



AUTHORS

Hillary R. Michaels, Ph.D.
*Hillary R. Michaels
 Consulting, LLC*

Katrice Hawthorne, MA
Norfolk State University

Nuria M. Cuevas, Ph.D.
*Southern Association
 of Colleges and Schools
 Commission on Colleges*

Alexei G. Mateev, Ph.D.
Norfolk State University

CORRESPONDENCE

Email
 hillarymichaels@gmail.com

CREATING SEAMLESS K-16 PATHWAYS: ROLE OF ASSESSMENT

The large number of underprepared students entering the nation's two- and four-year colleges and universities has created what Levin and Calcagno (2008) consider a "remediation crisis" (p.181). Despite the recent attainment of high school diplomas, many incoming students are academically unprepared for college-level coursework in reading, writing, and mathematics (Levin & Calcagno, 2008). The disconnect between high school competencies and college readiness poses a serious threat not only to President Obama's ambitious goal of having the highest proportion of college graduates in the world by 2020 (President Obama, Address to Joint Session of Congress, Feb. 24, 2009), but most importantly to the academic and career goals of today's youth. As Calcagno, Crosta, Bailey and Jenkins (2007) have noted, students who enter college through remedial pathways are less likely to graduate. The misalignment between K-12 and postsecondary expectations is a cause for serious concern, and educators must work together to bridge this ever-widening gap.

Attempts to create a seamless K-16 system have been stymied by the severe lack of information that K-12 and postsecondary educators as well as prospective college students have regarding each other's expectations and goals. This information asymmetry is clearly manifested in the misalignment of K-12 exit assessments and post-secondary education entry and general education assessments (Kirst & Bracco, 2004).

Effects of Misalignment on Assessment

Assessment serves several important roles; it provides opportunities for continuous improvement of student learning. It provides the academic community with opportunities to evaluate student outcomes, examine curriculum, and engage in reflection to determine if student performance corresponds to the expectations of the academic community. Assessment is an integral component of education at every level, yet secondary and postsec-

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ondary institutions do little to determine if the battery of tests students are required to complete are aligned or adhere to common standards. The lack of shared knowledge about assessment at each level makes it difficult for secondary and postsecondary institutions to develop cohesive academic communities that are able to use assessment to align student achievement standards.

Kirst and Bracco (2004) found that “between high school and college, college-bound students face a confusing set of exams... (K-12 exit, college entrance, and college placement) [that] often use different formats and emphasize different content” (p.10; also Le & Robyn, 2001). Moreover, many exams designed to determine students’ competency for high school graduation are of little use to postsecondary institutions as they bear little resemblance to the knowledge and skills expected of incoming college students (Atkinson & Geiser, 2009; IHEP, n.d.). This lack of alignment is inevitable as the end-of-course tests required by public high schools, which reflect state standards, are benchmarked based on the amount of content knowledge displayed in a particular course. These end-of-course tests are developed with high school content in mind. Proficiency is usually determined through a standard-setting method with high school instructors defining the skills and knowledge that students need to demonstrate to be categorized into specific performance levels such as *Basic* or *Proficient* in the subject. While these standards and benchmarks may meet high school proficiency standards, they are not designed in concert with postsecondary faculty nor are they intended to meet postsecondary needs or college readiness expectations. Brown and Conley (2007) concluded that “state high school assessments and the knowledge and skills necessary for university readiness align in areas that might be characterized as more basic and do not align as well in areas requiring more sophisticated cognitive functioning” (p.152). Embedding college readiness indicators in curriculum and assessment at the secondary level would allow for a better alignment of high school exit and college entry standards.

Many students, especially recent high school graduates, are baffled when they are directed to remedial courses. These students have likely passed high school exit exams and have been deemed competent in the high school curricula. However, approximately 60 percent of incoming students are placed in at least one remedial course and less than half of those students will ever enroll in the first college-level course (Bailey & Cho, 2010). In Virginia, for example, nearly one of every five freshmen requires remediation (SCHEV, 2007).

Accordingly, enrollment in remedial courses significantly increases the time to degree and decreases the odds of degree completion for traditional-age students (Calcagno et al., 2007). Some students must surely feel duped when directed to remedial college courses after having successfully met high school expectations. Students may feel stymied in academic pursuits when they learn that credit toward the degree will not be received for such coursework. A stigma often is attached with student placement into remedial college courses (Lesley, 2004). Boulton (2005) suggests that the embarrassment and shame students with deficiencies often face leads to “intellectual danger” and diminished educational outcomes.

