

THE COURSES THEY TAKE:

*The Impact of the MassCore
High School Program of Study on
Student Success*

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MASSACHUSETTS



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**MassCore 2022-2023 Statewide
Completion Report**

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INTRODUCTION

Students' selection of their high school courses hasn't been a particularly controversial topic in policy conversations about public education. High school students typically select the courses that reflect a mix of their interests and the skills they expect to need for life after high school. But the reality is that the courses students take in high school are crucially important, setting students up for — or holding them back from — pursuing their postsecondary dreams.

An established body of research indicates that successfully completing challenging coursework in high school translates to higher rates of success in college courses and higher earnings later in life. At the same time, students' ability to complete the additional training, certificates, and credentials required for non-college career pathways is also dependent on their access to quality high school coursework. Students' high school courses provide essential preparation — ensuring students are able to thrive after high school, whether in college or a career.

It is alarming, then, that Massachusetts has not made high school coursetaking a policy priority. Massachusetts is one of just two states in the nation that does not require all students to complete designated high school coursework/pathways in order to graduate.¹ Instead, in 2007 the Board of Elementary and Secondary Education and the Board of Higher Education created a **recommended** list of high school courses designed to set students up for success in college and careers. This recommended program of study, titled "[MassCore](#)," includes suggestions for courses in English language arts, math, science, social studies, world languages, and the arts as well as a provision for career and technical education. Although numerous districts have adopted MassCore as a graduation requirement, or are in the process of doing so, there remain significant percentages of



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students who are unaware of MassCore and the benefits this program of study could offer. The same is true for many of the adults who support these students.

Even more concerning from an equity perspective is how little accurate information we have about who has access to, and who completes, MassCore. The Department of Elementary and Secondary Education (DESE) does not require districts to report systematic data regarding high schools' graduation requirements, including which districts have opted to require MassCore for all students. Since participation is entirely optional, there are no consequences for districts that do not participate in MassCore, and MassCore completion rates are not part of the state's accountability formula — despite negative consequences for the students in districts that don't provide MassCore. We simply have no way to know, statewide, which districts are prioritizing MassCore, and which are not.

DESE does have a MassCore indicator, requiring all districts to report the numbers of their students who graduate having completed MassCore requirements.² But this indicator is also problematic. A recent analysis³ reveals apparent discrepancies between the public-facing statewide reports and the district-reported course data that tell us how many students have completed

MassCore **because there is no systematic collection of MassCore data**. Districts often use proxies to track each student's MassCore participation. And these proxies often over-report when compared with what students' course taking records reveal about the actual courses students completed.



Finally, and most concerning, a statewide analysis of high school students' courses/transcript data⁴, reveals that systemically marginalized students are disproportionately not completing MassCore. This means that the students who could benefit most from taking the courses that state policymakers have determined will best prepare them for success in their chosen postsecondary paths are less likely, not more likely, to complete these courses.

High school presents the final years of students' free public education and holds the promise of preparing students for future success, or future struggle. Our state constitution obligates us to provide a public education for all. If students are not prepared for college or careers after high school, we are not fulfilling our obligation⁵. And for students

who do not receive the preparation they need in these final years of their public education, it will be up to them and their families to cover the costs of the additional coursework or training needed to prepare them for postsecondary success. For these students, the promise of a free public education is unfulfilled.

The [Voices for Academic Equity coalition](#) — which formed in Fall 2022 around a shared focus on academic equity — is embarking on an in-depth analysis of MassCore and the implications of this policy for students. The central question framing our work is: **Given the role high school courses play in students' future success, what policies are in place to ensure access to the full array of college- and career-ready courses for all the Commonwealth's students?**

This report is the first of two reports on MassCore. In this report, we review current MassCore data, examine how students, parents and teachers are informed about MassCore, and make recommendations to improve MassCore policy so that every Massachusetts student is prepared for postsecondary success in whatever paths they choose. Future analysis will focus on the rigor and quality of courses and the equity of access to those courses for different groups of students.

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WHAT IS MASSCORE?

The MassCore recommended program of study is intended to align high school coursework with college and workforce expectations and increase the likelihood that high school graduates will meet admission requirements for the Commonwealth’s four-year public colleges and the University of Massachusetts, as well as improve their chances of admission to private colleges. MassCore was jointly adopted in 2007 by the Board of Elementary and Secondary Education and the Board of Higher Education. Adhering to MassCore means the successful completion of four units⁶ of English, four units of mathematics, three units of a lab-based science, three units of history, two units of the same world language, one unit of the arts, and five additional “core” courses. The framework below provides the complete list of MassCore courses.⁷

Increased attention to high school coursetaking was part of a national movement that began in the 1980s, based on the logic that providing access to rigorous coursework to all students — including students from low-income communities and those with learning differences — would increase the economic

prosperity and civic well-being of our nation.⁸ This increased attention spurred changes to high school courses, making them more rigorous and more tied to the expectations of colleges and employers than ever before. But access to these more rigorous courses remained limited to mostly white, affluent students — further exacerbating racial and economic disparities.⁹

As a result, two decades ago, policymakers and business leaders across the nation began emphasizing the importance of ensuring that all students received a diploma signifying “college and career readiness.”¹⁰ Research supported this premise, finding that more rigorous coursetaking¹¹ was correlated with more students enrolling in and persisting through 2- and 4-year colleges. It was this movement that spurred Massachusetts’s creation of MassCore, with coursework aligned to the expectations of the Commonwealth’s colleges and universities to ensure all students’ preparedness for success in college courses, without the need for non-credit-bearing remedial coursework.

