

Gifted Education in Massachusetts: A Policy and Practice Review

Prepared by Dana Ansel, Ph.D.

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About the Author

Dana Ansel, Ph.D., is an independent education policy research and evaluation consultant. She works with public, private, and non-profit organizations. From 2000 to 2009, she was the Research Director at the Massachusetts Institute for a New Commonwealth (MassINC), a nonpartisan think tank whose mission is to promote the growth of a vibrant middle class. As Research Director, Dr. Ansel directed research on a wide variety of topics, including K-12 education, higher education, workforce development, immigration, the aging of the population, public safety, and the Massachusetts economy. During her tenure, The Boston Globe called MassINC research “the gold standard” in the public policy arena. She has also served as the Director of Research and Policy at ConnectEDU, a national education technology company.

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Last year, the Massachusetts Legislature decided that the time had come to understand the state of education that gifted students receive in Massachusetts. They issued a mandate for the Department of Elementary and Secondary Education to review the policy and practices of education in public schools for gifted students as well as for students capable of performing above grade level.

The challenge that this mandate presents is that Massachusetts neither defines giftedness nor collects data on gifted students. We can nevertheless review what districts report about their practices and what parents of gifted children report about their experiences. We can also report on the state's policies toward gifted education. In addition, we can analyze the academic trajectory and social-emotional well-being of academically advanced students based on their math MCAS scores. All of this information is valuable in painting a picture of gifted education in Massachusetts, but it is nonetheless limited.

To begin, Massachusetts is an outlier in the country in its approach to gifted education. Nearly every other state in the country defines giftedness. Nor is there an explicit mandate to either identify or serve gifted students in Massachusetts. In contrast, 32 states reported a mandate to identify and/or serve gifted students, according to the *State of the States in Gifted Education*. In terms of preparing teachers to teach gifted students, Massachusetts used to have an Academically Advanced Specialist Teacher License, but it was eliminated in 2017 because of the lack of licenses being issued and programs preparing teachers for the license.

We do not know how many gifted students live in Massachusetts, but a reasonable estimate would be 6–8 percent of state's students, which translates into 57,000 – 76,000 students.¹ Without a common definition and identification process, it is impossible to pinpoint the precise number. According to the Office of Civil Rights (OCR) 2015-16 survey, 6.6 percent of students were enrolled in gifted programs nationally. This number includes states such as Massachusetts that have very few gifted programs, and other states that enroll many more than the average. Another source of data, a nationally representative survey of school districts, found that the fraction of elementary school students nationwide who have been identified as gifted and enrolled in a gifted program was 7.8 percent (Callahan, Moon, & Oh, 2017).

Districts in Massachusetts have full discretion in how they aim to meet the needs of advanced and gifted students. District leaders describe a variety of strategies to meet those needs. The district leaders with whom I spoke agreed that they face the greatest challenges in meeting the needs of advanced and gifted students in elementary schools. There are only a limited number of gifted programs in the

¹ This number would be higher if students capable of performing above grade level were included.

Commonwealth. Only 3.7 percent of schools (69 schools) in Massachusetts reported having a gifted and talented program, according to the OCR data. In sharp contrast, 57.6 percent of all schools nationwide reported having a gifted and talented program.

Some districts, such as Falmouth, report meeting the needs of their accelerated learners in the classroom. Falmouth has invested in a multi-year professional development initiative to enable elementary school teachers to meet the needs of accelerated learners. Falmouth, however, deliberately avoids the term “gifted,” which it finds to be exclusionary and limiting. Other district leaders also discussed how they find the term “gifted” to be controversial. While Falmouth had previously had professional development in differentiation, they found that its focus gravitated to meeting the needs of students who were struggling to master grade-level work. According to a Falmouth district leader, “There needed to be an intentionality around the conversation about accelerated learners.” The district found that students who had mastered the skills and content were also struggling, just in a different way. The administrator explains that advanced learners “need challenge. They need extension. They need deeper learning.”

At its core, gifted education is about meeting the learning needs of all students, including advanced and gifted students. Several recent national studies find that gifted students learn less in that school than do other students. A recent study found that high-achieving students had slower growth during the school year, compared with the growth of average students. In contrast, higher achieving students maintained the same rate of growth during the summer, while average students had no growth in the summer (Rambo & McCoach, 2015). One of the study’s authors posits, “There was a real question as to whether or not those students were benefiting at all from their time in school” (Sparks, 2019).

The lack of academic challenge coupled with a lack of understanding about gifted children harms them, according to parents who submitted written commentary or attended public meetings. Parents want policymakers to understand that gifted children will not just do fine on their own and that gifted children suffer harms from the state’s hands-off approach. The harms include: isolation, behavioral disruptions, frustration, boredom, depression, anxiety, lack of development of skills, such as persistence, loss of love of learning, loss of curiosity, and disengagement from school. This father captures the views of many parents who submitted commentaries when he writes, “It is breaking my heart to see my 7-year-old daughter becoming increasingly detached from school due to the lack of any real challenges.” A mother of six children writes that she worries the most about her gifted son who cries daily, because “he is incredibly lonely and isolated, and the school does nothing to help him shine.”

Issues of equity are of particular salience in any discussion of gifted education. Numerous studies have documented the inequitable access to gifted programs and other learning opportunities for low-income students and other traditionally

underserved students. Nationally, some researchers have begun to focus on the excellence gap, defined as “differences between subgroups of students performing at the highest levels of achievement.” Two researchers find that very few low-income students score at the advanced level on any national tests. Similarly, they document large excellence gaps between students of different races and ethnicities. Massachusetts has some of the largest excellence gaps in the country, despite the fact that the percentage of students in Massachusetts scoring advanced on state and national assessments has increased (Plucker & Peters, 2016). To be clear, the excellence gap is not the same as the achievement gap, which is focused on making certain that all students achieve basic proficiency. The excellence gap is focused on ensuring that all advanced learners have the opportunity to develop their talents.

A former teacher explains that gifted education is misunderstood and “has been looked upon as elitist. On the contrary, until our public schools acknowledge, understand, and serve our most advanced students, our educational system will be elitist. Only those who can afford it will be privileged to see their children’s potential blossom.”

Our analysis of academically advanced 3rd-grade students finds large differences in the trajectories of students of different races and ethnicities and socioeconomic status. After identifying the top 12 percent of 3rd grade students in 2014, as measured by their scores on the math MCAS, we follow these same students for three years.² Less than half (45.2%) of the academically advanced third graders remained in the top decile by 6th grade. What is even more striking though is the large differences depending on the race and ethnicity of the students. By 6th grade, only 21.0 percent (50 students) of the Black and 23.3 percent (130 students) of the Hispanic academically advanced 3rd grade students remained in the top decile, whereas for white and Asian students that percentage was 43.6 and 71.8 percent, respectively. There is a steep and disproportionate drop off of academically

About our Analysis of Academically Advanced Students

Academically advanced is not the equivalent of giftedness. Because Massachusetts does not have a definition of giftedness and does not collect data on gifted students, we cannot track the academic progress or social-emotional well-being of students identified as gifted.

We use MCAS math as a measure to define academically advanced students, but MCAS is not an assessment of giftedness. Rather, it is a curriculum-based assessment. We do not know how many of these academically advanced students are gifted, and we also do not know how many gifted students are not included in this analysis, either because they have left the public-school system or because their giftedness is not reflected in their MCAS scores.

We analyze the academic trajectory of a cohort of 3rd grade academically advanced students through 6th grade. We also analyze the social-emotional well-being of a different cohort of 3rd graders using the VOCAL data.

² We aimed to look at the top 10% but cutting the data at 272 allowed us a clear line, meaning we did not have to make distinctions between students who earned the same score. We also did this same analysis for students who earned a perfect score on the 3rd grade math, which was the top 6.67% of students. Because the trends were the same for the students who scored a perfect score, we decided

advanced Black and Hispanic students between 3rd and 6th grade.

Similar gaps exist for low-income students. Among the academically advanced low-income students in 3rd grade, only one quarter (24.8%) of those same students remain in the top decile in 6th grade. A higher share of the academically advanced English learners and students with disabilities remain in the top decile, although the fraction remaining in the top decile is still below the overall average of 45.2 percent. Specifically, 39.0 percent of the top English learners and 36.0 percent of the top students with disabilities remain in the top decile in 6th grade.³

To better understand the schools that academically advanced students attend, we analyze the achievement levels of the schools both in 3rd grade and also in 6th grade. We examine the overall student growth percentile (SGP) for the schools that academically advanced students attend. The SGP, which is calculated for all students in the school, compares the performance of students with other students like them over time, asking are they growing more than, less than, or the same as their academic peers? A student-level SGP score of 40 to 60 is considered typical growth, meaning that the student is growing roughly the same amount as other students who scored similarly on previous years of the MCAS test, his or her academic peers. A score above 60 is considered high growth, meaning the student is making greater gains than his or her academic peers, and a score below 40 is considered low growth, meaning that the student is making smaller gains than his or her academic peers. SGPs can be aggregated across all students in a school to give a measure of the growth of students overall in a particular school.

In 3rd grade, we find differences in the school SGP that academically advanced students attend, broken out by their race and ethnicity. We find that almost 45 percent of the academically advanced Asian 3rd graders attended a school that had a high level of student growth. In contrast, only 25 percent of the academically advanced Black 3rd graders attended a school that had a high level of growth. The differences are even more pronounced in 6th grade, by which point most students have transitioned to a new middle school. In 6th grade, looking at the same students, fewer than 5 percent of the academically advanced Black students attend high-growth schools and more than 30 percent of the academically advanced Black students attend schools that have low levels of growth. Similarly, nearly 30 percent of the academically advanced Hispanic students attend low-growth schools. While our analysis ends in 6th grade, these data about the schools that academically advanced Black and Hispanic students attend do not bode well for the future academic trajectories of these students beyond 6th grade.

to focus on the top 12%, giving us a larger number of students for our analysis and a greater ability to break out findings by student subgroups.

³ Some students with disabilities are academically advanced and also gifted. These students may receive special education services. In the gifted community, students who have disabilities and are gifted are commonly referred to as twice exceptional (2e) students.

