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College Readiness Efforts Still Hampered by Divided K-12 and Higher Education Systems

Michael Kirst and Andrea Venezia

A starting point for understanding many of the difficult challenges facing policy makers who are committed to helping young people in the U.S. become ready for colleges and careers is to review the long-standing disconnect between public K-12 and higher education. These challenges are best understood in historical perspective, and many are rooted in structural and institutional norms, policies, practices, and perceived policies. Understanding this disconnect provides an important context in which to view and analyze the work currently underway to connect K-16 systems in order to support student learning and success. The need to provide a historical perspective and the space constraints for this chapter make it necessary to concentrate on college readiness and leave career readiness for another occasion. In addition, career readiness is less well understood and quite wide ranging; while it must be integrated with college readiness because students attend college in order to move onto careers, it warrants much more attention than we can provide in this chapter.

Widespread postsecondary readiness-focused policy development is underway, but implementation is just in its infancy, and there are few cross-systems incentives or long-run K-16 sustainability mechanisms. It is not clear how much recent policy efforts are penetrating classrooms to change students' college knowledge or opportunities, particularly for those who attend broad access postsecondary institutions (institutions that admit all or the vast majority of students who apply). The cross-systems divide persists, despite these recent efforts—and deterrents to bridging the chasm are formidable.

Systems Alignment and Postsecondary Readiness

K-12 and postsecondary education operate in fundamentally different worlds in the U.S. Core structures—governance, funding, and accountability; curriculum

and assessment; and pedagogy and training—are kept separate, while large numbers of students regularly flow across the system divides (Kirst & Usdan, 2009). The policy making, systems organization and administration, and local operations are all disconnected, insulating the two systems from each other. Efforts to connect them are mostly sporadic and ad hoc. For example, faculty governance in higher education and the incentive structures related to teaching, research, and service do not focus attention on K-16 integrative systems thinking, student-centered practices, or forging connections with K-12 school systems. The reward structures in higher education are such that working with K-12 is generally viewed as service, which traditionally receives less "credit" for promotion and tenure than do teaching and research. For those working in K-12, there is often little understanding of how to connect better with higher education, and there are few rewards for doing so (Moore et al., 2015). In addition, the siloed separation of postsecondary academic and student affairs, and divisions separating different academic disciplines, often create barriers to systemic approaches to K-16 reform. Small boutique programs come and go, and many college outreach programs act like "band-aids" temporarily applied to small groups of students. They are not usually systemic efforts made to align efforts within and across systems around common goals for student learning. Also, at the core, those programs work from a perspective that students must change to fit into institutions. As this work has moved forward over the years, it has become clearer that many institutions need to change to create policies and practices focused on student needs, rather than institutional needs.

Disconnects between the systems contribute to vast inequities in postsecondary readiness, attendance, and completion. Programs and legislation starting in the 1960s helped pave the way for a larger proportion of students to be able to attend postsecondary education, but evidence demonstrates that many were not, and are not, completing their intended programs of study (Venezia & Jaeger, 2013). The vast majority of students matriculate into some form of postsecondary education or training and, as the research cited in this chapter demonstrates, underserved students face many more challenges navigating into and through higher education than do traditionally college-bound students. Efforts to connect the systems must overcome the deep divisions between the two systems.

Many involved in systems policy change to support postsecondary readiness extrapolated from Smith and O'Day's (1991) theory of systemic change that proposed a state structure that supports school-based efforts to improve classroom learning and instruction. This theory of systemic reform is based on challenging and clear standards for student learning, with finance, data, and other policy components tied to the standards and, thereby, producing self-reinforcing guidance to educators about instruction. The over-arching concept is to provide "coherent messages to schools" through the integration of federal, state, and local policy—state policies signal goals to localities when the policies are aligned and mutually reinforcing.

education systems, and consequent lack of connected incentives, systemic reform for postsecondary readiness requires systemic alignment of policies and practices across the K-12 and higher education divide.

large changes. Given the historical disconnect between K-12 and postsecondary

Influenced by Smith and O'Day's work, researchers at the National Center for Public Policy and Higher Education conducted research in the early 2000s to identify the policy facets that need to align in order to create a coherent policy frame for postsecondary readiness. Their published policy brief, Claiming Common Ground, outlined the following policy levers that appear to have the greatest potential for creating the needed coherence: assessment and curricula, accountability, data systems, and finance (Callan et al., 2006). Today's policy disconnects grew out of a great and persistent historical divide between K–12 and postsecondary education systems.