MassCore Framework Massachusetts High School Program of Studies		
SUBJECT	UNITS	NOTES
English Language Arts	4 Units	
Mathematics	4 Units	Including completion of Algebra II or the Integrated Mathematics equivalent. A mathematics course during senior year is recommended for all students. Students may substitute one unit of Computer Science that includes rigorous mathematical concepts and aligns with the Digital Literacy and Computer Science standards for a mathematics course.
Science	3 Units of lab-based science	Coursework in technology/engineering courses may also count for MassCore science credit. Students may substitute one unit of Computer Science that includes rigorous scientific concepts and aligns with the Digital Literacy and Computer Science standards for a laboratory science course.
History and Social Science	3 Units	Including U.S. History and World History.
World Language	2 Units	Of the same language.
Physical Education	As required by law	“Physical education shall be taught as a required subject in all grades for all students” (M.G.L. c.71 §3).
Arts	1 Unit	
Additional Core Courses	5 Units	Other additional coursework (including Career and Technical Education) or any of the above.

*A unit represents a full academic year of study or its equivalent in a subject that covers all the standards contained in a specific Curriculum Framework.
 ** Students enrolled in a state-approved Career and Technical Education program of studies have the option of opting out of World Language and Art and still fulfill MassCore.
 *** districts may designate students with demonstrated fluency and literacy in language(s) other than English as meeting the MassCore recommendations for World language
 MassCore is a recommended program of study Massachusetts high school students need to excel in college, career, and civic life. Developed by an advisory group from elementary and secondary education, higher education, nonprofits, and the private sector, MassCore maintains flexibility for students while letting districts set additional graduation requirements. Courses included in MassCore should be rigorous, engaging, and based on appropriate learning standards for high school or beyond. Fulfilling MassCore is just a start. Students should also engage in a full range of additional learning opportunities, such as: accelerated/advanced coursework; capstones or senior projects; dual enrollment courses; online courses; service learning; work-based learning; clubs and student organizations; varsity and intramural athletics; and part-time employment.

Source: Massachusetts Department of Elementary and Secondary Education



WHY HIGH SCHOOL COURSETAKING MATTERS

There is a growing research base indicating that the courses students take in high school can have a lasting impact on their future opportunities and the trajectories of their lives.¹² Studies have shown students who engage in a challenging set of courses in high school are “significantly more likely than others to enroll in and graduate from college, particularly four-year colleges,”¹³ and to have higher earnings.¹⁴ Research also connects advanced math coursetaking and completion of four years of math courses with college success.¹⁵

It is becoming clearer, too, that simply providing access to more courses is not enough — courses must be of high quality and rigorous. Studies have found significant differences in outcomes for students who take rigorous courses as compared with those who don’t, and estimated effects are often larger for youth of color, those who come from low-income households and those who attend schools in low-income communities.¹⁶ Courses in STEM, credits earned in Advanced Placement (AP) and International Baccalaureate (IB) math and science courses, higher levels of math course content, and coursetaking in chemistry and physics have all correlated positively with National Assessment of Educational

Progress (NAEP) math achievement, and these relationships persist even when gender, race/ethnicity, early grade 9 mathematics achievement, and socioeconomic status are factored in.¹⁷

While we know it can be difficult to determine cause and effect when analyzing high school coursetaking, studies have consistently found that completing high-quality high school coursework is a strong predictor of bachelor’s degree completion — both directly¹⁸ and indirectly.¹⁹ Importantly, high school coursework serves as a predictor regardless of students’ race, family income, previous academic performance, or the subject matter of courses.²⁰

Taking challenging courses in high school also reduces remedial coursetaking, which reduces

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the time needed for, and therefore the cost of, degree attainment.²¹ Research has revealed that “most of the gap in [college] graduation rates reflects pre-existing skill differences carried over from high school.”²² These gaps from high school, which lead to the need for remedial courses in college, have real implications for the students who are placed in them, and their families. A 2016 analysis from the Center for American Progress showed that for students who were placed into remedial courses, the cumulative cost nationally was nearly \$1.3 billion each year.²³ In other words, while we can change college policies to reduce developmental coursework, the fact remains that students who enter college without the requisite skills must have some form of support to do college-level work. These are the very skills students should be getting in high school, where they do not have to bear additional costs.

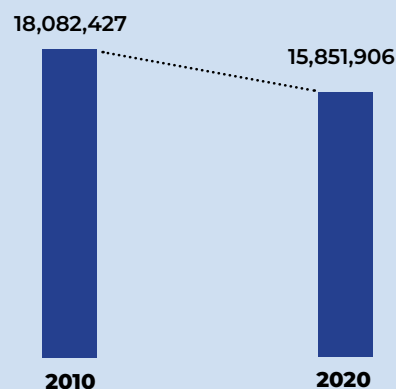
There remains much more to be done to ensure all students have access to a high school program of study that sets them up for success, especially post-pandemic. College enrollment rates have declined and college completion rates have stagnated or declined across the nation. In Massachusetts, recent data show a worrisome decline in the percentage of high school graduates who are enrolling in college (62% in 2022²⁴, down from

69% in 2016), and troublingly low percentages (42%) of students enrolling from low-income families.²⁵ Equally concerning are the large percentages of Latino and Black students who enroll in college but leave before their second year — 75% and 60% respectively. Many of these students are also burdened with college debt without the higher earning power of a degree to help them pay it off.²⁶

Even in our current era, in which college is acknowledged to be one of, but not the only, postsecondary option, high school coursetaking matters as a means to ensure that all students receive access to a basic level of knowledge and skill. Many non-college career pathways require additional training, certificates, and credentials — and students’ ability to achieve these is also dependent on their access to quality high school coursework. The courses students take are an important way to help ensure students are able to thrive after high school, whether in college or a career.

