

Finding America's Missing AP and IB Students

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The Education Trust



TO THE POINT

- ▶ AP and IB courses are a powerful means of disrupting high-end achievement gaps, but too many low-income students and students of color are missing out.
- ▶ Expanding access to more schools is needed, but if every school with an existing AP program focused on finding its own “missing students,” we could almost entirely eliminate participation gaps.
- ▶ Many schools have successfully eliminated inequitable patterns in students taking advanced courses. Their stories offer lessons for others ready and willing to take action.

It turns out that more than half a million low-income students and students of color are “missing” from AP and IB participation — students who would benefit from these advanced opportunities if they participated at the same rate as other students.

Finding America's Missing AP and IB Students

BY CHRISTINA THEOKAS AND REID SAARIS

Visit a local high school and ask to sit in on one of their best, most challenging classes. More often than not, you'll be shown an Advanced Placement (AP) or International Baccalaureate (IB) course. Designed to provide a head start on a college education, these classes conclude with rigorous, externally scored examinations, success on which can earn students college credit. In addition to helping students prepare for college-level course work, they increase students' chances of college admission and success.¹

First-time visitors to such classes are likely to be impressed. The teachers are engaging, the intellectual rigor is high, and the assignments are challenging. What you won't see, however, are many black, Hispanic, or low-income students. Fortunately, these patterns have not gone unnoticed.

Federal law provides dollars to help states expand their AP programs and cover test fees for low-income students, and the Department of Education's Office for Civil Rights collects data to monitor participation and success rates by race/ethnicity of students. Dozens of states have sponsored AP distance learning programs to reach students in schools that don't offer AP courses, and many have invested state dollars to encourage and reward successful participation.² Districts, too, have enacted comprehensive strategies to increase the number of AP courses taught, trained more teachers to teach in the AP program, and removed barriers for students of color and students from low-income families.³ Convinced of the worthiness of advanced study, the private sector also has stepped up. Exxon Mobil, Dell Computers, and Lockheed Martin, for example, have donated millions of dollars to the National Math and Science Initiative's Advanced Placement Training and Incentive Program (APTIP), an investment that has produced sustained and significant results in the number of qualifying or passing scores on AP math, science, and English exams for all students, and particularly students of color.

Yet even with this attention, virtually every analysis finds continued gaps in participation rates in these courses by race and family income levels. Lost in these participation gaps are real students. Lost, too, are some of the reasons why these gaps persist, despite the effort to close them.

In this paper, we examine AP participation patterns nationally and then by school to estimate how many students are missing out. We also look at data for the much smaller IB program. It turns out that, each year, more than half a mil-

lion low-income students and students of color are "missing" from AP and IB participation — students who would benefit from these advanced opportunities if they participated at the same rate as other students.

We also attempt to understand *why* inequities in participation exist, by asking whether the problem is mostly inadequate AP course offerings in high-poverty or high-minority schools, or because low-income students and students of color are not enrolling in existing programs.

The bottom line is clear. Yes, we need to continue to expand advanced offerings like AP and IB to schools that don't yet have them. But there's a lot we can do to bolster participation in existing programs. In fact, we could almost entirely eliminate the national access gap by doing, at scale, what some individual high schools already have done: close race and income access gaps within schools.

WHAT IS AP AND WHY DOES IT MATTER?

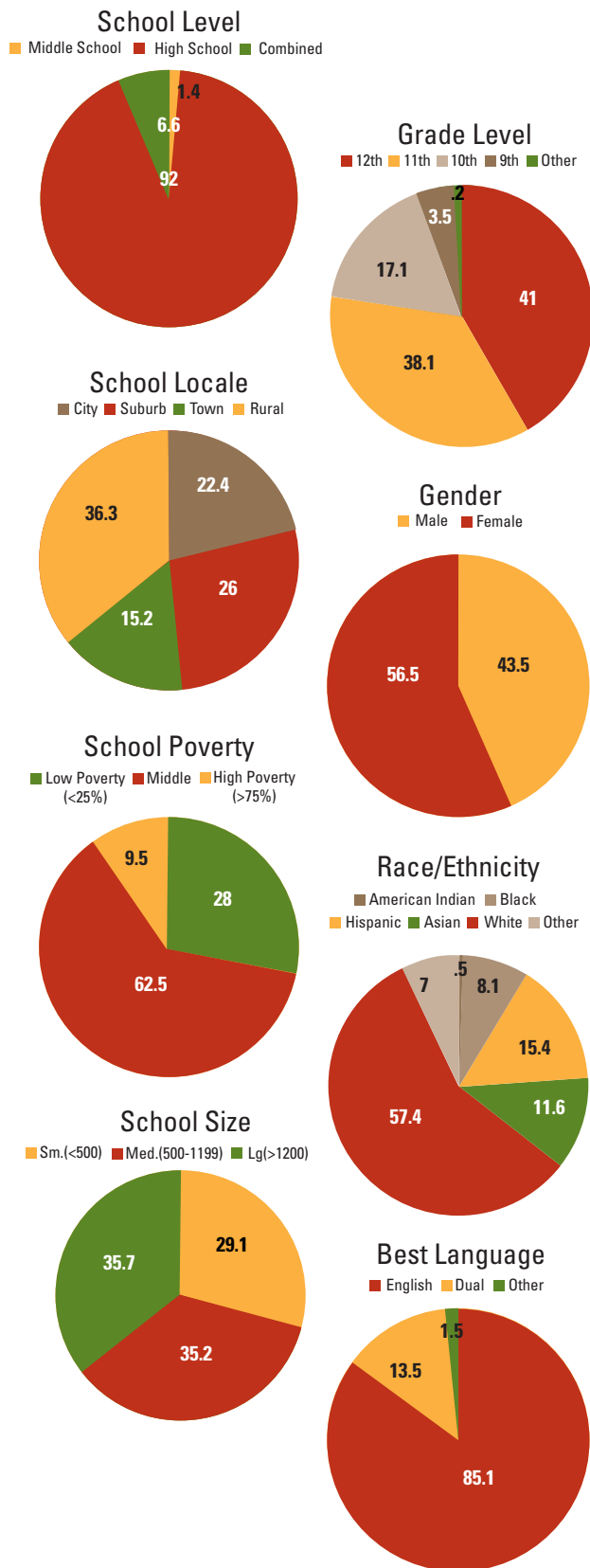
National and state assessment data reveal a troubling, well-documented, pattern: black, Hispanic, and poor students, on the whole, lag behind white, Asian, and middle-class students. The gaps are not limited to achievement on standardized assessments. There are also attainment gaps, with white and middle-class students graduating high school, attending college, and experiencing success in college at higher rates than students of color and students from low-income families.

