

Talent Search: Finding the Missing AP® Students in Massachusetts

— Dr. Dana Ansel

Every year, more than 10,000 Massachusetts seniors do not take the AP exams for which they have the skills and knowledge to pass. These students – who we call the “missing AP students” – are missing an opportunity to set themselves on a path for future college and labor market success. At the same time, the Commonwealth is missing the opportunity to benefit in the form of future economic prosperity, resulting from a more skilled workforce. Massachusetts’s “first in the nation” ranking on national tests conceals large differences in achievement between students of different races and ethnicities as well as socioeconomic characteristics. Specifically, gaps exist regarding which students

enroll in AP courses, which students take an AP exam, and how different subgroups of students perform on AP exams. The state’s changing demographics create an urgency to address these gaps. Increasing high school students’ access to rigorous coursework has consistently been identified as a powerful predictor of long-term student success. The Advanced Placement (AP®) program enables students to take rigorous, college-level coursework while still in high school. Over the past decade, Massachusetts has invested in expanding access, participation, and success in AP math, science, and English, particularly for underserved students.* These investments have made a difference; the number of students of color and underserved students participating in the AP program has increased substantially. Massachusetts is on the right track with its investment in expanding access to and success in the AP program; yet, more work is needed to close the AP participation and success gaps.

To be clear, not all students have the necessary skills to take an AP course. Preparing students to take rigorous coursework in high school, such as AP classes, is a process that should begin in middle school or possibly earlier. However, traditionally underserved students are less likely to enroll in AP courses, and data from the College Board suggest that large differences exist between different racial and ethnic groups in terms of their readiness to succeed in the AP program. These gaps in

Key Takeaways

- Research finds a strong link between college success and both taking an AP course and completing the Mass Core curriculum.
- Gaps exist between different racial and ethnic groups of students regarding who enrolls in an AP course, leading to an AP course enrollment gap or what we call an opportunity gap.
- In 2018, at least 10,000 seniors in Massachusetts who likely had the skills and knowledge to succeed on an AP exam did not take an exam.
- Gaps exist between different racial and ethnic groups of students regarding the share of students who earn a qualifying score, leading to an AP exam performance gap, or what we call a success gap.
- Closing the Gaps: Students who would benefit from the AP program should be identified and encouraged to participate, and underserved students should be offered more intensive and deliberate support in a broader set of AP subjects.

* We use the word “underserved” to refer to low-income, African American/Black, and Hispanic/Latino students. There is obviously overlap between these different students, which is captured by the word “underserved.”

preparation raise important questions about the need for equitable access to rigorous curriculum in middle and high school, and appropriate strategies to prepare all students to take rigorous courses. Addressing the preparation gap is critical to making sure that all students have opportunities to succeed, but that is not the focus of this policy brief. Figure 1 highlights different pathways to AP success. This policy brief is focused on the AP course enrollment gap – what we call the opportunity gap – and the AP exam performance gap – what we call the success gap. Schools and policymakers can and should take immediate steps to find the 10,000 missing AP students and encourage them to enroll in AP courses.

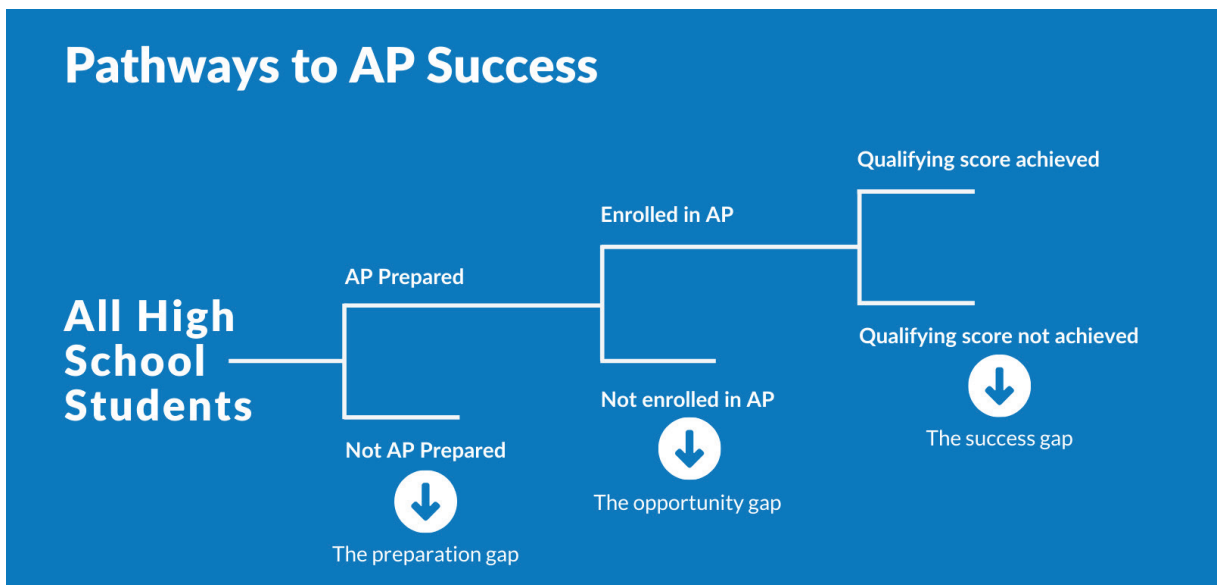
The Importance of Rigorous Coursework

Preparing students to earn a college degree is important for the economic security of the individual student, but the benefit is much broader. At the same time that most of the jobs being created in Massachusetts require workers who have a two- or four-year college degree, the population is aging,

and the number of people earning college degrees is stagnating.¹ In addition, the demographics of the state’s population are changing, and the workers who represent an increasing share of the state’s labor force are less likely to have a college degree.² These trends have led to real questions about whether there will be sufficient workers to fuel the state’s future economic growth. In short, Massachusetts’s continued economic prosperity depends on increasing the number of workers who have a college degree.

