

**PROMOTING ACADEMIC MOMENTUM AT
COMMUNITY COLLEGES:
CHALLENGES AND OPPORTUNITIES**

Sara Goldrick-Rab

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Address correspondence to:

Sara Goldrick-Rab
WISCAPE Scholar, Wisconsin Center for the Advancement of Postsecondary Education
Assistant Professor of Educational Policy Studies and Sociology
Department of Educational Policy Studies
University of Wisconsin-Madison
210 Education Building
1000 Bascom Mall
Madison, Wisconsin 53706
Tel: (608) 263-4292
Email: srab@education.wisc.edu

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Abstract

The expansion of the American community college has not been matched by the rapid, or even consistent, progress of all entering students toward postsecondary credentials. Instead, a significant proportion of students enrolled in community colleges appear “stuck” on the road to completion. This lack of progress is due to the complex ways in which social and educational inequalities affect specific students *and* the institutions of higher education designated to serve them. As a result, policymakers and practitioners face significant challenges in their efforts to promote academic momentum. In the first part of this literature review, the sources of these challenges are located in student characteristics as well as in state and institutional practices and policies. It is argued that there exists an interaction of sorts between the actions of community colleges and the attributes of their students. Acknowledging the myriad complexities in efforts to improve the progress of all two-year students toward goal or degree completion, the second part of this paper examines empirical research to identify opportunities for improvement.

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INTRODUCTION

The massive expansion of the American community college over the last century substantially increased opportunities in higher education, both for disadvantaged adults who previously were rarely educated beyond high school and for more traditional students seeking alternative routes to credentials or degrees. According to many analysts, the result was a democratization of prospects for college, which increased access for the middle class (Dougherty, 1994; Leigh & Gill, 2003; Rouse, 1995, 1998). But the opening of college doors has not been matched by the rapid, or even consistent, progress of all entering students toward postsecondary credentials. Instead, a significant proportion of students enrolled in community colleges appear “stuck” on the road to completion. For example, only slightly more than one-third of community college students complete a degree of any kind within six years of their initial transition to college (Bailey, Leinbach, & Jenkins, 2006). This lack of progress is due to the complex ways in which social and educational inequalities affect specific students *and* the institutions of higher education designated to serve them. As a result, policymakers and practitioners face significant challenges to their efforts to promote academic momentum.

In the first part of this literature review, I locate the sources of these challenges in student characteristics as well as in state and institutional practices and policies, arguing that there exists an interaction of sorts between the actions of community colleges and the attributes of their students. Specifically, the lack of curricular momentum evident among community college students stems from the way that their family backgrounds, prior educational experiences, and educational expectations intersect with colleges’ institutional structures, practices, and policies. At each point during college – from initial entry to remediation and the subsequent route through school – these factors interact to affect academic progress.

Acknowledging the myriad complexities in efforts to improve the progress of all two-year students toward goal or degree completion, I then turn to lessons from empirical research to identify opportunities for improvement. One puzzle facing policymakers is how to develop policies and practices that recognize and allow for complexity in the student experience, and also operate in a way that encourages positive interactions between the attributes that students bring with them into college and the way that schools respond. Some of the research I describe provides insight into this challenge, but, unfortunately, much of the existing discussion on institutional and state-level efforts to advance the progress of community college students is limited in both scope and usefulness to policymakers and practitioners.

THE PACE OF PROGRESS THROUGH COMMUNITY COLLEGE

Compared with even two decades ago, our ability to measure the pace of community college student progress has improved dramatically. Both the federal government (through the National Center for Education Statistics [NCES]) and many states regularly survey the two-year college student population and collect transcripts so that progress toward degrees may be assessed. For example, the studies reported below use the most recent nationally representative survey of undergraduates, the Beginning Postsecondary Students Longitudinal Study (BPS) from NCES. All students in this survey entered college in 1995-1996 and were tracked until 2001. Thus, they were given a substantial period of time for making progress toward a degree.

Of course, students vary in their expectations for earning a college credential. This is likely related to their purpose for enrolling in college: some enroll in order to obtain a degree, but others are there to learn job skills or for personal satisfaction (Bailey, Leinbach, & Jenkins, 2006). On average, federal surveys indicate that 90 percent of community college students enter with the intention of earning a formal credential or transferring to a four-year institution at some point in their lives. The goal of earning a credential is notably lower for those students who enter seeking job skills, and it is less common among women, African Americans, and students who begin college after age 23 (Hoachlander, Sikora, & Horn, 2003).

Among students who entered a two-year college in 1995-1996 with the intent to earn a credential, only 36 percent had done so by 2001 (10 percent earned a BA, 16 percent earned an AA, and 10 percent earned a certificate). Another 12 percent had not earned a degree but had transferred to a four-year college, and an additional 8 percent were still enrolled in community college (Bailey, Leinbach, & Jenkins, 2006).¹ Rates of associate and bachelor's degree completion were lower for Black and Hispanic students, those from poorer households, first-generation students, and students enrolling in an occupational rather than an academic major (Bailey, Jenkins, & Leinbach, 2005; Bailey, Leinbach, & Jenkins, 2006).

Some observers suggest that progress through community college is better measured using intermediate indicators or "milestones" (Calcagno, Crosta, Bailey, & Jenkins, 2006). For example, progress may be assessed based on the completion of course credits (either remedial or non-remedial credits), the percent of the program completed, and/or whether a student passes the initial college-level or degree-credit "gateway" courses in writing and mathematics. Measuring progress in this way more fully recognizes the numerous barriers that community college students face and the wide variation in their pathways. To get to a degree, some first-time community colleges students must

¹ Results from the National Educational Longitudinal Survey (NELS), which followed an earlier cohort of students who graduated high school in 1992, indicate that these numbers increase given a longer window of observation. Among those 1992 high school graduates who enrolled at a two-year college by 1994, 50 percent had earned a credential by 2000 (21 percent earned a BA, 18 percent earned an AA, and 11 percent earned a certificate). An additional 13 percent of students had moved on to attend a four-year institution (Hoachlander et al., 2003).

successfully negotiate through the completion of a high school credential (via Adult Basic Education [ABE], English as a Second Language [ESL], and/or GED classes), continue on to remedial courses in order to improve basic skills prior to entry into gateway classes in math and writing, and remain enrolled until a sufficient number of credits are accumulated for a degree. Other community college freshmen advance more quickly, transitioning directly from high school graduation into credit-bearing coursework, but still having to negotiate the transfer process should they seek a four-year degree (Ewell, n.d.). In the next section I discuss factors that act as barriers to student progress during the initial transition into college, the process of remedial education, and the subsequent period during which students must persist to complete programs.

HOW INTERSECTING BARRIERS AFFECT STUDENT PROGRESS

Rather than attempt to enrich our understanding of factors reducing student momentum by analyzing each potential barrier to success independently, I instead examine how drivers of educational disadvantage – related to socioeconomic status, race, academic preparation, etc. – interact with institutional settings, policies, and practices.² The structure of American society places students in multiple contexts simultaneously: for example, students from low-income families often receive elementary and secondary education in resource-poor environments amid a concentration of similar students, which poorly prepares them for college academically, socially, and culturally. When they enter college, these same students are often educated in highly heterogeneous settings and presented with numerous programmatic options in a milieu that concurrently grants them both opportunities and challenges. Thus, in order to effectively serve community college students, policymakers must recognize that even seemingly unrelated factors – such as family background and curricular pedagogy – interrelate to influence educational progress and outcomes.