The costs of these gaps are huge, both to individuals and to society. Evidence from economists clearly demonstrates that the lack of a postsecondary education will increasingly lock citizens out of the middle class. These achievement and attainment gaps in America produce a substantial drag on our economy, contributing to what one report called a "permanent national recession."⁴ And there are also non-material costs, from reduced engagement in our democratic process to increased mental and physical health ailments among our less educated citizens.⁵

We know that the strongest predictor of whether a student will achieve success in college is whether she had a rich and rigorous course of study in high school.⁶ Substantially

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Figure 1: Characteristics of all schools with an AP program and student test-takers from Spring 2010



reducing the gaps that help push so many black, brown, and poor people to the margins of American life is not only about lifting the results of our lowest performing youngsters. It requires eliminating the “high-end opportunity gap,” ensuring all students, regardless of race and class, participate equally in a rigorous course of study that leads to college.

As America increasingly embraces the necessity of higher standards for both college and careers in this evolving economy, AP enrollment and success patterns provide an important metric of our current status in challenging all students with a rigorous curriculum. AP, a program of the College Board, offers more than 30 courses across multiple subject areas, from calculus to art history to European history. The courses are designed by AP teachers and university professors so that they align with the knowledge, competencies and assignments typically found in corresponding college courses. AP is the oldest and largest program offering college-type experiences for public school students. It is larger than the IB program and serves more students than dual-enrollment programs.⁷ It is also a potentially powerful means of disrupting the high-end achievement gap.

Reported yearly by the College Board, overall AP enrollment data show steady growth over time in course access. For example, in the decade between 2001 and 2011, the number of high school graduates who took an AP exam increased by 95 percent. Although participation is up for all groups of students, program expansion has not rectified the gaps in participation by race/ethnicity or socioeconomic status.

Documentation of these gaps does not inform how best to shrink them. If these gaps are the result of spotty AP course availability in schools serving concentrations of black, Hispanic, American-Indian, and low-income students, then a whole array of initiatives and policies are needed to launch new AP programs. But if these gaps are primarily caused by an enrollment problem — that these students are in schools with AP courses but are not enrolled in them — then we need to focus on different solutions.

These are not merely academic questions. Given our national goals to challenge more young people with rigorous course work, we need to better understand the barriers and challenges that currently prevent us from enrolling students in programs that already exist.

THE HIGH-END OPPORTUNITY GAP: WHAT DO THE DATA SAY?

To fully understand patterns of access to the AP program, we merged College Board data on all AP test-takers from the spring of 2010 with the Common Core of Data (CCD), a

national database from the U.S. Department of Education's National Center for Education Statistics (NCES) that annually collects data about all public schools. This combination of data allowed us to explore the characteristics of students who take AP exams and compare them to the population and characteristics of the schools they attend, surfacing new information that more accurately reflects the opportunity gaps in our public schools.⁸ (See Figure 1 for more details.)

Which schools offer AP and who attends them?

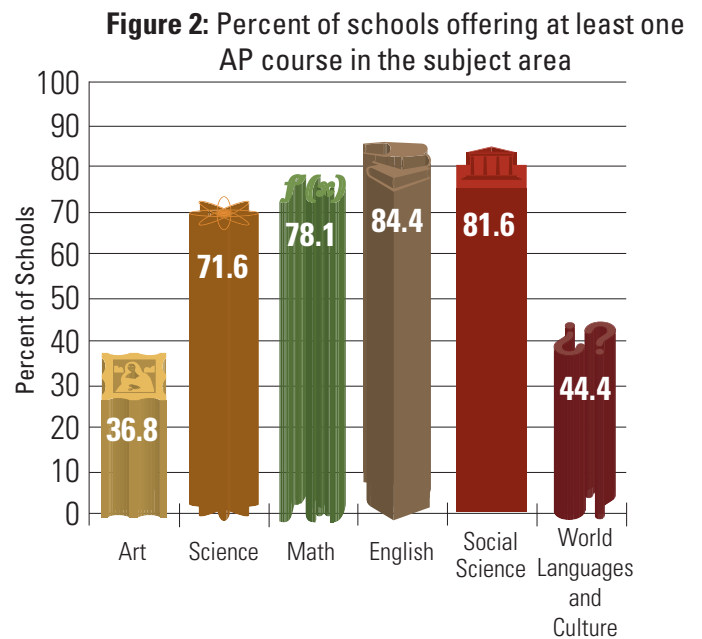
To answer this question, a school was defined as an "AP school" if it was a public high school and at least one student took an AP examination in the 2009-10 school year.⁹ We found 71 percent of all high schools had an AP program, and these schools were attended by a disproportionate number of America's public school students: 91 percent. Asian students (97 percent) were slightly more likely to have access to AP courses in their high school, while American-Indian students had the least access (76 percent); students eligible for free or reduced-price lunch (91 percent) and middle and high-income students (93 percent) were roughly as likely to attend schools with AP programs as were Hispanic (91 percent), black (89 percent), and white (91 percent) students.