Historical Context: Institutional Disconnects Between Education Systems

Before addressing options for systemic coherence, it is important to analyze the historical disconnects affecting K–16 governance, finance, and curricula. We focus initially on governance because it is the broad umbrella under which systemic alignment decisions are made. Finance creates incentives for change, and curriculum is one of the components that penetrates the classroom and affects student learning. Given current variability accountability policies and practices across the country, we postpone discussion of data-related issues to a later section (see "How Far Has the Nation Come in the 21st Century?").

Governance

State higher education coordinating and governing boards rarely interact with K-12 education governance entities. Because K-12 and higher education entities are developed and implemented in separate orbits, the institutional disconnect creates a ripple effect, passing the state-level incoherence on to the local institutions and systems (Kirst & Usdan, 2009).

The nation's education governance systems have a deeply rooted history of institutional divides. The divided cross-system governance situation is particularly

problematic for students who attend the nation's broad or open access institutions (those that admit the vast majority of applicants), and especially for community college-bound students. Originally, community colleges were extensions of K-12 systems and were funded like public schools with mostly local support and state supplements, but did not charge tuition. It was not until the 1950s that community colleges across the nation began to have their own governing boards; most were then termed junior colleges. After 1960, these colleges became the primary institutions for increasing college going opportunities. Between 1969 and 1974, community college enrollment increased by 174 percent. By contrast, there was only a 47 percent enrollment increase in four-year institutions (Callan, 1997). This growth was accompanied by a much expanded mission and a loss of coordination with, or focus on, secondary education. The colleges expanded their mission to emphasize vocational education and community service. As a result, they sent fewer and less clear signals to high school students about necessary academic preparation or the skills needed to obtain associate and vocational associates degrees and certificates. The impact of this detachment from secondary education has been profound, with over 60 percent of students entering community college unprepared for its demands (Scott-Clayton et al., 2014), though the accuracy of placement data is being challenged. The two levels became detached and proceeded to develop in separate ways.

At the state governance level, it is rare to find an overall coordinating mechanism designed to bridge the two education levels. Mechanisms that do exist vary substantially in function and pattern from state to state. In the late 1990s and early 2000s, states and localities experimented with various forms of pre-kindergarten to baccalaureate degree (P-20) councils—entities with little to no governing authority but charged with offering opportunities for people from different education systems and institutions to learn from each other and work together. They proved to be ephemeral and *ad hoc*, with limited impact on institutional coordination problems (Callan, 2009).

Compounding the institution-level coordination problems, the structure and organization of state legislative committees responsible for education typically reinforce the divide between K-12 and postsecondary education. Most states have separate K-12 and higher education committees in both houses of the legislature. A few, such as Oregon and Florida, experimented with committees that oversee both levels in both legislative houses (Callan et al., 2006). Having separate deliberative bodies makes policy making and appropriating funds across sectors unlikely, and does not allow for close policy connections to be forged. Appropriations committees also play a crucial role in establishing both the level and the constraints on education funding. Legislatures typically have separate subcommittees for each education level with the result that it is virtually impossible to produce integrated policies. In a world in which social, technological, economic, and demographic changes have been large, fundamental K-16 educational governance structures remain bifurcated, ossified, and seemingly immune to transformation.

Finance

K-12 and higher education finance systems, typically the driver for action in both public and private organizations, are completely disconnected from each other. The result is not only a lack of positive incentives for collaboration, but often the creation of disincentives. As staff at the Institute for Educational Leadership (2002, p. 16) wrote, there are two basic ways to create cross-system finance incentives:

The first, and probably the most popular, is to put dollars on the table for joint K-16 work. Those dollars can be made conditional on the creation of a K-16 governance structure and/or on the willingness to undertake particular actions. . . . This approach has the advantage of getting lots of activity underway quickly. But it has several disadvantages as well, not the least of which is that these activities tend to remain at the fringes of institutional life and institutional priorities. And when the dollars dry up the activity goes away. The alternative is to approach this issue through the lens of accountability. The core idea is simple: policy makers should design their accountability systems for both K-12 and higher education to include outcomes that each system cannot possibly deliver alone. K-12, for example, might be held accountable not only for improving student achievement and closing gaps between groups, but also for ensuring that all its secondary teachers have deep and substantial knowledge in the subject areas they are teaching. Similarly, higher education can be held accountable for decreasing the number of underserved students of color freshmen requiring remediation.

While money helps motivate, a key is to avoid the type of programmatic allocations that keeps K-16 reform on the edges of institutions and systems. There is little fiscal incentive for higher education, for example, to work with K-12 to reduce the number of students who require remediation because those students bring valuable funds into higher education. It is next to impossible to create meaningful financial incentives in the current financial universe of zero sum game budget negotiations created by states' willingness to disinvest in higher education more than in K-12 (Zumeta et al., 2012).

