# 1

## The Problem of College Readiness

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Contemporary economic trends and social concerns have propelled postsecondary attainment into the center of the education policy agenda (Executive Office of the President, 2014). Although a high school diploma historically signified adequate training for the workforce (Baker, Clay, & Gratama, 2005), the modern knowledge-based economy increasingly requires tertiary degrees (Dohm & Shniper, 2007). College completion is associated with myriad benefits such as increased earnings and job satisfaction, higher levels of civic engagement, and lower crime rates (Baum & Ma, 2007; Camara, Wiley, & Wyatt, 2010; OECD, 2009). Yet postsecondary attainment remains stratified by race, ethnicity, and class (Rosenbaum & Becker, 2011). Educational stakeholders have thus focused on enhancing college access and success (Kirst & Venezia, 2004). As President Obama declared in 2009, "a good education is no longer just a pathway to opportunity—it is a prerequisite."

While larger proportions of high school graduates are entering college relative to prior generations, many students leave prior to degree completion (Ashtiani & Feliciano, 2012). Approximately 56% of four-year university students and 30% of two-year students obtain a degree (Symonds, Schwartz, & Ferguson, 2011). Table 1.1 presents data on students' high school to college pathways. High rates of remediation, or non-credit-bearing coursework for students underprepared in English and math, present

3

TABLE 1.1. High school to college pipeline: Nationwide outcomes for the year 2010

| For every 100 9th graders | # Graduate from high school | # Enroll in college after high school | # Are still enrolled their sophomore year | # Graduate within 150% time |
|---|---|---|---|---|
| In the U.S. | 74 | 46 | 31 | 21 |
| In California | 74 | 46 | 30 | 22 |

*Source:* National Center for Higher Education Management Systems (n.d.)

further cause for concern (Bettinger, Boatman, & Long, 2013). Nationally, remedial enrollment exceeds 20% in public four-year institutions and 50% in community colleges (Complete College America, 2012). Remediation is associated with increased likelihood of attrition and time-to-degree (Flores & Oseguera, 2013).

Underrepresented students—those who are first-generation, low-income, and/or of color—face particular challenges pertaining to higher educational access and completion. For instance, only about 30% of students from the bottom income quartile enroll in college relative to 80% from the top quartile (Bailey & Dynarski, 2011). In 2009, 35% of blacks and 29% of Latinas/os ages 18 to 24 were enrolled in higher education compared to 46% of whites (Kim, 2011). Despite the pervasive assumption that Asian students are the "model minority" (The Education Trust-West, 2012), the college enrollment rates of many Asian Pacific subgroup populations (e.g., Vietnamese, Hmong, Laotian, Cambodian, Pacific Islanders) trail behind those of whites (Teranashi, 2011). Underrepresented students also experience lower rates of completion on average relative to the general population (Aud et al., 2013). Low-income students are six times less likely than their higher-income peers to earn a bachelor's degree by age 25 (Bailey & Dynarkski, 2011). From 2010–2011, 39% of whites ages 25 to 29 held a bachelor's degree or higher compared to 20% of African Americans, 13% of Latinas/os (Aud et al., 2012), and 12%–14% of Laotians, Hmong, and Cambodians (Teranashi, 2013). Part of the problem is that underrepresented students are more likely than their traditional counterparts to attend less-selective institutions for which they are overqualified (e.g., community colleges; Roderick, Coca, & Nagaoka, 2011) or take remedial courses (Complete College America, 2012; see Table 1.2), factors that are associated with lower likelihood of graduation.

Enhancing higher educational attainment is not simply a matter of enrolling more students in college. High school students must graduate

**TABLE 1.2. Average U.S. remediation rates among incoming college students, Fall 2006**

|  | *Entering two-year colleges* | *Entering four-year colleges* |
| --- | --- | --- |
| African American | 67.7% | 39.1% |
| Latina/o | 58.3% | 20.6% |
| White | 46.8% | 13.6% |
| Other race/ethnicity | 48.9% | 16.9% |
| Low-income | 64.7% | 31.9% |
| Total | 51.7% | 19.9% |

*Source:* Complete College America (2012)

with the knowledge and skills necessary to pursue their postsecondary objectives (Achieve, 2011). Educational researchers and policymakers have thus focused on college readiness (Collins, 2009). A college-ready student is prepared to enter a postsecondary institution without need for remediation and navigate the system to obtain a degree (Conley, 2008; ConnectEd, 2012). Stakeholders aim to define the elements of readiness and enact policies to facilitate students' movement through the K-16 pipeline (Callan, Finney, Kirst, Usdan, & Venezia, 2006; Foley, Mishook, & Lee, 2013).

The college readiness agenda has revealed the misalignment between secondary and postsecondary contexts and encouraged greater rigor in high school curricula (ACT, 2005; Venezia & Voloch, 2012). Readiness discourse has also enhanced transparency around the skills and knowledge needed for postsecondary success (Venezia, Callan, Finney, Kirst, & Usdan, 2005), supporting more unified college preparation efforts across schools and classrooms (Achieve, 2004; Roderick, Nagaoka, & Coca, 2009). Encouraging all students to attend college also combats negative stereotypes about the achievement potential of traditionally underrepresented students (Dougherty, Mellor, & Smith, 2006). College readiness efforts thus reflect concern for educational equity (Symonds et al., 2011; Washington et al., 2012).