So, while there are a number of high schools without an AP program, AP schools serve the vast majority of American high school students. Put another way, fewer than 1 in 10 students attend a school without any AP offerings. That doesn't mean there aren't inequities. The schools without an AP program tend to be small, higher poverty, and more often rural. For example, 74 percent of urban schools and 86 percent of suburban schools have an AP program, compared with only 59 percent of rural schools. Similarly, 99 percent of large schools and 87 percent of medium-size schools have a program, while only 44 percent of small schools do.

These deficiencies need to be remedied, as more than a million students attend schools without an AP program. Still, only a small part of the current gaps in AP participation by race or family income can be accounted for by which schools offer AP programs and which do not.

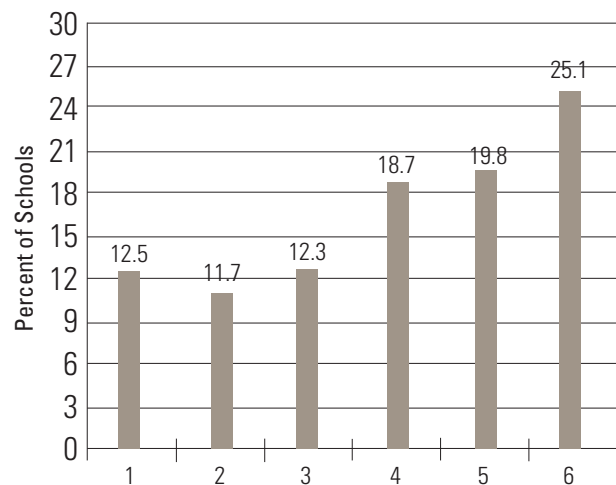
Do AP course offerings differ in schools with different student populations?

While 91 percent of high school students attend schools that offer at least one AP course, it could be that schools with more low-income students or students of color have smaller programs. Certainly, AP programs vary in size across schools. Our data show that about 27 percent of programs are quite small (fewer than 20 students or, likely, one class) while another 23 percent are very large (more than 180 stu-



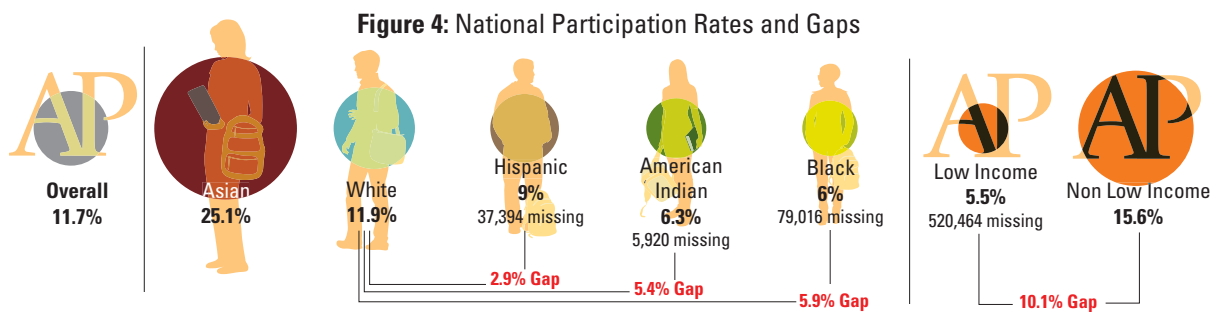
AP courses were grouped into major subject areas. See Appendix A for specific classes in each subject area.

Figure 3: Number of different subjects offered at schools



dents or, likely, nine or more classes). This could be entirely about school size, but we wanted to understand if there was something else going on. So, instead of just considering whether a school offered any AP course, we grouped AP classes into subjects and examined which were offered. (See Appendix A for list of classes by subject area.)

Our findings are summarized in Figure 2, which shows the types of courses offered and the percent of schools offering a course in that area, and Figure 3, which shows the frequency with which schools offered different types of classes. More than 75 percent of schools offer an AP class in at least three different disciplines, and 58 percent of schools offered a "complete" AP program, which we defined as at



Participation in the AP program represents a small part of the student body; slightly more than 1 in 10 students participate. Clearly, some subgroups are more likely to participate, including Asian and middle and high-income students. White students participate at the average and low-income, black and American-Indian students are the least likely to participate; slightly more than 1 in 20 students. Gaps represent large numbers of students.

least one course each in English, mathematics, science, and social science. While these schools served the majority of AP students (90 percent), they reached some groups of students better than others. Low-income students (15 percent) were almost twice as likely as other students (8 percent) to attend a school without the full complement of courses. Similarly, American-Indian (18 percent) and black (15 percent) students were far more likely than white (9 percent) students to have more limited course options.

So, while most low-income students and students of color attend schools offering AP courses, they are more likely than other students to attend schools with small, incomplete programs. This uncovers a different type of inequity experienced by low-income students and students of color. This phenomenon also contributes to the national participation gap, but not hugely.

Which students participate in the AP Program?

Saying students attend a school that offers an AP program is different than saying they are enrolled in AP. So, which students are actually taking these rigorous AP classes?

