



Leaping the College-Ready Gap: What Can Be Learned from Schools That Focus on Deeper Learning

The roots of the United States' entrenched gap in educational attainment run deep. Latino and black students have lower academic performance, high school graduation rates, and fewer opportunities to participate in courses that prepare them for college than white and Asian students. As a result, Latino and black students have lower college-going and completion rates, especially among those who enroll in four-year higher education institutions. This disparity manifests itself in an education attainment gap, with only 13 percent of young adult Latinos and 21 percent of blacks earning a bachelor's degree compared with 39 percent of whites.¹

A large proportion of Latino and black students consistently score below the basic achievement level on the National Assessment of Educational Progress (NAEP) in reading and math in the fourth, eighth, and twelfth grades than

white and Asian students. For instance, over one-half of black fourth graders and about one-half of Hispanic fourth graders scored below the basic achievement level in 2007. A small proportion of Latino and black students score at or above the proficient level on the NAEP. At the eighth-grade level, 13 percent of black students and 15 percent of Hispanic students scored at or above proficient.

The ongoing achievement gap has a cumulative effect on education attainment. As Latino and black students fall behind academically, some drop out, feeling it is impossible to catch up. As a result, a higher proportion of black and Latino students do not graduate from high school. For the school year 2011–12, 76 percent of Hispanics and 68 percent of blacks graduated from all public high school students, while 93 percent of Asians/Pacific Islanders and 85 percent whites graduated.²

Learners of all types can see achievement gains when schools remake themselves as centers of deeper learning. Eight schools may be pointing the way to how the nation can finally close the gaps for Latino and black students in beginning and finishing college degrees.

by Monica Martinez and Dennis McGrath

Given the changing US demographics, it will be impossible to achieve the goal of leading the world in college graduates without improving the college success rates of black and Latino students.

High school students need access to the kind of courses that will enable them to qualify and be successful in postsecondary education. Yet a significant proportion of black and Latino youth do not have access to these kinds of courses. Latinos are consistently underrepresented in prerequisite math courses for college, including Advanced Placement (AP) courses, and/or do not perform at the necessary level. For instance, among 2005 high school graduates, a lower percentage of Hispanic students completed courses in geometry, algebra II, and statistics than white, black, or Asian/Pacific Islander students. And only 6 percent of black and Latino high school graduates completed a calculus course, compared with 30 percent of Asian/Pacific Islanders and 15 percent of white graduates. While the total number of black and Hispanic students taking an AP exam more than tripled from 1999 to 2008—from 94,000 to 318,000 students—the percentage of Latino and black test takers are still lower than white and Asian students. Nonetheless, Latinos and blacks have the lowest mean scores on the exams: an average 2.42 for Latino and 1.91 for black students. The College Board considers a student to have been “successful” on an exam if he or she receives a 3 or higher.

It should be no surprise, therefore, that there are significant college completion gaps between white students and students of color. Nationwide, 60 percent of whites but just 40 percent of African Americans and 49 percent of Latinos who start college earn bachelor’s degrees six years later.³ In an address before a joint session of Congress in 2009, President Obama set this goal: “By 2020, the US will once again lead the world in terms of college graduates.” Given the changing US demographics, it will be impossible to achieve this goal without improving the college success rates of black and Latino students. To lay the foundation of economic success for all and to maintain economic competitiveness, the United States must narrow the education attainment gap. While meeting the growing demand for college-educated workers requires strategies that will increase the rate of college completion, efforts must start with providing students curricula and instruction that will ensure their K-12 success and thus their preparedness for postsecondary education.

Deeper Learning for All Students

What does instruction that prepares all students for postsecondary success look like? Certainly, it looks different from the traditional model of education that still underpins much of public school life today. As many have pointed out before, US schools were designed for mass education and efficiency, focused on transmitting information and assigning letter grades to certify learning, and not on developing students as active participants and directors of their own learning.

This system does not prepare students well for the present-day challenges of college, career, and life, in which they must not only master content knowledge but know how, when, and why to apply it. Instead, college and careers increasingly require students to develop what The William and Flora Hewlett Foundation calls deeper learning, a set of competencies that include mastery of core academic content, critical thinking and problem solving, collaboration, effective communication, self-directed learning, and an academic mind-set. These competencies align with four keys to college and career readiness developed by David T. Conley based on a decade or more of research: cognitive strategies, content knowledge, learning skills and techniques, and transition knowledge and skills.⁴

In *Deeper Learning: How Eight Innovative Public Schools Are Transforming Education in the 21st Century*, we identify strategies to ensure that students are college ready.⁵ Some activities focus on creating a college-going culture, developing an academic mind-set, and teachers knowing students in order to customize learning to meet students’ individual educational needs and aspirations. However, the key strategy that prepares students for college is contextualized learning. Such learning must incorporate relevant, meaningful activities to engage students emotionally and connect what they already know with other subjects.