Undergraduate enrollment has been on a steady slide

After peaking in 2010-11, the number of students enrolled in college has been falling ever since.



Source: National Center for Education Statistics.
Deloitte Insights | deloitte.com/insights

WHAT DO WE KNOW ABOUT THE IMPACT OF MASSCORE?

While MassCore is a statewide initiative, it is not required, resulting in variation in its implementation across the Commonwealth's districts. Given MassCore's importance as a tool for equity, our coalition identified key questions to explore, including:

1) How many, and which, students are completing MassCore within schools and districts, and across districts, **2)** how are districts reporting on students' completion of MassCore so that families have transparency about their high school's course offerings and can receive guidance to help support their students, and so that policymakers can see where gaps exist and track students' long-term outcomes, and **3)** are MassCore-aligned courses in one district at the same level of rigor as those in another district?

In this report, we focus on questions 1 and 2 and will address question 3 in a subsequent report.

ACCESS:

How many, and which, students are being supported to complete MassCore within schools and districts, and across districts?

DESE does not track which districts use MassCore guidelines as graduation requirements and which do not. But regardless of which districts have opted to require MassCore, the Department does require each district to self-report the number of graduates who complete MassCore.

Currently, DESE permits districts to self-report the number and percentage of students whose courses meet the MassCore requirements. While this self-reported approach may be expedient and practical, these data present challenges in both consistency and accuracy. Because there is no uniform way that districts track students' high school coursetaking, some districts closely track students' courses through their student information systems, while others rely on proxies for MassCore (like four years of math, or math courses taken in students' senior year). As a result, for some districts, the MassCore data DESE collects is an accurate tally, but for others it is little more than an aspiration. This fact makes it impossible for

students, parents, and policymakers to reliably know how many and which students are getting access to, and completing, MassCore.

The Annenberg Institute at Brown University's Educational Opportunity in Massachusetts project analyzed MassCore completion among Massachusetts public high school graduates in 82% of Massachusetts districts from 2014 to 2023.²⁷ The MassCore completion that districts self-report in the Student Information Management System (SIMS) is quite high on average.²⁸ In the average district, 88% of students are recorded as completing MassCore. In half of all districts, close to 100% of students are reported as having met MassCore requirements.²⁹

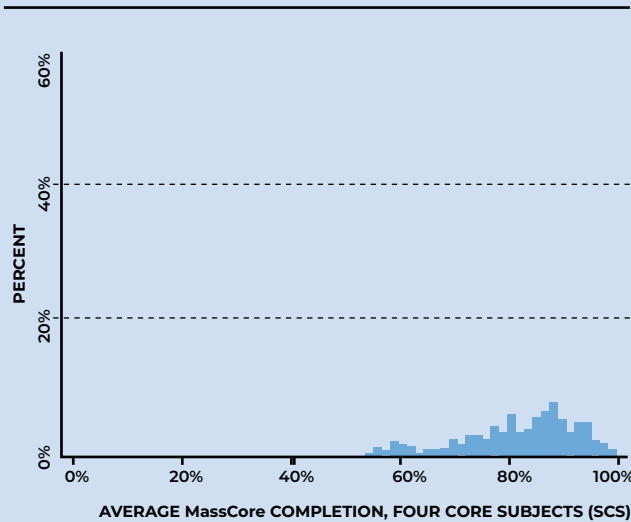
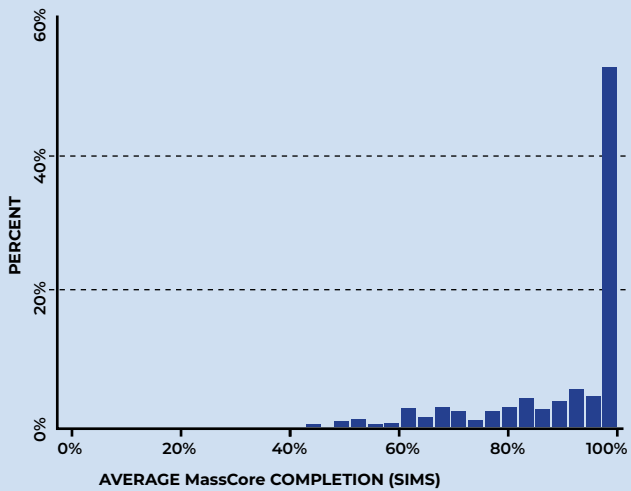
In most cases, however, such high estimates do not appear to be corroborated by the Student Course Schedule (SCS) data that is drawn directly from students' transcripts. In nearly half of the districts analyzed, self-reported numbers are more than 10 percentage points greater than the share of students who were recorded as having completed MassCore recommendations in core subjects. Analysis of the SCS data suggests that, in the average district, just

81% of students appear to meet MassCore requirements for the four core subjects.³⁰ Only 35% of districts with high self-reported completion rates have similarly high rates of completing coursework when looking only at the four core courses of ELA, math, science and social studies.