Further, the costs of remediation are staggering. Over a decade ago remediation was estimated to cost over \$1 billion annually (Breneman & Haarlow, 1998). The Bill and Melinda Gates Foundation reported that current expenditures for remedial education exceed \$2.3 billion per year (Jaschik, 2008). McCabe (2000) notes the specious complaints of legislators and opponents of remediation (Burd, 1996), who claim that college remedial programs are a duplication of high school curriculum and that the public is being charged twice for academic content that should have been mastered before college enrollment. Furthermore, McCabe contends that a gap exists between the competencies required for high school graduation and those required for college admittance. Consequently, students, especially those from traditionally underrepresented groups, are adversely affected by the costs of remediation, and many may be deterred from continuing or starting their education when faced with the costs associated with a year or more of remedial education that does not count towards a degree.

Current State Initiatives: Systems Approach

In terms of integrating frameworks and developing coherent systems, assessment is well-positioned to breach the chasm between K-12 and postsecondary education. However, the lack of coherence within assessment systems has contributed to the separation between K-12 and postsecondary standards. In both systems, coherence between curriculum and competency standards is needed if true reform is to occur. Moreover, cooperatively developed standards allow assessment “to move beyond mere coherence...and to achieve a resonance in complex systems in which the parts [K-12 and postsecondary] are mutually supportive and beneficial” (LeMahieu & Reilly, 2004, p. 202).

Brown and Conley (2007) suggested applying the emerging theories of systems coherence (e.g., Fuhrman, 2001) as a conceptual approach for exploring the impact of information asymmetry or (mis)alignment between K-12 and postsecondary education assessments. The theories of systems coherence posit, “By creating more explicit connection between local educational systems and state standards, superior learning will result” (Brown & Conley, 2007, p. 138).

There is growing energy behind the issue of alignment of assessment between K-12 and postsecondary education. A number of organizations are rallying for the creation of standards, assessments, and tracking systems that link secondary and postsecondary curriculum and evaluate students’ educational trajectories. The Council of Chief State School Officers (CCSSO) and the National Governors Association (NGA) introduced the K-12 Common Core State Standards (CCSS) in 2010 to outline the knowledge and skills high school graduates need to succeed in college. As of November 2011, the CCSS have been adopted by 45 states and the District of Columbia. The American Diploma Project (ADP; 2011) has developed rigorous college readiness benchmarks to promote college and career readiness. The ADP Network consists of 35 states that have committed to aligning K-12 and postsecondary curriculum and assessments.

Virginia is a member of the ADP network and the State Council of Higher Education for Virginia’s (SCHEV, 2007) strategic plan advocated alignment of P-12 with higher education and alignment of higher education with state workforce needs. Curriculum alignment between primary, secondary, and postsecondary education is endorsed, as are integrated P-16 data collection systems. The plan notes that P-12 and postsecondary alignment increase college access for underprepared, minority and low-income students.

To increase the college readiness of high school students, several states, most notably California (Cohn, 2010; Tierney & Garcia, 2011), have crafted system-wide college readiness initiatives to increase access, alignment, and success. Many other states have moved toward instituting more assessments at the K-12 level; yet, there is little evidence that those assessments align with postsecondary standards (Atkinson & Geiser, 2009; Brown & Conley, 2007). Intentionally aligned and collaboratively designed curriculum and assessments throughout the K-16 pipeline provide a viable tool to ameliorate the information asymmetry that plagues our current educational system.

Collaboration and Communication for Better Alignment: Consistent Signals

The second conceptual anchor for studying misalignment in the K-16 pipeline as suggested by Brown and Conley (2007) is signaling theory advanced by Kirst and Venezia (2004). This theory holds that when the signals from state standards, assessments, and postsecondary admission requirements are inconsistent it is impossible for secondary teachers and administrators to craft programs and practices that are consistently aligned with the standards of postsecondary institutions. To achieve coherence and alignment, collaboration and communication are imperative as they set the groundwork for providing consistent signals. Signaling promotes and sustains alignment as K-12 and postsecondary educators become cognizant of the other’s respective standards and expectations.

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Alignment between college faculty and high school faculty is essential as current research suggests that 44 percent of college faculty believe students are unprepared for the rigors of college-level writing whereas only 10 percent of high school teachers hold that position (Sanoff, 2006). Collaboration and ongoing cross-level professional development among K-12 and postsecondary educators is essential if a seamless K-16 pipeline is the aim.

For example, California State University (CSU) campuses implemented the Early Assessment Program (EAP) with local high schools in an effort to reduce the number of first-year students requiring remediation (Goen-Salter, 2008; Howell, Kurlaender, & Grodsky, 2010; Tierney & Garcia, 2011). The EAP targets high school juniors, enables them to take the CSU placement tests, and recommends high school courses that can enhance their college-readiness (Goen-Salter, 2008; Howell et al., 2010; Tierney & Garcia, 2011). Additionally, CSU campuses in Long Beach and San Diego have developed unique partnerships with local K-12 systems to align curriculum and assessments to college expectations, to increase the number of students who are college-ready, and to provide cooperative professional development opportunities for high school teachers and college faculty (Cohn, 2010).