Our analysis of the social-emotional well-being of academically advanced students using the state VOCAL survey has mixed findings. In short, we do not find any meaningful differences in the aggregate between the views of academically advanced students when they are in 5th grade, as compared with other 5th grade students regarding overall school climate, engagement, and environment. It is also possible that our inability to specifically analyze the responses of gifted students is skewing the results; the social emotional well-being of gifted students may differ from the well-being of academically advanced students. More research is needed to better understand the social-emotional well-being of gifted students.

Within the VOCAL data, we find that academically advanced students with disabilities report less positive views of school climate; lower engagement, less safe schools, and less supportive environments, compared with other academically advanced students. We also find racial and ethnic differences within the experiences of the academically advanced students as 5th graders; these differences, however, might reflect the different schools that the students attend. Academically advanced black students and Hispanic students report less positive school climates compared with other academically advanced students. Compared with other academically advanced students, Black academically advanced students reported that they were less likely to believe: Teachers at this school accept me for who I am; I get the chance to take part in school events; My teachers use my interests to help me learn when I need help; and I feel safe at school.

Can gifted education help meet the needs of advanced and gifted students? Students across the country receive a great variety of types of gifted programming, and some of them have been shown to be effective in meeting their learning and social-emotional needs. Programs differ in terms of goals, definitions of students served, how gifted services are delivered, amount of services received, and content of the curricular materials. It is helpful to think of gifted programming in two broad categories: acceleration, which enables students to advance either by grade or content more quickly than their peers, and enrichment, which include programs that allow students to go deeper or differently into content materials.

The vast variation in enrichment programs makes it difficult to measure and assess their effectiveness as a whole. Accordingly, the research findings on the efficacy of gifted programs are mixed, with some studies finding positive impacts and others finding no effects (Adelson, McCoach, & Gavin, 2012; Kim, 2016). There are also open questions about which students might benefit the most from gifted programs. For instance, one study found that the biggest impact of the program was for disadvantaged students who were just below the IQ cutoff score (Card & Giuliano, 2014). Building off of successful enrichment programs and using research studies to better understand the characteristics of effective enrichment programs is critical to meeting the needs of gifted students.

The research on acceleration consistently finds acceleration to be effective for gifted students in terms of learning gains and long-term outcomes and also usually

effective in terms of social-emotional adjustments (Colangelo, Assouline, & Gross, 2004). Research has found long-term positive outcomes to students who have accelerated, including better outcomes in both high school and college (McClarty 2015). Despite its positive outcomes, research also finds educator resistance to acceleration. Educators are often concerned about the social-emotional impact of acceleration on students (Rambo & McCoach, 2012). A strong body of research finds that acceleration is effective in meeting the needs of gifted students and has the additional advantages of minimal costs and being relatively easy to implement.

While there is still much to learn about gifted education, the central message of this report is that the current hands-off approach of Massachusetts, with few gifted programs and not much attention to gifted education, is not serving gifted students well. In particular, when we tracked one statewide cohort of academically advanced students, we found stark differences in the academic outcomes of Black, Hispanic, and/or low-income students, as compared with white and Asian students, meaning that the excellence gap widened between 3rd and 6th grade. Achieving the promise of a public-school system that provides all children meaningful opportunities to learn means meeting the needs of academically advanced and gifted students.

The research findings from this report lead to the following recommendations:

- ✓ Create a statewide taskforce, which will;
 - ✓ Define giftedness and measures to assess giftedness;
 - ✓ Determine most effective way to collect data on gifted students;
 - ✓ Consider best practices of other states and districts;
- ✓ Establish state policy and guidelines on acceleration;
- ✓ Track and report on the excellence gap; identify and implement strategies to close it.
- ✓ Include instruction on the learning needs of gifted students as part of teacher training for all teachers; and
- ✓ Hire staff at the Department of Elementary and Secondary Education with expertise in gifted students and gifted education.

I. Introduction and Purpose of the Report

In 2018, the Massachusetts Legislature mandated that the Department of Elementary and Secondary Education “study and report on a policy and practice review, along with a needs assessment, regarding education in the public schools, of those children who are capable of achieving beyond the age-based grades and those who are gifted as defined by federal law.”

This report brings together the existing data and academic research to respond to the Legislature’s mandate. It relies on national surveys, academic research, focus groups, interviews, submitted statements, comments at public meetings, and quantitative analyses of academic and social-emotional data. These sources of data are all pieces of a puzzle put together to understand the state of gifted education in Massachusetts. I developed research questions based on feedback from Department of Elementary and Secondary Education (DESE) staff and from a small meeting of stakeholders. The research questions guiding this report include:

1. What are current Massachusetts policies toward gifted students, and how do they compare with those of other states?
2. What is known about current practices and programming in schools and districts in Massachusetts?
3. What are the views of district leaders about gifted education?
4. What are the views of parents of gifted students?
5. What is known about the academic trajectory of advanced 3rd grade students?
6. What is known about the social-emotional needs of advanced 3rd grade students?

The mandate refers to the federal definition of gifted students. The federal Elementary and Secondary Education Act defines gifted and talented students as: “Students, children, or youth who give evidence of high achievement capability in areas such as intellectual, creative, artistic, or leadership capacity, or in specific academic fields, and who need services and activities not ordinarily provided by the school in order to fully develop those capabilities.” [Title IX, Part A, Definition 22. (2002)].

To be clear, the mandate from the Massachusetts Legislature is broader, as it does not refer only to gifted students. For the purpose of this report, we define “children who are capable of achieving beyond age-based grades” as students who are in the top decile of their grade, as measured by the MCAS math exam. We refer to them as academically advanced students throughout this report. Some of these students are likely gifted, and not all gifted students may be included in our analyses, either because they have left the public-school system or because their giftedness is not reflected in their MCAS scores.

This report is a policy and practice review of gifted education in Massachusetts. There are limitations to all research projects, and this project is no exception. As will become clear in the pages that follow, Massachusetts does not have a common definition of giftedness, nor does it collect data on gifted students. Without such data, it is not possible to systematically analyze the experiences and outcomes of gifted students in Massachusetts. At the same time, this report adds new information and data to our understanding of the state of gifted education in Massachusetts, including some recommended next steps to enable the public schools to better meet the needs of advanced and gifted students.

II. The Policies of Massachusetts Toward Gifted Students

The State of the States in Gifted Education: Policy and Practice Data is a national longitudinal survey of the 50 states and the District of Columbia. The survey, which is a collaboration between The Council of State Directors of Programs for the Gifted (CSDPG) and the National Association for Gifted Children (NAGC), provides data on policies and practices for gifted students across the country. In 2014-15, the most recent survey, 41 states and the District of Columbia responded. Massachusetts was one of the nine states that did not respond the survey.

In order to understand Massachusetts's state policies and how they compare with those of other states, I interviewed DESE staff to ask a subset of the survey questions to put our state's policies and practices into a national context. Although not a perfect comparison since the information about Massachusetts is current, while the survey data are five years old and may have changed, the information is nonetheless important to help put Massachusetts's approach toward identifying and serving gifted students into context.

The Policies of Massachusetts Compared with Other States' Policies

Put simply, the approach to identifying and serving gifted and talented students in Massachusetts looks different from most other states (Table 1). To begin, in Massachusetts, there is not a definition of giftedness; in contrast, 37 states defined giftedness in statute or regulations. In addition, although the Massachusetts General Law requires the appropriate education of all students, there is not an explicit mandate to identify or serve gifted students in Massachusetts. Across the country, 32 states reported a mandate to either identify or serve gifted students or both. According to the survey, the local education authorities have a lot of flexibility in the processes used and the services offered. In most other

Key Findings About Mass. Policies

Massachusetts is an outlier in its hands-off approach to identifying and serving gifted students.

Massachusetts has: no definition; no data collection; no educator preparation; no accountability; no mandates.

The New England region is also an outlier.

About half of Massachusetts's economic competitor states do more to serve gifted students; with the exception of California, all define giftedness.

states, however, giftedness is defined, and there are mandates to identify and serve gifted students.

In terms of funding, districts in Massachusetts can use Title IV-A funding to support gifted education, but there is no explicit state funding stream to support gifted education. Again, in contrast, 27 states provide funding for gifted education. Of the states that provide explicit funding for gifted education, a wide range exists in terms of the amount of funding. In 2014-15, Idaho provided \$150,000, while Texas provided more than \$150 million. The other states are in between, with 10 states providing \$10 million or less and 10 states providing between \$10 and \$49.9 million.

Massachusetts does not collect any data about gifted students, and there is no explicit system of accountability to help ensure the needs of gifted students are met. According to the survey, 21 of 40 states reported that they monitored and/or audited LEA programs for gifted and talented students through a system of reporting, submission, and approval of gifted education plans. In addition, 11 states include gifted education indicators as part of district report cards or other state accountability reporting forms, and 31 states used the National Association for Gifted Children's (NAGC) preK-12 gifted programming standards to aid in the accountability process.⁴

At the state level, the Department of Elementary and Secondary Education does not have any staff members dedicated to gifted education, and there is no educator preparation program in the state that prepares teachers to identify and serve gifted students. Massachusetts used to have an Academically Advanced Specialist Teacher license, but it was eliminated in 2017 because of the lack of licenses being issued and programs preparing teachers for the license. On a wide range of measures, Massachusetts is an outlier in the country in its hands-off approach toward gifted students.

⁴ The NAGC's standards can be found at <https://www.nagc.org/resources-publications/resources/national-standards-gifted-and-talented-education>

Table 1: Massachusetts's Policies Toward Gifted Students, Compared with Other States' Policies

Policy	Massachusetts	Nationally
Definition of Giftedness	None	37 of the 39 states (who responded to this question on the 2014-2015 survey) define giftedness in statute or regulations.
Mandate to Identify and Serve Gifted Students	Not explicit (All students)	32 of 42 states reported a mandate to either identify or serve gifted students, or both
Funding	Not explicit	27 of 39 states provide funding
Data Collection	None	26 states had some data
Accountability	None	21 of 40 states monitored and/or audited LEA G&T programs; 24 states required LEAs to report on gifted education
Staff at SEA Dedicated to Gifted Education	None	17 states had at least 1 FTE
Educator Preparation	None	29 states offered G&T credentialing for educators; 18 had no PD policy, 5 required PD; 1 required separate coursework

Source: 2014-2015 *State of the States in Gifted Education: Policy and Practice Data*

Policies of New England Region Toward Gifted Students

The New England region appears to be an outlier from the rest of the country in terms of its approach to serving gifted students (Table 2). As a note, Massachusetts, New Hampshire, and Vermont were 3 of the 9 states that did not complete the survey. I relied on the Davidson Institute's database on state policies toward gifted students to supplement the data from the *State of the States*. The Institute gathers information for its database directly from states that did not submit responses to the *State of the States*. While the information is roughly for the same time period, it may not be for the exact same year.