Increasing the number of workers with an education beyond high school is also critical to give workers and their families greater economic security. Although Massachusetts has a highly educated adult population, educational attainment is uneven across different racial, ethnic, and socioeconomic groups. While 47 percent of White workers have a bachelor’s degree or higher, only 24 percent of African American/Black workers and 19 percent of Hispanic/Latino workers have a bachelor’s degree or

Figure 1



Source: Mass Insight Education & Research.

higher (Figure 2).³ The recognized need to increase the number of workers with a college education has led to a number of different initiatives to prepare and support students to earn a college degree.

One strategy, supported by a substantial body of research, focuses on enabling high school students to take rigorous courses. Researchers consistently find that taking rigorous courses in high school prepares students for success in college and the labor force.⁴

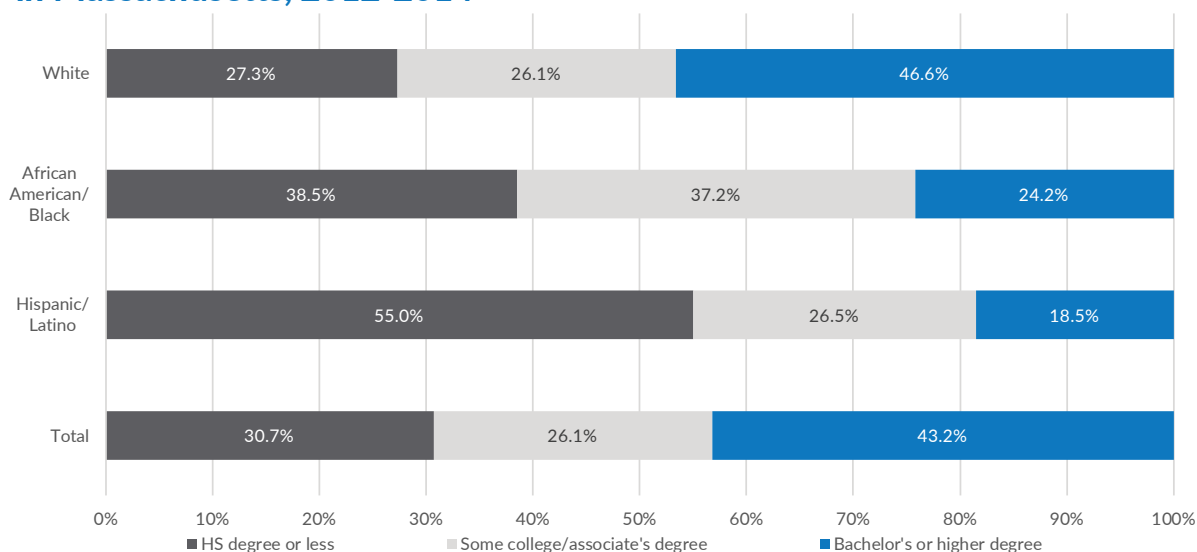
There are a variety of approaches aimed at increasing students' access to rigorous courses in high school. The Advanced Placement (AP) program is one such strategy. The AP program, which began more than 60 years ago, was developed to allow students more opportunities to take college-level coursework while in high school.⁺ The positive impact of the AP program has been documented by multiple independent research studies.⁵ AP courses are offered in most public high schools, and at the end

of the course, students across the country take the same exam, which is graded externally on a scale of 1 to 5 with a score of 3 or higher considered to be a qualifying score eligible for college credit.⁶ The transparency of the content of the courses and a national exam offers a standard benchmark of a student's mastery of content and skills.

A recent study of Boston Public School graduates from the Class of 2010 confirms the importance of a rigorous course of study. Researchers from the Everyone Graduates Center at Johns Hopkins University analyzed a set of indicators that predict college readiness and college success. They found that three indicators – a) attendance of at least 94 percent; b) G.P.A. of at least 2.7; and c) completion of the Mass Core curriculum and enrollment in an AP course – were strong predictors of student success in a four-year post-secondary program. (The Mass Core curriculum includes four years of English and math, three years of science and social studies, two

Figure 2

Educational Attainment of the Labor Force by Race/Ethnicity in Massachusetts, 2012-2014



Commonwealth Corporation (2016). *Closing the Skills Gap: Meeting the Demand for Skills in a Growing Economy*, p. 18.

⁺ Advanced Placement courses were created based on the recommendations of a few pivotal studies. The program was piloted in 1952 and began in 1955-56. Currently, there are 34 AP courses, and more than 1 million students took at least one AP exam.

years of world language, one year of arts, four years of physical education, and five electives.) Nearly nine of ten students who earned a post-secondary degree had at least one of the three indicators, and two-thirds had two or more of the indicators. Specifically, 79 percent of the students who completed the Mass Core curriculum and took an AP course completed their post-secondary education, and this indicator was associated with the highest completion rate of any indicator.⁷ The message from this research is clear: increasing the number of students who complete the Mass Core curriculum AND take at least one AP exam is key to increasing the number of workers with a four-year degree.

With regards to participation in the AP program, Massachusetts is in a strong position. For the third consecutive year, Massachusetts led the nation with the highest share of seniors participating in AP exams and also in the highest share of seniors earning a qualifying score on an AP exam. In 2018, 47.3 percent of seniors in public schools in Massachusetts took at least one AP exam and one-third (32.9%) earned a qualifying score of 3 or higher. Over the past ten years, Massachusetts has had the largest increase of any state in the percentage of public high school graduates earning a qualifying score.⁸ These

gains have come at a time when the Commonwealth has actively invested in expanding access to the AP exams, especially to underserved students. Yet, as will be shown, more work is needed to ensure that all students have the opportunity to benefit from the AP program.