Step One: The Transition into College

A student's clock to postsecondary completion begins ticking as soon as she enters the college doors, and in many ways her clock is set even prior to that time. Individuals who make a smooth transition into college without a significant period of delay after high school are substantially more likely to complete a credential or degree during college (Adelman, 2006; Bozick & DeLuca, 2005). Yet 17 percent of high school graduates who begin college at a community college delay that initial enrollment for eight months or more (Adelman, 2005). The ability to make a seamless transition into community college depends not only on academic performance in high school, but also on family background and socio-demographic characteristics, and on educational expectations. As the primary markers of difference in American society, a student's gender, race, and social class background have both direct and indirect impacts on the college transition, including via effects on how she thinks about college and how she did in high school.

Social Inequalities

Even after decades of policymaking and progress, there remain persistent racial and socioeconomic gaps in college enrollment and completion.³ The association between race

²This approach stems from the sociological concept of “intersectionality,” which is most often used in the sociological study of sex and gender, in recognition that women not only live as women, but also experience life via racial and class statuses (see, for example, McCall, 2005). The key similarity is that the approach is used here to expressly reject the notion that categories of advantage and disadvantage operating in the lives of community college students can be theoretically or practically separated.

³ More than two-thirds (69 percent) of White high school graduates continue to college immediately following graduation, compared with 62.5 percent of African Americans and 62 percent of Hispanics (National Center for Education Statistics, 2005).

and access to higher education is the subject of a great deal of research, the majority of which finds that the effect is not directly causal (Cabrera, Burkum, & La Nasa, 2005; Nettles, Millett, & Einarson, 2001; Perna, 2000). Instead, most observable racial differences in college outcomes are attributable to differences in family background and resources, and to prior schooling opportunities, experiences, and behaviors (Jencks & Phillips, 1998).

That is not to suggest, however, that racial minorities always experience the transition to college in the same way as do White majority students of similar socioeconomic backgrounds. Indeed, a substantial body of recent research reveals that members of one of the fastest-growing immigrant populations, Latinos, experience specific challenges related to familial norms and demands (Cabrera et al., 2005; Kurlaender, 2006). For example, Latino parents are disproportionately likely to prefer that their child attend college near home; this preference decreases the likelihood of college attendance among Latino students and reduces the chances that they will apply to multiple colleges (Turley, 2006).⁴ Moreover, the process of college selection for Latino students has been described as a “chain of enrollment,” where friends and family members provide each other with information and support, and ultimately follow one another into specific institutions (Person & Rosenbaum, 2006; Person, Rosenbaum, & Deil-Amen, 2006). If they do enroll in college, minority students are more likely to be the first in their family to attend and thus to feel a school/family tension exhibited by the higher proportions of first-generation students who work while enrolled, maintain identities as community members as well as students, and interrupt their enrollment to take care of family (Nunez & Cuccaro-Alamin, 1998). But, on average, what is notable is that what appear to be racial differences in both college attendance and college completion in fact stem from the unequal distribution of minority and majority families into different socioeconomic groups (Jencks & Phillips, 1998).

Observable gender differences in college pathways are in some respects harder to explain. Today women are enrolling in college at higher rates than men, yet men are more likely to start at a community college. Men are also slightly more likely than women to transfer to a four-year institution, but among students who do transfer, women are more likely to complete a degree (Bailey, Jenkins, & Leinbach, 2005). These differences may be due to disparities in early schooling experiences. For example, research indicates that women earn better grades, but men are more likely to take advanced math and science courses and score slightly higher on tests, (e.g., Jacobs, 1996). They may also be due to differences in non-cognitive skill development (Jacob, 2002), or they may be a response to changing labor market opportunities, family structure, and military and incarceration systems (Buchmann & DiPrete, 2006; Buchmann, 2006).⁵

⁴ Forty-six percent of first-time community college students report that they chose to attend a community college because it was close to home (Adelman, 2005).

⁵ One analyst has suggested that the emergence of two-year colleges directly affected the gender gap in baccalaureate completion, as it greatly increased the incidence of college attendance among women (more than among men) and that women’s rates of transfer have steadily increased, thus increasing their completion rates (Flashman, 2006).

In some ways, then, women are experiencing greater success in college transition and completion than men. Not all women, however, have experienced the same advantages over men. Poor women in particular have encountered additional challenges to academic success in community college during the last decade. In the past, one path to college access for women in poverty with children was through the welfare system. Under the federal program Aid to Families with Dependent Children (AFDC), some welfare recipients received free tuition and child care so that they might attend college. Following the passage of the 1996 Personal Responsibility Work Opportunity and Reconciliation Act (PRWORA), which put recipients directly into work, there were significant declines in the number of poor women allowed access to college via this route (Shaw, Goldrick-Rab, Mazzeo, & Jacobs, 2006).⁶ Poor women (and poor men) were also affected by the 1998 Workforce Investment Act (WIA), a workforce development policy that sharply curbed access to job training. Whereas under the Job Training and Partnership Act, community colleges across the country enrolled thousands of low-income adults in both long-term and short-term training programs, those numbers dropped dramatically under WIA. Moreover, the federal welfare reform and WIA worked in tandem to reduce the incentives for community colleges to develop and provide programs for the truly poor, via the development of an accountability regime which increased paperwork and decreased funding. Thus, today it is harder than ever for the poorest adults – women and men – to find ways to afford attendance at community college, and to find support if they do enroll.

Of the three primary demographic characteristics shaping the college transition (race, gender, and class), a student's socioeconomic status – or social class – produces the largest differences in his or her outcomes. An individual's socioeconomic status is comprised not only of family income, but also of parental education and occupation, as well as wealth (e.g., property and other assets) and place of residence. Thus, there are numerous mechanisms through which family background can affect the process of college entry. A lack of income introduces constraints on what is affordable, and, combined with a lack of wealth, may also affect the level of risk a student is comfortable tolerating in order to pay for college. Whether or not a student has a college-educated parent influences the kind of information about college that she accumulates in the years leading up to choosing a college (Person et al., 2006). The jobs held by a student's parents may create advantages or disadvantages by, for example, opening doors to easier admissions (witness the privileges held by children of faculty; see Goldman, 2006) or by introducing insecurity (when the labor market cannot sustain availability of opportunities). As a result, a student's socioeconomic status is associated with every step of the transition to college (Bowen, Kurzweil, & Tobin, 2006; Grodsky & Felts, 2006).

Educational Expectations

Family background has long been thought to exert part of its influence on achievement by affecting the expectations that parents, teachers, and peers hold for a student (Sewell,

⁶ For example, in Washington State the number of welfare recipients attending community college declined from 7,624 in 1996 (7.9 percent of the caseload) to 2,044 in 2004 (4.9 percent of the caseload).

Haller, & Portes, 1969). According to this theory, a student's own educational aspirations can be raised by increasing the expectations held by those who matter to him. Following an oversimplified version of this scenario to its conclusion, we might anticipate that communicating expectations of timely degree completion to all students would increase their desire to make rapid progress toward a degree. Yet what is remarkable is that almost regardless of family background, the educational expectations of today's traditional-aged students are uniformly high. Indeed, nearly all high school students (90 percent) indicate that they expect to attend college, even if their career choice does not require it (Schneider & Stevenson, 1999).⁷ Compared with the 1970s, high school seniors in 2000 were twice as likely to anticipate earning a bachelor's degree *in addition to* a two-year degree (Reynolds, Stewart, MacDonald, & Sischo, 2006). Moreover, even upon entry to a community college, 70 percent of students state an expectation of earning a bachelor's degree or higher (Bailey, Leinbach, & Jenkins, 2006).