K-16 finance could be designed to encourage cooperation and reduce systems' self-preservation efforts and benefit students. For example, some states, such as Georgia, allow for both systems to receive funding for dual enrollment students. Absent clear financial incentives, the work of collaboration across institutional boundaries falls on the backs of over-extended, well-meaning, individuals and ad hoc K-16 institutional relationships.

Curricula

The origin of the disconnect between K-12 and higher education in the United States stemmed, in part, from the way the nation created education systems to deliver curriculum for both K-12 and higher education. In the 1890s, there were no organized systems or common standards for college admission. Nearly half the colleges had either low entrance requirements or none. Some colleges accepted students from pre-approved secondary schools or used their own institutionally developed exams. High school educators wanted a more uniform and less haphazard system. In 1892, the National Education Association appointed the nation's first blue ribbon education commission to recommend secondary school academic standards. That commission, called the Committee of Ten, included five college presidents, a college professor, and the U.S. Commissioner of Education (Ravitch, 2000). It envisioned only a tiny proportion of high school graduates going on to college, but its report recommended all pupils should be prepared for any path in life by "melding the objectives of liberal education (i.e., a curriculum of rich content) and mental discipline (i.e., the training of the mind)" (Ravitch, 2000, p. 43). Its report influenced education policy and led to the College Examination Board, with its common college examination for diverse colleges.

By 1918, however, a new report with a very different vision appeared, called the Cardinal Principles of Secondary Education. This arose in a period when high school enrollments were expanding and many students were viewed as incapable of learning the traditional academic curriculum (Tyack & Cuban, 1995). The Cardinal Principles were presented as a blueprint for social efficiency, recommending that students be offered vocational training and courses on family life, good health, citizenship, ethical character, and the worthy use of leisure. Students were given "intelligence tests" to put them in the appropriate academic track, a move that exacerbated existing inequalities regarding access to equitable educational opportunities. Traditional academic subjects and pedagogy were deemphasized; courses intended to provide practical and engaging content to motivate and retain students in high school multiplied rapidly. The influential report helped spawn what came to be called the "shopping mall high school" where curricula lacked coherence and were not focused upon adequate college preparation for most students (Powell, Farrar, & Cohen, 1999). Starting in the 1950s, national groups tried to push the high school curriculum closer to the 1893 Committee of Ten's vision with mixed results (Kirst & Venezia, 2004).

The cross-pressures symbolized by these two reports produced American comprehensive high schools designed for many—often conflicting—purposes. And it is important to recognize that they were not encouraged to focus primarily on providing equitable postsecondary readiness for a large proportion of their students. High quality college preparation was seen as something to be provided to a small proportion of students. There were, of course, many "one-offs" in which faculty from high schools and postsecondary institutions work together to create aligned coursework across the systems, but there was no broadly shared conception of liberal education that relates the academic content of the secondary schools to the first two years of college. Instead, students face an eclectic academic muddle in Grades 10–14 (Orrill, 2000) until they select a college major. The primary alignment effort serving to provide a bridge across the sectors is

the Advanced Placement (AP) program. This program is attached to universities through their dictation of course syllabi and exams. The International Baccalaureate (IB) program also attempts to align secondary and postsecondary curriculum, but its scope is limited.

Dual enrollment courses—courses that are aligned with postsecondary expectations and provide students with both high school and college credit—are growing across the country (Zinth, 2014). Meanwhile, remediation rates continue to be high, nationally (Scott-Clayton et al., 2014). Thus, there is disconnect between efforts to provide access to postsecondary readiness to a larger percentage of students, and the reality that many of those students are still not gaining access to college-level courses once in college. High school curricula remain detached from the freshman and sophomore college curriculum and from any commonly accepted developmental vision of liberal education that would help students prepare for college-level coursework.

It is critically important to note that these deeply rooted historical divides are frequently unaddressed in postsecondary readiness policy development, implementation, and experimentation. As described later, many of the current postsecondary readiness reform efforts are grant funded and do not change governance structures, finance systems, and other entrenched practices that wield great influence over the nation's public education systems. Against these powerful mechanisms, it is difficult for initiatives that are not systemic (such as short-term grant or program funded initiatives, and add-on program initiatives like most college outreach programs) to create substantial or sustainable effects. Given the lack of coherence between systems and the challenges inherent in creating incentives for alignment, creating lasting systemic cross-systems reform faces a large uphill battle (Doyle & Kirst, 2015).