Most troubling, if one sees MassCore as a means to foster equity, is that no matter the source of data — self-reported, or transcript-based — Black, Latino, and Native students

as well as English learners, students with disabilities, students from low-income families, and students who spoke a first language other than English complete MassCore at lower rates than the population of high school graduates as a whole. And, relying on the SIMS self-reported data, which is the sole public indicator of MassCore completion, may slightly understate the level of inequality in MassCore completion in the state as seen in the SCS data.³¹

FIGURE 1.
Distribution of average MassCore completion in SIMS (top) and SCS (bottom)

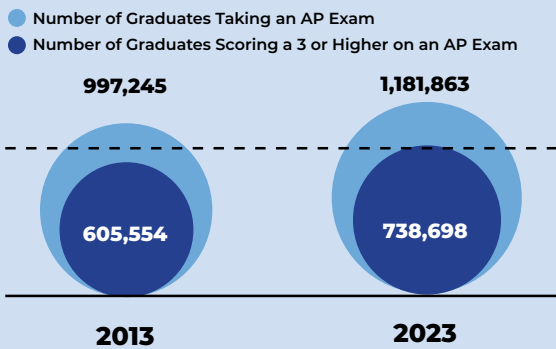


Source: Annenberg Institute at Brown University's Educational Opportunity in Massachusetts project

QUALITY:

What do/don't we know about the quality of education Massachusetts students are receiving?

National research has revealed the importance of students receiving access to high expectations, rigorous coursework and receiving accurate grades for their work. Students' life trajectories can be disrupted when their coursework is characterized by low expectations, low levels of student engagement, weak instruction, and a lack of grade appropriate assignments, especially for students of color, those from low-income families, those with mild to moderate disabilities, and multilingual learners. A 2017 national analysis of the experiences of 4,000 high school students in five diverse school systems, rural and urban, district and charter, by TNTP found that over the span of the 1,000-plus lessons researchers observed, students demonstrated mastery of grade-level standards only 17 percent of the time.³² Equally concerning, evidence suggests the widespread grade inflation that began during the pandemic is continuing post-pandemic, masking declines evident in students' decreasing NAEP scores.^{33 34}



Source: College Board. (2024). [AP Program Results: Class of 2023](#)

Given the local autonomy of Massachusetts districts, schools, and individual teachers, it is nearly impossible to compare the level of rigor between courses — even between courses with the same title and at the same grade level. Educators and policymakers have turned to externally validated courses like Advanced Placement (AP) and International Baccalaureate (IB) to serve as proxies for rigor since research supports their value as indicators of preparedness and future earnings outcomes.

To get a sense of the range of indicators that can serve as proxies for rigor, we reviewed data and engaged in conversations with district leaders in three districts: one small urban, one suburban and one rural.³⁵ Data show that while districts track MassCore completion and 9th-grade passing rates, it is their AP performance and MCAS scores that provide objective indications of the percentages of students achieving higher levels of skills and knowledge.

These data also reveal troubling potential for sending students and families mixed messages — with coursework and grades leading students to believe they are prepared for success in college and careers when they are, in fact, not equipped with the requisite skills and knowledge. For example, in the small urban district we reviewed in 2022, 100% of high school graduates completed MassCore. At the same time, 96% of students were passing their 9th-grade courses. But only 19% of students were meeting or exceeding expectations on the 10th-grade math MCAS and only 33% were meeting or exceeding expectations in the 10th-grade ELA MCAS. In other words, all high school graduates in this district are taking recommended

coursework for all 4 years of high school, and the vast majority of 9th-graders are passing those courses. Yet most of these students are not meeting grade level expectations according to 10th-grade MCAS scores, indicating that, despite their coursework, they may not be acquiring the skills and knowledge needed to be well-prepared to thrive in college or careers.³⁶

IMPACT:

Does MassCore correlate to college enrollment and completion?

Students who complete MassCore are more likely to enroll in postsecondary education and more likely to graduate from college. This is compelling, but not entirely surprising, given that the aspiration to be accepted to college may be the driving motivation for MassCore completion.

To get a better understanding of how MassCore completers and non-completers differ, Annenberg researchers analyzed students with similar 10th-grade MCAS mathematics test scores. The analysis revealed that MassCore is an important predictor of college-going and college completion across the MCAS score distribution. In other words, even students with relatively low MCAS scores are more likely to enroll and persist in college if they have completed the MassCore recommended program of study.