We identified eight schools that seek to create curious, passionate learners, critical thinkers and problem solvers, effective communicators, and productive collaborators (see box 1). Most of the eight had a high number of low-income and minority students. All were inspiring examples of rich learning environments, community involvement, and students engaged

Box 1. Eight Innovative Schools

King Middle School Portland, Maine

Serves 537 students in grades six through eight. Total minority enrollment is 39 percent, and 54 percent are eligible for free or reduced-price lunches. Students at King speak 28 languages and come from 32 countries. Fifteen percent of the students are classified as special education and 30 percent as English language learners. It is one of three public middle schools in the Portland Public School District. In 1988 it adopted the Expeditionary Learning model.

MC² STEM High School Cleveland, Ohio

Founded in 2008 as a public-private partnership. It is a subset of Cleveland Metropolitan School District's New and Innovative Schools Program. It has 289 students in grades nine through twelve, who attend classes at campuses embedded in business and school sites around the city. Total minority enrollment is 88 percent; 100 percent receive free or reduced-price lunches. About 12 percent are designated as special education, and 1 percent are English language learners. School is in session year-round, with students working for ten weeks and taking three-week breaks.

Rochester High School Rochester, Indiana

Serves 565 students in grades nine through twelve. It is the only public high school. Ninety-two percent of the students are Caucasian, 44 percent are eligible for free or reduced-price lunches, and 15.2 percent are classified as special education. In 2007, Rochester High School adopted the New Tech Network's model.

Science Leadership Academy Philadelphia, Pennsylvania

A magnet STEM high school that opened in September 2006. A partnership between the School District of Philadelphia and The Franklin Institute, the school enrolls 484 students in grades nine through twelve. Total minority enrollment is 68 percent, and 49 percent of students receive free or reduced-price lunches. Eight percent are classified as special education and 1 percent as English language learners.

Avalon School St. Paul, Minnesota

A charter that opened in 2001 and serves 185 students in grades six through twelve. Total minority enrollment is 30 percent, and 30 percent of all students are on free or reduced-price lunches. Thirty-two percent of the students are classified as special education, and 5 percent are classified as English language learners. The school operates on a teacher-owner governance model, has no principal or director, and uses the Envisions model.

Casco Bay High School Portland, Maine

Serves 335 students in grades nine through twelve. Total minority enrollment is 31 percent. Fifteen percent are classified as special education, 21 percent are English language learners, and 45 percent are eligible for free or reduced-price lunches. The school is one of four public high schools in the Portland Public School District. Founded in 2005, CBHS is a school of choice and uses the Expeditionary Learning model.

Impact Academy of Arts & Technology San Francisco-Oakland area, California

A college preparatory charter school founded in 2007 and operated by Envision Schools. Impact Academy operates within the Hayward Unified School District in the San Francisco-Oakland area. The school serves 460 students in grades nine through twelve. Total minority enrollment is 82 percent, and 66 percent of students are eligible for free or reduced-price lunches. Eight percent are classified as special education, and 17 percent are English language learners.

High Tech High San Diego, California

A college preparatory charter high school that serves 562 students in grades nine through twelve. Total minority enrollment is 66 percent, and 37 percent are eligible for free or reduced-price lunches. Ten percent are classified as special education and 4 percent as English language learners.

Source: Monica R. Martinez and Dennis McGrath, *Deeper Learning: How Eight Innovative Public Schools Are Transforming Education in the 21st Century* (New York: New Press, 2014).

in self-directed learning. We hope other schools can emulate them, and state policymakers can learn from their example.

Casco Bay High School

Learning becomes more meaningful when material is personally relevant and contextualized.⁶ At the eight schools we studied, subjects are not taught in isolation; instead, learning is connected to larger themes and concepts across multiple subjects, and students apply their learning to real-world issues and problems. As Susan McCray, an English teacher from Casco Bay High School (CBHS) in Portland, Maine, states, “Everything is related. Everything matters, and we are all working all the time to help them [students] see the connections.”

Perhaps the most innovative CBHS strategy is an intense, weeklong fieldwork experience in West Virginia called Junior Journey. This integrated curricula unit knits English, history, and chemistry and calls upon the teachers to work closely together and draw upon the expertise of partner institutions, and it requires students to learn and apply sophisticated content knowledge and skills.