Assessing the Implications for Students of Historical Institutional Disconnects

In the mid 1990s, data indicated that the U.S. had both a less well-recognized problem of providing access for students seeking to get into colleges and universities, and a less recognized problem of getting students through its public higher education institutions once they are admitted (Richardson & Martinez, 2009). Up until the 1990s, federal and state policies focused almost entirely on access a focus that made sense, given higher education policies that had discouraged or even barred women and certain ethnic groups from attending. Once the doors of higher education began to open for historically underserved groups, it became increasingly clear that completion—time to degree and graduation rates—deserved more attention and action. An area of study that had little documentation at the time was the connection or, more accurately, lack of connection, between high schools and postsecondary institutions. In addition, given the historical disconnects between K-12 and higher education, it was not clear who had

the power and ownership necessary to connect the systems for the public good. Absent strong state and system leadership, the systems tend focus on maximizing their own welfare, rather than taking a cross-systems policy approach.

In 1998, a research team at Stanford came together, led by the authors, to learn more about the role that state, system, and local policies play in creating an environment that keeps the education systems apart. Relying on a framework developed by Smith and O'Day (1991), the team focused on the role of policy in creating a coherent environment for practice-based action (see sidebar description of the Stanford Bridge Project).

THE STANFORD BRIDGE PROJECT

The Stanford Bridge Project, a six-year national study, began in 1996 to examine how states are developing integrative K–16 reform policies and practices.

Research questions included the following: How do education policy structures support, assist, or confuse students, parents, and K–12 educators? How are postsecondary admission standards and placement policies and state-level reforms communicated to, and interpreted by, K–12 stakeholders? How do student groups receive and interpret policies differently—particularly groups taking honors and non-honors classes? The study was conducted in California, Illinois, Georgia, Maryland, Oregon, and Texas.

Findings: The study found that states created detrimental barriers between high school and broad access postsecondary institutions—barriers that undermine student aspirations. Fractured education systems send students, parents, and K–12 educators conflicting and vague messages about what students need to know and be able to do to succeed in college. High school assessments stress different knowledge and skills than needed to meet college entrance and placement requirements. Coursework in high school and college was not connected; students graduating from high school under one set of standards must meet new course placement standards in college.

Data systems were not equipped to address students' needs, and no one was accountable for student transitions from high school to college. Many students and parents were confused by what colleges expect of students, and the misunderstandings contributed to poor college preparation. The study found many student misconceptions, ranging from "Meeting high school graduation requirements will prepare me for college," to "Community colleges don't have academic standards." Other findings documented: (a) inequalities in college counseling, college preparation course offerings, and connections with local postsecondary institutions; (b) sporadic and vague student knowledge about college curricular and placement policies;

(c) the role of teachers in advising students on college preparation; (d) student over-estimation of tuition; and (e) inequitable distribution of college information to parents.

Students in honors classes had more knowledge of college readinessrelated policies and had higher aspirations; one-quarter of the students in non-honors classes had never heard of the SAT. Honors students tended to talk with their teachers and counselors more about postsecondary education and had a greater understanding of curricular requirements for admission to nearby postsecondary institutions. Honors students also tended to have more accurate predictions about the cost of tuition at those institutions.

The project led to publication of a policy report, Betraying the College Dream: How Disconnected K-12 and Postsecondary Systems Undermine Student Aspirations (Venezia, Kirst, & Antonio, 2003) and an edited book, From High School to College (Kirst & Venezia, 2004). These publications helped illuminate the problem and catalyze policy changes improving postsecondary readiness. That research, along with efforts by organizations across the country, including The Education Trust and the State Higher Education Executive Officers, helped to lay the groundwork for a wide range of reform efforts. These efforts produced an expanded understanding of issues and shifted the focus within the field toward clarifying the goals of secondary school, and specifying what students should learn during their high school years to prepare for access to the community colleges and broad access universities that provide higher education opportunities for the vast majority of students in the U.S. This helped change the prevailing 20th-century view of postsecondary access and completion issues. Until the 21st century, most media coverage focused primarily on issues faced by Ivy League institutions and other highly selective colleges and universities.

Knowledge of state policies was low across all student groups, but honors students consistently knew more than non-honors students. Finally, honors students started college preparation coursework earlier, gaining an edge because pre-college coursework is a main predictor of college readiness (Adelman, 1999). The honors/non-honors distinction is likely not causal, but it is one way to understand the fundamental differences between student groups' expectations and opportunities.

The causes of under-preparation and poor completion rates at broad access postsecondary institutions are many. How well students fare in college is powerfully influenced by each individual student's growth and development as nurtured

by families and influenced by the diverse educational opportunities available to students. Understanding these personal and individual factors is a complex task, outside the scope of the Stanford Bridge Project and the focus of this chapter. The research team focused instead on understanding the "policy amenable" causes—both big P policy (federal and state policies) and little p policy (those made by school, district, and institutional decisions). Some important barriers arise from regulations, interpretations, and myths or historical lore ("we've always done things this way"). The research team tried to uncover what policies at different levels of the system could affect in order to create conditions and incentives that then could support changes in other areas that affect students' readiness and success—knowing that some of the most important factors, such as parent/guardian education and income and the expectations of the adults who teach and support students, likely have the largest effects and are not policy amenable.