Yet despite consensus around the importance of college readiness, it remains an elusive concept—what exactly constitutes readiness, how it should be measured, and how it can be enhanced via policymaking are not clear-cut (Olson, 2006). As Lee (2012) has asserted, "there is a dearth of empirical research to inform national educational policies and standards for college readiness" (p. 52). Although college readiness gets enacted at the school and district level, states shape those responses. Accordingly, the

TABLE 1.3. Remediation rates among incoming students at
California State University, Fall 2013

|  | *Needing remediation in math* | *Needing remediation in English* |
|---|---|---|
| African American | 53.8% | 46.1% |
| Latina/o | 38.8% | 42.0% |
| White | 15.4% | 12.1% |
| Other race/ethnicity | 23.6% | 33.1% |
| Total | 29.1% | 32.1% |

*Source:* CSU Proficiency Rates (n.d.)

collection of studies in this book addresses this concern through the lens of college readiness policy in one state—that of California. The national trends in high school to college pathways and remediation outlined above are reflected in California as well (see Tables 1.1 and 1.3). This volume provides insight into the current state of reform via studies of statewide policy design, implementation, and outcomes, as well as the experiences of underprepared students. Insofar as efforts to improve college readiness occur on a statewide level, documenting what takes place in one state enables readers to reflect on efforts in other states as well.

Investigating the policy landscape requires first examining the definitions, assumptions, and policies that characterize the college readiness agenda. First, what does it mean for a student to be college-ready? I discuss how the multifaceted nature of college readiness creates challenges for stakeholders. Second, how is college readiness measured? Which elements of readiness are addressed, and which are left out? I then turn to a discussion of college readiness policies designed to prepare high school students for postsecondary education. How have reforms addressed college readiness? What obstacles remain? Through considering these questions, I offer insight into the current state of the readiness agenda and its ongoing complexities. I close with previews of subsequent chapters.

## Defining College Readiness

College readiness is a deceptively nuanced construct that differs from post-secondary eligibility (Connect Ed, 2012; Lombardi, Conley, Seburn, &

Downs, 2013). High schools have traditionally been responsible for making students eligible for higher education, which involves completing a particular course of study and required college admissions tests (Balfanz, 2009; Conley, 2012). Daniel Almeida offers further insight into the historical development of college readiness in chapter 2. However, because many eligible students do not obtain degrees (Attewell, Lavin, Domina, & Levey, 2006; Johnson, 2012), college readiness scholars have broadened the college access agenda to include persistence (Bragg & Durham, 2012; Flores & Oseguera, 2013).

College readiness is characterized according to a range of outcomes (Porter & Polikoff, 2012; Stemler, 2012). Conley (2007) and ACT (2007) have defined college readiness as the level of preparation needed to avoid remedial placement and succeed in credit-bearing college courses. Others have emphasized degree attainment: "students are college-ready when they have the knowledge, skills, and behaviors to complete a college course of study successfully" (Mijares, 2007, p. 1). Some have not specified specific outcomes: "an accumulation of knowledge and experiences that prepare students for college" (Maruyama, 2012, p. 253).

The readiness agenda has grown more complex with the recent integration of career goals. College and career readiness implies the need to prepare students for both higher education and the workplace (Hooley, Marriott, & Sampson, 2011; Lippman, Atienza, Rivers, & Keith, 2008). While some have suggested college readiness and career readiness are synonymous (Achieve, 2013; ACT, 2007), others have asserted they have subtle, or even significant, differences (Conley, 2012; ConnectEd, 2012). For instance, college coursework may require a broader knowledge base than vocational training (Rosenbaum, Stephan, & Rosenbaum, 2010). Although this book focuses on college readiness, conceptions of readiness vary depending on how college and career objectives are specified. Below I discuss how college readiness is characterized in the literature and the challenges associated with defining the construct.

## The Elusive Nature of Defining College Readiness

College readiness researchers have shown that successful college students possess a diverse range of skills and knowledge (ACT, 2007; Bloom, 2010). Others also have outlined the specific components of college readiness (Conley, 2012; ConnectEd, 2012; McAlister & Mevs, 2012), which

TABLE 1.4. Components of college readiness

| Cognitive academic factors | Non-cognitive academic factors | Campus integration factors |
|---|---|---|
| • Content knowledge | • Mindsets | • College knowledge |
| • Cognitive skills | • Behaviors | • Relationship to self and others |

I summarize in three broad categories: cognitive academic factors, non-cognitive academic factors, and campus integration factors (see Table 1.4). Consistent with most readiness scholarship, I define non-cognitive as factors not measured by traditional achievement indicators (e.g., standardized exams; Bowles & Gintis, 1976). Campus integration factors may therefore be considered non-cognitive as well, but do not pertain directly to academics.