The collaborations listed above are in their infancy, but the results from Long Beach and San Diego are promising (Cohn, 2010). However, Tierney and Garcia (2011) found that in order to effect substantive change, the EAP would require the formation of viable and continuous relationships between a particular postsecondary institution and local school districts.

To better align high school and college curricula the following suggested actions are recommended:

- Ongoing communication is paramount. K-12 teachers need information about college readiness standards, expectations, and assessments. Conversely, college faculty need information about K-12 standards, expectations, and assessments. The conversations should seek not to establish blame but rather should initiate progress.
- Relationships between administrators and faculty at each level must be forged and fostered, as collaboration is crucial to the success of any alignment effort. According to Conley (2011), “States have, for the most part, developed their high school exams with minimal input from postsecondary education, which in turn has not used the results from these exams for substantive purposes or decisions” (p. 6). K-12 and post-secondary participants in Kirst, Venezia, and Antonio’s (2004) study “consistently stated that no one asked them to participate in devising the others’ standards or assessments” (p. 287).
- Curriculum alignment should be a key goal for high schools and colleges (Conley, 2011). This alignment can be fostered through curriculum mapping of high school courses and entry-level college courses. Course sequencing that ensures that students meet college readiness expectations and senior seminars taken during students’ final year of high school might ensure that students have the requisite knowledge and skills.
- Aligning assessments are recommended as “a much-needed strategy to improve college-readiness and enhance postsecondary success for all students” (IHEP, n.d., p. 2). Conley (2011) explores initiatives that align high school and college level content through the careful examination of the content and skills addressed in entry-level courses. Porter, Polikoff, Zeidner, and Smithson (2008) offer manageable approaches to conducting alignment studies of test content and curriculum standards.
- Placement tests are a key juncture between K-12 and college assessments. Rosenbaum and Becker (2011; also Long & Riley, 2007) hold that successful high schools “use the placement test to make college standards visible from the start, thereby posing clear, consistent goals throughout high school” (p. 16). Early alert assessment

programs also provide high schools with actionable data that can be used to address academic deficiencies.

- To determine where local secondary and postsecondary institutions diverge, research is needed. Replicating the studies of Le and Robyn (2001) and Brown and Conley (2007) could serve as a starting point. Institutions at both levels need to participate in data-driven analyses of student outcomes, assessment instruments, and curricula benchmarks; integrated data collection systems would prove especially beneficial to these efforts. High school and college faculty are also encouraged to form “communities of practice” where they engage in action research to address issues and determine solutions.

Educators are grappling with devising a comprehensive solution to the difficulties students are facing in their transition to higher education. Partnering K-12 and postsecondary institutions that communicate, collaborate and use assessment appropriately can create coherent networks to assist students in making seamless transitions to college.

Conclusion

The diversity of American secondary and postsecondary institutions is generally considered one of the strengths of our educational system. However, the lack of common standards or a national curriculum and the varying levels of selectivity make it difficult to align secondary and postsecondary agendas. While assessment serves an important role in alignment initiatives, localized assessments linked to particular institutions will be severely limited in their ability to “capture information on the full range of content knowledge and cognitive skills” (Brown & Conley, 2007, p. 154) that are expected of students at U.S. postsecondary institutions with varying admissions standards and college readiness expectations.

The variety of colleges and universities available to students yield various implications for alignment. Secondary schools may find it difficult to develop rigorous standards that impact students’ college readiness considering the diverse postsecondary institutions available to students. As such, there might always be minor gaps in expectations and slight information asymmetry. Nevertheless, current conditions demand action. Any partnerships that derive from K-16 alignment must be organic. The goals of both parties must intersect. Most importantly, both parties must be dedicated to increasing the academic opportunities afforded to local students. Assessment can play an important role in these partnerships as it necessitates systems coherence and consistent signaling.

The potential benefits of a K-16 partnership are plentiful and include an increase in the number of college-ready students, the opportunity to enhance the education and training of future teachers, provide targeted professional development to current teachers, reduced cost of remediation, and improved rates of access and graduation for students from underrepresented groups. However, the solution is unlikely to be one size fits all.

Colleges and universities may have varied perceptions of students’ college-readiness based on the selectivity of the institution. Creating a seamless K-16 pathway is undoubtedly challenging; however, it seeks to improve student outcomes by increasing access and enhancing academic support. President Obama has set an ambitious goal that will require cooperation and collaboration from educational institutions at all levels as it depends greatly on the ability of P-16 institutions to retain and strengthen students.

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