How Far Has the Nation Come in the 21st Century?

The historical persistence and depth of the disjuncture between postsecondary education and K-12 will not be overcome by uncoordinated small-scale program interventions nor will alignment of curricular standards resolve the disconnection problems. No single policy domain is sufficient. Rather, solutions must be systemic and address many policy components, attitudes, and cultural chasms simultaneously. A systemic approach will include developing clear problem definitions, appropriate policy framing, and clear messaging between the education systems and stakeholder groups. There has been so much work nationally in this area that an entire book would be required to delineate and evaluate all the federal, state, regional, and local college readiness policy and program initiatives. Hence, we concentrate here on key changes first suggested by the Bridge Project framework of eight recommendations for building on recent progress toward systemic integration. Additionally, we highlight one particularly important shift in the field not anticipated in the Bridge Project research findings, which is the move away from a narrow focus on academic readiness and toward a richer, more complex conception of readiness for college success.

The Bridge Project identified eight potential targets for policy development and implementation:

Bridge Project Recommendation #1

Focus on the institutions that serve the majority of students. Shift media, policy, and research attention to include broad access colleges and universities attended by the vast majority of students (approximately 80 percent).

There has been a large shift in media attention, public policy action, and philanthropic investment in college and career readiness over the past 20 years. Hardly a week goes by that a media outlet does not report on some facet of college and

career readiness. Broad access to postsecondary education institutions are now the focus of concern and analysis. For example, when the Community College Research Center at Columbia University marked its 20th anniversary, it noted that foundations and governmental entities have spent hundreds of millions of dollars on community college reforms (Bailey, Jaggers, & Jenkins, 2015). One important outcome of these efforts, however, has been growing awareness that this work is wearing thin as postsecondary institutions are "drowning in initiatives" and experiencing initiative fatigue, much as the as K-12 systems have been experiencing for more than two decades.

Bridge Project Recommendation #2

Provide all students, their parents, and educators with accurate, high quality information about, and access to, courses that will help prepare students for college-level standards.

Message clarity is one issue that has become increasingly clear since the Bridge Project research was completed. The disconnected education systems are generating confusing and complex messages to students about assessment, placement, course taking, transfer, and other policies that need to be presented in ways that serve to simplify policies and practices (see, e.g., Lewis, Nodine, & Venezia, 2016). It is hard to gauge how accurate and useful the wealth of information that currently resides online is, but some reports indicate that students believe it is not as useful as it could be (see, e.g., Venezia, Bracco, & Nodine, 2010, and Nodine et al., 2012).

Bridge Project Recommendation #3

Create an awareness that getting into college is not the hardest part (since the vast majority of institutions, approximately 85 percent, admit all qualified applicants). Expand the focus of local, state, and federal programs from access to college to include access to success in college access to the resources and information students need to prepare well for college and to make informed decisions.

This is one of the more noticeable shifts; college completion efforts are underway in most states (Lumina, 2016). The funding landscape has changed dramatically. There have been major investments from large, national philanthropic foundations such as the Bill & Melinda Gates Foundation and the Lumina Foundation. The Obama administration supported community college reform and free tuition for two years of college. State-based philanthropic support for college and career readiness has been provided by such foundations as the James Irvine and William and Flora Hewlett Foundations. A Lumina Foundation-commissioned report, "Stronger Nation 2016," found slow but steady progress in postsecondary degree attainment between 2008 and 2014 evidenced by the percent of students ages 25 and 34 who completed a postsecondary degree (increasing from 37.8 percent to 42.3 percent). Additionally, Lumina found that 4.9 percent of Americans

hold what it defined as a "high quality" postsecondary certificate. With the shift to focus on completion has come some backlash, likely related to political concern about a "national" college readiness curriculum (the Common Core State Standards) and beliefs that not all students need to or should complete college.

Bridge Project Recommendation #4

Of all the domains listed here, the curriculum has arguably come the furthest as evidenced by implementation of the Common Core. The majority of states are developing standards that include college readiness. But the work of implementing K–12 college ready curricula at the local level is challenging, voluntary, and often political. Moreover, the effectiveness of standards to drive the kind of deep cultural change needed to provide increased rates of educational opportunity is debatable (Conley, 2014). Approximately 40 states utilize Common Core or other similar standards that include postsecondary readiness expectations (Conley, 2014 and Education Week, 2016). The future of such standards is likely connected to such issues as the assessments that are aligned with the standards. There has been political opposition and concerns about the stakes of the tests for school accountability.