**Cognitive academic factors.** Cognitive academic factors include the content knowledge and cognitive skills required for success in entry-level college coursework (Barnett et al., 2012; Porter & Polikoff, 2012). First, students must acquire core content knowledge (Adelman, 1999, 2006; Conley, 2010). Students need to master the basics in main academic subjects and develop proficiency in math, reading, and writing (Byrd & Macdonald, 2005; Long, Iatarola, & Conger, 2008). Second, college readiness entails cognitive skills such as critical thinking, problem-solving, metacognition, communication skills, research skills, and systems thinking, which facilitate learning across disciplines (ConnectEd, 2012; NRC, 2012).

**Non-cognitive academic factors.** The academic preparation required for college readiness also includes non-cognitive abilities, or mind-sets and behaviors (Farrington et al., 2012). Mind-sets are the attitudes, beliefs, and emotions students have about themselves and schooling (Dweck, Walton, & Cohen, 2011). Examples include engagement, motivation, self-efficacy, and persistence (Robbins et al., 2004). Academic behaviors enable students to engage with content and maximize learning (Conley, 2012; Kuh, 2007). College-ready behaviors involve help-seeking, motivation, goal-setting, time management, self-efficacy, self-regulation, study skills, and task completion. Researchers have pointed out that these behaviors are transferable

to the workplace, and thus also relevant to career readiness (McAlister & Mevs, 2012; NRC, 2012).

**Campus integration factors.** Although academic ability is essential to college readiness, students also need skills that help them adapt to a postsecondary setting, or campus integration factors. These factors, which may also be framed as non-cognitive, include college knowledge and relationship to self and others. I define each below.

*College knowledge.* College knowledge refers to understanding the procedural requirements and cultural expectations of higher education (Conley, 2005; Hooker & Brand, 2010). The processes of applying to college and securing financial aid can present large obstacles for high school seniors—particularly those who are low-income and/or first-generation (Corwin & Tierney, 2007; Perna & Steele, 2011). Bryan Rodríguez in chapter 7 explores the challenges associated with financial aid in greater depth. College-ready students understand how to complete college applications, select and enroll in their desired institution, and secure financial resources (ConnectEd, 2012; McAlister & Mevs, 2012). College knowledge also involves awareness of the culture, values, and expectations of postsecondary contexts, which differ from those of secondary schools (Conley, 2007). Research has shown that tacit cultural knowledge, such as knowing to visit office hours, utilize style guides to format papers, and submit assignments on time, is necessary for postsecondary success but may be unfamiliar to many first-generation students (Byrd & Macdonald, 2008; Collier & Morgan, 2008). College-ready students are familiar with the cultural and behavioral norms of higher education (Hooker & Brand, 2010).

*Relationship to self and others.* In addition to awareness of the postsecondary context, college readiness involves developing a strong relationship to oneself and others. First, students need a firm sense of self or a "productive self-concept" (ConnectEd, 2012, p. 15), which encompasses traits such as self-esteem and self-awareness. According to Conley (2012), students who are successful in postsecondary settings develop an academic- and/or career-oriented identity. College-ready students identify their goals, recognize their strengths and weaknesses, and understand how they fit into the larger campus community. Second, college-ready students possess social-emotional skills that enable positive relationship-building and community engagement (Aries & Seider, 2005; Sedlacek, 2004). Because college campuses serve diverse populations, students are expected to interact well with people from different backgrounds (Durlak, Weissberg, Dymnicki,

Taylor, & Schellinger, 2011; Murnane & Levy, 1996). College-ready students demonstrate interpersonal skills such as effective communication, teamwork, leadership skills, flexibility, and cultural sensitivity (ConnectEd, 2012; NRC, 2012). The ability to establish rapport with professors and build social capital is important to enable persistence, especially for first-generation students (Yamamura, Martinez, & Saenz, 2010).

In summary, college readiness is defined here as the preparation a student needs to enter college and persist to graduation without needing remediation. Readiness includes competencies in three areas: cognitive academic factors, non-cognitive academic factors, and campus integration factors. These components of readiness are summarized in Table 1.4.

### *Remaining Definitional Challenges*

Although researchers have agreed that college readiness involves a combination of academic preparation and non-cognitive capacities, these skills are diverse, complex, and articulated in multiple ways (Olson, 2006; Washington et al., 2012). In addition, readiness develops and manifests differently for different students (Conley, 2012). The absence of a universal, operational definition leads stakeholders to interpret college readiness based on their individual experiences and goals (McAlister & Mevs, 2012). For instance, Washington et al. (2012) studied the implementation of a high school course developed in Virginia to enhance students' college readiness. Findings revealed large variation in course design due to teachers' varying perceptions of college readiness. For example, some prioritized academic outcomes, others focused on student motivation, and others emphasized knowledge transfer across contexts.