Ongoing questions exist about whether benefits accrue for students who enroll in an AP course but do not take an AP exam or take an exam but do not earn a qualifying score. Research findings are mixed. The best outcomes occur for students who take an exam and earn a qualifying score (a score of 3 or higher).⁹ At the same time, research shows that there is value for students to take the AP exam, even if they do not earn a qualifying score. One study found that taking an AP course improves students' chances of persisting in college, even if a student does not earn a qualifying score.¹⁰ Another study of students in Texas found that students who took AP classes performed better in college than students who did not participate in the AP program.¹¹ In addition, the recent Johns Hopkins research of Boston Public School graduates found that simply taking an AP course or an AP exam was nearly as strong at predicting post-secondary success as was earning a qualifying score on an AP exam.¹² Thus, enrolling

The Impact of Mass Insight Education & Research's AP Program

Mass Insight (Mi), a nonprofit based in Boston, works in partnership with the MA Department of Elementary and Secondary Education, school districts, and funders to enable more students to access challenging AP courses in high school. Launched during the 2007-08 school year with just eight partner high schools, the program has now served over 50,000 students in more than 125 schools across the Commonwealth.

The program aims to increase access, participation, and success in AP math, science, and English courses, particularly for underserved students, and to increase teacher effectiveness in these content areas. Mi combines high-quality professional development, instructional support, and summer training for AP teachers with student support including additional learning time on Saturdays at high schools across the state, mock AP exams that provide students with feedback on their preparation, and a school culture focused on college success.

Partner high schools join the core program with the option of continuing after three years. In an evaluation of 104 partner high schools, during the core program, AP STEM and English exams taken increased by 129% for Hispanic/Latino students and by 84% for African American/Black students. Qualifying scores also increased during the core program at partner schools: 156% for Hispanic/Latino students and 129% for African American/Black students.

in an AP course benefits students and a goal should be to increase the number of students who earn a qualifying score on an AP exam.

Students with the Skills to Succeed: The Missing AP Students

Even as Massachusetts leads the nation in the share of seniors taking an AP exam, thousands of students in Massachusetts with the skills to succeed do not take an exam.¹³ Researchers at the College Board have analyzed national AP exam data to identify the profile of students who are likely to earn a qualifying score on each AP exam. By analyzing the relationship between outcomes on AP exams and students' scores on a set of other assessments, such as their PSAT/NMSQT and SAT, they created a tool called AP Potential.TM The AP Potential tool can be used to identify students who are likely to earn a 3 or higher (a qualifying score) on a specific AP exam.¹⁴ Students with AP potential are estimated to have at least a 60 percent chance of earning a qualifying score on a particular AP exam. The AP potential tool can be

used to identify students who have the skills to be successful on an AP exam.

According to the AP potential tool, of the 59,725 seniors in Massachusetts public schools in 2018 who had taken a qualifying assessment during their high school years, 28,935 seniors were estimated to be likely to succeed on an AP exam.^{*} Yet, only 18,232 seniors took an AP exam. That is, only 63 percent of the students who had the skills likely be successful actually took an AP exam. The other 37 percent of students with the skills to succeed who did not take an exam are the "missing" AP students (Table 1). Because not all students took a qualifying assessment, we don't know if some of the students who did not take a qualifying assessment had the skills to succeed, and so, the number of missing students may be even higher. In 2018, more than 10,000 seniors in Massachusetts who had the knowledge and skills likely to be successful did not take an AP exam.

Table 1

Race/Ethnicity	Students with the skills to succeed on an AP exam	Students who took an AP exam	Percent who took an AP exam	Number of Missing AP Students
African American/Black	1,003	535	53%	468
Asian American	2,717	2,158	79%	559
Hispanic/Latino	2,237	1,261	56%	976
White	21,382	13,380	63%	8,002
Other*	1,053	694	66%	359
Race not identified	543	204	38%	339
Total	28,935	18,232		10,703

*Includes multi-race, Native American, and Native Hawaiian students.

Source: *Opportunities to Expand AP, MA Public Schools, 2018, The College Board* (numbers derived by the author)

^{*}According to Department of Elementary and Secondary Education data, there were 69,978 seniors in 2018. Not all seniors took a qualifying assessment, and we do not have any information about the skills of those students. We do not know how many would be likely to succeed on the AP.

Differences exist among the missing AP students across different racial and ethnic groups. While 79 percent of Asian American seniors with the skills to be successful took an AP exam, only 53 percent of African American/Black seniors and only 56 percent of the Hispanic/Latino seniors with the skills took an exam. While 63 percent of White students with the skills to succeed took an AP exam, there were still 8,000 White students with the skills who did not take an AP exam (Table 1). The large number of missing White AP students reflect the fact that nearly two-thirds of high school students (63%) in Massachusetts in 2017-18 were White. These data does not indicate whether a student is low-income. Extant research, however, finds that low-income students are less likely than other students to participate in AP classes, suggesting that low-income students might be more likely to be missing AP students.

AP Course Enrollment Gap: The Opportunity Gap

By far the most common pathway to taking an AP exam is through enrolling in an AP course. Most students in Massachusetts who take an AP course go on to take an AP exam. Given that underserved students are less likely to enroll in AP courses, more equitable enrollment in AP courses would help “find” some of the missing AP students. Because AP

courses are advanced courses, not all high school students have the necessary skills to take an AP course. Preparing students to be able to take rigorous coursework in high school should begin in middle school or possibly earlier. At the same time, today, many more students could succeed in AP courses than are currently enrolled.