Bridge Project Recommendation #5

Assess postsecondary education placement exams for reliability, validity, efficacy, and the extent to which they promote teaching for understanding and allow students to take placement exams in high school so that they can prepare, academically, for college and understand college-level expectations.

The vast majority of broad access postsecondary institutions still rely on traditional placement tests, but few statewide secondary school assessments are aligned with those postsecondary placement tests or the content of first-year college courses. This appears to be changing, however; some states, including California, Georgia, and Texas, use assessments near the end of high school to help inform students' readiness for public postsecondary education in their states. Many states either require or subsidize students to take the SAT or ACT (Conley, 2014). In addition, some states have passed legislation that reduced or stopped remedial education. Further, community colleges across the country are experimenting with using high school GPA for placement, and are finding that students usually progress and complete at greater rates when placed that way versus via traditional placement tests.

Bridge Project Recommendation #6

Sequence undergraduate general education requirements so that appropriate senior-year courses in high school are linked to postsecondary general education courses.

Many state governments have chosen the route of simply specifying titles of courses to be taken, but failing to deal with content to be offered within the specified courses (*Education Week*, Quality Counts, 2008). The hard work of getting secondary school teachers to work with their higher-education counterparts on subject-matter course articulation between the 10th grade and the sophomore year in college is happening in some pockets across the country, but is not systemically pursued through state or regional structures.

Bridge Project Recommendation #7

Expand successful dual or concurrent enrollment programs between high schools and colleges so that they include all students, not just traditionally "college-bound" students.

The states have made significant policy shifts in this area (Zinth, 2014). As of 2016, 47 states and the District of Columbia have statutes or regulations that govern statewide dual enrollment policies. Twenty-five states and the District of Columbia allow for both high school and postsecondary credit to be awarded, and 11 states allow for the student or school to decide. With regard to access, most states require that students be in grade 10 or higher in order to enroll in dual enrollment courses; six states have minimum GPA requirements, 17 require permission from an educator, and 25 states require that students meet college placement or other academic readiness requirements. Eighteen states leave eligibility requirements up to the local district or postsecondary institution (Zinth, 2014; Education Commission of the States, 2016).

Bridge Project Recommendation #8

Collect, and connect, data from all education sectors; and establish federal grants to stimulate more K-16 policy making.

As for data systems for tracking the progress of students, most states are making significant data improvements—partly with federal money—but most do not have data systems that provide student-level information about progresses within and across education systems. The Data Quality Campaign reports that four states publicize the education performance data required by the federal government, 45 states report data only in English, 36 states do not report data on the percentage of students that enroll in two- or four-year postsecondary institutions, and 38 states do not report on student growth measures. In addition, six states do not break out data by race/ethnicity, six do not provide information about English language learners, 13 do not disaggregate by gender, and seven do not provide student achievement data about students with disabilities (Data Quality Campaign, 2016b). There are large equity implications when it is not possible to track groups of students within and across education systems. In addition, while some of the systems are running, educators often struggle to use the information to inform

practice. As the Data Quality Campaign noted, "The data infrastructure largely exists, but more work remains to build the capacity, conditions, and culture to use data to truly support success" (p. 3). This is particularly challenging across the secondary/postsecondary divide. Given those challenges and the state-by-state variation with regard to data issues, the National Student Clearinghouse (NSC) provides some cross-system data that usually are not available in states. In 2004, NSC started a transcript service that allows K–12 educators to track students in participating postsecondary institutions. In 2010, it launched a research center and publishes reports on student enrollment, progression, and completion. Over 40 states utilize NSC data to track their high school graduates' access, persistence, and graduation rates in higher education (National Student Clearinghouse Fact Sheet, 2016).

More Thorough Conception of College Readiness

In addition to the changes recommended by the Bridge Project, the field has come a long way in understanding an over-arching frame for postsecondary readiness. The established view that academic readiness measured by grades and test scores should be the main target of college readiness programs (see, e.g., Adelman, 1999) is being augmented to include a wide range of knowledge and skills. One of the more nuanced and widely accepted models of postsecondary readiness was developed by Conley (2014):

A college and career ready student possesses the content knowledge, strategies, skills, and techniques necessary to be successful in any of a range of postsecondary settings. Success is defined as the ability to complete entry-level courses at a level of performance that is sufficient to enable students to continue to the next courses in their chosen field of study. Not every student needs exactly the same knowledge and skills to be college and career ready. A student's college and career interests help identify the precise knowledge and skills the student needs.