To answer this question, we first conducted a national analysis. We summed all of the students enrolled in AP schools and compared it to the population of students who took at least one AP exam in the spring of 2010. Figure 4 shows that, overall, about 11.7 percent of high school students attending schools with AP classes participate. So, while reach to high schools is high, reach in a given year to actual students is only a fraction of the total population, about 1 in 9 students.

Further, our examination of reach across different groups of students revealed wide differences in participation. Middle and high-income students who attend schools with AP classes are three times as likely to enroll in an AP course as are low-income students. Asian students participate at more than twice the national average, while black and American-Indian students participate at about half the rate of the national average.

These participation rates show where the real advanced-course opportunity gap lies: not between schools, but within them. And the numbers of students falling into these gaps are huge. If, for example, low-income students participated in AP at the same rate as other students, more than half a million more low-income students would benefit from advanced study. These same patterns hold for black, Hispanic, and American-Indian students who are *not* from low-income families: If they were served equally, more than 79,000 black students, 37,000 Hispanic students, and nearly 6,000 American-Indian students would benefit. In sum, if all groups of students attending AP schools were served equally, more than 640,000 additional low-income students and students of color would benefit.¹⁰

School by School: How many students are missing?

Next, we wanted to test if the national gaps in participation could be filled if every school that offered an AP program focused hard on finding its own “missing students” and enrolled them in existing AP courses. So, we dug beneath the overall data to look at the numbers school by school.

Our school-by-school analysis examines the equitability of access in each school with an AP program. This type of analysis allowed us to account for school-level differences in demographics, participation rates, and program size and to calculate a more precise estimate of missing students than any national analysis yields.¹¹ The expectation is proportionate enrollment within schools.¹²

Figure 5 shows how many students would need to be enrolled in the AP program for each school to fully close its participation gaps. In terms of real numbers, this equates to more than 600,000 students not currently enrolled in AP *who would participate* if enrolled in those courses at the same rate as the peers in their school. The number of low-income students across schools sums to more than 450,000 students. When we compare these figures to the overall national missing student numbers, we find the Hispanic

IB ANALYSIS

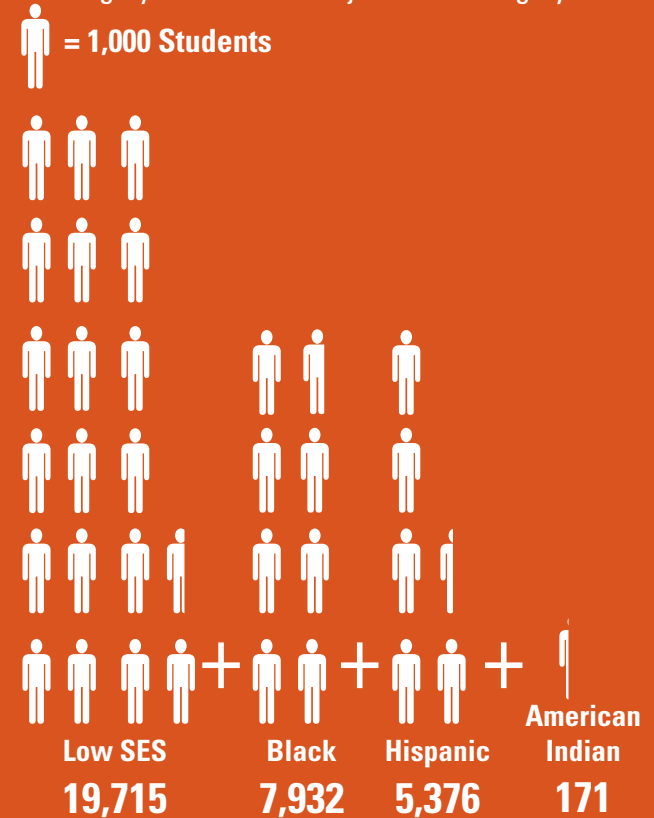
The International Baccalaureate program for high schools (called the “Diploma Program”) is offered to 11th- and 12th-graders. Students can earn a certificate for passing the IB exam in a single subject (as with AP), or they can earn a full IB diploma if they pass six subjects; pass a course in Theory of Knowledge; write an “extended essay”; and complete “creativity, action, and service” hours outside of class. For the purposes of our analysis, we examined access to IB courses, rather than the full diploma program. Although there are differences between AP and IB — the latter emphasizes “international-mindedness,” for example — there also are many similarities. Both programs use an externally graded exam, provide training and support to teachers, and are committed to rigorously preparing students for college. It is these similarities that make both programs (and other similar programs) very effective means for moving students to advanced levels of performance. Such programs provide good examples of relevant and high standards, and offer aligned exams to measure the achievement of those standards.

In the spring of 2010, the IB dataset included 570 schools; 561 were matched with school demographic data from the Common Core of Data, a national database from the U.S. Department of Education’s National Center for Education Statistics (NCES) that annually collects data about all public schools. These schools represent about 3.5 percent of traditional, public high schools. It is a much smaller program than the AP program, but has been growing rapidly in recent years; the number of participating schools in the U.S. in 2013 was 783.

Still, not all students in a school participate in the IB program. Indeed, IB programs serve an even smaller proportion of students within their schools than do AP programs: 1 in 19 or so, compared with 1 in 9 in AP. But as with AP, there are also big gaps in participation. Overall, about 5.5 percent of students in IB schools participated in the program. White (6.7 percent), Asian (9.6 percent), and middle and high-income students (7.5 percent) were more likely to participate compared with black (2.1 percent), Hispanic (2.7 percent), and American-Indian students (fewer than 1 percent). School-level gaps in participation totaled over 33,000 students in the single-year snapshot. Lost in those gaps are about 20,000 low-income students. The other 14,000 are students who would be enrolled in their school’s IB program if we closed the gap between Latino, African-American, and American-Indian students who are not low-income and their white peers.