In New England, Maine is the only state that has a mandate to identify and serve gifted students, and the only state that provides funding. Connecticut has a definition of gifted students and a mandate to identify gifted and talented students but no mandate to serve the students, and the state does not provide funding. Rhode Island has a definition of gifted students, but there are no mandates and no funding. Overall, with the exception of Maine, the New England region's approach to identifying and serving gifted students is different from most other states in the country.

Table 2: New England Policies Toward Gifted Students

	Definition	Mandate for Identification	Mandate for Services	Funding	Amount
Connecticut	✓	✓	No	No	None
Maine	✓	✓	✓	Partial	\$4.9 million (2014-15)
Massachusetts	None	No	No	No	None
New Hampshire*	✓	n/a	No	No	None
Rhode Island	✓	No	No	No	None
Vermont*	✓	n/a	No	No	No

*Based on the Davidson Institute database

Source: 2014-2015 State of the States in Gifted Education: Policy and Practice Data and Davidson Institute, accessed at: <http://www.davidsongifted.org/Search-Database/entryType/3>

Policies of Massachusetts's Economic Competitor States Toward Gifted Students

In addition to the policies of region, the policies of Massachusetts's economic competitor states might also be important to consider. The availability of a strong gifted education program might be considered an attractive asset for families. In this case, it might make to sense compare Massachusetts's approach toward gifted students with those states who compete with Massachusetts for jobs and workers.

Each year, in its *Annual Innovation Index* report, the Massachusetts Technology Collaborative benchmarks Massachusetts performance on a number of indicators with other leading technology states. In 2018, the Index identified the following 15 states as the leading technology states: California, Connecticut, Florida, Illinois, Massachusetts, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, Texas, and Wisconsin. According to the Index, these 15 states have economies with a significant level of economic concentration and size in the 11 key sectors that compose the innovation economy in Massachusetts.⁵ While no list is perfect, it is reasonable to consider these 14 states as economic competitors.

There appears to be a range of approaches toward gifted education among Massachusetts and its competitor states (Table 3). With the exception of Massachusetts and California, all of the economic competitor states have a definition of gifted students. In addition, the majority have a mandate to identify gifted students. Not all states that have a mandate to identify students have a mandate to serve those students. Specifically, Connecticut and Minnesota require identification

⁵ For more information on the Index and the Leading Technology States, see the *Annual Index of the Massachusetts Innovation Economy*, accessed at <https://masstech.org/index>

of gifted students but do not require services for them. Seven economic competitor states have a mandate for services. In terms of funding, five states provide funding to support gifted students. In some states, such as California, districts can use some of their general funding to support gifted education, but there is not explicit gifted funding.⁶ With the exception of California, all of Massachusetts's economic competitor states define giftedness, and six of them require that services be offered.

Table 3: Economic Competitor States' Policies Toward Gifted Students

	Definition	Mandate for Identification	Mandate for Services	Funding
Massachusetts	No	No	No	No
California	No	No	No	No
Connecticut	✓	✓	No	No
Florida	✓	✓	✓	✓
Illinois	✓	No	No	No
Minnesota	✓	✓	No	✓
New Hampshire*	✓	n/a	No	No
New Jersey	✓	✓	✓	No
New York*	✓	n/a	No	No
North Carolina	✓	✓	✓	✓
Ohio*	✓	n/a	✓	✓
Pennsylvania	✓	✓	✓	No
Rhode Island	✓	No	No	No
Texas	✓	✓	✓	✓
Wisconsin	✓	✓	✓	No

**Based on the Davidson Institute database,*

Source: 2014-2015 State of the States in Gifted Education: Policy and Practice Data and the Davidson Institute database, accessed at:

<http://www.davidsongifted.org/Search-Database/entryType/3>

Massachusetts is an outlier in its approach to gifted students and gifted education. It is one of the few states in the country that does not have a definition for giftedness. It neither collects data on gifted students, nor is there mandate to identify or serve gifted students. Other New England states are also outliers in their approach to gifted education, although every other New England state defines giftedness. Compared with its economic competitor states, Massachusetts and California are similar in their lack of definition or mandates for identification and services. The approaches of the other 13 states differ, with Florida, North Carolina, Ohio, and Texas providing funding in addition to mandates for identification and services.

⁶ In 2013, California made significant changes to its gifted education program. State funding for GATE (Gifted and Talented Education) was mandated to revert to local school districts, and the state stopped funding and defining giftedness centrally. The programs still exist, but they differ widely from district to district.

III. Current Practices and Programming in Massachusetts

The approach to gifted education should follow from the goals and purposes of the programs. According to the National Survey of Gifted Programs, the goals for gifted programs are typically to provide “adequate learning opportunities commensurate with student needs through differentiation, enrichment, and/or acceleration” (Callahan, Moon, & Oh, 2014). A range of practices and programming are used to serve gifted students, often with different approaches for different levels of school. Students can be served within a classroom or pulled out for services. Some schools have separate classrooms for gifted students. Technology might be used to allow for self-paced study. Alternatively, a student might enter kindergarten early or accelerate in a specific subject or grade. For older students, dual enrollment in high school (for middle-school students) or in college (for high-school students) is a common approach.

Key Findings About Current Practices

Only 3.7% of all schools in Mass. offer gifted programs; in contrast, 57.6% of schools nationally offer gifted programs.

In a recent survey, district leaders in Mass. report their strategies to meeting the needs of gifted students include enrichment during the school day and acceleration and separate classes for older students.

Teacher recommendations and course grades were the most commonly cited factors for selecting students for services.

Massachusetts state policy specifically allows dual enrollment for high school students seeking to enroll in college courses. Massachusetts has no policy regarding early entrance to kindergarten or acceleration.⁷ In Massachusetts, it is up to the Local Education Authorities (LEAs) to decide their policies.

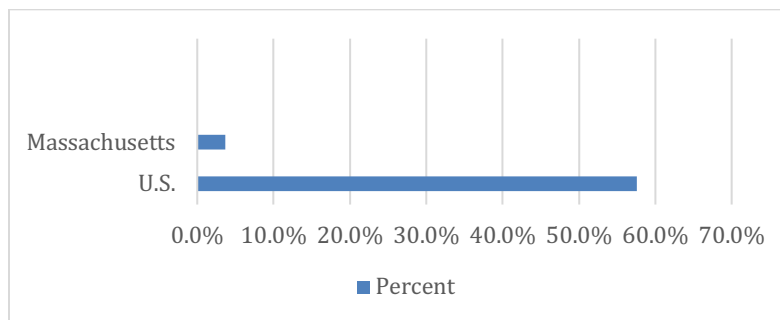
Gifted Programs in Massachusetts

The Office of Civil Rights (OCR), which is part of the U.S. Department of Education, collects data from every public school in the country on some education and key civil right issues every other year. As part of that survey, each school is asked whether the school has any students enrolled in one or more gifted/talented programs. If a school reports having a gifted/talented program, the school then reports how many students participate and the race and ethnicity of the participants. The OCR survey defines gifted/talented programs as: “programs during regular school hours that provide special educational opportunities including accelerated promotion through grades and classes and an enriched curriculum for students who are endowed with a high degree of mental ability or who demonstrate unusual physical coordination, creativity, interest, or talent.” The survey explicitly states Advanced Placement and International Baccalaureate programs are not included in the definition.

⁷ A variety of types of acceleration exist, including: early entrance to school, whole grade, subject matter, curriculum compacting, self-paced instruction, and early entrance to college.

According to the 2015-16 OCR survey, 69 schools out of 1,872 schools (3.7%) in 27 districts in Massachusetts reported having a gifted and talented program.⁸ In sharp contrast, nationally, 57.6 percent of all schools reported having a gifted and talented program (Figure 1). According to the OCR data, the only states with fewer gifted and talented programs than Massachusetts are Vermont (2.0% of schools) and Rhode Island (1.6% of schools) and the District of Columbia (0%).

Figure 1: Share of Schools with Gifted Program



Source: Office of Civil Rights Data, U.S. Department of Education, 2015-2016

We do not know how many gifted students live in Massachusetts, but a reasonable estimate would be 6–8 percent of state’s students, which translates into 57,000 – 76,000 students.⁹ Without a common definition and identification process, it is impossible to pinpoint the precise number. According to the OCR 2015-16 survey, 6.6 percent of students were enrolled in gifted programs nationally. This number includes states such as Massachusetts that have very few gifted programs, and other states that enroll many more than the average. Another source of data, a nationally representative survey of school districts, found that the fraction of elementary school students nationwide who have been identified as gifted and enrolled in a gifted program was 7.8 percent (Callahan, Moon, & Oh, 2017).

The Department of Elementary and Secondary Education Survey

In an effort to understand more about district practices and policies, the Department of Elementary and Secondary Education (DESE) surveyed all Massachusetts superintendents and charter school leaders in June 2017. Out of a possible 404 respondents, 117 people responded, for a response rate of 29 percent, and there is a likely a selection bias of the districts that responded being more likely to offer services. In addition, the districts that responded were not representative of the state as a whole; large districts were overrepresented. Thus, the findings from this survey should be viewed with some caution. At the same time, they do offer

⁸ The 27 districts include: Barnstable, Berkshire Hills, Beverly, Boston, Boxford, Brockton, Burlington, Canton, Dover-Sherborn, East Longmeadow, Falmouth, Fitchburg, Halifax, Hatfield, Hingham, Lowell, Lowell Community Charter Public School, Malden, Melrose, Middleton, Quincy, Springfield, Sturbridge, TEC Connections Academy, Topsfield, Waltham, and Wrentham. A listing of the 69 schools is available at: <https://ocrdata.ed.gov/DistrictSchoolSearch#schoolSearch>

⁹ This number would be higher if academically advanced students were included.

information about what some districts are doing to identify and serve academically advanced and gifted students in Massachusetts.

At the elementary level, district leaders most frequently cited enrichment during the school day as their strategy for serving gifted students. Of respondents whose districts include elementary schools, 45 percent of respondents reported using this approach with many or all eligible students and 31 percent with a few or some eligible students. Leaders also reported using personalized learning and technology as a common strategy.