(p. 14)

Accepting this view of college (and career) readiness necessitates a more nuanced understanding of readiness across a broader range of knowledge and skills. Conley created a definition of college and career readiness that allows for greater nuance and understanding of students' strengths; it also allows for new ways to help students prepare to succeed in some form of postsecondary education. It includes the following: (a) key cognitive strategies such as problem formulation research, interpretation, communication, and precision and accuracy; (b) key content knowledge including the structure of knowledge (e.g., facts and linking ideas), attitudes toward learning content, and technical knowledge and skills; (c) key learning techniques covering such skills as time management and test taking

strategies; and (d) key transition knowledge and skills supporting movement from secondary to postsecondary institutions, which includes social contexts (aspirations, norms, and culture), institutional procedures (institutional choice), financial awareness, transitional cultures (postsecondary norms), and personal development (self-advocacy) (Conley, 2014). These concepts have been utilized by some states during their college and career readiness standards development and by some researchers, school districts, K-12/postsecondary partnership organizations, and others. Conceptual clarity and measurement of those constructs lags behind the awareness that college and career readiness is a complicated endeavor. The field does not have the measurement capabilities necessary to assess and transmit information that would allow educators to understand students' knowledge and skills in each of those areas.

Additional Challenges to College Readiness Reforms

As states, regions, and localities undertake implementation of college readiness policies, new issues are emerging. Among the most important current challenges are as follows:

Renewed Concern About Access to Higher Education

As education systems work toward supporting greater levels of completion, those involved in college readiness efforts face continued problems of access to postsecondary educational opportunities. Public disinvestment in higher education over recent years is troublesome, as are negative institutional incentives that are generated by the increased attention to completion rates (such as raising admission requirements to admit students who are more likely to complete). Readiness pressures will be self-defeating if they lead to substantial reductions in access and opportunity, and if they increase opportunity gaps.

Moving From Programmatic to Systemic

Many of the approaches being tried are programmatic and even technocratic, such as focusing on improved advising or improving the use of test scores in placement decisions. A shift to guided college pathways integrating social supports and academics guidance within and across systems is critical. Informing students of college requirements early in their K-12 experience, identifying their college goal promptly once they arrive on a community college campus, and then smoothing their way through to that goal using tracking and various support systems require coordinated efforts rather than piecemeal programs (Bailey, Jaggars, & Jenkins, 2015). Guided pathways should include high school career technical education courses that are designed to be linked to specific industries and community college courses and internships (Schwartz, 2004). Moving from programmatic to

systemic policies that link across systems requires the kinds of communication, collaboration, governance, and data that are difficult to develop and sustain, especially when cross-system work is typically a voluntary activity with few clear incentives, stable finances, or accountability mechanisms.

Building Local Capacity to Implement Effectively

Policy coherence is merely one piece of a very complicated puzzle—and policy change can cause turmoil in schools, especially when it threatens significant consequences for those not meeting expectations. Educators at all levels can be overwhelmed by the constant churn of new policies and practices. Taking on a new and complicated way of working requires time—something that is in short supply within the nation's education systems. Additionally, when educators are pursuing systemic change, they need to develop new and different capacities. Neither centralized nor locally controlled policies can penetrate classroom practices if teachers in either the K-12 or the postsecondary systems do not support changes, or do not have the professional capacity needed to implement the changes successfully. Leadership is critically important and, for cross-system change, requires effective leadership within and across different education systems (Organizing for Success). There is no manual or process that will work universally. While it is a start, it is not sufficient to get people around a table and talk about student needs. For the nation's public education systems to work together effectively, they need cadres of individuals who think outside of their own system and institutions, and who possess the knowledge, skills, and relationships to be boundary crossers. This requires new pedagogical, political, relational, leadership, fiscal, and technical capabilities in all education systems.

Develop and Adopt a Locally Applicable Concise, Constructive, Definition of College and Career Readiness

It is difficult to create college and career readiness definitions and systems that allow for flexibility, pathways, and rigor. As the field has become more complex and nuanced by including career readiness and related multiple curricular pathways (such as health sciences, agriculture, and so forth), it is not clear how useful one definition can be. However, without a clear definition, educators are unable to know if they are succeeding in their efforts to support college readiness for a larger percentage of students (Lewis, Nodine, & Venezia, 2016).

College and career readiness are inherently challenging to operationalize in a way that can be useful to educators. One issue is whether a definition is useful within classroom practice. Lofty definitions, such as "possess 21st century knowledge and skills" can be met in so many ways as to be rendered relatively useless. Very specific definitions, such as definitions by program of study or degree path.

are likely too complex. The readiness needs for someone in Computer Aided Design are likely quite different from those in English, and both are likely different from those who study Applied Mathematics.