A deeper dive into the data reveals that again the transcript-based SCS data provides somewhat different information about students' MassCore completion. Students who complete MassCore elements according to transcript data but are not recorded as having done so in districts' self-reported data have college outcomes that are more similar to students who complete in both data sources, while students who complete in self-report data only have outcomes that are more similar to students who don't complete in any data source.³⁷

Small Urban District

MassCore-Related Data

District	MassCore Required	MassCore Completion	Advanced Coursework Offered	Advanced Course Completion	AP Performance (3+)	% 10th Grade Meeting/Exceeding Expectations	9th Grade Passing
Small Urban	~2012	100%	AP	40%	27%	Math: 19 ELA: 33	96%
State Avg	Not tracked	83%	N/A	65%	65%	Math: 50 ELA: 58	77%

Demographic Data

	Af. Am	Asian	Hispanic	Native Am	White	Multi-Race	First Lang Not English	ELL	Low-Income	Students w Disabilities	High Needs
Small Urban	17.6	1.8	69	.1	8.3	3.1	28.4	16.8	86	25.2	89.6
State Avg	9.4	7.3	24.2	.2	54.4	4.4	25	12.1	42.3	19.4	55.1

Rural District

MassCore-Related Data

District	MassCore Required	MassCore Completion	Advanced Coursework Offered	Advanced Course Completion	AP Performance (3+)	% 10th Grade Meeting/Exceeding Expectations	9th Grade Passing
Rural	No (no world lang)	65%	AP, early college	60%	23%	Math: 26 ELA: 43	67%
State Avg	Not tracked	83%	N/A	65%	65%	Math: 50 ELA: 58	77%

Demographic Data

	Af. Am	Asian	Hispanic	Native Am	White	Multi-Race	First Lang Not English	ELL	Low-Income	Students w Disabilities	High Needs
Rural	2.1	.7	7.9	.3	80.5	8.3	1.2	.8	71.2	24.7	75.4
State Avg	9.4	7.3	24.2	.2	54.4	4.4	25	12.1	42.3	19.4	55.1

Suburban District

MassCore-Related Data

District	MassCore Required	MassCore Completion	Advanced Coursework Offered	Advanced Course Completion	AP Performance (3+)	% 10th Grade Meeting/Exceeding Expectations	9th Grade Passing
Suburban	Yes	100%	AP, early college	90%	61%	Math: 55 ELA: 71	89%
State Avg	Not tracked	83%	N/A	65%	65%	Math: 50 ELA: 58	77%

Demographic Data

	Af. Am	Asian	Hispanic	Native Am	White	Multi-Race	First Lang Not English	ELL	Low-income	Students w Disabilities	High Needs
Suburban	2.2	2.4	8.4	0	83	3.9	4.7	2.4	27.6	24.1	43.8
State Avg	9.4	7.3	24.2	.2	54.4	4.4	25	12.1	42.3	19.4	55.1

Source: Massachusetts Department of Elementary and Secondary Education

RECOMMENDATIONS

As one of only two states that does not *require* high school students to complete a set of courses in order to receive their diploma, Massachusetts policymakers entrust local school districts and professional educators as well as students and families with the autonomy to determine their own coursetaking paths in high school — without having to adhere to a state-mandated course of study. Then, to ensure all students receive the basic level of knowledge and skill to which they are entitled, the Commonwealth employs MCAS, requiring students to earn a minimum passing score in English language arts, math and science as one of the criteria needed to earn their high school diplomas.³⁸ The Voices for Academic Equity coalition has come to question the logic of our state’s policy approach, given its potential to perpetuate inequities. Based on our analysis of MassCore, our coalition proposes the following recommendations for DESE:

NEAR-TERM RECOMMENDATIONS

- 1 Launch a communications campaign to make the case about coursetaking.** DESE, in partnership with stakeholders and organizations, including the Voices for Academic Equity coalition, can launch a robust, comprehensive communications campaign, specifically aimed at schools and districts with low MassCore completion rates to help educators and families understand the implications of their students’ course selections and to understand the importance of their students taking rigorous coursework that challenges them, grows their skills, and sets them up to pursue the postsecondary paths they choose. This could include providing districts with a comprehensive set of guidelines and evidence that they can use to inform their educators and families about the importance of high school coursetaking and MassCore completion.
- 2 Explore ways that MassCore expectations can help shift mindsets and expectations for the whole PK-12 system.** MassCore is intended for high school but ensuring students are prepared to thrive in college and careers starts much earlier. The messages students receive about their ability to be successful and their sense of belonging in school begin as early as kindergarten and are important precursors to developing the skills, mindsets, attitudes, and confidence to succeed in rigorous high school courses.
- 3 Improve the quality of MassCore data.** Right now, districts self-report their data leading to large disparities in accuracy. To support the collection of more accurate public data, DESE could instead conduct its own report of MassCore completion, drawn from the more detailed Student Course Schedule (SCS) data.

4

Make MassCore data more transparent and accessible to families. Once accurate data are collected, DESE could provide information about students' progress toward MassCore completion to families — perhaps providing guidance for local districts to include MassCore progress on students' report cards and transcripts. DESE could also include progress toward MassCore completion in the MCAS data reports sent to families.

5

Conduct direct outreach to districts, especially school counselors and department chairs, to find out how best to support them as they discuss MassCore and its importance. Engage with school counselors to find out what is needed to better support them as they explain the value of MassCore and ensure access to it among all students within their districts. DESE could also partner with counselors' professional associations as well as subject area professional associations like the Massachusetts chapter of the National Council of Teachers of Mathematics and the National Council of Teachers of English to ensure that content area teachers are aware of, and encouraging their students' participation in, MassCore.

