include basic academics, pathway specific courses and also "college life" and career planning. Ideally, students graduate from high school with a diploma, an associate's degree and enough credits to qualify them as college juniors. Early college schools seek to emphasize high career-driven expectations for students, to

encourage use of technology and “active” learning, involve parents and allow time for staff collaboration.

Since 2001 more than \$124 million has been committed to the creation of more than 170 early college high schools in 25 states, with funding provided by major national foundations (including Gates, Kellogg, Carnegie and Ford). Schools are typically small, nearly three quarters have at least a 50 percent minority student body and half of early college students are on free and reduced price lunch.² Most of the schools require waivers from district rules and many are charter schools. Some are conversion schools while some are completely new; some offer courses at the high school site, others at a local college; and some teach all courses with high school teachers while others utilize college faculty.

Establishing a causal linkage between the early college model and student achievement after the outcomes is a high bar. Ideally, a large scale study including randomization of students would be needed. Since this is unlikely; researchers and educators must rely on much less perfect information. Anecdotal data on individual early college programs suggest some promise for this model. The most often cited example of early success is that of Bard High School Early College in New York which opened in 2001, and where 90 percent of the first graduating class went on to college, a majority as sophomores or juniors (See e.g., *U.S. News and World Report* 11/3/03). An early indicator of success of early college high schools is whether they are able to enroll a student body that is primarily drawn from underrepresented groups and to minimize attrition in ninth and 10th grades; to date the Gates models have been fairly successful in this regard. Of course, the ultimate test is whether the students at these schools graduate from high school, do so with some college credit, and enroll in postsecondary institutions.

² A series of reports prepared by the American Institutes for Research and SRI International detail the Early College initiative. (American Institutes for Research and SRI International 2004 and 2005).

Early college is a relatively new and as yet unproven strategy to improve high school achievement and transition to college. Although the initiative is being evaluated, the complexity of the rollout, selection of schools, and relative newness of the reform model means that comprehensive data on its efficacy and scalability are unlikely to be available. However, early college shares similarities with “dual enrollment” programs that can shed some light on its possible impact. Dual enrollment initiatives provide college credit to high school students for certain courses. Such arrangements have a long history as private agreements between high schools and colleges, but it was not until the 1980s that states began developing formal dual credit policies (Fajen and Prentice 2002). Dual enrollment exists in some form in nearly every state and 18 mandate that dual enrollment opportunities be provided to students (Weiss 2005). Nationally, most public high schools offered dual credit of some sort (71 percent in 2002-2003) and about half of all Title IV degree-granting institutions, particularly two-year colleges, had high school students taking courses for college credit within dual enrollment programs (Waits, et al. 2005; Kleiner and Lewis 2005).

One recent review of 45 studies on dual enrollment, Advanced Placement (AP), International Baccalaureate (IB) and Tech Prep, concluded that although there was little rigorous evidence, existing data were largely positive (Bailey and Karp 2003). The research available certainly indicates that participants and educators, both in high schools and in community colleges, are enthusiastic about the strategy. Students do proceed on to college and have more success there than the typical high school student, although this may reflect the characteristics of the dual enrollment students rather than the effects of the program. The very small numbers of studies that control for high school grades at least begin to take account of selection effects, and such studies still show positive effects. What we know so far is positive enough to warrant further experimentation and assessment (Bailey et al. 2002). Another review of the evidence reached a similar conclusion, “most studies indicate that dual credit students do well in college” (Fajen and Prentice 2002).

In general, the limited research evidence gives cause for optimism about dual enrollment approaches. There are some potential downsides, of course. The large literature on school reform design and implementation suggests that local contextual factors can cause significant variation in how well programs are implemented and this ultimately will affect their benefits and costs. If the program is structured so that college faculty teach the high school students there is some additional cost for taxpayers,³ but if they are taught by high school teachers there may be concerns about instructional quality. In many of the neediest schools, teachers are often relatively new and many are teaching out of field particularly in key subjects like mathematics and science.⁴ Over the long run, programs reduce time to degree and yield additional economic and social benefits from higher levels of education; they may well be cost effective.

A few specific studies are worth mentioning, although none are able to fully address the issue of selection into these programs. A recent examination of Texas longitudinal data concluded that high school students in that state whom concurrently enroll in postsecondary courses experience greater success in college. Indeed, they are twice as likely to graduate from college in four years as those who did not enroll in such a program (O'Brien and Nelson 2004). Nationally, four-year college students who participated in a high school dual enrollment program have, on average, a higher college GPA and a higher four-year graduation rate than students who did not participate in such a program (Martinez and Klopott 2004). There are a large number of additional studies of a single state or institution (See Brewer and Stern, 2005, for full list of sources).