In middle school, districts' strategies appear to shift toward acceleration in particular subjects as well as enrichment activities. Of respondents whose districts include middle schools, 38 percent reported acceleration in particular subjects for many or all eligible students and 41 percent for a few or some eligible students. Nearly one-third (31%) reported that they provide enrichment activities for many or all eligible students, and 26 percent provided these activities for a few or some eligible students.

In high school, acceleration and separate classes for students above grade level are the predominant strategies. Nearly two-thirds of respondents (67%) whose district included a high school reported acceleration for many or all eligible students and 52 percent reported that they offered separate classes for students above grade level.

The survey also queried district leaders about their processes for identifying students for services. Without a mandate to identify gifted students, districts have full discretion to determine their policies. About half (45%) of respondents formally screen students for potential eligibility for programs and supports for academically advanced students, with 26 percent screening many or all students and 19 percent screening some or a few students. The remaining 55 percent of districts do not conduct any screenings.

According to the district respondents, teacher recommendations and course grades were the most commonly cited factors in selecting students for services. Specifically, 75 percent of respondents cited teacher recommendations as a major factor and nearly 70 percent cited course grades. Less commonly used were assessments of academic knowledge, previous identification for similar programs, parent recommendations, and local benchmark assessments, all of which were used by about one-quarter to one-third of responding districts. Almost no districts reported using assessment of cognitive skills or IQ or non-verbal assessments to determine eligibility.

This differs from the rest of the country. According to the *State of the States*, 33 states were required to use specific criteria and/or methods to identify gifted and talented students. In 12 of those states, the criteria/method were determined at the state level. The majority of states (34) provide LEAs with some guidance on the identification process, even if the specific process to be used was not mandated.

At the end of the ESE survey, respondents were given the opportunity to provide any additional comments. While these comments are not necessarily representative of district leader views about gifted education, they offer some insights into some leaders' views about gifted education. Among some of the respondents, there is a clear desire for more support from the Department of Elementary and Secondary Education to help them meet the needs of their gifted students.

An urban leader stated, "Gifted and talented students and academically advanced students are often invisible/under-served in our state. Parents and students are frustrated and move to private schools. We lose great thinkers!"

Similarly, another leader stated, "I am very excited to see that DESE is looking at this sub-group. As a school district, we spend a lot of time and resources with our lower achieving students but far less with the higher achieving students." Another leader echoes, "We would love more support or ideas from DESE around this idea. We need to do more to support our highest achievers."

One leader at a rural district reported, "While the district was once able to more effectively provide opportunities for students performing above grade level, the lack of any significant increase in state educational aid after 2003 & 2004 has forced the district to significantly reduce the budget and eliminate many programs. Like many other rural and small schools in the Commonwealth we feel the state has little understanding of the realities facing rural towns and their schools."

Finally, one leader cautioned, "I would be concerned about an emphasis on advanced programs for students based on the flawed implementation of programs in the past. The state should continue its efforts to encourage districts to move towards personalized learning, allowing flexibility for teachers to help students move towards individual CCR goals."

There are very few gifted programs in Massachusetts. At the same time, district respondents reported a variety of strategies to meet the needs of advanced and gifted students. Their strategies differ depending on the school level of the students.

District Profiles

As part of the research for this report, I visited four districts — East Longmeadow, Falmouth, Waltham, and Worcester — to learn more about their approaches to meeting the needs of advanced and gifted students. These districts, geographically dispersed across the Commonwealth, include urban and suburban communities of different sizes and socioeconomic statuses. Two districts (East Longmeadow and Waltham) have pull-out programs in their elementary schools, although the East Longmeadow enrichment teachers also do a substantial amount of push into classes. Both of these programs use CoGAT, an assessment commonly used to identify students for gifted services, as part of their identification process. Worcester has two separate programs for middle-school students. Finally, Falmouth has invested

in a multi-year professional development initiative to enable all elementary classroom teachers to be able to meet the needs of accelerated learners. These profiles — East Longmeadow (p. 23), Falmouth (p. 28), Waltham (p. 49), and Worcester (p. 35) — highlight a range of approaches that some districts are using to meet the needs of advanced and gifted students in Massachusetts.

The Gifted and Talented and Enrichment Program in East Longmeadow

The hum of excitement overtook the room as the fifth-grade students eagerly began to work on their inventions. During this two-month project, all fifth graders at the Mapleshade Elementary School in East Longmeadow will create an invention either in small groups or on their own to solve a problem that will make life better in some way. During this year's theme of "Solving Everyday Problems through Innovation," the inventions ranged from helping students open their lockers more easily with finger print recognition to enabling people to donate clothes at supermarkets and receive a refund, similar to bottle refunds, to a way to solve boredom. The project will culminate with an Invention Convention at the end of May.

East Longmeadow is a small district of 2,650 students in Western Massachusetts. The share of economically disadvantaged students is much lower than the state average (17.9% vs. 32.0%), and the student population includes a higher share of white students than the state average (81.9% vs. 60.1%). In recent years, however, the share of white students has declined, while the share of students of color has increased. The share of Hispanic students in East Longmeadow increased from 5.1 percent to 7.1 percent between 2016 and 2018. Student achievement in grades 3-8 is higher than the state average. In 2018, 53 percent of students in grades 3-8 met or exceeded expectations in mathematics MCAS, compared with a statewide average of 47 percent. The district is making typical progress, with student growth measures between 40 and 60.

The district's program began around 2000, when several people started working with the Renzulli Center at the University of Connecticut, which promotes a schoolwide enrichment program. Today, there is a full-time teacher of gifted and talented students at each of the district's three elementary schools (one PK-2 school and two 3-5 schools). In the preK-2 school, all of the work by this teacher is pushing into the classrooms, offering more in-depth, hands-on lessons in math and science to all students. The teacher of gifted and talented students is in each classroom at least once a week, working with all students.

In the two 3-5 elementary schools, the teachers of gifted and talented students do a combination of push-in lessons in all grades and classrooms and also pull-out lessons for fourth and fifth grade students who have been identified as academically advanced or gifted in either English Language Arts and/or mathematics. The push-in lessons are at least once a week in every classroom, and, like the fifth-grade invention convention, they emphasize design-based problem solving that involve engaging students in real-world challenges that require creativity, collaboration, problem-solving, and the application of skills from a variety of areas. The goal of these lessons is to empower all children to help instill a genuine love for thinking and learning. While many classroom teachers also incorporate these types of projects into their classrooms, the push-in work offers a way to supplement and enrich the curriculum.

The third graders at one school will soon begin designing a new playground. They will work in teams to plan, design, and build a three-dimensional model of their playgrounds. They will have a budget of \$40,000 and a list of the cost of different items, ranging from a tire swing to a climbing wall to a slide to a snack bar. Each team will create a blueprint that includes the area and perimeter of the actual space and pictures of their chosen equipment in their playground. After the blueprint is completed, the teams will use the maker space to create a 3-D model of their playground. The teams will finish the project with a letter to the School Committee about their design and why the School Committee should approve and build their proposed playground.

At Mapleshade School, the teacher of gifted and talented students also works with third, fourth, and fifth grade students who are at or above grade level in ELA and/or math during the intervention time, while the classroom teachers

and other specialists focus on helping other students. The groupings are flexible, and students can be added or removed from the enrichment group based on their needs. This time allows the teacher the opportunity to work with more students, offering them a range of enrichment challenges, such as designing the perfect toothbrush.

The pull-out program is for 4th and 5th students who have been identified as having a particular strength in mathematics and/or Reading/Language Arts. These students meet with the teacher of gifted and talented students once a week for a small group class where they conduct research, work on independent projects, and work on challenging problems, such as the math Olympiad. For instance, a pair of students are currently working on designing a model house, learning about architecture in the process. Another student is creating a children's book about math. While there is not an explicit social-emotional curriculum to the pull-out sessions, the sessions include a lot of collaboration and working in teams. These sessions aim to challenge the students beyond the work of their regular classroom setting and are largely driven by student interest.

The district uses several avenues to identify the students for pull-out services and has made a conscious decision to include more students than might qualify under a narrow definition of giftedness. The district uses the STAR assessment, and students who score in the 94th percentile or higher in ELA and/or math will then, with parental permission, take the CoGAT assessment, a multi-choice test designed to measure a student's academic aptitude. Students who score 90% or higher on the CoGAT are placed in the pull-out program. If students score at or above the 94th percentile on the STAR assessment and below the 90% threshold on the CoGAT, the teacher completes a gifted indicators checklist. The classroom teacher and the gifted and talented teacher make a determination based on these three data points. In addition, a parent or teacher can request gifted and talented screening. In this case, the CoGAT assessment will be administered, the teacher will complete the gifted indicators checklist, and the team will look at the data points and collaboratively determine appropriate placement of the student.

The district is proud that it has stopped the notion of just giving advanced and gifted students more work and also that all students have access to instruction by the teachers of gifted and talented students. Both the push-in and pull-out programs seek to enhance student learning by reaching across disciplines to engage all students in a range of projects. Students can go as far as they want with their projects with "nothing holding them back."

IV. Views of District Leaders About Gifted Education

District leaders play a large role in shaping the education of gifted students. To learn about their perspectives, I held three focus groups with superintendents and other district leaders from across the state. In addition, I received feedback from a group of urban superintendents and district leaders following a brief presentation at an Urban Superintendent Network meeting.

These leaders represented small and large districts across the state. There was also a range of socioeconomic characteristics of these districts, including urban centers and more prosperous suburbs. Some of the districts had gifted programs, while others did not. Because the leaders were a self-selected group who volunteered to speak with me, their views may not be representative of district leaders' statewide. Nonetheless, these findings and the leaders' suggested recommendations offer

useful information. In particular, I found that the district leaders with whom I spoke held mostly consistent views about gifted education.

District leaders agreed that the term “gifted” can be controversial, and they try to avoid it. A leader explained, “I think every parent thinks their kid is gifted.” Similarly, another leader elaborated, “There was a very big concern of labeling anyone gifted or not gifted.” In Falmouth, according to my interview with district leaders, the district explicitly avoids the word “gifted” because they find it to be exclusionary and limiting.

Parents were often the drivers of conversations about gifted education and, according to one leader, they aspire to have their children labelled “gifted.” Another leader described conversations about gifted education arising in her district because of parents who have become vocal about “my child is bored.” A different leader reported that the topic comes up in conversations with her school committee. A third leader reported that staff brought up the topic.