The ambiguity around readiness is particularly problematic for first-generation students and their families. Research has found that parents from different backgrounds have diverse, often conflicting perspectives on college readiness (Cortez, Martinez, & Saenz, 2013; ENCORE, 2009). One study by ENCORE (2009) found that high-income, native English-speaking parents spoke of college readiness in terms of skills (e.g., critical thinking, strong study habits), while low-income, Spanish-speaking parents understood readiness in terms of measurable outcomes (e.g., exam scores, high school graduation). Students and parents require clearer understandings of what college readiness entails to access adequate preparatory

experiences (Yamamura et al., 2010). Consequently, one remaining challenge for researchers and policymakers is enhancing transparency and clarity around the components of college readiness (Maruyama, 2012).

Some scholars have argued that dominant college readiness models fail to adequately address the high school context or the cultural identities of students, families, and communities (Carter, Locks, & Winkle-Wagner, 2013; Castro, 2013). By focusing on the skills students should have, readiness frameworks de-emphasize the structural conditions that create inequitable access to college preparation (Welton & Martinez, 2013). Studies focusing on college knowledge tend to adopt a deficit model, portraying students of color as lacking social or cultural capital or college aspirations (Castro, 2013). Researchers consequently recommend policies designed to remedy deficiencies rather than build on the existing cultural assets of underrepresented youth (Liou, Antrop-Gonzalez, Cooper, 2009). Most quantitative studies of college readiness employ dichotomous variables to account for race (e.g., Latino/Hispanic, or not), which oversimplify the multifaceted nature of cultural identity (Welton & Martinez, 2013). Few studies acknowledge the heterogeneity of college preparatory practices among students from similar racial/ethnic backgrounds. Mainstream conceptions of readiness may therefore perpetuate a set of normative assumptions around college-going (Castro, 2013). Greater consideration of the contexts, needs, and experiences of non-dominant students may improve college readiness models.

### Measuring College Readiness

Although college readiness involves non-cognitive elements, it is typically measured based on indicators of academic performance (McAlister & Mevs, 2012). Measures of academic achievement are useful for two primary reasons. First, research has cited rigorous academic preparation as a key predictor of postsecondary outcomes (Adelman, 1999, 2006; Long, Iatarola, & Conger, 2008; Perna, 2005). How students perform in high school is strongly associated with their likelihood of doing well in college courses. Second, assessments of student performance are relatively easy to obtain and standardize (Porter & Polikoff, 2012). In what follows, I first discuss the common indicators used to measure readiness and then areas for future improvement.

*Indicators for Measuring College Readiness*

**Course-taking, GPA, and class rank.** One approach is to examine high school students' course-taking patterns, such as the level of course rigor and fulfillment of four-year college admissions requirements (Porter & Polikoff, 2012; Roderick et al., 2009). Research has identified the rigor of curriculum as the strongest indicator of college performance (DesJardins & Lindsay, 2008), and the effect of rigorous course-taking is even larger for African American and Latina/o students than for their white peers (Adelman, 1999). Taking advanced courses while in high school has consistently been associated with higher likelihood of postsecondary success (Karp, Calcagno, Hughes, Jeong, & Bailey, 2007; Struhl & Vargas, 2012). Thus, students who have completed a college preparatory curriculum may be considered college-ready (Lee, 2010). High school grade point average (GPA) and class rank are additional indicators used to assess a student's level of readiness for college (Astin & Oseguera, 2012). Research has established a relationship between these measures of high school performance and college GPA (Cimetta, D'Agostino, & Levin, 2010; DesJardins & Lindsay, 2008; Strayhorn, 2010).

**Standardized testing.** In addition to course-taking patterns, GPA, and class rank, test performance is often employed to assess readiness (Camara et al., 2010; Wiley, Wyatt, & Camara, 2010). Researchers have developed benchmark scores on college admissions tests (e.g., ACT and SAT) to predict a student's likelihood of postsecondary achievement (Wyatt, Kobrin, Wiley, Camara, & Proestler, 2011). Cut scores have also been established on state and/or institutional assessments such as remedial placement exams (e.g., ACCUPLACER and COMPASS) to signify readiness (Grubb et al., 2011; Venezia & Voloch, 2012)—an approach Lisa Garcia will examine in chapter 5. Standardized test performance is often used to determine college course assignment (Howell, Kurlaender, & Grodsky, 2010). Students who do not exceed a designated cut score on college admissions tests, Advanced Placement exams, or institutional remedial placement assessments may be considered not ready and placed into remediation (Calcagno & Long, 2008).

**Postsecondary outcomes.** The aforementioned academic indicators may be more or less predictive depending on how a researcher defines college success. As Porter and Polikoff (2012) have pointed out, various postsecondary

outcomes can serve as proxies for whether a student was ready for college. Assignment to remediation is one postsecondary outcome used to gauge students' readiness. Other scholars use college freshman GPA, which is measured on a four-point scale by most institutions and only requires following high school graduates for one year. When researchers have the capacity to collect longitudinal data, longer-term postsecondary outcomes may be used to evaluate students' readiness. For instance, studies may consider degree completion, time-to-degree, or the cumulative GPA of graduating seniors (Porter & Polikoff, 2012). In summary, college readiness is typically measured based on indicators of academic achievement at both the secondary and postsecondary levels.