Massachusetts’s “first in the nation” ranking in AP participation and performance conceals large differences between subgroups of students. The Massachusetts Department of Elementary and Secondary Education (ESE) tracks the share of juniors and seniors in public schools who enrolled in at least one AP course during a given school year. In 2018, 53,231, or 37 percent, of all juniors and seniors in Massachusetts enrolled in at least one AP course.¹⁵ These overall numbers hide significant differences regarding which students take AP courses. While 59 percent of Asian juniors and seniors and 40 percent of White juniors and seniors took an AP course, only 23 percent of African American/Black and 21 percent of Hispanic/Latino juniors and seniors enrolled in an AP course in 2018 (Table 2). An AP course participation gap exists; African American/Black students, Hispanic/Latino, and other (multi-race, Native American, or Native Hawaiian) students are

Table 2

	Number of juniors and seniors	Number enrolled in at least one AP course	Percent participation
African American/Black	13,801	3,220	23%
Asian	9,385	5,533	59%
Hispanic/Latino	25,513	5,482	21%
White	92,548	37,452	40%
Other*	4,367	1,544	35%
All Students	145,614	53,231	37%

*Includes multi-race, Native American, and Native Hawaiian students

Source: ESE DART detail: Success After High School, accessed at <http://www.doe.mass.edu/dart/>

less likely to enroll in an AP course in Massachusetts.

Differences also exist in the socioeconomic characteristics of AP course takers; economically disadvantaged students are much less likely to enroll in an AP course.¹⁶ In 2018, 20 percent of economically disadvantaged juniors and seniors enrolled in at least one AP course (Table 3). Because economically disadvantaged students are of all races and ethnicities, it is not possible to add the numbers of economically disadvantaged students to the numbers presented in Tables 2 and 3. However, if economically disadvantaged students participated at the state average of 37 percent, then an additional 6,210 economically disadvantaged students would have taken an AP course.¹⁷ This data should create a renewed urgency to prepare and support economically disadvantaged students so that they are academically prepared for and enrolled in AP courses and that they view AP courses (and college) as an attainable goal.

High schools' policies and practices contribute to student participation and success in the AP program. High schools differ in their approaches with regards to how they include (or exclude) students

from their AP program. Pre-requisites or teacher recommendations, while well-intentioned, can often be barriers to participation. In contrast, some high schools in Massachusetts have taken steps to encourage broad participation in the AP program. The approach of Fitchburg High School on page 8 reveals how an urban high school has used the AP program as a part of its strategy to convey high expectations for all students and to ensure that all students have access to rigorous coursework. Through its work over the last decade, Mass Insight has identified strategies to increase the number of students, particularly underserved students, who participate in the AP program. The AP potential tool, available at no cost to counselors as part of the PSAT program, can actively be used to identify and communicate with students who have the skills to succeed. Letters can be generated for each student and then sent home to their families to let them know the student is ready for an AP course. In addition to letters, more direct outreach to students and families is often crucial. Some schools host AP nights and meetings in the community, such as in churches or other local gathering places. Offered in multiple languages, these sessions often include babysitting and food to encourage attendance.

Table 3

	Number of juniors and seniors	Number enrolled in at least one AP course	Percent participation	Assume at least 37% participation rate	Additional number of students who would enroll in an AP course
Economically Disadvantaged	36,338	7,235	20%	13,445	6,210
All Students	145,614	53,231	37%		

Source: ESE DART detail: Success After High School, accessed at <http://www.doe.mass.edu/dart/>

¹⁷ It is also important to acknowledge that English Language Learners and students with disabilities are also much less likely to enroll in an AP course. While there might be specific reasons why some of these students are not ready to enroll, there is likely room to increase their enrollment.

Engaging families about the AP program is key to increasing student participation and breaking down preconceived notions about which students are thought to be “AP material.”

More generally, school counselors play a critical role in guiding course selection and pathways to college. To be effective at encouraging students to enroll in rigorous courses, counselors need up-to-date information about available programs of study and different pathway options. Counselors have many responsibilities beyond college advising, and each high school counselor is typically responsible for large numbers of students. In Massachusetts, in 2014-15, the guidance counselor to student ratio was 423 K-12 students: 1 counselor (This ratio is for all K-12 students, not just high school students). While this ratio is slightly lower than the national average of 482:1, it still illustrates the large challenges that counselors face in meeting the needs of all of their students.¹⁷ At Fitchburg High School, the guidance counselors play a key role in recruiting students to take AP courses. The high school guidance counselors, who each have a caseload of about 250 students, meet with every student one-on-one about his or her schedule, and during those meetings, the counselors will use information from the AP Potential Tool to encourage students to take AP courses in which they will likely succeed. For more on Fitchburg High’s approach, see *Which AP Class Will You Take at Fitchburg High?* Because of the critical role of the counselor, best practices to guiding students should be identified and disseminated.

Ensuring the success of underserved students in AP courses requires a deliberate approach with targeted interventions. Research has found that open access to AP courses can work if access is coupled with the

SPOTLIGHT: WHICH AP CLASS WILL YOU TAKE AT FITCHBURG HIGH?

At Fitchburg High, “it’s not whether or not you’re going to take an AP class, it is which one.” When Jeremy Roche became the principal of Fitchburg High eight years ago, the school added the goal of having every student take at least one AP course to its school improvement plan.

Fitchburg High, an urban high school in Central Massachusetts, educates a diverse student body of about 1,200 students. Almost half of the students are Hispanic/Latino, more than twice the state average (47.4% vs. 20%). In addition, 57.2 percent are economically disadvantaged, compared with a state average of 32.0 percent. The share of students with disabilities is also greater than the state average (21.2% vs. 17.7%). Despite the diversity, the expectation at Fitchburg High is that students will take an AP course. The message conveyed to students is that “We want you to do this, we expect you to do this, we know you can do this.”