Total Missing IB Students

Missing by income and adjusted missing by race

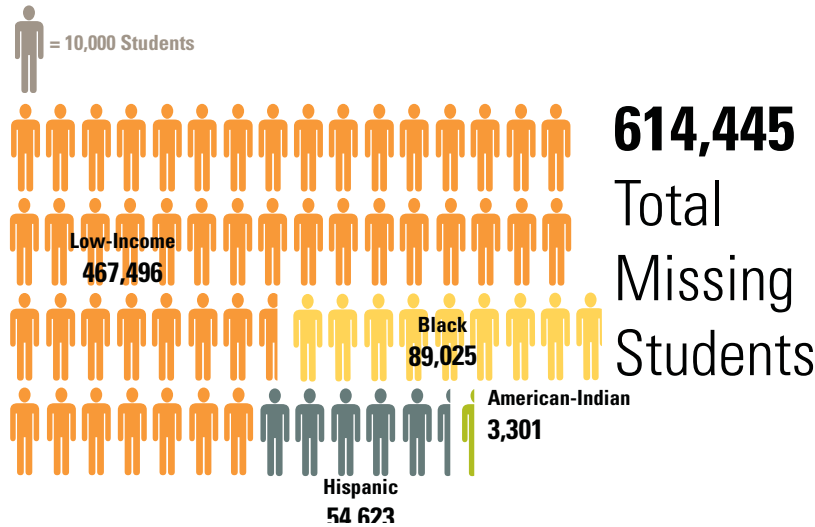


33,194

Total Adjusted Missing Students

Although the reach of the IB program is far smaller than that of AP program, and program expansion would be a worthwhile goal, this analysis demonstrates that within-school access barriers are a consistent and central part of the story in getting students into rigorous courses. Both College Board and IB officials recognize this problem, and both programs have committed resources to closing these gaps. IB’s efforts include an “equity coaching” program they’ve deployed to support schools seeking to find their “missing students” and successfully transition them into IB. ■

Figure 5: Number of missing students due to AP participation gaps within schools



The school-by-school analysis unmask some of the differences among schools that the national analysis does not reveal. Participation rates vary widely across schools. A number of schools have no missing students.

If within-school gaps were closed, the national missing student Hispanic and black gaps would close completely, and the low-income gap would nearly close (90 percent).

and black gaps would close completely, and the low-income missing student gaps would nearly close (about 90 percent).

How many students are missing per school?

The number of missing students per school varies considerably according to school and AP program size, with the median around 22, meaning 50 percent of schools have fewer than 22 students missing, or one additional class. The number rises as schools and programs get larger, although there are also some small and medium-size schools that have big gaps in participation that equate to large numbers of students. The schools with the most missing students, those totaling in the hundreds, tend to be larger schools that have more than 50 percent of their middle and high-income students enrolled in AP and few, if any, of their low-income students enrolled.

However, at the other end of the spectrum, there is very good news: A significant number of schools have no missing students. For example, 10 percent of high schools nationally have *no* missing low-income students, with the participation of poor students in the AP program equal to or greater than that of students who are not low income.¹³ These schools were equally likely to be small, medium, or large schools. They were more likely to be high-poverty and high-minority schools, but there was a range of schools represented. There also was a range in rates of AP participation, spanning from nearly the whole school population to participation rates more closely mirroring the national data, so this feat was not accomplished by just low participation rates. We observed similar patterns for American-Indian, black, and Hispanic students who were not low income. Here, the numbers of schools with no gaps are even larger: About 50 percent of schools serving Hispanic or black

students did not have any gaps in the AP participation of students of color who were not low-income.

Finally, we examined only those schools that had more than 20 students in AP and were diverse (11-89 percent) both economically and racially. Among this group of nearly 5,000 schools, 247 had no missing students. These schools tended to be higher poverty and higher minority, but had good participation rates. They show us very clearly that this work can be done, and not just by a mere handful of “outlier” schools.

DOES THE ENROLLMENT GAP JUST REFLECT A PREPARATION GAP?

The idea of adding more than half a million low-income, American-Indian, black, and Hispanic students to AP programs may raise concerns. Some fear, for instance, that course content may be watered down and harm students who are “truly ready” for the rigorous work.¹⁴ Such sentiments are based on the common misperception that low AP participation rates among poor students and students of color simply reflect a lack of AP readiness — that these gaps in enrollment represent gaps in preparation and achievement.

Certainly, there are many low-income students and students of color in our high schools who may not yet have the skills to be successful in AP course work. But new research conducted by the College Board calls into question the assumption that poor preparation is the primary barrier. Indeed, in analyzing data from 690,000 high school graduates in 2012, the College Board found that 75 percent of American-Indian students, 72 percent of black students, and 66 percent of Hispanic students whose PSAT scores suggested

they had the potential to be successful in an AP math course were left out of the program.¹⁵ And, with regard to science, they found that 72 percent of American-Indian students, 69 percent of black students, and 65 percent of Hispanic students whose PSAT scores suggested they had the potential to be successful in an AP science course were left out.

Certainly, the College Board cautions that PSATs, like any other single test, should not be the sole criterion for placement in AP courses. Indeed, students with lower PSAT scores can and do succeed in AP, while those with high scores sometimes do not. But if we use PSAT scores as one indicator of readiness, it is clear that far more black and Latino students have demonstrated the potential to succeed in AP courses than are enrolled in those courses today.

DISRUPTING THE HIGH-END OPPORTUNITY GAP: WHAT ARE SCHOOLS DOING?