### Remaining Measurement Challenges

Although common indicators offer insight into students' achievement levels, there is no consensus around how college readiness should be measured (Conley, 2007; Maruyama, 2012). Below I discuss recommendations for (a) improving academic indicators and (b) developing indicators for noncognitive competencies.

**Improving academic readiness indicators.** Many researchers have highlighted shortcomings of existing academic indicators and offered suggestions for improvement (Maruyama, 2012; Nichols & Berliner, 2008). I address each in the following subsections.

*Course-taking, GPA, and class rank.* Although rigorous course-taking is strongly associated with success in college, this indicator is difficult to assess due to variation across schools and classrooms (ACT, 2007; Maruyama, 2012; Porter & Polikoff, 2012). Researchers may quantify the number and types of college preparatory courses that appear on students' transcripts, but course titles do not convey the level of rigor or breadth of content students experienced (Finkelstein & Fong, 2008; Wyatt, Wiley, Camara, & Proestler, 2011). One challenge is the absence of a standardized measure for academic rigor. Wyatt et al. (2011) utilized SAT scores and test-takers' high school grades to establish an academic rigor index (ARI), but the ARI was created based on test-takers' course titles, and thus could not account for instructional variation across classrooms. The variation in academic rigor across educational contexts speaks to the weaknesses inherent in measuring readiness based on GPA and class rank (Porter & Polikoff,

2012). A high school GPA of 4.0 may signal that a student is hardworking, but does not necessarily indicate that a student mastered college-ready academic content and honed college-ready academic skills.

*Standardized testing.* Scholars have suggested that standardized test performance is insufficient to accurately reflect a student's level of academic preparation, citing both philosophical arguments and concerns around validity and reliability (Maruyama, 2012; Stemler, 2012). Standardized testing has sparked general criticism for conflating exam performance with student learning (Crouse & Trusheim, 1988; Kim & Sunderman, 2005; Nichols, Glass, & Berliner, 2005). Students may perform well on particular tests without mastering course content or acquiring a broad range of skills and knowledge. Benchmarks on standardized exams also portray college readiness as a dichotomous variable—ready, or not—rather than a complex set of competencies that develop over time (Barnes & Slate, 2013). At the same time, standardized testing has been associated with reinforcing unequal systems of power (Fraizer, 2003). College admissions exam scores have been associated with socioeconomic status, as high-income parents can provide their children with supplemental test preparation (e.g., tutoring; Huot & Williamson, 1997; Lehman, 1999).

Additional areas for improvement relate to the validity and reliability of standardized assessments for measuring college readiness. Research finds that college admissions tests are only minimally useful in predicting postsecondary achievement (Allensworth & Easton, 2007; Niu & Tienda, 2010). Since institutions vary by type, selectivity, and criteria for admissions and course placement, benchmarks may signal readiness for some universities but not for others (ACT, 2010; Lee, 2012). Another challenge is that college admissions tests are disconnected from federal and state standards (Achieve, 2007). Because the SAT and ACT tests are norm referenced, scores reflect how students compare to other test-takers rather than what content they have mastered (Atkinson & Geiser, 2009). Efforts to improve the alignment of assessments to curriculum have been complicated by the variation in readiness standards across states and testing organizations, although the Common Core may encourage greater uniformity (Porter, McMaken, Hwang, & Yang, 2011; Le, 2002; Rolfhus, Decker, Brite, & Gregory, 2010). Remedial placement exams, which are often institution-specific and cannot be standardized across contexts, also raise concerns around validity (Porter & Polikoff, 2012).

*Postsecondary outcomes.* Postsecondary outcomes commonly used to determine college readiness also have limitations (Porter & Polikoff, 2012).

For example, remedial placement may not accurately measure readiness because many students assigned to college-level courses do not persist (Ashtiani & Feliciano, 2012), and remedial courses vary across institutions (Levin & Calcagno, 2008). I further explore the challenges associated with remedial assessment and placement in chapter 6. Variation in coursework across colleges and universities limits the utility of measuring readiness based on freshman GPA. Using freshman grades also requires selecting a benchmark GPA that differentiates ready students from their not-ready peers; the challenge is determining what level of achievement (e.g., passing vs. earning a B average) denotes readiness. Long-term outcomes, such as graduation and time-to-degree, are useful given the emphasis on college completion. However, using these indicators necessitates tracking students for multiple years, and this type of data is often difficult to obtain (Porter & Polikoff, 2012).

Given these challenges, scholars have advocated for using multiple measures and improving existing indicators to more accurately assess students' academic readiness (Hodara, Jaggars, & Karp, 2012). Coupling high school test scores with course grades, for instance, is important to give greater weight to teachers' judgments of students' ability (Maruyama, 2012). Researchers are also developing college and career readiness assessments based on the Common Core standards (Achieve, 2012). The College Career Ready School Diagnostic (CCRSD) developed by Conley and colleagues (2010) assesses the extent to which schools offer college preparatory opportunities (Conley, McGaughy, Kirtner, Van Der Valk, & Martinez-Wenzl, 2010), and has shown evidence of reliability and internal validity (Lombardi et al., 2013). Such comprehensive assessments are promising but have yet to be adopted on a wide scale. Further research is needed to maximize the effectiveness of these measures.