In order to make these expectations a reality, Fitchburg High took a close look at its course offerings. They decided to add several AP courses that could be an on-ramp to other rigorous course work. These AP courses, such as AP Environmental Science, AP Stats, and AP Psychology, are still challenging, but they are often more accessible to more students. In addition, they added AP Spanish, which is often a good fit for the large number of Spanish-speaking students. Today, the high school offers 16 AP courses and is seeking to add Spanish Literature.

The school actively recruits and encourages students to take AP courses, and it is a team effort across the school. The principal sometimes meets individually with students, particularly English Language Learners. He will often encourage them to take AP Spanish. Teachers also help recruit students into AP classes. The guidance counselors play a key role in recruitment, as well. The guidance counselors who each have a caseload of about 250 students meet with every student one-on-one about his or her

schedule. During those meetings, the counselors will use information from the AP Potential Tool to encourage students to take AP courses in which they will likely succeed.

The school also had to change its schedule. Previously, it had a semester-block schedule that impacted the AP program, because students would have an AP class for only one semester, which was not enough time. Four years ago, the school decided to switch to a traditional seven-period schedule. The switch has had a positive impact for the students because it gives them more time to master the material.

The school helps support the students academically and financially. There are nine Saturday sessions (three in English, three in math, and three in science) to help support students. The school developed pre-AP classes to build a staircase, preparing students for the rigorous demands of AP courses. In response to student feedback, the school went to one-to-one with Chromebooks, so that students can use Khan Academy or other instruction to prepare for SATs or AP classes. AP exams cost \$94 per exam. The school either waives the fee or reduces it to \$15. If students cannot pay the fee, the school will cover the cost, no paperwork or parental involvement needed.

The district has also created an Honors Academy in the high school, and there are academies in the city's three middle schools. The high school academy, which accepts about 50 students per grade, requires students to take at least four AP classes. The students also have access to dual enrollment at Fitchburg State at no cost, and if the students meet certain requirements, they earn preferred acceptance into Fitchburg State's Honors program and \$2,500 annual renewable scholarship. The students taking AP courses are much broader than the Honors Academy students, but those students have helped drive the expansion of the course selection because of their hunger for AP courses.

The school is deliberate about not putting up barriers to enrollment and the staff buys into what they are

doing. They don't believe in a "gated AP community." As Principal Roche explains, "If we put up barriers, then we will go right back to the type of program we had before. It'll be just your strongest students only. It'll tend to be students supported with family at home. They can speak the language and are pushing them for a four-year college experience." Roche further explains that putting up barriers would defeat the whole purpose of high expectations and to helping students believe in themselves.

Their approach has made a difference. In 2011, there were 148 AP tests taken at Fitchburg High. Today, there are consistently over 500 tests taken. In 2011, there were eight AP tests taken by Hispanic/Latino students; there were about 182 AP tests taken by Hispanic/Latino students in 2017. There have been similar increases in the tests taken by low-income students, as well. The demographics of the test takers do not yet match the demographics of the school, but the gains have been significant, and the school is working to do more. In 2018, 94.2 percent of the 11th and 12th graders at Fitchburg High had completed an advanced course, which includes AP courses, dual enrollment courses, and other rigorous math and science courses.

The school would like to increase the number of students who earn a qualifying score (a score of 3 or higher), but their focus, to date, has been on access. Even for the students who do not earn a qualifying score, the experience helps prepare the students for college or the workforce. Recent changes in the data available is allowing the district to start tracking its students after graduation. Anecdotally, they hear from past students about how the AP classes helped prepare them for what they are currently doing, whether it is college, work, or the military.

At Fitchburg High, the AP program has become one of the central strategies to convey high expectations for all students. It is embedded in the school's improvement plan; it is not an "add-on." Conveying the expectation that all students can and will take rigorous courses is how Fitchburg High educates its students.

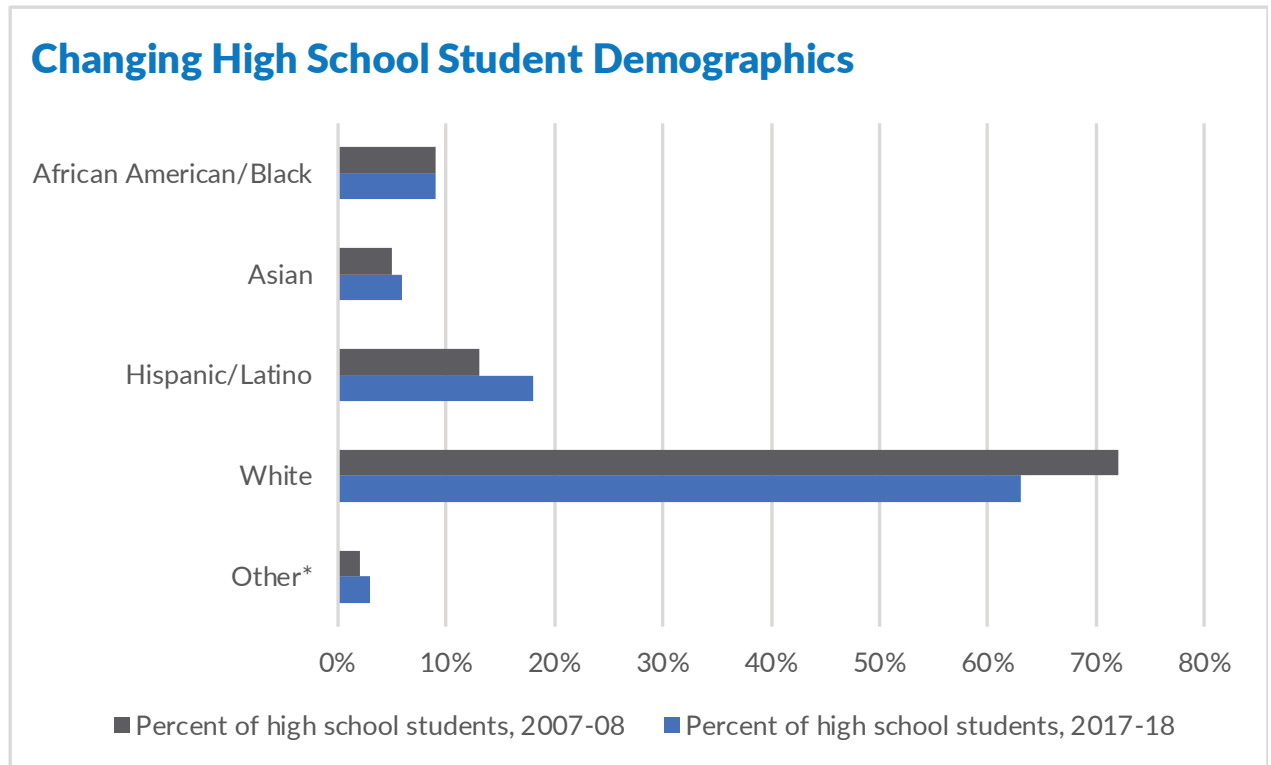
following ingredients: teachers who are trained and supported, a school schedule that promotes AP enrollment for everyone, a school culture focused on success for all students, and extra tutorials and interventions for students who need help. Researchers at Stanford found that not all AP courses are created equal, and simply creating an AP program is not sufficient to improve student learning.¹⁸ The programs that have had a positive impact tend to be part of a larger reform effort and include support for both students and teachers. For the AP program to be an effective pathway to rigorous coursework for underserved students, there must be a shared responsibility to identify, prepare, and support students and teachers, with this responsibility shared between policymakers, school leaders, teachers, and students.