District leaders agreed that they face more challenges in meeting the needs of gifted students at the elementary-school level. In elementary school, teacher differentiation was a common strategy to meet the needs of gifted students. One leader suggested that Universal Design Learning (UDL) enables teachers to meet the needs of all students in the classroom, but there was not agreement among the leaders with whom I spoke on this topic. As students progress to middle and high school, more opportunities and choices are available to meet their needs. District leaders referred to honors classes, AP courses, dual enrollment at the high school for middle-school students, and dual enrollment at local community colleges for high-school students.

One area where district leaders were not in agreement was about whether the lack of programming in elementary schools was an issue for concern. Specifically, one leader was not too concerned about kids being bored because she believed that “most kids make their own fun when they are bored.” In contrast, another leader believed, “It’s unfair to those students who are exceptional kids to have to endure five or eight years before they actually get something that is exciting and challenging.” Another leader echoed that sentiment, explaining that gifted students “go to school to learn. So, we have to have something for them.” Overall, district leaders agreed that meeting the needs of gifted students was the most difficult in the elementary school years; however, leaders were mixed in their levels of concern.

Key Findings from District Leaders

The term “gifted” is controversial and often avoided.

Face more challenges at the elementary school level;

Concerns about the social-emotional needs;

Challenges around screening (universal vs. time on assessment);

Concerns about inequitable access to services;

Questions around what does gifted education look like; and

Challenges around teacher training and capacity.

Some district leaders discussed the tradeoffs in their thinking about gifted programs. One district leader explained how her district had eliminated leveling (also known as tracking) “because of the research about how heterogeneous groupings is more beneficial for all learners.” Similarly, another leader reported that they struggle with the notion of gifted education philosophically asking whether they would be preventing other students from showing their giftedness and whether they would be “segregating students?”

District leaders, with and without gifted programs, described the goals of gifted education as student engagement and critical thinking. One leader whose district has a program reported that “Our goal is to meet the needs of every child.” She continued that the goal is to have gifted students “work to their potential.” Leaders seem more interested in enrichment, such as project-based learning, than in subject or grade acceleration. Leaders also agreed that meeting the social-emotional needs associated with gifted students was a central goal and allowing them to be with peers was an important consideration.

As an example, one district leader referred to a student who took pre-calculus in 9th grade and then in junior year “had a nervous breakdown and never came back to school. He definitely had social-emotional issues. He didn’t have a cohort. He was the only one.”

The consequences of not meeting the needs of gifted students include behavior problems and also the lack of development of important work habits and other skills, according to district leaders. Leaders referred to negative behaviors that can develop. One leader explains, “If their academic needs are not met, they get bored and they ask for negative attention.” Another leader agreed that if students are not challenged, then that can lead to “social-emotional challenges.” In addition, two district leaders raised concerns about underachieving gifted students who do not develop good work habits and resiliency because of the lack of challenges in elementary school. When they encounter challenging work in high school, there can be problems. District leaders were aware and mostly in agreement that negative consequences can result from not meeting the needs of gifted students, both for the individual students and for the classroom.

Leaders identified challenges around screening for gifted students. First, they would like guidance in defining and assessing giftedness. One leader suggested, “I am not exactly sure that the school system right now is in a place where we know how to even measure [gifted and talented].” In addition, they already face concerns about too much time spent on assessments. At the same time, because of concerns about equitable access to the services, they believe that universal screening is important. Two different leaders whose districts have gifted programs had concerns about the demographic balance of their programs, compared with the district’s demographics. Raising concerns that their current screening process might be missing students,

both districts were considering moving toward universal screening and also making certain that the screening tool is reliable.

One urban leader suggested that all districts should have a balanced conversation that includes discussions of gifted and talented students as well as strategies to meet the needs of struggling students. A different leader reported, “We often target the middle students and the low students and often times leave out the upper students.” The same urban leader believes that some people mistakenly fear that if there is a focus on gifted and talented students then the needs of students who are struggling will not be addressed because of limited resources.

Leaders also raised questions about how gifted programming would work. One leader asks: “How do you identify students and identify them with some sort of metric that’s fair and accurate? How do you then train all of your teachers to understand what this is going to look like? And, how do you come up with the dollars to make something like this work?” Leaders want more specific information and guidance about what gifted education looks like. For instance, in the past, gifted education has often been seen as interdisciplinary and project-based. Today, a lot of classrooms incorporate those principles in the classroom, raising questions about whether pull-out or a coaching model in the classroom is the best strategy.

As a result of all these issues, leaders agreed that their energies are often focused on their test scores and trying to meet the needs of students with disabilities. One leader suggested that the state’s accountability system has led districts to focus on students who were not yet proficient on MCAS, explaining, “We were trying to get everybody to be proficient. Being proficient became the goal rather than being exemplary.”

A different leader explains that Massachusetts “just has not had the infrastructure or even the teacher training. It just has not been part of the culture of schools.” In addition, the leader referred to concerns about equity and that historically more privileged families and their children have benefitted more from gifted education. He wonders, “Have we over-corrected? Probably, and how do we think about a system where there’s an equitable approach to giving gifted and talented education?”

District leaders had suggestions for what support policymakers could offer in order to help them meet the needs of advanced and gifted students in their districts.

District leaders suggested:

- A state definition of gifted;
- A metric to know when a student is gifted;
- Models of gifted education programs and lessons, including beyond Massachusetts;
- Examples of what advanced or gifted and learning tasks look like;

- Teacher training and professional development for administrators and teachers;
- Sustainable funding to support gifted education; and
- A common understanding about the purpose and goals of gifted education.

The district leaders with whom I spoke recognized the challenges of meeting the needs of gifted students, particularly in elementary schools. They recognized the negative consequences when their needs are not met. They spoke about balancing a range of needs, including time spent on assessments vs. universal screening, and the value of heterogeneous groups vs. grouping students by ability. They would like more information about how gifted programming would work and what gifted education looks like. They agreed that a state conversation about giftedness would help in order to create a common understanding about the purpose and goals of gifted education.

Meeting the Needs of Accelerated Learners in Falmouth Public Schools

In 2015, Falmouth Public Schools made a decision to become more intentional about meeting the needs of accelerated students in the district's four elementary schools. The district invested in professional development focused on helping teachers meet the needs of all students, specifically those who are capable of work beyond their grade level. This is not a gifted program, and, in fact, the district deliberately eschews the term "gifted," which it finds to be exclusionary and limiting. Rather, the district prefers to talk about accelerated learners, which implies movement, and the idea that there is something else to learn.

Falmouth Public Schools, a district on Cape Cod, educates about 3,300 students in its K12 public schools. The share of economically disadvantaged students in the district is slightly less than the state average (30.4% vs. 32.0%), and the percentage of white students is greater than the state average (79.9% vs. 60.1%) and, correspondingly, there are lower percentages of students of color in the district. In 2018, the percentage of students in grades 3-8 that met or exceeded expectations on MCAS math was 54 percent, compared with a statewide average of 47 percent. The district is showing progress across most accountability measures, and the students in grades 3-8 are making typical progress with an average student growth score between 40 and 60.

The motivation to meet the needs of accelerated learners through a multi-year commitment to professional development came from a variety of sources. Teachers were seeking resources to help them meet the needs of students who were strong academically. Parents who had identified their children as gifted or academically accelerated wanted the schools to do a better job of challenging their children. At the same time, administrators realized that students could not access advanced opportunities in later years if they did not have foundational skills. District administrators describe the importance of students learning how to work through challenges in their early years, so they are prepared to do so in later years. These different views came together and led to seeking out professional development for teachers in the elementary schools.

Falmouth worked with Janis Baron, a consultant with Teachers 21, to develop a professional development program to enable elementary school teachers to meet the needs of accelerated learners. In the first cohort, there was one teacher from each grade from each of the four elementary schools. The teachers attended half-day professional development sessions five times throughout the year, and Janis would also spend time at each school to coach teachers, work with administrators, and teach model lessons to students. The focus was on pedagogy, examining the instruction to make certain it was meeting the needs of all students. Janis shared strategies and materials to help the teachers go deeper. Teachers had opportunities to discuss challenges with their peers and to observe other teachers across classrooms.

The teachers who were participating in the professional development brought back what they were learning to their colleagues at their schools. Based on the positive feedback from staff in the first cohort, a second cohort was added in year 2, and those teachers received the same training. This school year (2018-19), a third cohort was added. By the end of this year, almost all of the elementary school teachers and some of the elementary school specialists, such as art and music teachers, will have participated in the professional development. As Falmouth looks to the future, it is considering designating teacher leaders in each grade at each school who can be the point person for their colleagues as a way to sustain the professional learning and instructional model.

Part of the strategy is focused on grouping students in ways that they have opportunities to be challenged by peers at their level. The schools cluster small groups of peers together in classrooms or facilitate groupings across classrooms for lessons or projects. As one teacher explains, "In the classroom you want at least another peer at their level so they are not isolated. It's beneficial for the students who are accelerated because they have someone [with whom] they can rack their brains with and have discussions with." The teacher also notes that grouping the students with academic peers also helps the classroom because the students are less likely to be disruptive.

Teachers and administrators appreciate the flexibility of this approach and point to the ability to be fluid in their strategies. It is not a one-size fits all approach. Students might be accelerated in one content area and not in another. Students might develop and change over the summer. Teachers can adjust groupings across classrooms to meet the needs of accelerated learners. In contrast, they describe a gifted program as taking away that flexibility by "locking" students into a group. Their approach enables teachers to recognize a specific strength or talent and then create an opportunity for the student to "journey further." According to district administrators, the students can "deepen their learning and challenge themselves in a way that doesn't allow them to become complacent with their learning."

It is an approach based on the strengths of students – pushing all students to go farther, extending their learning based on their strengths. If a student is accelerated, the teacher is pushing that student a little farther. If a student is working on grade level, the teacher is also pushing that student a bit farther. It is just differentiated to the students' readiness level. For example, if the class is working on phonics and a student in that class is already writing and spelling, that student might be challenged to write sentences and to rhyme words, while her classmates are working on decoding and spelling out words. A teacher explains that everyone might be going to California, but each student's route might be different.