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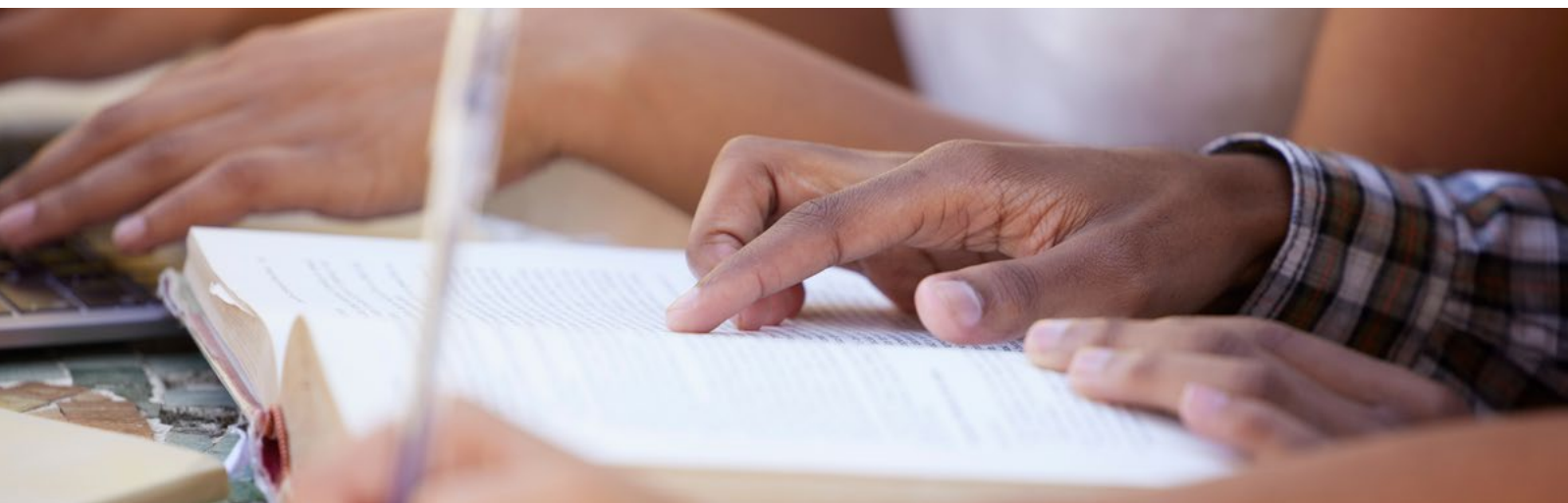
Conduct an analysis of districts not requiring MassCore. DESE should conduct an assessment of the districts that are not requiring MassCore to discern why. For example, districts may be struggling with finding enough qualified teachers to teach all of the MassCore required courses that would permit them to offer MassCore to all of their students.

7

Conduct an analysis of districts that have large gaps between groups of students who are and are not meeting MassCore requirements. DESE could analyze data to discover which districts are not providing MassCore equitably to all their students and why.

8

Provide incentives for districts' use of My Career and Academic Plan (MyCAP) as a means for students to identify their future college and career pathways and map their high school coursetaking accordingly. The MyCAP process focuses on individual student's interests, skills and talents, allowing students to be the drivers of their education as they connect their course taking with postsecondary and career interests.



LONGER-TERM RECOMMENDATIONS

9

Explore teacher licensing policies, including reciprocity with other (especially neighboring) states. We heard from small districts that they were unable to find licensed candidates to fill open teaching positions for MassCore courses due to a lack of applicants. In one small district, leaders reported receiving one or two applications for open positions. In June 2023, BESE voted in licensing changes designed to enable more educators to enter fields in which school districts reported major staffing challenges.³⁹ But much more could be done to foster flexibility in who teaches and where — particularly for rural areas that border other New England states.



10

Pending the findings of the MassCore analysis (recommendations 6 & 7 above) explore options for providing targeted support to those districts unable to require MassCore. Currently, there are barriers — staffing challenges, licensing policies, and funding constraints — that are preventing all of the Commonwealth’s districts from requiring MassCore for all of their students. DESE should explore the possibilities of offering grants or other supports to ensure that all districts are able to provide MassCore to all students.

11

Once the current barriers are addressed, permitting all students access to MassCore, add district accountability measures tied to MassCore. DESE should explore ways to increase districts’ sense of accountability for this indicator — such as adding the percentages of students completing MassCore to districts’ Student Opportunity Act funding reports or adding MassCore completion rates to the states’ accountability system.

12

Investigate and pilot innovative technology tools that expand access to high quality coursework and learning experiences. Technology tools are emerging, including AI, that can provide round the clock support to expose students to a wider range of college and career options. These tools can help students make better informed course selections based on their interests, the jobs they hope to get, and the job descriptions of employers.⁴⁰ AI school counseling tools are emerging and tools like these have the potential to benefit multilingual students and families by removing language barriers as multilingual students determine the best courses for their chosen careers.⁴¹

CONCLUSION

Given the evidence base supporting the strong connection between MassCore completion and postsecondary success, the state has an obligation to ensure that all students have access to the courses that will prepare students for the futures they choose.

Massachusetts has long-embraced the premise of local control — the belief that the individuals and institutions closest to the students are best equipped to make decisions about what happens in those students' schools. At the same time, our state constitution states that “it shall be the duty of legislatures and magistrates” to “cherish” education and “to provide the resources for quality public education.”⁴² Our review of MassCore data reveals stark inequities in access to the courses that will best prepare all students to thrive when they leave high school. When it comes to high school coursetaking, state policymakers are facing a reckoning, requiring them to choose between our obligation to cherish quality education for all students and our long-held inclination to let local leaders determine who has access to which courses.