The State’s Changing Demographics

If steps are not taken to encourage more equitable

participation, the gaps will grow, leaving more students behind. The demographics of the state’s population, including K-12 students, is changing. Over the last decade, the share of Hispanic/Latino students has increased accompanied by a corresponding decline in the share of White students. In 2007-08, 13 percent of high school students in Massachusetts were Hispanic/Latino. Ten years later, in 2017-18, Hispanic/Latino students accounted for 18 percent of high school students, which was a 38 percent increase. In contrast, the share of White high school students declined from 72 percent to 63 percent (Figure 3). Demographers forecast that the demographics are still changing. According to the Western Interstate Commission for Higher Education (WICHE)’s *Knocking At the College Door* project, the share of high schools graduates who are White in Massachusetts is projected to decline to 56 percent by 2034.¹⁹ Without shared urgency and a concrete plan, the AP course enrollment gap combined with

Figure 3



*Includes multi-race, Native American, and Native Hawaiian students

Source: ESE DART detail: Success After High School, accessed at <http://www.doe.mass.edu/dart/>

Table 4

	Number of test takers	Number earning a qualifying score	Percent earning a qualifying score
African American/ Black	2,604	921	35%
Asian	4,614	3,494	76%
Hispanic/Latino	4,261	2,094	49%
White	33,043	23,523	71%
Other*	1,763	1,343	76%
All Students	46,285	31,375	68%

*Includes multi-race, Native American, and Native Hawaiian students.

Source: ESE DART detail: Success After High School, accessed at <http://www.doe.mass.edu/dart/>

the state's changing demographics portend even greater gaps in the future, and an increasing number of students of color will lack access to rigorous courses in high school and be at significant risk of being left behind economically.

AP Exam Performance Gap: The Success Gap

While there is value to taking an AP course without taking an exam or without earning a qualifying score, the best outcomes occur for students who take an exam and earn a qualifying score (a score of 3 or higher).²⁰ Thus, a goal should be to increase the number of students who earn a qualifying score on an AP exam. Currently, gaps in the performance on

AP exams exist between different racial and ethnic groups of students in Massachusetts. Overall, slightly more than two-thirds of juniors and seniors (68%) in Massachusetts in 2018 earned a qualifying score on their AP exams. Asian juniors and seniors were the most likely to earn a qualifying score, with 76 percent earning at least a 3 on an AP exam. Seventy-one percent of the White juniors and seniors earned a qualifying score. In sharp contrast, only 35 percent of African American/Black and 49 percent of Hispanic/Latino juniors and seniors earned a qualifying score (Table 4). African American/Black and Hispanic/Latino juniors and seniors were much less likely to earn a qualifying score on their AP exams than were their

About the Data Sources

In this policy brief, we rely on two different data sources. We use data from the Massachusetts Department of Elementary and Secondary Education (ESE). The DART Detail: After High School provides information on secondary and postsecondary education, and career development data with trends and school comparisons. We use this data to examine the number of juniors and seniors in Massachusetts in 2018 who enrolled in AP courses and to examine their performance on AP tests. We also use the DART data to examine the changing student demographics in Massachusetts over the past decade. The Department data includes juniors and seniors at all public high schools in Massachusetts.

In addition, we use data from the College Board to identify the missing AP students, those students who have the skills to succeed on an AP exam but did not take an exam. The College Board data includes only seniors. We use data about seniors who graduated in 2018. Although the College Board data does not include all of the regional secondary schools in Massachusetts, it captures the vast majority of public high schools in the state. Because the College Board does not include all high schools in Massachusetts, it is likely there are even more missing AP students in Massachusetts.