But such an orientation toward earning a degree does not always translate into the development of a concrete and realistic plan. In other words, simply stating an intention to earn an associate degree does *not* mean that the student has made a commitment to a future course of behavior (Morgan, 2005). Indeed, while 36 percent of entering community college students state that their purpose of enrolling is to transfer to a four-year institution, six years later only half of those students have done so (Bailey, Leinbach, & Jenkins, 2006).⁸ Students from socioeconomically disadvantaged family backgrounds are demonstrably less likely to possess a clear sense of how to negotiate either the college social or academic context. As a result, when these students are confronted with multiple pathways and options (with regard to courses, programs of study, etc.), they are more likely to make ineffective choices (Alfonso, 2004; Person et al., 2006).

K-12 Education

In a country where parents with greater resources may choose to live in school districts with more educational opportunities, it is often difficult to disentangle students' educational experiences in primary and secondary school from early familial experiences. However, comparisons among students from similar family backgrounds but with different types of high school education reveal that the quality of academic coursework and performance in that coursework are particularly strong predictors of both college entry and subsequent performance (Nora & Rendon, 1990; St. John, 1991).

In several national analyses of high school transcripts from 1982 and 1992 high school seniors, Adelman identified a "toolbox" of high school courses considered crucial for preparing a student for postsecondary participation, including those in math, science, and

⁷ Recent studies have identified some important racial and ethnic variations among educational expectations. For example, Bohon, Johnson, & Gorman (2006) have found that while on average Latinos are less likely to expect to earn a bachelor's degree, within-group variation exists such that Mexicans and Puerto Ricans have lower expectations than Whites, while Cubans have higher expectations.

⁸ One byproduct of increasing educational expectations over the last 30 years is a corresponding decline in the predictive power of expectations in explaining later educational attainment (Reynolds et al., 2006).

foreign language. Students whose high school curricula include advanced levels of these courses tend to perform better in college, even after holding high school grades and standardized test scores constant (Adelman, 1999, 2006). But, as noted earlier, not all students have access to this kind of college prep curriculum: disadvantaged and minority high school students are more likely to receive secondary schooling in vocational rather than academic tracks (Gamoran, Porter, Smithson, & White, 1997); take fewer math and science courses (Nora & Rendon, 1990); and attend schools with fewer resources, less-qualified teachers, and a lack of college prep coursework (Cabrera et al., 2005; Orfield, 1992; Orfield & Eaton, 1996; Terenzini, Cabrera, & Bernal, 2001). This is especially problematic given empirical evidence that the benefits of strong high school preparation are greater for socioeconomically disadvantaged students (Cabrera et al., 2005; Goldrick-Rab & Han, 2006). Moreover, many community college-bound students are unaware of the need to engage in rigorous college prep coursework, partly because of the false perception that open door institutions have no academic requirements (Schneider & Stevenson, 1999; Person, Rosenbaum, & Deil-Amen 2006). Indeed, some studies indicate a broad lack of awareness of placement testing and its consequences (Deil-Amen & Rosenbaum, 2002; Person et al., 2006). The concentration of poor and minority students in schools with other poor and/or minority students exacerbates the uneven distribution of both academic opportunities and “college knowledge,” since students with greater needs are isolated from more advantaged students.⁹

Financing College

An additional challenge faced by many students considering college, as well as by adult learners returning to or attending college for the first time, is how to pay for school (Hossler & Vesper, 1993; St. John, 1991). Affordability is one significant reason why a disproportionate number of low-income and minority students do not attend college or do not complete a college degree once enrolled (Heller, 2001; Mumper, 1993; Perna, 2002). Trends in financial aid toward providing less need-based aid (and more merit-based aid), and devoting more funding to loans rather than grants, have lowered the chances that college students from low-income families will enter college or complete a degree (Orfield, 1992; Perna, 1998, 2002; St. John, 1990; St. John & Asker, 2003).

Knowledge of how to pay for college is concentrated in those families where at least one parent attended higher education. In particular, low-income parents and students are less likely to receive high quality information about financial aid opportunities, and, in turn, are less likely to apply to college or file the federal application for student aid, which is required for them to receive grants or loans (DesJardins, Ahlburg, & McCall, 2006; Flint, 1993, 1997; Olson & Rosenfeld, 1984).

Both the quantity and quality of college financing information that families receive differ by social class: economically advantaged students learn about college and how to pay for

⁹ The average White student attends schools where more than three-quarters (78 percent) of students are White; the average Black student attends schools where more than half (53 percent) of the students are Black, and the average Latino student attends schools where 55 percent of the students are Latino (Orfield & Lee, 2006, p. 9).

it from a variety of sources, while poor students often have to rely on their high school counselors, largely because most persons in their circle of influence (e.g., family members, close friends) did not attend college (Cabrera et al., 2005; McDonough, 1997). As a result, disadvantaged parents are less likely to feel they can predict the cost of college, and empirical evidence indicates that they make more errors in their cost estimates when they do provide them (Avery & Kane, 2004; Grodsky & Jones, forthcoming). One study of parents of eleventh graders found that those who indicated that they were knowledgeable about the costs of attending a specific two-year college and were willing to estimate those costs overestimated the actual costs by only about five percent.¹⁰ In sharp contrast, parents who estimated the costs of attending a two-year college after reporting not possessing information about those costs overestimated the actual costs by 228 percent (Grodsky & Jones, forthcoming). There is a strong sense among researchers that such inaccuracies in cost estimates act to discourage some students from any form of college attendance (Avery & Kane, 2004; Glenn, 2004).

Delayed Entry

Success in postsecondary education is also affected by the age at which a student enters college. What some call a growing “disorderliness” in the traditional sequence of life events has resulted in delayed college entry for some, and incomplete progress and later re-entry for others (Rindfuss, Swicegood, & Rosenfeld, 1987; Jacobs & King, 2002). Fifty-three percent of community college students are over age 23, and 35 percent are age 30 or older (Horn & Nevill, 2006). Women are more likely than men to enroll in community college later in life, and, according to one study, over four-fifths of women entering college after age 25 are actually re-enrolling (Jacobs & King, 2002). Older students are disproportionately likely to juggle enrollment with work and family, and thus more likely to enroll part time, and also to experience “life events” such as marriage, childbirth, or divorce, which compete with schooling. In an analysis of the college completion rates of women over the age of 25, Jacobs and King (2002) found that it was these factors (particularly part-time enrollment) – rather than a student’s entering age – which accounted for the observed lower rates of completion among older students.

Adult Basic Education

At open door institutions such as the American community college, a lack of academic preparation or a temporary absence from formal schooling does not always preclude later college enrollment. A significant portion of the community college population is comprised of older adults from disadvantaged backgrounds, who often enter higher education with low levels of literacy. Nationally, 57 percent of two-year institutions rank the academic preparation of their entering students as fair or poor (El-Khawas & Knopp, 1996; Lewis, Farris, & Greene, 1996).

¹⁰ These cost estimates are of mandatory fees only; estimates of other fees and expenses were also reported and the trends are similar.