CBHS teachers have developed integrated projects that explain the role that coal mining has played in rural West Virginia and introduce students to regional music and literature. High school juniors first study a thematic curriculum that focuses on two guiding questions: “How do we resolve our dependence on fossil fuels?” and “How does a community sustain itself in the face of resource degradation and economic adversity?” Chemistry teacher Brooke Teller leads the students through the science of the carbon cycle and the role of coal in providing energy. Students research current and alternative sources of energy and then use what they have learned to develop policy proposals in the humanities course, where they identify regulations, costs, and incentives for different energy sources. The project concludes with a symposium in which the juniors present their proposals and respond to questions from local energy and environmental experts.

In the next trimester, students learn about the history, economy, and culture of the region. McCray uses classic texts, such as *Their Eyes Were Watching God* and *Native Son*, to give

students a broad sense of how literature can reveal the nature of community life. The history teacher uses *Grapes of Wrath* to help students understand how economic conditions affect families and communities. Staff from the 317 Main Street Music Community Center co-teach sessions on Appalachian music.

To help students develop the skills they will need once the Junior Journey begins, McCray partners with the Salt Institute for Documentary Studies to co-teach sessions on interviewing and photography. The final project involves teams of students creating a multimedia documentary that captures the life stories of West Virginians they interview. As Susan McCray puts it, “Students go from geeking out and developing their research skills to being able to tell powerful stories.”

Once in West Virginia, students work at a Habitat for Humanity worksite in the morning and conduct interviews in the afternoon that the Habitat staff arranged with individuals who are waiting for homes. Some members of the student teams are interviewers, some audiotape, some take pictures, and some observe. As one describes, “We got our own training, so everyone had their own skills, but we were really dependent on each other. We had to learn how to work together as a group in a totally new situation.”

After dinner, students look at photographs they shot and review their interviews. The teachers prod them with questions such as: “What is the thread of the story so far, and what will you ask next?”

Once the students return home, each writes an oral history of the West Virginian her group interviewed. Working as a team, the group creates one joint narrative: They compare notes and revise drafts. They then create a three-minute video set to music.

The teachers see this phase of the project as critical. Not only are students engaged in meaningful learning, but teachers provide regular, sustained opportunities for the deliberate practice of deeper learning. This sustained engagement at CBHS dovetails with research that shows expertise is gained over a long period of deliberate effort to improve performance in a specific domain.⁷

At an evening event in Portland at the close of the project, students play bluegrass music and show their videos. Students repeat this performance for the Habitat Volunteer

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Center in West Virginia and other community members via Skype. Because students have to show their work to an authentic audience, they strive to create high-quality work that shows concept and skill mastery.

Evidence That Deeper Learning Works

The American Institutes for Research have substantiated the effectiveness of deeper learning practices on student performance in a series of studies.⁸ One surveyed 1,762 students from 22 schools in New York and California serving low-income students and students of color and associated with deeper learning networks. The study demonstrated that attending these schools benefited students, regardless of their background or whether they lived in an urban or suburban district:

- Regardless of their prior level of academic achievement, students attained higher standardized test scores on both state assessments and the OECD PISA-based test. Both assessments measure core content knowledge and problem-solving skills.
- Students are more likely to graduate from high school on time than students in comparison schools.
- Graduates are more likely to enroll in four-year colleges and enroll in more selective institutions.
- Students reported higher levels of collaborative skills, academic engagement, and motivation to learn compared with their peers in schools that were not part of the deeper learning network.

A recent SCOPE study also found that specific high school practices, including instructional relevance, contribute to students' success in college.⁹ Similarly, another study conducted by Linda Darling-Hammond found that a rigorous, coherent instructional program enables all students to overcome barriers often associated with race, poverty, language, or initially low academic skill.¹⁰ All such programs establish high expectations, link performance assessments to clear standards, and teach intellectual and research skills through rigorous coursework that has been made relevant with the application to real-world problems. Further, the study says, "The schools connect students to their

communities and their futures through community service, internships, and partnerships with community groups and local colleges. Authentic learning experiences connect to the world outside school."

Policy Implications

State boards of education can support deeper learning and the necessary instructional shifts through policies that support the following: a continued focus on college- and career-ready standards, professional learning for both teachers and leaders, revamping educator preparation, creating a system of assessments, and reconsidering how time is used for student learning, including expanding the school day.

High standards communicate expectations to educators, parents, and students. Standards like the Common Core State Standards (CCSS) and the Next Generation Science Standards can eliminate academic tracks, where only some students are prepared for postsecondary education. The high rate of adoption and implementation of high-quality standards not only helps prepare all students for college; it also aids the transition from rote memorization to inquiry and understanding, critical thinking, problem solving, and construction of viable arguments.