**Measuring non-cognitive readiness competencies.** As discussed above, college readiness is not simply the acquisition of academic content knowledge or skills (Conley, 2012). Measures of academic performance may therefore "fail to fully capture the developmental process required for all young people to complete high school and enter, succeed in, and graduate from postsecondary education and training" (Hooker & Brand, 2012, p. 77).

Research on attrition has revealed that many students who drop out of college were actually in good academic standing (Johnson, 2012). For instance, Tinto (1993) found that academic failure accounts for only 15%-25% of dropouts. Most students drop out for reasons such as poor social

integration, dissatisfaction with the institutional environment, or financial concerns (Tinto, 1993). A study by the American Institutes for Research (AIR) reported that only 10% of students who dropped out prior to degree completion had less than a C grade point average (GPA; Johnson, 2012). Attewell, Heil, and Reisel (2010) found that across two-year and four-year institutions, no single, dominant factor is associated with degree attainment, and factors related to graduation vary widely. Relying on measures of academic performance may not fully illustrate students' likelihood of postsecondary completion.

Scholars have suggested that non-cognitive competencies may be particularly important for the long-term educational success of first-generation youth (Deke & Haimson, 2006; Kyllonen, 2008; Lerman, 2008; Sedlacek, 2008). One qualitative study investigated first-generation college students' perspectives on college readiness (Byrd & Macdonald, 2005). Participants stressed the importance of time management, goal-setting, help-seeking, and self-advocacy more frequently than academic skills like math and reading. College knowledge is another aspect of readiness that academic indicators do not capture (Hooker & Brand, 2010). Postsecondary requirements such as taking admissions tests, meeting particular deadlines, and selecting a well-matched college are often difficult for students to navigate (Corwin & Tierney, 2007). How much aid students receive and students' perceptions of college costs also affect college outcomes (Perna & Steele, 2011). Even high-achieving students may be unable to matriculate successfully if unaware of admissions and financial aid procedures (Lin, 2006). Almeida's study in part II of this volume offers insight into the challenges first generation students face in acquiring college knowledge.

The shortcomings of current measurement systems stem not from the focus on academic preparation but rather from the conflation of academic readiness with college readiness (Maruyama, 2012). Indicators of academic preparation are often purported to measure college readiness in mainstream policy discourse. Yet while academically ready students may be positioned to perform well in college courses, they are not inherently college-ready (Karp & Hughes, 2008; McAlister & Mevs, 2012). Additional indicators that account for non-cognitive, nonacademic competencies may facilitate more comprehensive approaches to college preparation and provide clearer information for students and their families (Conley, 2010). As ConnectEd (2012) asserts, "assessments are needed that can measure the full array of knowledge and skills in the proposed [college readiness

frameworks]" (p. 17). The subsequent section examines how college readiness has been translated to policy.

## Developing College Readiness Policy

Attention to college readiness has sparked reforms to smooth students' transitions from high school to postsecondary education (Cline, Bissel, Hafner, & Katz, 2007; Domina & Ruzek, 2013). Federal legislation such as Race to the Top and the American Recovery and Reinvestment Act of 2009 has prioritized college and career readiness (Bloom, 2010; Yamamura et al., 2010). To be sure, college readiness policy broadly defined may arguably assume many forms, such as expanding charter schools (Hoxby, Murarka, & Kang, 2009), developing early college high schools (Hoffman & Vargas, 2010), hiring more qualified teachers (Howell, 2011), and creating longitudinal data tracking systems (Adelman, 2010). These reform initiatives are beyond the scope of this chapter. I focus on two policies that explicitly address college readiness in public high schools, which prepare the majority of underserved students for higher education: college for all curriculum and college readiness assessment. I discuss the accomplishments and challenges of each below.

### *College Readiness Policies Targeting Public High Schools*

**College for all curriculum.** One college readiness policy approach is encompassed in the mantra "college for all," implying that all high school students should graduate prepared to pursue postsecondary degrees (Carnevale, 2008; Osterman, 2008). This goal suggests the need to expose all students to a college preparatory curriculum (Hoffman, Vargas, Venezia, & Miller, 2007; Venezia, Kirst, & Antonio, 2004). College for all is embodied in state- and district-level policies focused on college preparatory course-taking and accelerated learning programs (Allensworth, Nomi, Montgomery, & Lee, 2009; An, 2013). A college preparatory curriculum involves minimum coursework in core academic subjects (e.g., four years of English and at least three years of math) that make students eligible for postsecondary entrance (Venezia & Jaeger, 2013). Historically, high school students planning to pursue higher education have been encouraged to

complete these courses. Traditionally underrepresented students have been less likely than their higher-income white counterparts to be ushered into the college preparatory track and more likely to be steered into vocational courses (McDonough, 1997; Oakes, 2005).