For those students who did not complete a high school diploma, some period of enrollment in Adult Basic Education (ABE) coursework is necessary prior to enrollment in the most fundamental college-entry courses. Yet, the majority of empirical studies find that adult basic education programs are of low quality and have little economic or educational impact (D’Amico, 1997; Pauly & DeMeo, 1996). In a study of students in Washington State’s Community and Technical Colleges, Prince and Jenkins (2005) found that only 13 percent of adults who started in ESL programs earned any college credits during the next five years, and only 30 percent of students in ABE and GED programs transitioned to college-credit courses during that time. Such findings appear to be relatively common. Other studies have found that half of all ABE students drop out in less than 10 weeks, and only a small proportion of GED students who earn that credential then go on to college-level coursework (Alamprese, 2005; Comings, Parella, & Soricone, 1999; Jobs for the Future, 2004).

As a result, ABE classrooms often experience “attendance turbulence,” impelling some administrators to employ an open-entry/open-exit system via which adult learners can come and go (Sticht, MacDonald, Erickson, 1998; Strucker 2006). It is thus unsurprising that an analysis of the results of 22 of the most credible outcome studies in adult education found that only five identified earnings gains and four identified student test scores gains (Beder, 1999). However, three of the studies found an increase in rates of GED completion, and over 40 percent did find that participation in adult education programs increased students’ likelihood of obtaining postsecondary education.

Research suggests that both economic (labor market conditions, occupational segregation) and personal factors (loss of child care, transportation challenges, substance abuse) mediate the relationship between basic education and adult outcomes (Comings et al., 1999; D’Amico, 1999). Yet, there is also evidence that program-level factors matter as well. A study of two GAIN programs in California found that adult basic education programs that paid attention to “quality” produced small but statistically significant test score increases (Martinson & Friedlander, 1994; Strawn, 1998).¹¹ “Quality” factors include the intensive monitoring of student participation, an ability to adapt program services to client needs, and the intensity and duration of the program. Links to further educational opportunities and to employers are also important aspects of program quality; traditionally, adult basic education programs have weak or non-existent links with advanced certificate and degree programs (Alamprese, 2005). Educational programs that link skill development to these real-world contexts enhance learning by clarifying the relevance of skills to the setting in which they are applied.

Yet, few programs in community colleges or other settings employ contextualized teaching and learning strategies in basic education. Pauly & DiMeo (1996) found that only 16 percent of the ABE programs that they studied made any effort to link basic education and the world of work. In a 1994 survey of 75 remediation and basic skills providers, only two providers reported that they linked curriculum with vocational skills

¹¹ GAIN was the California Greater Avenues for Independence program, which served families receiving welfare benefits during the 1990s (under Aid to Families with Dependent Children) with the goal of increasing employment and self-sufficiency.

training (Grubb & Kalman, 1994). Instead, texts and content in these programs were separated from context, what Grubb calls the “skills and drills” approach (1996, p. 72). Similarly, a study of 271 adult literacy programs revealed that 203 employed instructional strategies and materials that were devoid of strong connections to the “life-context” and real world situations learners faced, including the workplace (Purcell-Gates, Degener, & Jacobsen, 1998).

Step Two: Remedial Education

Given that students bound for community colleges are less likely to take and succeed in rigorous high school courses, it is perhaps unsurprising that for more than two-fifths of entering community college students the first year is characterized by participation in remedial education (National Center for Education Statistics, 2003). Rates of remediation at community colleges do not vary significantly by a student’s racial or ethnic background, household income, or parental education, but this similarity in rates is likely attributable to the segregation of socioeconomically disadvantaged students in certificate programs, which require little remediation – 91 percent of community college students taking remedial courses during their first year are in associate degree programs. The vast majority (90 percent) of community college students spends a year or less in remediation, and they are most often engaged in remedial math courses, rather than writing or reading. Students who require remedial coursework are less likely to complete any type of credential at a community college (Bailey, Jenkins, & Leinbach, 2005).

Evaluating Effectiveness

Critics of college remediation often interpret lower rates of completion among participants to mean that remediation has deleterious effects on student progress, while supporters contend that remediation is successful in furthering the progress of some students. But students who take remedial coursework differ in both observable and unobservable ways from students who do not. For example, Attewell and his colleagues (Attewell, Lavin, Domina, & Levey, 2006) found that remedial students tended to come from urban rather than suburban high schools, and that students who engaged in the most advanced curriculum in high school were less likely to take some remedial coursework in college – even when compared with students who take only “fairly demanding” courses in high school. Moreover, it is possible that students who do not take remedial coursework are more highly motivated, more knowledgeable about what is required to pass a placement test, or different in other important – yet unmeasured – ways from students in remediation. Thus, it is very difficult to make a causal claim about the effectiveness of remedial education on student success because students who participate in such programs differ from students who do not. Analysts must therefore take care to distinguish the process of selection into remediation from any effects of remediation on later outcomes.

Recent rigorous studies of remedial education have found that it *does not* have a causal negative effect on student progress (Attewell et al., 2006; Bettinger & Long, 2005;

Calcagno, 2007; Moss & Yeaton, 2006). One study using data from a well-known national longitudinal survey and statistical techniques to correct for selection bias found that taking one or more remedial courses in a two-year college does not lower a student's chances of graduation (Attewell et al., 2006). The same study found that even students who take three or more remedial courses are not disadvantaged relative to students from similar family and education backgrounds who took less or no remediation. Another study, which also carefully modeled remediation effects via a two-stage process that first predicted selection into the program and then completion, found math remedial students as likely as non-remedial students to complete their first college-level math courses, to re-enroll in the next fall, and to earn a degree or certificate (Calcagno, 2007). Moreover, remediation does not appear to inhibit the chances that a student will transfer to a four-year college. In fact, remedial coursework may *enhance* the likelihood of transfer: a rigorous study of community college students in Ohio found that students placed in math remediation were 15 percent more likely to transfer to a four-year college than students with similar test scores and high school preparation who attended colleges with policies that did not require placement in remedial classes (Bettinger & Long, 2005).

The impact of remediation on student success does appear to vary by the type of remedial coursework taken, although the findings are inconsistent. In one study the effects were notably larger for remedial coursework in reading and writing when compared with the effects of math coursework (Attewell et al., 2006), but other studies have found positive effects of math remediation, while the results for English remediation suggested no conclusive positive or negative impact on students (Bettinger & Long, 2005; Kolajo, 2004).

Despite growing evidence of the effectiveness of remediation for the community college population as a whole, there is little research on the variation of effectiveness of remedial education based on student characteristics such as family background, race, or full-time or part-time enrollment status. Descriptive statistics indicate that while rates of remediation do not vary substantially by racial/ethnic category, the gaps in completion rates between remedial and non-remedial students are much larger for Black and Hispanic students, compared with Whites who do not appear to experience a remediation "penalty" (Bailey, Jenkins, & Leinbach, 2005). However, one recent study did compare the effect of remediation on students under and over the age of 25, and found that while remediation reduced the chances for graduation overall, older students were less negatively affected. Moreover, older students appear to gain greater benefits from math remediation than do younger students (Calcagno, Crosta, Bailey, & Jenkins, 2006).