Much of the struggle over implementing the CCSS flows from the fact that support, particularly for professional learning, has been uncoordinated and limited. States should require districts and schools to set aside a percentage of the school year to school-based, teacher-directed professional development or collaborative planning after the creation of a professional development plan based on teachers' needs. States can access their federal Title II funds to support or help implement these policy recommendations. Professional development should focus on instructional strategies that develop deeper learning, specifically the design, use, and analysis of performance-based formative and summative assessments.

Most important, state policies should encourage schools to create schedules that provide time for teachers to work together to design curricula, create common assessments, and analyze student data and to improve instruction through observing other

classes, providing feedback to one another, and meeting with instructional coaches.

A task force of the Council for Chief State School Officers (CCSSO) articulated a vision for the knowledge and skills teachers and principals will need that are consistent with the knowledge and skills we saw displayed in the eight schools we profiled. CCSSO recommends states push for greater alignment of K-12 and teacher preparation offered in higher education and licensure requirements for teachers and principals. States also should advocate rigorous program approval standards to ensure that educator preparation programs recruit candidates based on supply and demand data; have highly selective admissions and exit criteria, including mastery of content; provide high-quality clinical practice throughout a candidate's preparation that includes responsibilities from beginning to end of a school year; and produce quality candidates that can boost student achievement. Additionally, states should provide the resources necessary to support and retain teachers, for example, by investing in residency models and mentoring programs. Ultimately, states should invest in the continuum of the education profession: teacher induction, professional growth, and teacher leadership.

The use of assessment to measure student learning has been criticized since standards-based reform was introduced in the 1980s but has picked up speed with the transition to CCSS. Many states are reconsidering their assessment strategies and asking whether existing assessments are adequate to support the new demands on students. To address gaps in existing assessments, many states should consider using performance assessments, which require students to construct answers, produce products, or perform activities rather than merely selecting from a list of multiple-choice answers. Such assessments will require that states and districts develop an assessment bank of exemplary performance tasks that evaluate standards and deeper learning outcomes.

In addition, schools need the flexibility to reconsider their use of time by restructuring their schedule appropriately and extending the school day. Inquiry-based learning requires longer instructional blocks and opportunities to extend student learning outside school in field-based experiences and in public presentations

of classwork. Expanding the school day can provide additional support to students who are struggling in developing their academic proficiency and deeper learning outcomes. Finally, there has to be time for teachers to work together, review student work, plan or integrate curriculum as a team, and participate in other professional learning opportunities.

Conclusion

Minimizing both the achievement gap and education gap for all students, but particularly for black and Latino students, is critical to preserving the country's economic future and strengthening its democracy. A key part of closing these gaps is ensuring that all students have an opportunity to pursue postsecondary success. Providing students with deep, meaningful learning experiences is an essential ingredient toward realizing this vision. Students from all walks of life that can master content knowledge, think critically and solve problems, communicate effectively, collaborate productively, and develop a strong academic mind-set will be well on their way toward success in college and careers. ■

¹Young adults are defined as 25- to 34-year-olds here. Data from US Census Bureau, "Current Population Survey, 2009 Annual Social and Economic Supplement," April 2010.

²http://nces.ed.gov/programs/coe/indicator_coi.asp.

These graduation rates were derived from Department of Education figures using the Averaged Freshman Graduation Rate (AFGR), which represents the number of high school diplomas expressed as a percentage of the estimated freshman class four years earlier.

³Mami Lynch and Jennifer Engle, "Some Colleges and Universities Do Better Than Others in Graduating African American Students" (Washington, DC: Education Trust, August 2010).

⁴<https://www.epiconline.org/Issues/college-career-readiness/the-solution/>.

⁵Monica R. Martinez and Dennis McGrath, *Deeper Learning: How Eight Innovative Public Schools Are Transforming Education in the 21st Century* (New York: New Press, 2014).

⁶Mary Helen Immordino-Yang and Matthias Faeth, *Mind, Brain, and Education: Neuroscience Implications for the Classroom* (Bloomington, IN: Solution Tree Press, 2010).

⁷K. Anders Ericsson, "The Role of Deliberate Practice in the Acquisition of Expert Performance," *Psychology Review* 100, no. 3 (July 1993): 363–406.

⁸Kristina Zeiser et al., *Findings from the Study of Deeper Learning: Opportunities and Outcomes* (Washington, DC: American Institutes for Research, 2014).

⁹Stanford Center for Opportunity Policy in Education (SCOPE), *Student-Centered Schools: Closing the Opportunity Gap*, <https://edpolicy.stanford.edu/news/articles/1217>.

¹⁰Linda Darling-Hammond and Diane Friedlaender, "Reshaping High Schools Creating Excellent and Equitable Schools," *Educational Leadership* 65, no. 8 (May 2008): 14–21.

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