In our next report, we will dive into the question of quality. That is, even if students have access to MassCore, is their coursework of sufficient quality to adequately prepare them for success after high school? It's not enough to ensure all students have access to MassCore, if the courses high school students are taking don't set them up to thrive in college and careers.

Our analysis shows that the result of inaction — of letting districts determine for themselves what types and levels of courses to offer to whom — disproportionately impacts our most vulnerable students. Without a strong mandate, the disparities in high school course taking simply perpetuate inequities in our public education system, and society, further limiting the potential opportunities for thousands of students who are Black, Latino, multilingual learners, those from low-income households, and those with learning disabilities.

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APPENDIX 1:

MassCore 2022-2023 Statewide Completion Report

The table below shows the number and percentage of students across the Commonwealth who completed the MassCore program of study according to the Student Information Management System (SIMS) which captures the numbers of MassCore completers self-reported by districts.

<u>Student Group</u>	<u># Graduated</u>	<u># Completed MassCore</u>	<u>% Completed MassCore</u>
All Students	66,858	55,778	83.4
Female	32,896	28,073	85.3
Male	33,698	27,482	81.6
High Needs	35,339	27,056	76.6
LEP English language learner	5,704	3,726	65.3
Low Income	29,313	22,216	75.8
Students with disabilities	12,009	8,985	74.8
African American/Black	6,244	4,477	71.7
American Indian or Alaskan Native	166	129	77.7
Asian	4,762	3,921	82.3
Hispanic or Latino	13,691	10,210	74.6
Multi-race, non-Hispanic or Latino	2,319	1,967	84.8
Native Hawaiian or Pacific Islander	56	43	76.8
White	39,620	35,031	88.4

DESE also provides MassCore numbers for individual districts on its school and district profiles webpage: <https://profiles.doe.mass.edu/statereport/masscore.aspx>.