The Remedial Experience

Apart from whether remedial courses themselves result in slower academic progress, a substantial body of qualitative research reveals that many students struggle in remedial coursework (Deil-Amen & Rosenbaum, 2002; London, 1978; Traub, 1995; Weis, 1985). Rosenbaum (2001) has accused American high schools of contributing to high levels of remediation by promoting a "college-for-all" norm that encourages nearly all students to attend college despite their level of effort, achievement, and preparation. This philosophy

is also said to operate in remedial courses at community colleges, where students are simultaneously encouraged to hold high aspirations for a bachelor's degree while being provided with little feedback about their academic performance and chances for completion (Deil-Amen & Rosenbaum, 2002). Evidence from a study of over 4,000 students in 14 two-year colleges indicates that many community college students have little knowledge about course requirements, and in some cases are not even aware that the classes they are taking are remedial and do not count toward a degree (Person et al., 2006).¹²

Step Three: Persistence Through Community College

The transition into college and the process of remediation are but two of the steps that community college students must take in order to meet their goals. Remaining enrolled until a certificate or degree is awarded, and continuously accumulating credits and developing a coherent program of study, are challenges for many.

Early Coursework

An analysis of Florida community college students suggests that certain math and writing courses act as “gatekeepers,” and that passing them may significantly contribute to student progress. For example, among students in remedial writing courses, those who passed the first-year composition course were more than twice as likely to graduate when compared with those who did not pass that course (Calcagno, Crosta, Bailey, & Jenkins, 2006).

Attendance Patterns

Despite empirical evidence indicating that continuous, full-time enrollment is the optimal scenario for degree completion, many community college students find that route impossible to follow. Nearly one-fourth of them stop out from college within nine months of initial enrollment (Horn & Nevill, 2006). Only 31 percent of community college students enroll exclusively full time; indeed 26 percent enroll less than half time (Horn & Nevill, 2006). Part-time enrollment may result from competing demands with work or family, or from an inability to afford full-time enrollment. One-fifth of community college students are married parents, 15 percent are single parents, and 10 percent are married without children (Horn & Nevill, 2006). Students who work, particularly those who first identify as employees and only secondly as students, are disproportionately likely to enroll at a community college (Berker & Horn, 2003).

¹² According to Person et al. (2006), nearly one-third of community college students in their survey mistakenly believed that the remedial coursework in which they were enrolled would count toward degree requirements.

Financial Aid

Unfortunately, while part-time enrollment may be a reflection of a student's need to earn money to afford college, it may simultaneously reduce eligibility for financial aid. Students enrolled less than half time are ineligible for any form of aid, and earnings from work are absorbed quickly (especially for independent students) under the federal formula for financial aid. In one study of low-income workers in six different community colleges, participants reported concerns about the forgone wages associated with reduced work when going to school, being rendered ineligible for financial aid due to having a working spouse, and not knowing enough about their financial aid opportunities or even the existence of financial aid (Matus-Grossman, Gooden, Wavelet, Diaz, & Seupersad, 2002).

Does a lack of financial aid reduce momentum toward a degree? Clearly, students who receive financial aid may have characteristics which reduce the likelihood that they will complete college (and vice versa); thus, comparing the persistence of recipients with non-recipients will yield unsatisfactory results. Quantitative analyses that have attempted to isolate effects of financial aid on persistence using nationally representative datasets have produced mixed findings, partly due to differences in statistical techniques, sample, and the time-frame under study (Dowd & Coury, 2006). Recent rigorous analyses of the effects of aid on persistence reveal that students who do receive financial aid appear more likely to make consistent progress in college. For example, receiving a Pell Grant appears to decrease the probability of withdrawal among students during their first two years of college (Bettinger, 2004). Conversely, Dowd and Coury (2006) found that loans had no effect on degree completion when they are taken out by community college students in the first year and had negative effects on persistence. Furthermore, grants and work study had no significant effects. But aid may represent more to students than money. A study by DesJardins, Ahlburg, & McCall (2002) indicates that both the type of aid and the timing of aid may affect student retention; for example, scholarships given earlier during college appear to be more effective at preventing stopout.

Transfer

Another barrier to academic momentum subsequent to initial enrollment is the requirement that community college students move to another institution in order to earn a bachelor's degree. The current policies and practices of U.S. higher education do not facilitate the equitable flow of all students among all schools. Some students who change schools lose a portion of the credits they earned at the last institution they attended, fail to piece together a coherent curriculum of courses, and struggle to find the means with which to pay for college and travel to school (Bailey, 2003; McCormick, 2003; Prager, 2001). Moreover, studies of student mobility in elementary and secondary education in the U.S. indicate that mobile students, especially those from disadvantaged backgrounds, have difficulty coping with moves to new schools, often suffering psychologically, socially, and academically (Rumberger, 2003).

Approximately one-third of community college students transfer to a four-year institution within six years of initial enrollment (Bailey, Jenkins, & Leinbach, 2005). Transfer rates are notably lower for Black and Hispanic students, and within every racial and ethnic group women are less likely than men to transfer (Bailey, Jenkins, & Leinbach, 2005). Students from poorer households and those without college-educated parents are also less likely to transfer and earn a bachelor's degree (Bailey, Jenkins, & Leinbach, 2005).

Of course, while the most recognized form of student mobility is the upward transfer from a two-year to a four-year school, researchers have identified more than a dozen different types of multi-institutional attendance (Adelman, 2004; McCormick, 2003). These pathways range from "excursions," where attendance at the second or third institution is temporary and includes only a small number of credits, to "migration," which involves a permanent transition from one school to another, across sectors. In some cases students alternate attendance between multiple institutions (known as fragmentation, discovery, or rebounding), while in others they attend schools in sequence (called serial transfer). Analyses of national transcript data reveal that students from the lowest socioeconomic bracket are disproportionately likely to engage in mobility patterns involving discontinuities in enrollment and "reverse" movement from four-year to two-year schools – aspects of mobility which significantly reduce the odds of completion (Goldrick-Rab, 2006; Goldrick-Rab & Pfeffer, 2006).

Size of Institution

Other institutional characteristics, policies, and practices have also been shown to affect patterns of community college student persistence. Community colleges that are large (more than 1,000 students) and/or have a higher proportion of part-time faculty tend to have lower rates of student persistence (Bailey, Calcagno, Jenkins, Kienzl, & Leinbach 2005). Of course, the movement of students across schools makes it more difficult to identify effects of any specific institution, but it is clear that institutions can affect outcomes, even among similar groups of students.

IMPROVING THE PACE OF PROGRESS

State policymakers and community college practitioners face a substantial but not insurmountable task in increasing the academic momentum of students in their colleges. Though students bring with them a set of challenges resulting from social inequalities and an imperfect K-12 system, there is a consensus that practitioners ought to be prepared with effective programs and policies designed specifically to serve their needs. Such programs must not only acknowledge the intersecting barriers that students face, but effectively ameliorate the difficulties presented by those barriers. In this section I discuss relevant findings from rigorous empirical evaluations of programs and policies, using the same structure of dividing them among transitions to college, remedial education, and persistence.

Smoothing the Transition to College

Efforts to ease the transition between high school and college are at the center of numerous contemporary education policy discussions, especially those that focus on high school reform efforts. When examining specific interventions in this area, it is especially important to consider where the reforms are located (e.g., in high school or college), how they are funded, and who claims responsibility for them.