Policymakers have aimed to combat this trend and increase college-going by implementing stricter curricular requirements (Achieve, 2011; Venezia & Jaeger, 2013). Twenty-one states and the District of Columbia will have mandated college preparatory course-taking by the year 2015 (Achieve, 2012; Balfanz, 2009, 2012; Mazzeo, 2010). Many school districts such as Los Angeles Unified and San Jose Unified in California have also instituted default curriculum standards (Finkelstein & Fong, 2008). These reforms aim to ensure that all high school graduates meet the course-taking requirements for entrance into four-year institutions. Such policies are motivated by research showing that schools in which all students take college preparatory coursework have higher achievement outcomes and more equitable learning opportunities for low-income students of color (Lee, Burkam, Smerdon, Chow-Hoy, & Geverdt, 1997; Lee, Croninger, & Smith, 1997).

Accelerated learning programs such as dual enrollment (DE) and Advanced Placement (AP) expose high school students to college-level academics and the opportunity to earn college credits (An, 2013; Struhl & Vargas, 2012; Ward & Vargas, 2012). DE courses utilize a college syllabus, confer college credits to students who pass the class, and may be offered on a postsecondary campus (Speroni, 2011). AP courses have a standardized curriculum intended to be college-level, and students can earn college credits if they pass the optional exam at the end of the year. Studies comparing the outcomes of AP or DE course-takers to non-course-takers find that participation in college-level classes increases the probability that students will enroll and succeed in a postsecondary institution (Iatarola, Conger, & Long, 2011; Karp et al., 2007). Though initially developed to target high-achieving students, accelerated learning programs have been viewed as a strategy to increase college readiness (An, 2013; Hoffman et al., 2008). Policymakers have encouraged schools to offer these courses to a broader population of students (Ward & Vargas, 2012). To summarize, college for all reforms include requiring college preparatory curriculum for all students and expanding access to accelerated learning programs.

**College readiness assessment.** Another prevalent college readiness initiative has focused on assessing high school students' proficiency prior to

college matriculation (Dougherty, 2008; Venezia & Voloch, 2012; Zinth, 2012). These efforts reflect concern that many students do not know they are underprepared until they enter college and place into remediation (Knudson, Zitzer-Comfort, Quirk, & Alexander, 2008). The idea is that if students learn they are not ready earlier, they can improve their skills before high school graduation, reducing remedial need at the college level. Assessment initiatives often involve interventions for struggling students.

Many states have employed existing testing mechanisms—K-12 state assessments or college placement tests—to support postsecondary preparation (Achieve, 2012; Martinez & Klopott, 2005). California's Early Assessment Program (EAP) is one such policy that has received national attention (McLean, 2012; Venezia & Voloch, 2012) and will be discussed by Garcia later in this volume. The EAP added college readiness indicators to the 11th grade California Standards Test (CST). Participating seniors who have not met proficiency in English may enroll in the Expository Reading and Writing Course (ERWC) designed by K-12 teachers and California State University (CSU) faculty (Knudson et al., 2008). A similar course is being developed for math. The EAP also provides professional development for high school teachers. While the program has not significantly lowered remediation rates, researchers have identified some evidence of its effectiveness (Achieve, 2009; McLean, 2012). One study found that EAP decreased students' likelihood of placing into remediation by four percentage points in math and six percentage points in English (Howell et al., 2010). Hafner, Joseph, and McCormick (2010) reported that ERWC participation increased students' learning outcomes and improved teachers' knowledge of postsecondary literacy standards.

Other states have implemented similar reforms. Florida requires high school students that score within a specified range on its state exam to take a college readiness assessment during their junior year (Barnett & Fay, 2013; Burdman, 2011). Students who do not meet college-ready proficiency must enroll in College Success and College Readiness classes, which impart postsecondary developmental education curriculum. New Mexico legislation adopted in 2003 mandated the alignment of high school curricula with the placement tests employed at public colleges and universities (Dounay, 2006). Since 2001, 11th-graders in Colorado and Illinois have been required to take the ACT, an approach that has been associated with increased college-going rates in both states (ACT, 2005). The City University of New York's (CUNY) At Home in College Program (AHC) offers math and English preparatory classes for public high school students who

TABLE 1.5. The college readiness policy agenda for public high schools

| College for all curriculums | College readiness assessment |
| --- | --- |
| • Mandated college preparatory course-taking | • Early signals based on college readiness indicators |
| • Accelerated learning programs | • CCR assessments aligned with Common Core State Standards |

have not met college readiness benchmarks on the SAT or the state assessments (Venezia & Voloch, 2012). Students then take the CUNY Placement Exam in January of their senior year and have a second opportunity to pass the test in the spring. AHC has been associated with decreased remedial need at CUNY.

While some states have employed existing testing mechanisms to support college preparation, the Common Core State Standards (CCSS) initiative has spurred the development of college and career readiness assessments (Lee, 2010; Rothman, 2011). These standards, adopted by 45 states since 2009, outline the skills and knowledge needed for success in college-level English and math coursework (ConnectEd, 2012; Dougherty et al., 2006). The federal government awarded two multistate consortia more than $362 million to design these assessment systems for the 2014–15 school year (U.S. Department of Education, 2010).