The district had previously done work in differentiation. Yet, they found that the focus gravitated to meeting the needs of students who were struggling to master grade-level work. According to a district administrator, "There needed to be an intentionality around the conversation about accelerated learners." They found that students who had mastered the skills and content were also struggling, just in a different way. The administrator explains, "They need challenge. They need extension. They need deeper learning." A teacher further elaborates that giving more of the same work is not going to help, nor is giving the student next year's work. The accelerated students need a challenge that deepens their learning. They found that the consequences of not meeting the needs of accelerated learners were often behavioral issues. Despite teachers' best efforts, prior to the professional development, the district was not confident that they were addressing all of the needs that accelerated students presented in their classroom.

With the professional development and coaching, teachers describe being more mindful about supporting all different levels of learning. They have added more project-based learning that is more open-ended. On a recent Friday, using things from the environment, students built their own nests that won't fall apart. Students have built bridges, boats, and parachutes with limited materials. There will be a wide range in how students approach these projects and the depth of their solutions. These projects offer flexibility to meet student needs, and with common planning time, teachers have greater opportunities to collaborate.

Describing a boy in first grade this year who is accelerated in math, a teacher explains while his classmates were speed solving basic addition problems, he started out with subtraction and then moved onto multiplication problems. As the

the class worked on nonstandard units of measurement, he worked on multi-step problem-solving. When he is challenged, his teacher explains that “it’s like his eyes are gleaming, [with] the biggest smile on his face because he knows he’s accomplished something.”

The district administrators and teachers describe a mindset that expects that teachers put in as much work in meeting the needs of accelerated learners as they do to meet the needs of struggling learners. The district views this effort as part of their work toward equity within their larger strategic plan, titled The Framework for Student Success. Their approach is also consistent with their emphasis on nurturing a growth mindset in their students. The growth mindset emphasizes that the brain is like a muscle; it needs to be used to get stronger. All students should have opportunities to learn, whether they are at grade level, below grade level, or above grade level.

V. Views of Parents and Other Stakeholders About Gifted Education

Parents are key stakeholders in discussions about policies and practice about the education of gifted children. In order to understand their experiences and perspectives, DESE created an email address where anyone could send feedback about their experiences. I relied on the advocacy community to let stakeholders know about the opportunity to submit commentary; neither I nor the Department did any outreach to solicit feedback. Like the findings from the district leaders, it is important to note that these are a self-selected group of parents and other stakeholders. Their views may not be representative of the views of parents statewide or even of the views of parents of academically advanced or gifted students. Nonetheless, their experiences add critical information to the discussion of gifted education, and many parents offer a snapshot into the consequences of not meeting the needs of gifted students.

I received 79 emails from stakeholders. Of those 79 emails, the majority (70) were from parents. The remaining emails came from teachers (3), former students who had participated in a gifted education program (2), school committee members (2), a psychologist who specializes in gifted education, and a nurse practitioner.

The parents who responded to the opportunity to provide commentary live in all regions of the Commonwealth and are from cities and towns of different sizes and socioeconomic characteristics. Parents from urban centers submitted comments, as did parents from wealthy suburbs. Several parents specifically identified themselves

Key Findings from Parents

The needs of gifted students are different, both academic and social-emotional needs;

Schools are unable to meet their children’s needs, and they also lack an understanding of their children’s needs.

Teachers lack training or support to meet the needs of gifted students.

The lack of understanding, teacher training, resources, and policy guidance harms children.

The harms include: isolation, behavioral disruptions, frustration, boredom, depression, anxiety, lack of development of skills, such as persistence, and disengagement from school.

Some parents report pulling their children from the public schools, either to homeschool them or to switch to a private school.

as low-income, and several also identified themselves as people of color. Some parents wrote about their experiences in school districts that are considered by many to be high-quality districts. Several parents who submitted comments live in towns that have gifted programs. Despite some differences, the experiences of the parents who submitted comments were very similar overall, and a common set of themes emerged.

The parents were very clear that they view the needs of gifted students as different from those of other students, both their academic and social-emotional needs, with many likening their needs to those of special education students.¹⁰ Put simply, one parent writes, “It is well documented that children of gifted ability have unique learning needs and challenges.” Another parent explains, “Gifted kids don’t just learn more than other kids, they learn differently from other kids and require different teaching methods. This is a special need. These kids should be seen as special needs students, just like kids who have learning challenges. This is not a minor issue that can be dismissed easily for these kids. For gifted kids, it is an existential crisis if they cannot learn.” Similarly, another parent writes that “Gifted students are simply born with brains wired to learn differently, and their needs are not being met in our state’s education system as it is now. They display cognitive, artistic, leadership or academic ability outside the norm for their age. These traits require accommodations that are typically not provided in regular classroom settings, unless we plan for it.”

Nearly every parent wrote that the public schools were not able to meet their children’s needs. Twenty-two parents explicitly described the inability of schools to meet their children’s needs, while this inability was implicit in most other comments. One parent explains, “In Massachusetts, teachers and schools are not equipped and/or not willing to address the need for advanced learners that require increased and different challenges for their academic development and social-emotional well-being.” Parents attributed the inability of schools to meet the needs of gifted students to different factors, including lack of resources, lack of training, lack of policies, and lack of understanding of these students’ needs.

A lack of understanding was a common theme. A father explains, “There was no recognition of what [my son] needed or why he was struggling with his social-emotional development...This is a real issue. Gifted kids have special needs, and there’s a lot of kids and families suffering because their needs are not being met.” Negative consequences result from not meeting the needs of gifted students. This parent speaks for many when she states, “I can tell you honestly that the lack of understanding of gifted children – not just the academic needs but even more an understanding of the emotional and social intensity and challenges – has deeply injured my son and my family.” The lack of understanding and inability to meet the

¹⁰ According to the *State of the States* survey, 23 states required gifted education strategies align with special education, especially regarding a free appropriate public education.

needs of gifted students has led to harms for students and their families, according to the parents who submitted commentary.

In describing the lack of understanding, some parents refer to myths about gifted students, including the idea that gifted children will be fine on their own. A mother explains that “Many [educators] believe the common myths about gifted students, including that gifted children do not need any special assistance and can get by on their own, and that social considerations are more important than academic when determining a child’s placement.” Parents believe that educators’ and administrators’ lack of understanding contributes to certain misbeliefs, such as gifted students will be fine on their own or that they do not need any specific accommodations, which has not been true for their children.

Acceleration, an intervention where a student progresses through an educational program faster or at ages younger than typical, is a common strategy nationwide to meet the needs of gifted students.¹¹ Fourteen parents who wrote about the inability of their children to accelerate, either at the subject level or grade level, believed that some of the harms to their children could have been alleviated if their child was able to accelerate. In contrast to most families’ experiences, three parents wrote that their children had been able to accelerate, and it had been a positive experience. One parent describes the positive impact of her son skipping first grade, as “he has made many friends, and he is doing well in all subjects.” At the same time, she acknowledges that “as long as accommodations for gifted students are treated as a favor and an exception rather than a necessity and a right, only a select few children will ever access them.” Acceleration is a policy that some parents of gifted students believe could help meet their children’s needs.

Other parents who submitted commentaries also raised concerns about the lack of policies toward gifted students. One parent explains that the education that a gifted child receives is “incredibly subjective and subject to budgets, teacher personalities, classroom constraints, and a myriad of other factors.” Another parent echoes that it “is extremely variable, based on training, personality, and beliefs of teachers and administrators that a child has.” These parents and others suggest that districts and schools need guidance and also training to meet the needs of gifted students.

The lack of training for teachers was a major concern, raised by twenty-four parents. One parent describes, “It was not the fault of her teachers. They were lovely. This was a problem of lack of appropriate assessment, lack of appropriate policy regarding the needs of gifted students, lack of education regarding what they need to take part in real learning in a classroom, and a lack of leadership in our state’s schools regarding the needs of these children.” Similarly, a parent writes that “Teachers need training, districts need guidance and mandates to provide the

¹¹ Because there is no state policy and because Massachusetts does not collect data on acceleration, we don’t know its prevalence in the Commonwealth, although it should be included as part of the OCR data collection, which suggests it is rarely used in Massachusetts.

appropriate education for our gifted youth.” Despite teachers’ best intentions, their lack of training has had negative consequences for students and their families. In addition to the adverse effects on the children, the lack of teacher training impacted families in a variety of ways, including having to address the children’s social-emotional needs and/or respond to behavioral issues at home and/or the financial burdens of homeschooling or private school tuitions.

While most parents did not blame the teachers, several parents referred to hostility or indifference from their children’s teachers. One parent wrote that her daughters “were told they could not take out Harry Potter books in 2nd grade, because it wasn’t a 2nd grade book.” She went on to say that “They were told not to be ‘know-it-alls.’ So my girls grew up hating school.” Another parent writes that “In third grade, my child was told to stop memorizing more of the multiplication table because she was getting too far ahead of everyone else, but the teachers did not provide any additional material for my child to learn.” These experiences were the exception; in general, parents believed that the teachers were well-intentioned but lacked the training or support necessary to meet the needs of gifted students.

A father asks, “What is it going to take to get the state to realize that we have a large population of incredibly bright, gifted students – with their own specific set of learning needs – being left to flounder in our schools without access to an appropriate education, and with a total lack of understanding from their well-intentioned teachers who want to help them – but just don’t understand their learning needs?”

Parents want policymakers to understand that gifted children will not just do fine on their own and that children suffer real harms resulting from a lack of understanding of gifted children’s needs and the inability to meet those needs. Describing a misconception, a parent explains that nothing is done to meet the needs of her son “because people mistakenly believe that gifted kids have it made. They don’t! He suffers greatly from depression and anxiety. He feels like an outsider.”

Forty-two parents describe the harms their children have experienced. Examples of these harms include: isolation, behavioral disruptions, frustration, boredom, depression, anxiety, lack of development of skills, such as persistence, loss of love of learning, loss of curiosity, and disengagement from school. This father reflects the sentiment of many when he writes, “It is breaking my heart to see my 7-year-old daughter becoming increasingly detached from school due to the lack of any real challenges.” Parents (and district leaders who participated in the focus groups) report that the lack of learning opportunities can often lead to misbehavior. One parent describes the consequences for her son as “he is bored in school and often finds himself getting in trouble behaviorally as he jokes around a lot to fill the time.” Tellingly, a teacher submitted a note that a student had written, which says “I wish my teacher knew how smart some of the bad kids are.”