³ The state is paying twice for the same students, i.e., "double dipping" into state resources. On the other hand there may be long run cost savings. See Bailey, et al. (2002), p. 23.

<http://www.inpathways.net/dualcredit.pdf>

⁴ "According to the Department of Education's 1999-2000 Schools and Staffing Survey, 52 percent of middle school and 15 percent of high school mathematics teachers did not have a major or minor in mathematics and 40 percent of middle school and 11 percent of high school science teachers did not have a major or minor in science." White House Fact Sheet: Jobs for the 21st Century (2004). <http://www.whitehouse.gov/news/releases/2004/01/20040121.html>. (Ingersoll, June).

Helping Early College Succeed

Although we do not yet have systemic evidence, the early college model is a plausible approach to reforming the nation's underperforming high schools. The evidence suggests that raising expectations for students and engaging them in college level work can produce tangible benefits. Implemented at scale, early college could have a profound impact on reducing dropout rates and increasing retention of students in high schools, increasing the number of students entering college, reducing the need for remediation and increasing the chances for postsecondary success. However, to achieve this goal will require a good deal of resourcefulness on the part of early college advocates and policymakers at the local, state, and federal levels.

What are the key mechanisms to help promote dual credit and early college? State and district policies can make implementation difficult by regulating course location, instructor credentials, or access to programs. Perhaps the primary need is for policies that grant schools autonomy so that a flexible design can be utilized. This means enabling charter school legislation or an openness to arrangements with public school districts that permit alternatives. Examining high school graduation requirements and statutes that limit the granting of college level credit to high school students (several states currently have such limitations) would also help implementation of early college. Schools must also have the resources to provide enhanced counseling and support mechanism for students (Karp et al. 2004).

Two recent reports have provided a comprehensive analysis of how state policies could be used to assist early colleges (Hoffman and Vargas 2005).

- *College courses can supplant high school courses.* Currently there are often restrictions on the use of college courses to fulfill requirements for high school seat time, or states allow a choice of *either* high school or college credit but not both, or there are caps on the number of college courses high school students can take. Removal of these kinds of

restrictions would help smooth the establishment of combined high school and college courses.

- *Eligibility requirements for college courses are based on student readiness in subject area.* Some states have limitations on access to dual enrollment courses based on assessment scores or GPA or there may be restrictions based on age or grade level. If dual credit and early college is to benefit for all students, entry restrictions would need to be lifted.
- *Credits for early college high school are transferable to two- and four-year institutions.* Most states have no systematic means of equating courses across high school and college. Many colleges have unique prerequisites set by academic departments that can only be satisfied within the institution. And there may be uncertainty from four-year colleges regarding admission status of students with dual credit courses. All these institutional barriers need attention.
- *Teacher certification is flexible.* State and union regulations may prohibit college instructors teaching high school students or high school teachers may not be able to become adjunct college faculty. Flexible kinds of certification arrangement would facilitate the adoption of early college.
- *Secondary and postsecondary funding streams can be merged.* A number of barriers to expansion of dual enrollment and early college programs exist due to the way schools and colleges are funded. For example: there may be a lack of FTE reimbursement for dual enrollees at four-year institutions; high school students are ineligible for federal and state financial aid; high schools lose dollars when students leave, discouraging high school participation in dual enrollment; funding rules to pay for per credit costs are typically inflexible. Developing a stable and equitable funding mechanism for early college strategies will be key to their long term spread and success.