Although there is a long way before AP and IB participation gaps are closed nationally, there is some good news in the school-level data: Many schools have entirely eliminated gaps in AP participation by race and family income; others are moving fast in their efforts to do the same thing.

Of course, the numbers don't tell us how some schools have been able to reach the goal of equitable participation, or why they got started on that journey. We don't know all those stories, or the lessons they have for the rest of us. But we do know some because of the groundbreaking efforts of a relatively new organization, Equal Opportunity Schools (EOS).

EOS 10-member staff specializes in partnering with schools, districts, and states to fully close gaps in access to advanced high school courses that prepare students for college success.

Lessons emerging from schools taking on these challenges have much to teach us, particularly about the role that leadership and teacher actions play in ensuring the success of these initiatives.

One District's Approach

The initiative to close gaps in access to advanced classes in Federal Way Public Schools in Washington state initially began with district leadership. Convinced that advanced programs contribute to student success, the superintendent and school board wanted to ensure equitable access for students of all races and income levels. With input from the high schools, the board adopted a new policy and, ultimately, not only offered "open access" to AP/IB courses, but went even further to automatically enroll students who

scored proficient on the state exam. Their new policy not only caught all their prepared students, but it flipped AP/IB from an "opt-in" program to an "opt-out" one that assumed all students meeting a basic proficiency bar had the potential to be successful in AP or IB.

The policy was a good start. But to generate school and classroom-level engagement, build capacity, and allay anxieties around these raised academic expectations, school leadership played a critical role. Principals had to meet the challenges of the new policy while addressing the concerns teachers had about their students' and their own abilities to be successful. Large groups of parents showed up at board meetings to express concerns about the new policy and ask questions about effects on the quality of education their students would receive: Would AP get "watered down"? Was the district moving too quickly? What plans were in place to help ensure teacher and student success in advanced classes?

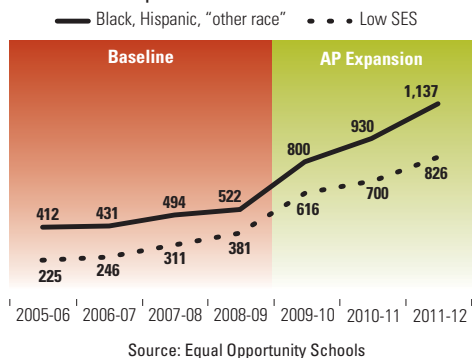
Teachers found that some of the new AP/IB students didn't need additional supports to be successful in AP/IB — they had been ready all along — but others did. Schools relied on the Advancement Via Individual Determination (AVID) program that was already in place to supplement some students' academic and self-advocacy skills. Americorps was also a significant support program for students in this transition. In turn, the district extended instructional coaching support to ensure teachers were capable of meeting the demands of their new classes, offering techniques and strategies for differentiating lessons to reach all their students.

The road to fully closing their AP/IB access gaps was bumpy, but this school year Federal Way achieved its goal. And by expecting more from its students, Federal Way often gets more from them, ultimately influencing their success beyond high school. As one recent graduate explained, he felt the teachers were "seeing" him for the first time when he transferred to the school — "like I had a special glow, and I could do anything, even AP." This fall, he's in college and credits that to the teachers who told him he could do more — including much more rigorous academic work — than he had previously thought possible.

One School's Approach

The San Jose Unified School District was one of the first school districts in the country to choose college readiness as a goal for all its students and to require every one of them to take the full sequence of courses required for admission to the University of California. While the district made huge strides in assuring that all its students took college preparatory courses, they also realized they still had gaps at the top, in AP participation. So the superintendent invited his principals to dig into the issue. With help from EOS,

Figure 6: San Jose Unified School District
AP Expansion and Success Data



each school analyzed its own data to understand the scope of the problem and generate solutions that reflected their unique problem and capitalized on the resources they had. The solutions varied greatly from building to building. Over time, however, the data for the whole district changed dramatically: Participation rates have doubled for under-represented student subgroups, which has resulted in more than 1,000 low-income students and students of color transitioning into AP/IB since the work began, all the while maintaining pass rates (*Figure 6*).

For example, the staff at Lincoln High School undertook a grassroots effort that built on previous work to increase rigor in student experiences. School leaders leveraged rich survey data from students to identify students who were under-challenged, or felt that “students like me aren’t welcome in AP.” In addition, they decided to collect recommendations for AP from faculty, instead of having students make rounds to collect signatures. The school’s leadership and faculty felt that, given historical gaps in access to AP, they should do the opposite of asking students to surmount hurdles to show their readiness for AP; they should remove barriers and actively recruit students through group and one-on-one conversations. As they engaged in these conversations with students, instead of viewing mild student doubts as a sign a student shouldn’t take AP, they saw them as an opportunity to express their confidence in the student and a willingness to support the student as she took on the challenge of more rigorous classes.

One Leader’s Approach

Summit Public Schools is an example of a high school charter network that has built schoolwide supports that enable, even require, all students to take AP as a capstone experience in each subject area. Summit’s founder, Diane Tavenner, came from a traditional school leadership background, with a passion for providing higher level learning opportunities for all students. When her push on this front

didn’t gain the traction that she wanted in the district, she decided to build a new school that would. The new school reflected the district’s poverty and racial demographics and set out on a bold mission: enable all students’ success by preparing everyone for AP course work. The team at Summit invested heavily in professional development and curricular design in order to create course sequences in each department that would culminate in an AP course in senior year (if not before). They focused on seamless curricular articulation across grades, hired passionate teachers who brought the subject matter to life, and adopted an attitude of do-whatever-it-takes to bring students — many of whom entered Summit far below grade level — up to the AP standard by the end of high school. This do-whatever-it-takes attitude led to extended learning time for students, which resulted in all Summit students entering college having already completed a college-aligned course.