Clarify Postsecondary Expectations

Postsecondary systems cannot reasonably message to their K-12 partners without clarifying the substantial variations in postsecondary courses of study. And K-12 systems cannot provide useful readiness opportunities without understanding postsecondary expectations. Who is best situated, for example, to define the math expectations for programs in the Arts or Humanities—math faculty or Arts and Humanities faculty? If students intend to proceed into Arts or Humanities, take less or lower level math, and then decide to switch into Economics, is it problematic for them to have to take additional math? When messaging about differing expectations, how can the field avoid the perception that some programs of study are easier than others? For these and other reasons, the field has not moved far enough along in defining college and career readiness and in creating systems that support all students' readiness needs effectively.

Understanding Non-Academic Readiness

It is clear that academic knowledge and skills are not sufficient for students to be able to succeed in postsecondary education. Focusing entirely on core academics leaves a large proportion of students underserved. Yet the alternative most utilized by schools and postsecondary institutions is to have different curricular tracks that vary with regard to rigor, and with regard to future opportunities. Thus, the equity implications of historically rooted curricular tracking are unresolved. Efforts to embed rigorous career and technical educational opportunities throughout the pipeline appear to be promising, but they are too new to be confident about their effects with regard to postsecondary readiness and completion. Recent interest in socioemotional learning and subcomponents such as grit, growth mind-set, and persistence (Duckworth & Yeager, 2015) are important, but raise critical issues about why the nation's most historically underserved students need grit and persistence to overcome inequalities and poorly constructed systems. The field does not have the tools necessary, however, to measure student learning in nonacademic areas, though many groups are working to develop new ways to do so (Duckworth & Yeager, 2015). As a whole, education systems still rely heavily on problematic measures, such as off-the-shelf standardized placement tests with cut scores—tests that do not measure the full range of what students need to know and be able to do, with cut scores that often have such wide margins of error that students who do not meet them could still do well in college-level coursework (Bailey, Jeong, & Cho, 2010).

Having the Necessary Information to Gauge Success

Learning how recent policy changes are affecting classroom expectations and activities at both education levels will require new data collection. It is also very challenging for secondary teachers to measure their success in linking K-12 to postsecondary instructional practices and expectations. Data about how their students fare after high school are often not shared with K-12 educators, or even collected by postsecondary education.

Framing and Messaging

While the Obama administration focused on the need for all students to have access to some form of postsecondary training and education, including certificates as well as degrees, there was quite a national backlash from opponents of the popular "college for all" rhetoric. It is challenging to create public messaging that encompasses the full range of postsecondary institutions and entities (Scott & Kirst, 2017). In addition, the field has become more sophisticated about the need for better career and technical education, along with all the options and supports students need in the socioemotional arena. While necessary in order to provide holistic and individualized pathways for each student, it makes defining college and career readiness and communicating about it more difficult.

The Tendency to "Meet and Greet"

One criticism of the P/K-16 councils as they evolved in the late 1990s and early 2000s was that they constituted entities where people meet and update each other on system activities, but do not have the authority or capacity to create lasting cross-systems change. Successful collaborative efforts have clear roles, relationships, responsibilities, and reporting deadlines for people at different levels in their respective systems (Callan et al., 2006). It seems likely that, in order for cross-systems work to succeed, there need to be well-aligned structures that are tiered and include people from different levels, with clear and different roles and responsibilities (Moore et al., 2015). Top leaders are needed to keep historical political problems at bay, and they can use the bully pulpit to help steer and re-direct work when needed. They must be in the loop about key messages and relationships, but they cannot ordinarily be expected to participate in day-to-day reform implementation. Staff and faculty need to stay informed in order to pull in the top leaders as needed. And people in the middle of K-16 systems need to have the time, space, and authority to do the work—work that is well aligned with top leaders' visions.

Summary: The Future of K-12 and Postsecondary Education System Alignment

If college and career readiness reforms are going to change opportunity structures for students, they must include deep, lasting, systemic restructuring of policies, practice.

and norms within and across systems. Ensuring policy coherence is necessary, but not sufficient because policy coherence alone does not penetrate classrooms to affect student learning. There is no one-size-fits-all model that can be scaled everywhere, and there is no "technical fix"; this work is highly relational. At the level of practice, the work is often programmatic (such as the proliferation of pre-college outreach programs), individualized, and small scale—necessary, but insufficient to create large-scale change. Local educators need to have the knowledge, skills, and relationships necessary to support student learning and connections between systems differently from in the past. This chapter provided an overview of some of the parts that need to move together coherently; it does not try to offer a reform blue-print for any particular locale because there is no one-size-fits-all model. Rather, this is a call to the field to pay attention to institutional disconnections and barriers

along with clarity of vision and development of staff capacity to act aggressively and competently to bridge the historical and dysfunctional gaps separating the K-12 and postsecondary education systems. It is also a call to provide more support for capacity building at the local level. Empowered centrally, educators need to act

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locally to identify and overcome policy gaps and institutional conflicts.

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