Dual Enrollment

One way to smooth the transition to college from secondary school is to offer early exposure to college coursework and environments (Fitzsimmons, 1999; Perna & Swail, 2001; Tierney & Jun, 2001). Dual enrollment programs are designed to move students more seamlessly from high school to college by allowing students to earn college credit while still in high school, thereby also potentially reducing the length of time (and associated costs) spent in college (Bailey, Hughes, & Karp, 2002).¹³ Particularly in states with relatively low high school graduation requirements and those with fewer opportunities for advanced course taking, dual enrollment may help introduce students to college courses and their academic demands. Nearly every state has some form of dual enrollment policy, either formalized at the state level or locally negotiated between colleges and high schools (Hughes, Karp, Fermin & Bailey, 2005). Approximately 4.5 percent of high school students participate in dual enrollment, and levels of participation are rising (Kleiner & Lewis, 2005; Marshall & Andrews, 2002; Welsh, Brake, & Choi, 2005).

¹³ Families can accrue significant cost savings if their children earn college credit while in high school and the local school district pays the tuition. According to one estimate, parents save between \$5,000 to \$24,000 in college tuition if their child completes a year's worth of college credit through a dual credit program (Marshall & Andrews, 2002). Taxpayers can also save when students earn credit for high school and college simultaneously. In 2001–02, the Running Start program in Washington State is estimated to have saved taxpayers \$34.7 million (Washington State Board for Community and Technical Colleges, 2002).

Studies of the effectiveness of dual enrollment tend to find that students who participate perform similarly or better in college-level courses compared with those who do not participate (Delicath, 1999; Hughes et al., 2005; Puyear, Thor, & Mills, 2001; Washington State Board for Community and Technical Colleges, 2002; Windham, 1998). It should be noted, however, that much extant research on dual enrollment suffers from one or more flaws. Dual enrollment studies generally examine students in a single institution, focus only on short-term outcomes (e.g., grades during freshmen year), and fail to grapple with the identification of appropriate comparison groups (e.g., Jordan, Cavalluzzo, & Carollo, 2006). The last is a particularly difficult research challenge, as there is considerable heterogeneity in the non-dual enrollment population, which should be considered when estimating any programmatic effects.

High School Reforms

One particular program that combines the high school and college experience is the Early College High School (ECHS), funded in part by the Bill and Melinda Gates Foundation. ECHS establishes a separate school within a public school district in collaboration with an institution of higher education. The schools are located in communities with populations underrepresented in postsecondary education, including low-income, minority, and first-generation college students. One characteristic of these schools is that they are small, with no more than 75 to 100 students per grade. The goal is for students to leave high school with sufficient college credit to enter a four-year university as a sophomore or junior. By changing the nature of high school and compressing the number of years spent in higher education, proponents argue that states and districts can increase high school and college graduation rates, save dollars for families and taxpayers, and better prepare students for entry into higher education and the workforce. However, some argue that programs such as this offer a fairly decontextualized entryway to college, which may hinder their effectiveness in the goal of easing the transition to college and ultimate postsecondary student success. Early results indicate that the first cohort of ECHSs (22 schools) are providing students with several options for earning college credit, including offering college courses at the high school and offering college courses at the college with both high school and college students. Attendance rates at ECHSs are high (91 percent average daily attendance) and 90 percent have at least some students enrolled in college courses. Retention and graduation outcome data are not yet available; the evaluation, which is being conducted by SRI International and the American Institutes for Research, began in 2002 and will continue until 2009 (American Institutes for Research, 2006).

Adult Basic Education

The transition from adult basic education to credit-bearing college courses can also be a target of interventions. Evidence from Kentucky suggests that states may improve adult education outcomes by integrating adult basic education into the mission of the community college, and emphasizing the transition to college in ABE programs. In Kentucky, tight linkages between ABE providers and community colleges appear to

facilitate both greater access to high quality programs based on learner-centered, competency-based instruction and success in those programs (Chisman, 2004). Yet, as elsewhere in the country, ABE programs in Kentucky still struggle to define goals and measure progress effectively. Should the success of ABE be measured by transition rates to remedial education, the completion of credit courses, improved test scores, or higher rates of GED completion? Given the numerous challenges faced by adults attempting to integrate higher education with family and work responsibilities, it may be appropriate to utilize a measurement of progress that captures the myriad ways in which adults may learn.

Comings and his colleagues (1999) suggest that persistence might be defined as “adults staying in programs for as long as they can, engaging in self-directed study when they must drop out...and returning to programs as soon as the demands of their lives allow” (p. 3). Of course, the flexibility of such a definition should not absolve institutions from being accountable for the outcomes of the adults they serve – instead, its purpose should be to encourage the provision of learning opportunities in multiple settings, and enable adults to assess their own progress. There is some evidence that indicates a need for colleges to devote resources to connecting with students when they are not currently enrolled in formal classes, and to track their participation across programs and settings (Comings et al., 1999; Reder, 1998).

An evaluation of 25 ABE programs across 40 colleges in New England found that participants were more successful in programs that were well coordinated and that included strong social supports provided by active staffers (Gittleman, 2005). The evaluation produced some evidence that simply providing relevant information can help to adjust essential student perceptions of college. For example, following the program, respondents indicated a greater awareness of college costs and, as a result, were less likely to consider affordability a significant barrier to degree completion. Instead, they reported their primary concerns as child care and transportation. A substantial portion (nearly 70 percent) of participants went on to college after graduation from the program. However, this study measured outcomes after only a single academic semester, and participants self-selected into programs.¹⁴

In perhaps the most rigorous evaluation of a program designed to help adults access literacy programs, Head Start participants with children under age eight were randomly assigned to a Family Service Center (FSC) program or regular Head Start services (Bernstein, Swartz, & Levin, 2000). The FSC demonstrations, begun in 1990, provided intensive case management and greater collaboration with community organizations. Participants who received these special services were more likely to participate in GED and ABE classes, and to report a degree goal, although they were no more likely to actually attain a degree during the three-year evaluation period. Thus, the most rigorous evidence related to ABE at this point indicates that social supports may help move low-

¹⁴ Indeed, program staff noted that successful students appeared to be a select group, since they were “self-starters” who displayed “a willingness to embrace change” (Gittleman, 2005, p. 34). On the other hand, program dropouts were disproportionately non-native speakers.

income adults into literacy programs, but it is not clear what features of specific programs help them to succeed.¹⁵

There is also some evidence that financial aid may help adults remain enrolled in college after adult basic education. Prince and Jenkins (2005) examined the educational attainment and labor market outcomes of adults who entered community colleges with limited education in the Washington State community college system. They found that students who entered ABE or ESL courses with less than a high school diploma were more likely to succeed in completing at least 45 college credits if they received financial aid once they enrolled in college-credit courses, when compared with students who enrolled in college-level courses, but did not receive financial aid. Specifically, 66 percent of students who began in ESL and received financial aid when they entered college-level courses achieved the 45-credit milestone, compared with 16 percent of students who began in ESL and entered the college level, but did not receive aid. Similarly, 42 percent of students who began in ABE classes and received aid once they advanced to college-level courses completed 45 credits, while only 13 percent of unaided students reached that point.

Recently, the Washington State Board of Community and Technical Colleges initiated a program to try and enhance the pace of progress from basic skills to college-level courses by integrating the teaching of basic skills into instruction in college-level occupational courses. This approach, known as I-BEST (Integrated Basic Education and Skills Training), was evaluated in 10 demonstration projects involving 268 ESL students. Comparisons of participants with other ESL students attending the same colleges revealed that I-BEST students had substantially higher completion rates in workforce training and stronger propensities to earn college credits (Washington State Board of Community and Technical Colleges, 2005). While this approach has yet to be rigorously studied, the initial evaluation provides some evidence that colleges can increase the rate of transition to college for students with limited English proficiency by integrating the teaching of basic skills and college-level content.