Table 5

	Number of test takers	Number earning a qualifying score	Percent earning a qualifying score
Economically Disadvantaged	5,669	2,630	46%
All Students	46,285	31,375	68%

Source: ESE DART detail: Success After High School, accessed at <http://www.doe.mass.edu/dart/>

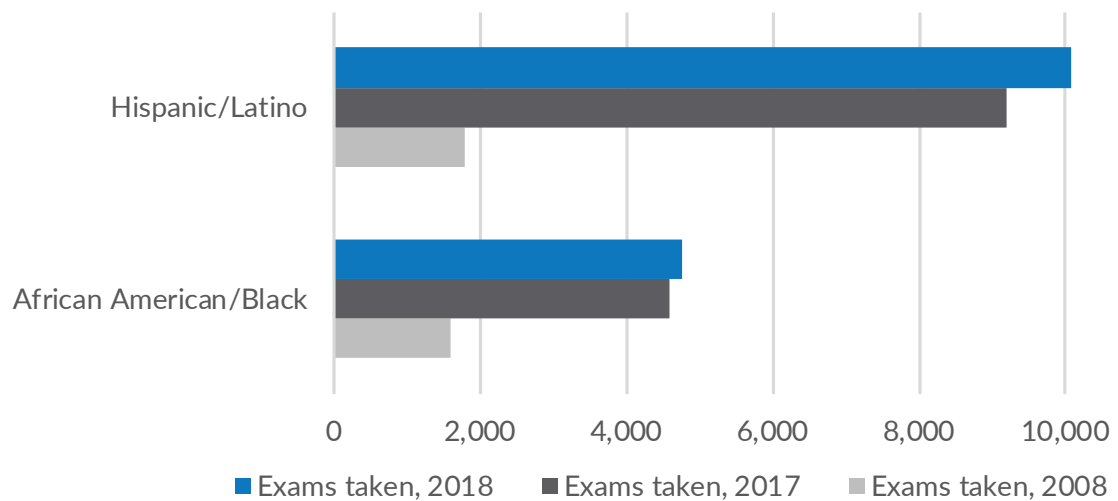
Asian and White peers. In addition, economically disadvantaged students were also less likely to earn a qualifying score. In 2018, less than half (46%) of economically disadvantaged juniors and seniors in Massachusetts in 2018 earned a qualifying score (Table 5). Underserved students are less likely to earn a qualifying score on AP exams, a gap which can and should be addressed.

These gaps in participation and performance notwithstanding, the number of African American/Black and Hispanic/Latino students in Massachusetts participating in the AP program has grown considerably over the past decade and their

performance has also improved. Through a number of initiatives and partnerships, Massachusetts has invested in expanding access to AP courses and exams, particularly for underserved students. Targeted interventions can improve access to and success in AP courses and AP exams. The number of exams that both African American/Black and Hispanic/Latino students have taken has increased substantially (Figure 4). In 2008, African American/Black high school seniors took 1,584 AP exams during their high school years; in 2018, they took 4,761 exams (which was also an increase over the class of 2017's 4,592 exams). Similarly, in 2008, Hispanic/Latino high school seniors took 1,787

Figure 4

Increase in the Number of Exams Taken, African American/Black and Hispanic/Latino Students



Source: MA DESE: “Mass Students Lead Nation in Advanced Placement Success for 3rd Year,” accessed at <https://mailchi.mp/doe.mass.edu/press-release-massachusetts-students-lead-nation-in-advanced-placement-success-for-third-year?e=fbf1e6819a>

exams during their high school years; in 2018, they took 10,068 exams (which was also an increase over the class of 2017's 9,200 exams).²¹ More African American/Black and Hispanic/Latino students are taking AP exams; yet, more work is needed to achieve equitable participation.

In addition, their performance has been improving. During this decade of expansion, the number of low-income students and students of color earning a qualifying score has increased substantially, despite slight declines in the share receiving a qualifying score. In 2018, African American seniors earned qualifying scores on 1,620 AP exams, compared with only 565 qualifying scores in 2008. Similarly, Hispanic/Latino seniors earned qualifying scores on 4,734 exams in 2018, compared with only 959 qualifying scores in 2008.²² This expansion underscores the fact that there are many students with the potential to take and pass AP exams. At the same time, the data also reveal that more work is needed to make certain that all students are adequately prepared and supported to succeed in AP courses and exams.

Concluding Thoughts and Recommendations

There is an ongoing and urgent need to improve the quality of education in many districts across the state, especially in communities that educate high proportions of low-income and underserved students. The ability to take rigorous high school coursework does not begin in high school. A lack of adequate preparation and uneven preparation of students is a significant topic. While this topic is critically important, it should not distract from the action items that can be implemented immediately and that would make a difference in increasing participation in the AP program.

For the AP program to serve as a viable opportunity

for a greater number of underserved students, policymakers, school leaders, guidance counselors, teachers, and students all have a role to play. Identifying students who have the skills to succeed and making certain they have access to rigorous coursework and the information to make an informed choice is a critical first step.

Our students cannot wait. Their future as well as the state's future economic prosperity depend on preparing students for success in college and beyond. Immediate next steps include:

- Identify all students who have the skills to succeed in the AP program and encourage them to participate;
- Develop a comprehensive strategy to offer underserved students more intensive and deliberate support to ensure their participation and success;
- Support underserved students in a broader set of AP subjects;
- Identify and disseminate best practices for high school course guidance; and
- Encourage all districts to adopt the Mass Core curriculum and offer AP courses.

Identify All Students Who Have the Skills to Succeed in the AP Program

At least 10,000 seniors in Massachusetts had the skills to likely succeed on an AP exam but did not take an AP exam in 2018. The College Board provides a free tool to schools that offer the PSAT that would allow counselors or other school administrators to identify students who have the skills to succeed on an AP exam. Some districts already actively use this tool to identify students and reach out to the student and families. Given the importance of accessing rigorous coursework, the effort is worthwhile.

Students who have the skills to succeed on an AP

exam should know about the program and have the opportunity to participate. Setting these students on a pathway to success in college and the labor market is an action that can be taken immediately.