STEPS TO TAKE RIGHT NOW: CLOSING THE HIGH-END OPPORTUNITY GAP

As a nation, we’ve already endorsed a college- and career-ready agenda: Almost all states have adopted the Common Core State Standards or their own version of “college- and career-ready” standards. While we work to implement the new standards, we should also take immediate action to close these devastating gaps in our most rigorous existing courses and curricula. There is much work to be done by policymakers and practitioners.

What District and High School Educators Can Do

Schools and districts like those discussed in this report show us it can be done. Their stories shed light on promising strategies for disrupting existing inequitable patterns. Here are some steps districts and high schools can take immediately:

- **Examine your data and start asking questions.** It is important to understand the reality of the enrollment patterns that exist at your school and be honest about which students are enrolling, which are not, and even in which classes. Once you know the size and scope of the problem, you can better strategize what is needed to close the opportunity gaps that exist.
- **Audit your entry requirements.** Across America, districts and schools have instituted policies — formal and tacit — that create barriers to entering AP, IB, or other rigorous course work (e.g., grades in pre-requisite courses or students obtaining recommendations from teachers). Take time to review existing policies and practices for AP enrollment to ensure they do not

create rigid barriers simply based on tradition or for the benefit of teachers.

- **Examine what students and teachers know about accessing your AP/IB program.** We've found time and again that missing students are far less likely to know what AP and IB are, what the benefits are, and how to sign up. Open access is a policy increasingly adopted by schools. But it's not enough for it to reside on paper. Information gaps are a huge barrier to access even in many "open access" AP/IB schools. Often, teachers and students in these schools will tell you that they believe there are many different requirements for accessing AP/IB, even if the policy is that anyone can take these courses.
- **Consider expectations, too.** Many times unsaid expectations about who is "AP material" get conveyed to students. For example, underrepresented students often don't feel welcome in AP/IB classrooms because no other students who share their background or skin color are taking AP/IB classes. Getting good data on student and faculty perceptions of who is appropriate for advanced classes is a great way to cut through the speculation and get down to actionable solutions.
- **Think about the preparation gap as part of your long-term strategy.** While initial fears about whether students can handle the rigor are typical, most schools have a surprising number of low-income students and students of color who are prepared to start AP/IB classes right away. However, to increase participation rates overall, schools need to examine how students are prepared and supported along the way so that rigorous courses are the norm, not the exception.
- **Set a specific, near term goal to find all your missing students and articulate that goal clearly.** Then, begin the hard work of determining whatever changes in staff assignments, master schedules, professional development, and staff supports are necessary to build a culture of high achievement for all students.

What Policymakers Can Do

Federal and state policymakers have been focusing on improving access in recent years. Now that we know the problem exists both between and within schools, there is more to be done. Here are some steps policymakers can take right now:

- **Be vocal about gaps at the high end.** Federal and state officials must increase awareness of these opportunity gaps and at the same time collect and share best practices from schools that have disrupted these long-standing patterns.
- **Make sure that all high school students have access.** There still are students trapped in schools that have yet

to put in place AP or IB programs. States should continue to enact policy that opens access in these places, where limited resources, geographic segregation, or lack of will limit students' access into the programs they need.

- **Ensure grant programs that provide funding for AP/IB programs focus on equitable participation as well as program expansion.** Program expansion has resulted in more students participating in AP and IB, but it has not rectified national or within-school participation gaps. Attention must be given to this issue.
- **Require all high schools to offer a minimum number of AP/IB classes and provide the necessary supports.** We found AP classes were less plentiful in schools serving students of color and low-income students. This may be a resource issue, ranging from equipment and materials scarcity, to a lack of staff members who are able to teach the course, but states have a role in ensuring equality of AP course availability among schools.
- **Report participation and success rates in courses offered for all groups of students at the school level.** Federal and state reporting requirements must specify data be disaggregated and compared to the demographics of the school or LEA. Transparency can both shed light on the problem and produce some pressure for changing these patterns.
- **Identify diverse schools and districts that have narrowed or eliminated these gaps.** Using the data reported, states should identify local schools that are closing gaps in AP/IB access and create opportunities for others to learn from those efforts.
- **Take Action.** States should identify which schools and districts continue to have large gaps and intervene with appropriate pressure and support. Resistance to providing equitable access to these highly prized elite programs will be inevitable in some schools and districts. But lessons from successful schools are clear: You don't have to sacrifice quality to give more students access.

CONCLUSION

Opportunities to participate in rigorous classes can go a long way toward better preparing students for postsecondary options. The data show that opportunity gaps exist in many places, between schools, types of programs offered, and within schools. There are immediate actions that can be taken right now to change the experiences of many students. Until we make these changes, many students will continue to be less prepared for higher education or for some challenges found in today's workplaces, and disproportionately, those students will be low-income and students of color. ■

Appendix A: AP Courses by Subject

Arts

Art History
Art: Studio Drawing
Art: Studio 2-D Design
Art: Studio 3-D Design
Music Theory

Sciences

Biology
Chemistry
Environmental Science
Physics B
Physics C:Mechanics
Physics C: Electricity and Magnetism

Math and Computer Science

Computer Science A
Calculus AB
Calculus BC
Statistics

World Languages and Culture

Chinese Language and Culture
French Language and Culture
German Language and Culture
Italian Language and Culture
Japanese Language and Culture
Spanish Language
Spanish Literature and Culture
Latin