Enhancing Remedial Education

As noted earlier, research on the barriers to momentum presented by remedial education suggests that most students begin to get stuck very early during their community college careers. Initial college-level courses in math and writing act to either greatly boost student progress – if the student completes the courses successfully – or serve as a substantial barrier to graduation (Calcagno, Crosta, Bailey, & Jenkins, 2006).

However, too little is known about how to effectively remediate students, particularly older adults who have been out of school for some time. The notorious “drill-and-skill”

¹⁵ These results are supported by findings from a Kentucky program designed to help welfare recipients attend college. Recipients in the Ready to Work program attending a community or technical college with the support of a case manager appear to be more likely to stay in college and earn better grades (Kentucky Community and Technical College System, n.d.).

approach is still thought to dominate most instruction, though it may not be an effective teaching style for students who are likely to already have had bad experiences with it in high school. To promote college readiness, many colleges have introduced remedial orientation and other “student life skills” (SLS) courses that attend to different learning styles and that introduce study skills, time management, and effective college habits (Derby & Smith, 2004; Levin & Calcagno, forthcoming). It is plausible that enrollment in such orientation courses could help deter students from dropping out, assist students who want to re-enroll after stopping out, and promote persistence for students seeking to earn a degree. Indeed, a descriptive analysis of students enrolled in a Student Life Skills course in Florida community colleges found higher rates of academic success over a five-year period among participants who completed the program, compared with both non-participants and non-completers (Florida Department of Education, 2006).¹⁶

Contextualized Settings

Another approach involves contextualized remedial instruction, connected to real world settings (Grubb & Kraskousas, 1992; Mazzeo, Rab, & Alssid, 2003). While small-scale studies of particular programs have been conducted, there is little reliable evidence to suggest that specific pedagogical techniques are more effective than others, nor is there much research to indicate that combining social supports with developmental coursework necessarily boosts progress (Levin & Calcagno, forthcoming). As Bailey and Alfonso (2005) have noted, we have much yet to learn about how institutional and program characteristics affect the success of remedial programs.

What is clear is that in order to realize any positive impacts of remedial coursework on student progress, students who are placed into remediation must complete those courses. In general, about three-quarters of the students enrolled in remedial reading, writing, or mathematics courses pass or successfully complete them. For example, in 1995, 72 percent, 71 percent, and 66 percent of students in two-year public institutions completed their reading, writing, and math remediation courses, respectively (National Center for Education Statistics, 1996). In order to improve these rates of completion, many community colleges have established learning assistance centers, which pay particular attention to the needs of remedial students. These centers are typically independent of traditional academic departments and holistic in their approach to student development. Services may include career counseling, peer and faculty tutoring, group tutoring, self-guided computer-based instruction, study skills classes, and additional diagnostic testing. Studies have found that first-term grade point averages and remedial English pass rates are higher in programs where such tutoring is available, and remedial math pass rates are higher in programs where counseling and advisement are available (Boylan & Saxon, 1999). In cases where students decline or fail to participate in or complete remedial courses, or where these classes are ineffective in improving achievement, assistance in learning centers can help fill in gaps in reading, writing, and math skills (Perin, 2004).

¹⁶ The student life skills course in Florida teaches test-taking skills, study skills, time management, and financial management, and is geared toward students who are required to take developmental coursework.

Institutional Setting

States should also carefully consider the decision of where to deliver remedial education (Attewell et al., 2006). Locating remediation only in two-year institutions effectively tracks the students most likely to require remediation (those from lower-income brackets who attended high schools with fewer resources) away from the four-year sector. Such a decision should also be considered in relation to financial aid and college costs. Students in remedial courses at community colleges pay tuition and are eligible for aid, yet they receive no degree credit for their courses. Students at private four-year colleges in remedial classes are disproportionately likely to be awarded degree credit for those courses, however (National Center For Education Statistics, 2003).¹⁷ These very different practices, resulting from a hierarchical structure in higher education, suggest that despite evidence that remediation in community colleges may be effective, it does not mean that all students should have their remedial needs met exclusively by two-year colleges.

Promoting Persistence

The retention of community college students from one semester to the next remains a real challenge – whether retention is measured by continued enrollment in the institution where the student began or enrollment anywhere in higher education. A substantial body of research (based primarily on studies of four-year colleges) indicates that helping students to feel socially and academically integrated into the college environment encourages them to stay (Tinto, 1993, 1997). The Community College Survey of Student Engagement (CCSSE) is a well-known instrument intended to assess institutional practices and student behaviors associated with academic success among two-year students. Results of CCSSE indicate that student engagement is an important contributor to academic progress; students appear to learn more when they are actively engaged in creative and challenging coursework (see the CCSSE website, <http://www.ccsse.org>). However, it is important to note that CCSSE can only produce information about students who actually take the survey on the day it is administered. Furthermore, there is only limited evidence that the measures used in the survey are strong predictors of student success. On the whole, empirical findings from studies of two-year college students indicate that those students may be less likely to benefit from integration, especially since many of them commute and have families, and work off campus (Bailey & Alfonso, 2005).

¹⁷ The majority of both four- and two-year institutions offer remedial courses and do not grant degree credit for them. However, the differences between institutions in the granting of degree credit for remedial coursework is striking: 33 percent of private four-year colleges offer degree credit for remedial reading courses, compared with only 6 percent of public two-year colleges. For writing the comparison is 42 versus 7 percent; for math it is 30 versus 6 percent. (National Center for Education Statistics, 2003).

Learning Communities

One particularly popular approach to improving the connection between students and colleges is via the construction of learning communities where instruction is organized thematically and cohorts of students take multiple classes together during their academic careers at the institution. Numerous community colleges have experimented with learning community models in the hope that the approach will better integrate harder-to-engage students (Bailey & Alfonso, 2005; MacGregor, 1999; McPhail, McKusick, & Starr, 2006). Until recently, though, it was quite difficult to assess any impacts of learning communities. Since participation is nearly always voluntary, students who self-select into these communities may differ in important ways from students who are not involved.

In an effort to more effectively measure the impacts of learning communities, MDRC is conducting a learning community “experiment” as part of its Opening Doors project, in which MDRC and its research partners are working with six community colleges to test several program strategies designed to increase student success. The key benefit to experiments lies in the random selection process. If students are randomly distributed into a program or a control group, then resulting differences in their outcomes may be appropriately attributed to the program itself, rather than to other differences in student background or achievement. The learning community experiment is taking place at Kingsborough Community College in Brooklyn, New York, where the program has been serving approximately 750 students (mostly freshmen) since 2003. The program places students in groups of 25; the students take three introductory courses together and share a team of instructors and counselors. Early results from an examination of the first student cohort of 400 are mixed: while participants were more likely than those in the control group to pass their introductory coursework in English, they were no more likely to remain enrolled in college a year later.¹⁸ In other words, thus far there is no evidence to suggest that this learning community helps to retain students for a longer period of time, but it does appear to have had a positive impact on helping students to take and pass important entry-level courses (Bloom & Sommo, 2005).