Target Interventions to Help Support the Participation and Success of Underserved Students

Supporting underserved students so that they can access and succeed in AP courses requires a deliberate approach that includes targeted interventions. These interventions might include access to tutoring and/or additional learning time to help prepare students. In addition, policymakers can help offset the fees for students to take AP exams. Currently, students pay \$94 for each AP exam they take. Even with the fee reduction that the College Board offers for students who qualify for free and reduced lunch, the cost of an exam or multiple exams can be prohibitive at the reduced rate of \$53. Financial barriers should not prevent students from taking an AP exam. In recent years, Massachusetts has relied on a patchwork of funding sources to reduce AP exam fees for some low-income students. The absence of a consistent state policy creates uncertainty and makes planning difficult.

In addition, targeted outreach can help broaden participation. For instance, when Worcester South High Community School was building up its AP program, it did significant outreach to engage and support Latino students and their families. They conducted sessions in Spanish and visited local churches, many of them Spanish speaking, to increase awareness about the importance of AP courses among both parents of students and community members. Their efforts were so successful that the need for such active recruitment has declined. The school has successfully shed the mentality that AP courses are only for some students.

Support a Broader Range of AP Subjects for All Students, particularly Underserved Students

The research is clear: taking rigorous coursework in high school is a key indicator to post-secondary success. The recent research on Boston Public School graduates found that taking the Mass Core curriculum and an AP course was the indicator that best predicted success at a four-year college. Currently, the Commonwealth supports students in math, science, and English AP exams. The support includes extra tutoring, training for the teachers, and offsetting the exam fees. Given the importance of rigorous coursework, it would be worthwhile for the Commonwealth to consider supporting students in other AP courses and exams, as well. For instance, some high schools, such as Worcester South High Community School, have encouraged students whose first language is Spanish to take a Spanish Language AP class. Similarly, some AP courses that 10th grade students take, such as Human Geography or Environmental Science, are often considered more accessible for students, although still rigorous, and can serve as important on-ramps to other AP courses. Massachusetts should consider supporting a broader range of AP courses with the goal of enabling more students, particularly underserved students, to access rigorous coursework in high school.

Identify and Disseminate Best Practices for High School Course Guidance

Guidance counselors have a critical role to play in helping students access rigorous coursework. At the same time, the reality is that guidance counselors are responsible for supporting an enormous number of students on many issues in addition to course selection. At Fitchburg High, the guidance counselors who each have a caseload of about 250 students meet with every student one-on-one about his or her schedule. During those meetings, the counselors

will use information from the AP Potential Tool to encourage students to take AP courses in which they will likely succeed. Because of their contact with students and families, they are an important source of information about pathways to college. It is critical that they have current information about pathways and courses. Within the reality of the large caseloads they manage, identifying and disseminating best practices in course selection and planning for postsecondary education is important to enable more students to access AP courses and other rigorous coursework.

Encourage All Districts to Adopt the Mass Core Curriculum and Offer AP Courses

The research is unambiguous; students who take the Mass Core Curriculum and an Advanced Placement course are likely on a pathway to postsecondary success. The recent study of Boston Public School graduates from the Class of 2010 found 79 percent of the students who completed the Mass Core curriculum and took an AP course completed a four-year degree, and this indicator had the highest completion rate of any indicator. Mass Core is a state-recommended program of study intended to align high school coursework with college and workforce expectations. The Mass Core curriculum includes four years of English and math, three years of science and social studies, two years of world language, one year of arts, four years of physical education, and five “core” courses. Yet, not all high schools offer AP courses or offer sufficient courses for students to complete Mass Core. The message from this research is clear: increasing the number of students who complete Mass Core and take at least one AP exam is key to increasing the number of workers with a four-year degree. It is worth taking a closer look at the schools that currently do not offer Mass Core to better understand the obstacles

in order to identify solutions so that all high school students are on a path to success in post-secondary education.

About The Author

Dr. Dana Ansel works as an education research and policy consultant.

She works on a range of different projects for clients, including public, private, and nonprofit organizations. Her work includes synthesizing complex bodies of research so that the findings are accessible for a broad audience. She compiled and synthesized existing research comparing the PARCC and MCAS assessment systems in order to assist the Massachusetts Board of Elementary and Secondary Education in its decision about which statewide assessment system to use. In addition, she co-authored a report that reviewed the research regarding the impact of non-cognitive skills and habits on long-term outcomes. She has also co-authored policy briefs on different research methodologies for federal Teacher Incentive Fund (TIF) grantees.

From 2000 to 2009, she was the Research Director at MassINC, a nonpartisan think tank in Boston. At MassINC, she directed all of the organization’s research projects, including reports on K-12 education, higher education, workforce development, the changing demographics of the state, and the Massachusetts economy. She is the co-author of many research reports and publications and an experienced public speaker and commentator. She has also worked with a wide range of stakeholder organizations across the state. During her time as Research Director, the Boston Globe called MassINC research “the gold standard” in the public policy arena.

Dr. Ansel earned a B.A. from Wellesley College and Ph.D. in Politics from Princeton University.

Endnotes

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¹³For more on the missing AP students nationally, see Theokas, Christina and Reed Saaris. (June 2013). *Finding America's Missing AP and IB Students*. Washington, D.C.: The Education Trust.

¹⁴For more information about the AP Potential tool, see <https://files.eric.ed.gov/fulltext/ED573925.pdf> and <https://apppotential.collegeboard.org/app/welcome.do>

¹⁵Most AP courses are for juniors and seniors, although some freshman and sophomores take AP courses. This data include only juniors and seniors.

¹⁶The definition of an economically disadvantaged students are students participated in one of the following state-

administered programs: SNAP (food stamps); TAFDC (welfare); DCF (foster care); MassHealth (Medicaid) in October, March, or June.

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