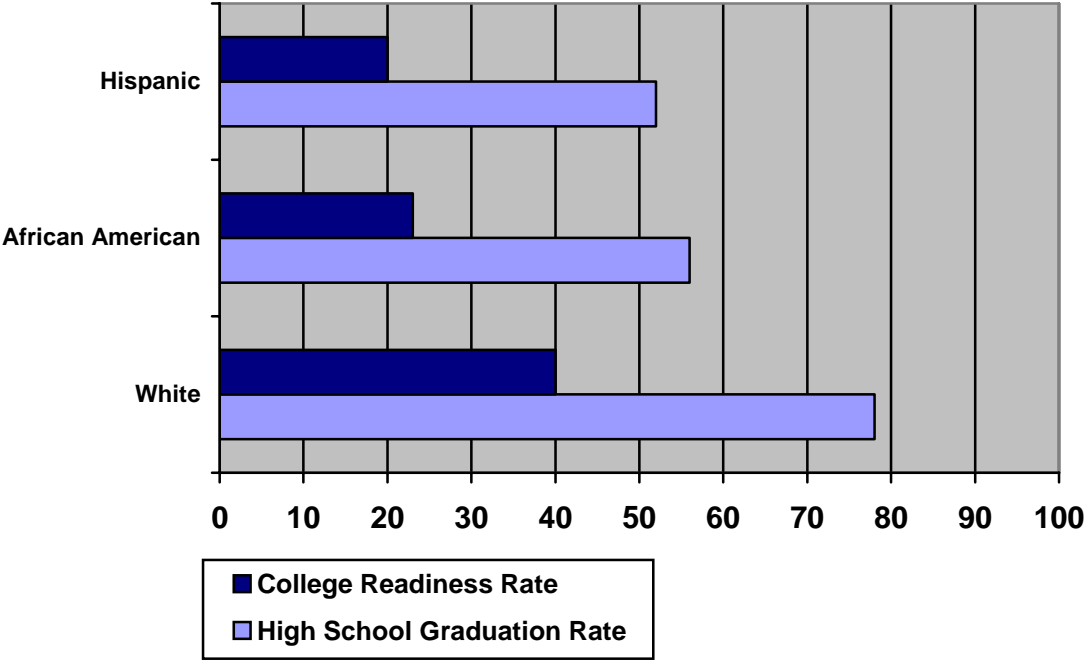
- *Schools have autonomy.* In regular public schools there may be insufficient autonomy at the site level to permit the introduction of major changes to the way high schools are organized. Charter school, on the other hand, have the needed flexibility; the adoption of early college high school is therefore aided by policies that support the expansion of charter schools.

In order to implement these recommendations, states will need to establish governance mechanisms that cross the boundaries between high school and postsecondary education, ensuring, for example, that high school exit standards are aligned with college admission requirements.⁵ Similarly, the existing system of accreditation, both of high schools and of colleges and universities, will need to be amended given that early college high schools straddle both sectors. States will also need to establish a data system that enables the tracking of students as part of a single K-16 system, something that is currently rare.

Tackling America's high school performance issues is a critical undertaking. The scale of the problem is massive with a high number of dropouts, particularly among low-income and minority students, and lackluster academic standards reflected in stagnant achievement levels and widespread college remediation. Reforms that promote student retention, raise academic expectations and increase college-going are needed. The early college model, built on the premise that all students should have the opportunity to attend postsecondary education and be prepared accordingly, is a promising strategy, with encouraging early anecdotal evidence. This is a reform that both policymakers and educators should pay attention to.

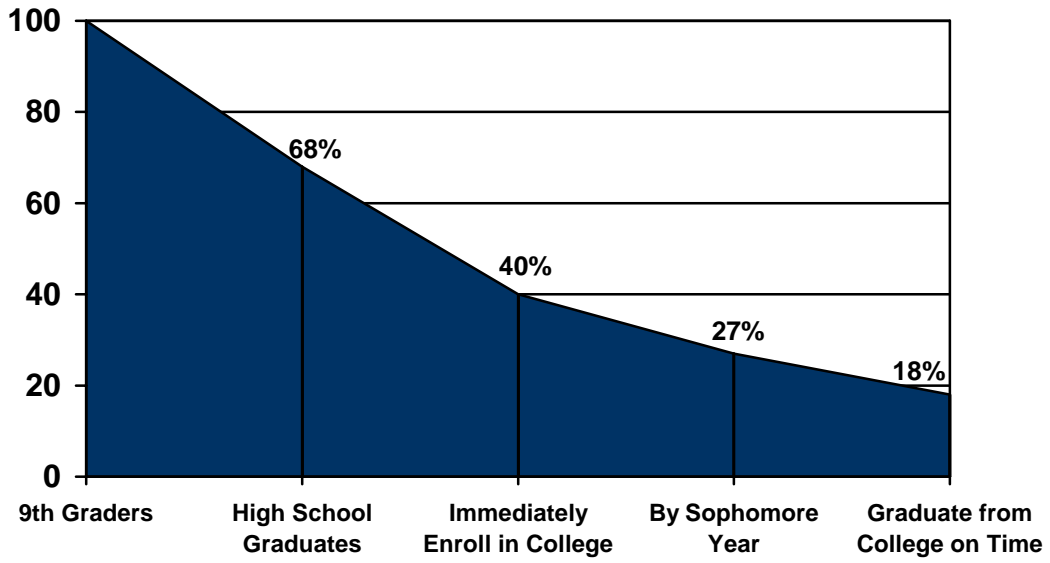
⁵ For a detailed discussion of this issue see Kirst and Venezia (2004).

Figure 1: High School Graduation and College Readiness Rates



Source: Greene and Winters, 2005.

Figure 2: The Filtering of Students from the Educational Pipeline



Source: National Center for Public Policy and Higher Education, 2004. Data are estimates of pipeline progress rather than actual cohort.

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