ENDNOTES

- ¹ The other state is VT. CO and PA have no state requirements for high school courses, but do have requirements for high school pathways. See [Education Commission of the States 50-State Comparison: High School Graduation Requirements](#).
- ² Districts are required to report their MassCore completion rates in the Student Information Management System (SIMS) as a binary indicator - indicating either "Student graduated and successfully completed the Massachusetts Core Curriculum" or "Student graduated and did not successfully complete the Massachusetts Core Curriculum."
- ³ Researchers from the Annenberg Institute at Brown University's Educational Opportunity in Massachusetts project calculated MassCore completion rates by district among high school graduates who entered a Massachusetts public high school as 9th-graders and accumulated at least four years of course data. Students who transferred into a Massachusetts public high school were not included.
- ⁴ Data in the Student Course Schedule (SCS) database is drawn from nearly 70,000 student coursetaking records each year. For the purposes of this report, and in the spirit of simplicity, we are referring to this data as "transcript data."
- ⁵ The decision of the Massachusetts Supreme Judicial Court in *McDuffy v. Secretary of the Executive Office of Education*, 415 Mass. 545, 615 N.E.2d 516 (1993) held that the Education Clause of the Massachusetts Constitution imposes an enforceable obligation on the Commonwealth to provide all students with a public education. See: <https://www.doe.mass.edu/lawsregs/litigation/mcduffy-hancock.html>.
- ⁶ A unit represents a full academic year of study or its equivalent in a subject that covers all the standards contained in a specific Curriculum Framework.
- ⁷ Current high school graduation requirements include participation in physical education, and earning a "competency determination." All other graduation requirements are determined by districts, which may require courses that meet or exceed MassCore, as well as ensure students meet course requirements for an Educational Proficiency Plan. For more about the competency determination, see: <https://www.doe.mass.edu/lawsregs/603cmr30.html?section=02>.
- ⁸ *A Nation At Risk* (1983). http://edreform.com/wp-content/uploads/2013/02/A_Nation_At_Risk_1983.pdf
- ⁹ Heller, R. (2023) What Should High School Students Study? Washington, DC: New America. See: <https://www.newamerica.org/education-policy/briefs/what-should-our-high-school-students-study/>
- ¹⁰ *Ibid.*
- ¹¹ Austin, M. (2020). Measuring High School Curricular Intensity over Three Decades. *Sociology of Education*, 93(1), 65-90. <https://doi.org/10.1177/0038040719885123>
- ¹² Higher educational attainment is associated with higher median earnings, a pattern that the National Center for Education Statistics has found to be consistent for each year from 2010 through 2021. For example, in 2021, the median earnings of those with a bachelor's degree (\$61,600) were 55% higher than the earnings of those who completed high school (\$39,700). National Center for Education Statistics. (2023). Annual Earnings by Educational Attainment. Condition of Education. U.S. Department of Education, Institute of Education Sciences. Retrieved 2/15/24, from <https://nces.ed.gov/programs/coe/indicator/cba>.
- ¹³ Paul Attewell and Thurston Domina, "Raising the Bar: Curricular Intensity and Academic Performance," *Educational Evaluation and Policy Analysis* 30, no. 1 (March 1, 2008): 51-71;
- ¹⁴ Heather Rose and Julian Betts. "The Effect of High School Courses on Earnings," *Review of Economics and Statistics* 86, no. 2 (May 1, 2004): 497-513.
- ¹⁵ Long, M. C., Conger, D., & Latarola, P. (2012). Effects of High School Course-Taking on Secondary and Postsecondary Success. *American Educational Research Journal*, 49(2), 285-322. <http://www.jstor.org/stable/41419458>. and Yee, D., Ogut, B., Bohrnstedt, G., Broer, M., and Circi, R. (2021). Examining the Relationship Between STEM Coursetaking in High School and Grade 12 NAEP Mathematics Performance. [AIR-NAEP Working Paper #2021-25]. Washington, DC: American Institutes for Research.
- ¹⁶ Megan Austin, "Measuring High School Curricular Intensity over Three Decades," *Sociology of Education* 93, no. 1 (January 1, 2020): 65-90.
- ¹⁷ Allen, J., Mattern, K., & Ndum, E. (2019). An empirically derived index of high school academic rigor. *Educational Measurement: Issues and Practice*, 38(1), 6-15.
- ¹⁸ Niu, S. X., & Tienda, M. (2013). High school economic composition and college persistence. *Research in higher education*, 54, 30-62.
- ¹⁹ Coursework can prepare students to determine what's best for them: two- or four-year colleges, selective colleges, and set them up for success in their first-year academic performance.
- ²⁰ Mark Long, Dylan Conger, and Patrice Latarola, "Effects of High School Course-Taking on Secondary and Postsecondary Success," *American Educational Research Journal* 49, no. 2 (April 1, 2012): 285-322.
- ²¹ Attewell, P., & Domina, T. (2008). Raising the bar: Curricular intensity and academic performance. *Educational Evaluation and Policy Analysis*, 30(1), 51-71.
- ²² Attewell, P., Lavin, D., Domina, T., Levey, T. (2006). "New Evidence on College Remediation," *The Journal of Higher Education*, Vol. 77, No. 5. <https://imagic.com/eLibrary/ARCHIVES/GENERAL/JOURNALS/H060900A.pdf>.
- ²³ Center for American Progress (2016). "Remedial Education: The Cost of Catching Up" <https://cdn.americanprogress.org/content/uploads/2016/09/29120402/CostOfCatchingUp2-report.pdf>.
- ²⁴ Massachusetts Department of Elementary and Secondary Education - 2021-22 Graduates Attending Institutions of Higher Education (District) - All Students - All Colleges and Universities Statewide Report
- ²⁵ Massachusetts Department of Elementary and Secondary Education. (2022). [College Access in Massachusetts](#)
- ²⁶ *Ibid.*
- ²⁷ The Annenberg analysis excludes districts in which fewer than 40% of students met MassCore requirements in core subjects, as the researchers suspect data issues or local scheduling policies may be driving these low reported completion rates. For example, some of these districts may use block scheduling or other formats in which course term lengths do not correspond neatly to full-year equivalents. With current reporting requirements, there is no straightforward way to differentiate between districts where students meet MassCore requirements through such non-standard course scheduling policies and districts where course offerings are misaligned with MassCore.
- ²⁸ Analysis from the Annenberg Institute at Brown University's Educational Opportunity in Massachusetts project
- ²⁹ Analysis from the Annenberg Institute at Brown University's Educational Opportunity in Massachusetts project
- ³⁰ The Annenberg report makes clear that calculating precise MassCore completion rates using the SCS data is complicated for many reasons. For example, some districts appear to report core courses for English learners as ESL courses, some districts count 8th grade algebra for MassCore credit, and some records are duplicate counts of courses that are difficult to identify, meaning that credits may be overcounted. None of these issues is sufficiently large to change the main conclusion. A potentially more substantial concern is that SCS data do not appear to always record summer courses or credit recovery.
- ³¹ Analysis from the Annenberg Institute at Brown University's Educational Opportunity in Massachusetts project
- ³² TNTP (2018). [The Opportunity Myth](#).
- ³³ Goldhaber, D. and Young, M.G. (2023). [Course Grades as a Signal of Student Achievement: Evidence on Grade Inflation Before and After COVID-19](#)
- ³⁴ College Board. (2024). [AP Program Results: Class of 2023](#).
- ³⁵ In conversation with leaders in the rural district, we learned that they could not find qualified and licensed World Language teachers and thus were unable to require MassCore. This district tried to access synchronous online World Languages courses, but they found it difficult to fit these courses into students' schedules and received poor feedback from the students who did participate about their engagement in the course.
- ³⁶ [Analysis of MCAS scores and long-term earnings from Brown University](#) shows that, while test scores are not the only thing that matters, higher test scores in 10th-grade do translate to higher earnings later in life.
- ³⁷ Analysis from the Annenberg Institute at Brown University's Educational Opportunity in Massachusetts project.
- ³⁸ Local districts also set their own requirements for students to earn diplomas, which often include attendance thresholds, and minimum passing grades in courses, as well as culminating projects such as [Visions of a Graduate](#).
- ³⁹ Board of Elementary and Secondary Education. [June 23, 2023 meeting memo](#).
- ⁴⁰ Forbes. August 23, 2023. [Dear Superintendents, Get Ready for the AI Guidance Revolution](#)
- ⁴¹ The Conversation. October 12, 2021. [How AI can guide course design and study choices to help graduates get the jobs they want](#).
- ⁴² [Massachusetts Constitution](#).



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