Supplemental Instruction

Another model designed to improve performance in gateway coursework, the supplemental instruction (SI) program, has produced some positive results (Widmar, 1994). SI, which has been implemented in more than 50 institutions (including both four-year and two-year schools), pairs peer-assisted study sessions with courses identified as especially difficult. Participants are less likely to withdraw from, drop, or fail a gateway course, and, on average, earn higher grades than non-participants (International Center for Supplemental Instruction, 2003). However, it should be noted that non-participants may differ from participants in important ways; a random assignment evaluation of the program has not been conducted.

¹⁸ Students were tracked both at Kingsborough as well as throughout the 19 colleges and universities of the City University of New York system.

Financial Aid

Nearly all college students are concerned not only with whether they like a college and feel comfortable there, but with whether they can afford to continue to attend. With regard to initiatives related to student finances, administrators and policymakers should take note that MDRC has begun to do experimental evaluations of financial aid programs at community colleges (Brock & Richburg-Hayes, 2006). The first evaluation is based on the Louisiana Opening Doors program, designed both to help low-income parents attend college by giving them enhanced financial aid meant to cover more of the costs of schooling and also to supply an incentive for academic progress. This program was instituted in two New Orleans-area community colleges before Hurricane Katrina destroyed the region. Each school offered students a scholarship of \$1,000 per semester for a maximum of two semesters, provided that they were enrolled at least on a half-time basis and maintained a grade point average of “C” or better. These scholarships did not affect any other financial aid for which the student qualified. Students were paid in installments so that guidance counselors could confirm that students maintained academic progress and at least part-time enrollment.

The Opening Doors Program in Louisiana was executed by using a random assignment research design. Low-income parents who were eligible to participate in the program were randomly assigned to two groups: a program group that was given the scholarship along with counseling or a control group that received regular financial aid and the counseling available to all students. An analysis of the transcripts of initial participants after three semesters in the program revealed that Opening Doors students experienced higher rates of full-time enrollment, had greater success in courses (measured by the number of courses passed), and earned more total credits when compared with the control group. Indeed, the evidence of program effectiveness for this model is quite strong: for example, the second semester retention rates among Opening Doors students were 18 percentage points higher than for those in the control group (57.5% versus 39%), and the third semester retention impact was 11 percentage points higher than predicted (49% versus 38%) (Brock & Richburg-Hayes, 2006). Thus, while the program is still being implemented and evaluated, indications are that this financial aid strategy is among the most promising models for increasing the academic momentum and continued participation of community college students.

Transfer and Articulation Policies

Policymakers have also tried to ease the route to a bachelor’s degree by implementing articulation agreements designed to ensure that the courses taken at community colleges accrue toward a degree if and when the student transfers. However, recent evaluations of state-level articulation agreements have identified no impact on student transfer (Anderson, Alfonso, & Sun, 2006; Anderson, Sun, & Alfonso, 2006; Roksa, 2006). Another approach to improving bachelor’s degree completion rates, particularly for students who are unlikely or unable to change colleges, is to grant bachelor’s degrees at community colleges. Several Florida community colleges, including Miami-Dade

College, are now doing just that. However no evaluations have been conducted to assess their effectiveness in promoting degree completion (Levin, 2004).

Institutional Reform

Finally, some institutional practices may serve to enhance student momentum, but only if colleges effectively manage and align those programs and services designed to promote student success.¹⁹ For example, a rigorous study of Florida's 28 community colleges (Jenkins et al., 2006) found that colleges which specifically targeted support services to the students who most needed them had a bigger positive impact on minority student persistence, transfer, and completion. In addition, the formal provision of student services and job counseling has been found to be more effective in changing student outcomes than more informal models which rely on individual faculty personal "commitment" and attention in lieu of more formal procedures and practices (Jenkins et al., 2006; Person et al., 2006). For colleges serving students with numerous constraints on their time, who are attempting to juggle multiple responsibilities, and are on campus only part time, there is evidence that the advising process needs to be mandatory. In other words, rather than wait for the student to approach the advisor, colleges need to require students to see an advisor on a regular basis (Person et al., 2006). This policy also requires reducing the average student-counselor ratio, which can be extraordinarily high (in some cases 1,000:1) (Purnell & Blank, 2004).

¹⁹ This conclusion is consistent with a growing body of rigorous, empirical research from K-12 education, which finds that comprehensive school reforms models, which focus on reorganizing whole schools rather than implementing uncoordinated school improvement initiatives, are often substantially more effective at increasing student achievement (Borman, 2005; Borman , Hewes, Overman, & Brown. 2003).

CONCLUSION

The challenges faced by policymakers and practitioners seeking to improve the rates of progress made by students through community colleges are substantial. There is an abundance of research to suggest the enormous complexity of the problems that students face, but only a limited body of evidence to indicate that we know how best to overcome those barriers. This review identified obstacles related to the initial transition to college, the remedial process, and the path to persistence. The structure of social and economic disadvantage in the broader society clearly acts to limit the resources and information that students have when considering entrance to higher education, and delineates the early educational opportunities available to some and not others. Furthermore, once in community college many students struggle to balance classes with work and family, fail to seek out or receive the advising needed to construct a coherent program, and, as a result, feel isolated from both the academic and social life of the college. Indeed, some of these difficulties are the result of factors traditionally viewed as outside colleges' control, such as income and wealth differentials and racial segregation, and the inequitable distribution of resources in states' K-12 systems. But there is also some evidence that the means through which institutions provide information and resources to students can help overcome some of their initial limitations and guide more students to goal completion.

The most successful interventions appear to be those that meet students "where they are." For example, the Opening Doors program in Louisiana works to alleviate financial constraints without requiring students to attend full time or earn a particularly high grade point average, and yet seems to have a substantial impact on student retention. Other opportunities to improve student success seem to lie in the basic education and developmental programs that integrate high quality instruction with real world examples and intensive social supports – acknowledging that many community college students are not only enrolled in school, but are also engaged deeply in work and family life. The best available evidence indicates that such efforts should be institutional and systematic in nature, rather than programmatic and unlinked. In other words, colleges should be encouraged to undertake "whole school" reforms which simultaneously recognize the needs of their students and act to challenge and support them both in the classroom and outside it as well.

Finally, in order to overcome many of these challenges, there remains a substantial need for additional rigorous research on effective practices designed to increase academic momentum among community college students. In particular, learning communities, first-year support service programs, and adult literacy programs deserve more careful attention. As Comings and Soricone (2006) have noted, most studies of such programs lack longitudinal samples and/or appropriate comparison groups, and, perhaps most troubling, implemented programs often deviate from their intentional intervention designs. Thus it is difficult to determine whether the programs truly increase academic momentum or whether they simply attract students more likely to make academic progress in the first place. It is also hard to compare the conditions under which programs are more or less successful in order to draw lessons about how to improve program effectiveness. Thus, there is significant demand for more research employing experimental or quasi-experimental methods to test specific curricula and support

services, and to examine effects for subgroups of adult learners (Comings & Soricone, 2006).

Despite the inherently varied and multifaceted nature of the American community college mission, improving the academic achievement of students attending community college must remain a top priority. Some students enroll at two-year colleges because they want to, others because they feel they have few other options. That so many fail to make progress, getting stuck often very early in their trajectories, is evidence of both the numerous barriers that these students face and a failure by colleges and states to identify and implement effective reforms. We still know far too little about what works, but what evidence we do have indicates a need for a multifaceted approach that is flexible enough to accommodate the variety of student needs and ambitious enough to create meaningful change.

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