The two consortia, the Partnership for the Assessment of Readiness for College and Careers (PARCC) and Smarter Balance, have taken different approaches, but their systems share some similarities (Doorey, 2012). Both feature end-of-the-year summative assessments, optional interim assessments, professional development, model curricula, and formative tasks for instructional use. The consortia also include cutoff scores on the 11th-grade assessments that indicate college readiness in English and math (Barnett & Fay, 2013). These assessments are particularly important given that fewer than 2% of math items and 20% of English items on existing state tests measure the high-order skills required for college and career readiness (Yuan & Le, 2012). Researchers have found that PARCC and Smarter Balance assessments reflect the goals of deeper learning, or the transferable college- and work-ready skills that enable success (Herman & Linn, 2013; Pellegrino & Hilton, 2012).

In summary, integrating high school assessments and college readiness indicators represents a second policy trend to improve students' likelihood

of postsecondary success. Table 1.5 summarizes the college readiness policy interventions discussed above.

### *Remaining Policy Challenges*

**College for all curriculum.** Although mandating high curricular standards may broaden access to college preparation, scholars have raised some concerns around placing all students on a college-bound track (Barnes & Slate, 2013; Glass & Nygreen, 2011; Roderick, Coca, Moeller, & Kelley-Kemple, 2013). Research indicates that of the 47 million job openings projected by 2018, more than two-thirds will require some postsecondary education (Carnevale, Smith, & Strohl, 2010). Nearly half of the jobs requiring attainment beyond high school—14 million—will demand workers with an associate's degree or occupational certificate (Barton, 2008). Yet by mandating course-taking patterns required for entering four-year institutions, current reforms de-emphasize educational and vocational alternatives and potentially disadvantage students geared for community colleges (Barnes & Slate, 2013)—obstacles Rodríguez discusses in further detail in chapter 3. Rosenbaum (2001) has argued that "college for all" is confusing and deceptive for many youth, who are encouraged to plan for college regardless of their past achievement and personal goals. Some researchers have recommended enabling students to pursue multiple postsecondary pathways (Rosenbaum, 2001; Symonds et al., 2011). Opponents of tracking warn that different paths result in the marginalization of traditionally underrepresented youth (Nieto, 1999; Oakes, 2005; Spring, 2000), which is a legitimate concern. Nevertheless, policies focusing on bachelor's degree attainment rather than higher education generally seem misaligned with projected economic demand and may fail to acknowledge the goals of all students.

College for all initiatives also raise the stakes for students and may create particular challenges for underserved youth (Balfanz, 2012; Rosenbaum, 2001). Academic achievement rates and course-taking patterns are already stratified by race and class (Ashtiani & Feliciano, 2012). One study of California high schools found that the proportion of white seniors who had completed the college preparatory curriculum exceeded that of Latina/o and African American seniors by at least 15 percentage points in both English and math (Finkelstein & Fong, 2008). Likelihood of meeting these requirements also varied substantially across schools, with students

in low-performing schools significantly less likely to complete college preparatory courses. Different students therefore have unequal opportunities to meet the same high standards, and the personal consequences of failing to meet those standards (e.g., inability to graduate high school) may fall disproportionately on the most marginalized youth (Rosenbaum & Becker, 2011).

As a result, college for all policies may inadvertently push underserved students out of the K-12 system (Berliner, 2006; Rosenbaum et al., 2010). Research on dropouts finds that students who leave high school early are often struggling academically (Balfanz, 2012; Neild & Balfanz, 2006; Rumberger, 2011). Dropout rates run as high as 50% in urban districts that serve primarily low-income students of color (Balfanz & Legters, 2004; Greene & Forster, 2003). In a study of Chicago schools, which mandated college preparatory coursework beginning in 1997, Mazzeo (2010) found that struggling students earned lower grades and were more likely to fail ninth-grade classes after the reform. High school graduation and postsecondary enrollment rates also decreased. While Allensworth et al. (2009) found that mandatory college preparatory curriculum did not exacerbate the dropout rate in Chicago schools, Algebra I failure rates among low-ability students increased. Struggling students may also be funneled out of the traditional school system. For instance, after San Jose Unified School District mandated a college preparatory curriculum, black and Latina/o students were disproportionately transferred to alternative high schools (Lin, 2006). Providing additional academic supports is imperative to ensure that underserved high school students can succeed (Asch, 2010; Symonds et al., 2011).

Another concern is that completing a college preparatory curriculum does not guarantee readiness, evidenced by high rates of remediation in four-year institutions (Dougherty, 2008; Flores & Oseguera, 2013; Howell, 2011). For example, a study of Chicago Public Schools (CPS) found that many rising 12th-graders had already fulfilled their college preparatory course requirements and opted to take relatively easy classes (e.g., electives; Roderick et al., 2013). Racial and economic disparities widened in the fourth year of high school because first-generation students did not know the importance of taking advanced courses for college transition. Students may also complete college preparatory course requirements but remain ineligible for more selective four-year institutions if they do not take the SAT or complete other admissions requirements (Lin, 2006).