History and Social Science

U.S. History
Economics: Macro
Economics: Micro
European History
Human Geography
U.S. Government and Politics
Comparative Government and Politics
World History
Psychology

English

English Language and Composition
English Literature and Composition

NOTES

1. Saul Geiser and Veronica Santelices, "The role of advanced placement and honors courses in college admissions." (Berkeley, Calif.: University of California–Berkeley, Center for Studies in Higher Education, Research and Occasional Paper Series: CSHE. 4.04, 2004). Heather Rose and Julien Betts, "The effect of high school courses on earnings." (The Review of Economics and Statistics, 86, 497-513, 2004). Mark Long, Patrice Iatarola, and Dylan Conger, "Explaining gaps in readiness for college-level math: The role of high school courses." (Education Finance and Policy, 4, 1-33, 2009).
2. See: Florida's Focus on Preparation for Success in College. Retrieved from: <http://www.excelined.org/Docs/A%20Summary%20of%20Florida's%20Education%20Revolution.pdf>
3. "Expanding Advanced Placement (AP) Access: A Guide to Increasing AP Participation and Success as a Means for Improving College Readiness." (Los Angeles: The Broad Foundation, June 1, 2010).
4. "The Economic Impact of the Achievement Gap in America's Schools." (New York: McKinsey & Company, April 2009).
5. Sandy Baum, Jennifer Ma, and Kathleen Payea, "Education pays: The benefits of education for individuals and society." (New York: The College Board, Trends in Higher Education Series, 2010). Sidney Verba, Kay L. Schlozman, and Henry Brady, "Voice and Equality." (Cambridge, Mass., Harvard University Press, 1995).
6. Cliff Adelman, "Answers in the Toolbox: Academic Intensity, Attendance Patterns, and Bachelor's Degree Attainment." (U.S. Department of Education, Washington, D.C., 1999). Cliff Adelman, "The Tool Box Revisited: Paths to Completion from High School Through College." (U.S. Department of Education, Washington, D.C., 2006).
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8. The file from the College Board included about 1.5 million public school AP test takers. Approximately 99.5 percent of these students were linked with a public school (N=12,750), and 97 percent were linked to a school with complete and usable enrollment data that was required for the analyses (N=12,509). The College Board's annual report examines high school graduates and utilizes demographic projections of the graduating class in the given year for comparison at the state and national level. Our analysis merges the College Board data with a school level data file from the same school year and analyzes the data at the school level for all spring test-takers in 2010.
9. The AP program was in 11,555 public high schools in the continental United States — 92 percent of the schools in the data (schools not classified as high schools were dropped, for example K-12 schools). Moreover, 98 percent of the schools were "regular" schools, i.e., not serving special populations exclusively such as alternative schools or special education schools. They were compared with 16,255 public high schools that are also not alternative, special education, etc. in the country.
10. One important note about our data is that low-income status is separate from racial/ethnic status. Previous research found that low-income status was the single most important factor behind the minority AP participation gaps. Our low-income number of missing students includes students of all races, but the American-Indian, black, and Hispanic figures are for middle and high-income students only. This decreases the number of missing students in these groups, but more closely represents the gap associated with ethnicity/race, not confounded by socioeconomic status.
11. Details of the analysis are available from the authors. But broadly, a number of accommodations were made to address the realities of school enrollment and segregation of schools. For example, if a school was highly segregated or only had a few students in the comparison group, no missing students would be calculated.
12. For example, data for one large high school with about 25 percent students of color and 25 percent low-income students had about 6 percent participation in AP overall. At this school, low-income and higher income students participated at similar rates (6 percent), so no low-income students were missing at this school; however, there is a 4 point percentage gap between Hispanic and white students (2 percent vs. 6 percent) and a 3 point percentage gap between black and white students (3 percent vs. 6 percent). These two gaps were converted into specific numbers of missing students: In this case eight and 11 students respectively would be enrolled in AP if students of color participated at rates similar to their white peers.
13. A small number of schools (95) are left out of this analysis as they do not have any low-income students.
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15. "The 98th Annual AP Report to the Nation." (New York: the College Board, February 2013). Retrieved from: <http://apreport.collegeboard.org/report-downloads>

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The Education Trust promotes high academic achievement for all students at all levels — pre-kindergarten through college. We work alongside parents, educators, and community and business leaders across the country in transforming schools and colleges into institutions that serve all students well. Lessons learned in these efforts, together with unflinching data analyses, shape our state and national policy agendas. Our goal is to close the gaps in opportunity and achievement that consign far too many young people — especially those who are black, Latino, American Indian, or from low-income families — to lives on the margins of the American mainstream.

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Equal Opportunity Schools partners with school, district, county, state, and national leaders around the country to close race and income enrollment and success gaps in their Advanced Placement and International Baccalaureate programs. By identifying, enrolling, and supporting missing students in challenging college-preparatory courses, we boost their academic motivation and achievement, and their likelihood of going to and graduating from college.

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In this series, we will be producing reports focused on calling attention to gaps at the high end of achievement and shattering expectations about the achievement of our low-income students and students of color that have existed for far too long. This is the second paper in the series, the first report, *Breaking the Glass Ceiling of Achievement for Low-Income Students and Students of Color*, outlined the progress and gaps that remain in which students reach advanced levels of performance, as measured with the National Assessment of Educational Progress. This report examines the high-end opportunity gap that exists in regard to AP and IB course taking within our schools. Future papers will examine other opportunity gaps, as well as the opportunity costs of certain course taking patterns. Each report will provide examples of schools that are breaking these long entrenched patterns and how they are helping all their students reach high levels of performance. In general, papers in this series will focus on strategies for increasing excellence and rigor in our schools, while also attending to equity.



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