One mother of six children writes that she worries the most about her gifted son who cries daily because “he is incredibly lonely and isolated, and the school does nothing to help him shine.” Another parent describes the long-term effects as: “Our public school has taken a child who started out in this world desperate to know everything about everything and to be the best at everything he does and turned him into a child who by 1st grade had given up on his dream of school being the place where the world and all its mysteries would open up to him and by 3rd grade stopped even asking me to teach him new things after school.” Other parents describe similar trajectories, with students checking out from school or refusing to attend school or hating school.

Ten parents wrote about their twice-exceptional (2e) children, and the schools’ inability to understand or meet their needs. Twice-exceptional students are gifted students who also have a learning disability. Some of these students have Individual Education Programs (IEPs). Despite these plans, their parents describe the same set of challenges that other parents of gifted students describe in terms of a lack of understanding of their needs and an inability to meet their needs.

In contrast, when gifted students are challenged and given opportunities to learn, parents describe motivated and energized children. A parent explains the contrast: “When appropriately challenged, he rises to expectations and looks forward to school each day, but he becomes disengaged and unhappy when forced to repeat work he mastered years ago.” Another parent elaborates, “When my child finally received learning material at his level of instruction, of which he has not yet mastered, he came to life with such vigor.” Parents report seeing their children thrive when they receive appropriate materials and curriculum, typically after they have left the public-school system, either to be homeschooled or attend a private school.

These harms have led parents to pull their children from the public school, either to attend a private school or to homeschool them. Seventeen parents reported moving their children to a private school, although not all could remain in a private school because of the financial burden. Eleven parents reported homeschooling their children. Several parents described the financial burden of having to leave the labor market to homeschool their children. Three parents wrote about moving school districts in an effort to find a better option for their children’s education.

Some parents were aware that not all parents of gifted students had the resources that they had or even the experiences to understand their children’s needs. Seven parents who were able to find a solution outside the public system voiced their concern for other families who might not have the same choices. One parent explains, “I am very mindful of the fact that, although we had the resources to get my son tested and placed in a private school, there are many minorities who do not. I am concerned that many bright minds are not getting the support they need.”

The message from the parents who submitted commentary is remarkably consistent: Gifted students have different needs from other students. The lack of understanding, resources, teacher training, and policy guidance harms their children. The harms take a variety of forms, including isolation, misbehavior, and detachment from school. The parents believe that if the Commonwealth is committed to serving all students, the public schools must focus on the needs of gifted students, in ways that currently do not exist.

Common recommendations from parents include:

- Legislation to establish the rights of students to an education that meets their potential;
- Legislation to mandate the identification of and services for gifted students;
- Legislation to meet the needs of twice-exceptional students;
- Testing for giftedness among all students at an early age;
- Use of adaptive assessments;
- Training for administrators and teachers about giftedness;
- Ability for children to accelerate based on ability; and
- Resources for in- or afterschool academic interests, also at the elementary school level.

Gifted and Talented Middle-School Academies in Worcester

The parents and the community in Worcester want more advanced programming for their students, and the district is responding with programs in two middle schools. For over 25 years, there has been a gifted and talented program called the Goddard Scholars Academy for middle-school students, and the Academy has always had a waiting list. More recently, the district created the Hanover Insurance Academy of the Arts.

Worcester, the Commonwealth's third largest school district in 2018, is a diverse school district that educates over 25,000 students. The share of students of color is higher than the state average. In 2018, African American students accounted for 15.9 percent of the district, compared with 9.0 percent of all students statewide. The district has more than twice as many Hispanic students, compared with the state average (42.6% vs. 20%), and the share of English learners in the Worcester was more than three times as high as the state average (34.4% vs. 10.2%). Nearly 60 percent of the students are economically disadvantaged, compared with a statewide average of 32 percent. In 2018, 29 percent of the students in grade 3-8 met or exceeded proficiency in math MCAS, compared with the state average of 47 percent. The growth of MCAS scores across all grades show typical levels of growth, and the district is partially meeting its target goals.

As academically advanced and gifted students approach middle school, they have the option of applying to become a Goddard Scholar. The Goddard Scholars Academy is a citywide magnet program for highly motivated, gifted and talented middle school students in grades 6-8. Admission is based on MCAS scores plus a parent and student commitment to the program. While not necessarily ideal to use only one data point, the District found that using an objective criteria has led to more equitable access for all students. All eligible students are invited to an open house to learn about the program. There is a lottery to select the scholars from applicants who meet the criteria. There are 48 Goddard Scholars per grade. The demographics of the Scholars roughly reflect the total school district population, with the exception of EL students who are underrepresented.

The mission of the Academy is to provide a rigorous and accelerated program that can delve deeper into subjects. All students complete Algebra 1 by the end of 8th grade. The Academy is designed to help students become lifelong learners, good citizens, and leaders of the 21st century. It also aims to provide students with a safe, challenging, and fun place to learn. The Goddard Scholars Academy continues at South High Community School for grades 9-12, where the Scholars are part of a larger high-school community. Clark University offers two full college scholarships for the top two Academy students.

The Goddard program is a cohort model where students take all of their classes together and operate separately from other students in the building. They take a weekly gifted and talented class that includes a range of activities, such as an academy challenge problem, an engineering activity, peer mediation, a field trip or other activities. According to one teacher, the Academy students “tend to be kids who like school, who don’t mind doing homework, and have some curiosity. They are interested in being in school.” The teacher continues, “They challenge each other to be better students.” For some students, it is the first time that they have been challenged in school.

Almost all of the Academy teachers have received training and professional development at the University of Connecticut, and they use the schoolwide enrichment model advocated by Dr. Joseph Renzulli, a leader in gifted education. They aim to have students solving problems or issues in their community to make an impact, called a type III experience. For instance, a group of students collected socks and toiletries for homeless people, and they collected the goods from their churches, girl scout troops, and housing complexes. Many teachers offer after-school clubs, such as the Science Olympiad, the Math Team, and Model UN with students attending competitions outside the district.

The success of the Goddard program coupled with a need for more opportunities for advanced learners led to the creation of the Hanover Insurance Academy of the Arts, another citywide magnet program, which is currently in its second year. The Hanover Academy, housed within a different middle school, is an art-infused program for gifted and talented students. The program builds off of an existing arts program in that middle school, where students specialize in an art field, such as media arts, dance, music, or theater. Similar to the Goddard Academy, students qualify for the Academy based on their MCAS scores, and eligible student can apply to attend this 7th and 8th grade program. Again, all eligible students are invited to an open house the previous year to learn about the program. There are also 50 students in each grade. The students who attend the Academy have the opportunity to focus on two arts coupled with an advanced academics curriculum. The students will then continue as students in the arts magnet high school, which is adjacent to the middle school.

Their work to meet to the needs of advanced learners is not done. The current two programs are not sufficient to meet all the needs. So, the district is in the process of planning for a third program at a different middle school. The focus of this program will be health sciences, and the partnerships and details are still being planned. According to district leaders, the topic of advanced learners and gifted students comes up often in the district. As families consider choosing Worcester as their place to live, they want to know what the schools can offer, and, the district is doing its best to respond and to meet the needs of all students.

VI. Academic Research on the Efficacy of Gifted Programs

Students receive a great variety of types of gifted services across the country. Programs differ in terms of goals, definitions of students served, how the gifted services are delivered, the amount of services received, and the content of the curricular materials. It is helpful to think of gifted programming in two broad categories: acceleration and enrichment. Acceleration programs enable students to advance either by grade or by subject matter more quickly than their peers.¹² In contrast, enrichment programs allow students to go deeper into the content material or access different content that is appropriate to their levels.

Enrichment programs can benefit gifted students in terms of their learning outcomes and social-emotional well-being. Because of the large variation in enrichment programs, however, it is challenging to identify which characteristics of enrichment programs result in positive impacts for different groups of students. Some research finds positive effects of enrichments, while other research finds no effects. For instance, one study that analyzed the effects of gifted programming in mathematics and reading found no effect on gifted students' achievement or on their academic attitudes. Yet, the researchers also note that the programming did not distinguish between the type, length, or degree of programming (Adelson, McCoach, & Gavin, 2012). In contrast, a meta-analysis of 26 studies found that the enrichment programs had a positive impact on both gifted students' academic achievement and social-emotional development (Kim, 2016). Some enrichment programs lead to positive outcomes, but more research is needed to better understand the attributes of effective gifted enrichment programming.

There are also open questions about which students might benefit the most from gifted programs. In one study *"Does Gifted Education Work? For Which Students?"* researchers examined the impact of separate gifted classrooms on three different groups of 4th grade students: 1) non-disadvantaged students with IQ scores ≥ 130 ; 2) low-income students and English learners with IQ scores ≥ 116 ; and 3) students who miss the IQ thresholds but scored highest among their school/grade cohort in statewide achievement tests in the previous year. The researchers found no effects

Key Findings About the Efficacy of Gifted Programs

Gifted programming can be thought of in two broad categories: acceleration and enrichment.

Enrichment programs can benefit gifted students. The research findings are mixed, with some programs showing positive outcomes and other programs finding no effect. More research is needed to identify the attributes of effective enrichment programs and for which students.

The research on acceleration consistently finds acceleration be an effective intervention for gifted students and is also usually effective in terms of social emotional adjustments.

Several recent studies have found that higher achieving students learn less in school than other students. In one study, higher achieving students learned at the same rate during the summer as they did during the school year.

¹² Acceleration can include: early entrance to school, whole grade, subject matter, curriculum compacting, self-paced instruction, and early entrance to college.

on the reading or math achievement for the first two groups of students. In contrast, they found that students in the third group, the students who missed the IQ threshold, showed significant gains in reading and math. These findings lead the researchers to conclude “that a separate classroom environment is more effective for students selected on past achievement – particularly disadvantaged students who are often excluded from gifted and talented programs” (Card & Giuliano, 2014). The study raises larger questions about the importance of clarifying the goals of gifted programs and also the need to understand in a much more nuanced way than currently exists about which students might benefit from what type of programming.

In contrast to the research findings on enrichment, the research on acceleration consistently finds acceleration be an effective intervention for gifted students and finds that is usually effective in terms of social-emotional adjustments (Colangelo, Assouline, & Gross, 2004). Studies about acceleration date back to the 1920s. In his analysis of acceleration interventions since the 1960s, James Kulik finds that bright students almost always benefit from accelerated programs of instruction (Kulik, 2004). The accelerated students usually perform like bright, older non-accelerated students. In addition, the accelerated students usually score almost one-grade level higher on achievement tests than bright, same-age non-accelerated students do (Kulik, 2004). His research finds that other types of programming for gifted students are less effective than acceleration. His conclusions that acceleration is the most effective intervention for bright students and that the benefits of acceleration have been strongly documented are shared by a wide range of scholars who have looked at the efficacy of acceleration.

Other research focuses on the long-term positive outcomes to students who have accelerated. One study compares accelerated students with older grade-level peers who had similar academic and demographic backgrounds who were not accelerated. The findings suggest that, on average, accelerated students consistently and significantly outperformed their nonaccelerated peers, both in high school and in college. When compared with their comparable nonaccelerated peers, accelerated students perform better on both the PSAT, SAT, and most ACT measures. They earn higher grades in high school and in college, compared with their comparable nonaccelerated peers (McClarty, 2015). In addition, in another study, the research finds that being in an accelerated program can affect a student’s educational goals. Specifically, Kulik finds that “accelerated students are clearly more likely than bright non-accelerated students to aspire to advanced educational degrees.” (Kulik, 2004). The benefits of acceleration persist beyond K-12 schooling.

Concerns about the effects of acceleration on students’ social-emotional well-being are common. It is important to note that there are a wide variety of acceleration options and policies. In some situations, students may stay with their age-based peers for some or most of the school day. In other situations, they may be solely with older peers. In addition, depending on what type of acceleration, the age of the students can vary significantly. Acceleration policies range from early entrance to

kindergarten to early entrance to college. While the specific context and design of the acceleration matters, a growing body of work finds that students who experience acceleration opportunities seem to benefit psychologically (Cross, Andersen, & Mammadov, 2015). At the same time, research also identifies educator resistance to acceleration. Educators are often concerned about the social-emotional impact of acceleration on students (Rambo & McCoach, 2012). Many studies have found either positive or no negative effects, although a few studies have found negative impacts. A full exploration of the social-emotional needs of gifted students should also include an examination of the social-emotional effects of a lack of policies, such as not allowing acceleration or offering other gifted programming.

In thinking about the efficacy of gifted education, it is useful to step back and reflect about its purpose and goals. At its core, gifted education is about meeting the needs of all students, allowing them the opportunity to learn and be challenged. Several recent studies find that gifted students learn less in school than do other students. A recent survey found, “Gifted students, on average, began third grade with academic achievement two grade levels above the academic level of non-gifted students but posted slower academic growth than general education students between third grade and fifth grade” (Long, Hamilton, McCoach *et al.*, 2019). Similarly, a different study found that high-achieving students had slower growth during the school year, compared with the growth of average students. In contrast, higher achieving students maintained the same rate of growth during the summer, while average students had no growth in the summer (Rambo & McCoach, 2015). Similarly, in another study, researchers found that the highest achieving students had the slowest growth during the school year. One of the study’s authors wonders, “There was a real question as to whether or not those students were benefiting at all from their time in school” (Sparks, 2019).

A national study *Do High Flyers Maintain Their Altitudes: Performance Trends of Top Students* has similar findings. The researchers found that high-achieving boys were more likely than high-achieving girls to lose ground in math and reading, raising questions about the differential impact of the lack of academic growth and progress. These research findings raise questions about schools’ ability to meet the academic needs of high-achieving students.

While more research is needed to better identify the attributes of successful gifted programs and what type of programs work best for which students, that need should not be interpreted as a case for inaction. Enrichment programs can be an effective way to meet the learning needs of advanced and gifted students. In addition, the research findings on acceleration are clear and consistent about the benefits for gifted students, including longer-term outcomes.

VII. The Academic Trajectory of Advanced and Gifted 3rd Grade Students

Because Massachusetts does not have a definition of giftedness and does not collect data on gifted students, we cannot track the academic progress of students identified as gifted. As a result of these limitations, this analysis focuses on academically advanced 3rd graders – defined as those students who scored a 272 or higher on the math MCAS in 2014.¹³ These students represent the top 12.4 percent of all 3rd grade students in the state.¹⁴ In the analysis that follows, we will follow this same group of students through 6th grade.¹⁵ We refer to these students who are in the top 12 percent as the academically advanced 3rd graders.

From the outset, it is important to note that the MCAS is not an assessment of giftedness. Rather, it is a curriculum-based assessment. We can say that these students are academically advanced. We do not know how many are gifted, and we also do not know how many gifted students are not included in these numbers, either because they have left the public-school system or because their giftedness may not be reflected in their MCAS scores.

In 2014, there were 8,316 students (12.4%) who scored of 272 or higher on the math MCAS in 3rd grade. Table 4 shows both the racial and ethnic breakdown of those students and racial and ethnic distribution of all 3rd grade students. Both white and Asian students were overrepresented in the top 12 percent. In contrast, Black and Hispanic students were underrepresented. Black students accounted for

Key Findings About the Academic Trajectory

By 6th grade, 45% of the academically advanced 3rd grade students remain in the top decile of MCAS math achievers.

There are large racial and ethnic differences. More than three-quarters of the academically advanced 3rd grade Black and Hispanic students are no longer in the top decile in 6th grade.

Similarly, three-quarters of the academically advanced 3rd grade low-income students are no longer in the top decile in 6th grade.

The schools that academically advanced 3rd grade Black and Hispanic students attend in 6th grade are much more likely to have low student growth.

¹³ During 2015 and 2016, some students took MCAS, while others took the PARCC assessment. The Department of Elementary and Secondary Education created equivalency tables allowing comparisons of student achievement across both assessments. This analysis includes all 3rd grade students. In addition, from 2014-2016, the assessment was the legacy MCAS. In 2017, the state switched to the next generation MCAS assessment. Our analysis is based on the math MCAS, because the relationship between math achievement levels on the legacy and next generation MCAS which is more consistent. In addition, the relationship between math instruction and growth and achievement is also stronger.

¹⁴ We aimed to look at the top 10% but cutting the data at 272 allowed us a clear line, meaning we did not have to make distinctions between students who earned the same score. We also did this same analysis for students who earned a perfect score on the 3rd grade math, which was the top 6.67% of students. Because the trends were the same for the students who scored a perfect score, we decided to focus on the top 12%, giving us a larger number of students for our analysis and a greater ability to break out findings by student subgroups.

¹⁵ I want to acknowledge and thank Tyrone Mowatt of Ed Inquiry who recommended that we pursue this analysis. I also want to thank Bob Lee and Kate Sandel of DESE who did the analyses of the MCAS data for this section.

3.2 percent of the top students, although 8.2 percent of all 3rd graders were Black. Similarly, Hispanic students accounted for only 7.7 percent of the top students, although they were 17.9 percent of all 3rd graders in 2014.

Table 4: Academically Advanced 3rd Grade Students by MCAS Math Scores, 2014

	Number of Top 12% Students	Percent of Top 12% Students	Percent of All 3 rd Grade Students
Asian	1,147	13.8	6.3
Black	268	3.2	8.2
Hispanic	642	7.7	17.9
Multi-race	362	4.4	3.4
Other*	16	0.2	0.3
White	5,881	70.7	63.9
Total	8,316		

*Includes Native American and Pacific Islander students

In addition to race and ethnicity, we analyzed some additional characteristics of the students in the top 12.4 percent, including students who were English learners (EL), low-income students, and students with disabilities (SWD) (Table 5). To be clear, these characteristics are not mutually exclusive. For instance, a student can be both an English learner and also be low-income. All of these students have also been counted in Table 4, by their respective race and ethnicity. All of these students (EL, low-income, and SWD) were underrepresented in the group of academically advanced students. English learners were 3.8 percent of the top students, while they were 10.8 percent of all 3rd graders. Low-income students were 17.7 percent of the top students, although they were 40.9 percent of all 3rd graders. And, students with disabilities were 4.2 percent of the top students, while they were 16.8 percent of all 3rd graders. In the gifted community, students who have disabilities and are gifted are commonly referred to as twice exceptional (2e) students. Three hundred forty-eight of the academically advanced 3rd grade students were students with disabilities. Again, we don't know how many of these students with disabilities are twice exceptional, but they certainly are academically advanced.

Table 5: Academically Advanced 3rd Grade Students by MCAS Math Scores by Other Characteristics, 2014

	Number of Top 12% Students	Percent of Top 12% Students	Percent of All 3 rd Graders
English learners	315	3.8	10.8
Low-income*	1,476	17.7	40.9
Students with disabilities	348	4.2	16.8

*Low-income is defined as students who received free or reduced-price lunch.

We follow those academically advanced students for three years asking: What happens to academically advanced students between 3rd and 6th grade? Of the students still attending Massachusetts public schools, we examined how many stayed in the top decile or top quintile of math MCAS scores in 4th, 5th, and 6th grades. (In 4th grade, we use the top 11% to allow for an even break between scores.).¹⁶ We find that half or slightly less than half of the academically advanced students remain in the top decile in 4th, 5th, and 6th grades (Table 6), and by far, the largest drop off is between 3rd and 4th grade. In 6th grade, 45.2 percent of the academically advanced students were still in the top decile of MCAS math achievers.

Table 6: Academic Trajectory of Academically Advanced 3rd Grade Students

	Number	Percent
Grade 4, Top 11% (2015)	3,780	49.9%
Grade 5 Top 10% (2016)	3,403	45.0%
Grade 6 Top 10% (2017)	3,438	45.2%

Racial and Ethnic Differences

Large differences exist in the academic trajectories of students of different races and ethnicities. In Table 7, we present the academic trajectories of students of different races and ethnicities who were all in the top 12 percent in 3rd grade. The vast majority of the Black and Hispanic 3rd grade academically advanced students do not remain in the top decile. By 6th grade, only 21.0 percent of the Black academically advanced 3rd grade students remained in the top decile and only 23.3 percent of the academically advanced Hispanic students remained in the top decile. In 3rd grade, there were 268 academically advanced Black students; in 6th grade, only 50 of those same Black students remained in the top decile. We find a similar drop off for academically advanced Hispanic students. In 3rd grade, there were 642 academically advanced Hispanic students, and by 6th grade, only 130 of those same students were in the top decile. In sharp contrast, we find that 71.8 percent of the top Asian students and 43.6 percent of the top white students in 3rd grade were still in the top decile in 6th grade. There is a steep and disproportionate drop off of academically advanced Black and Hispanic students.¹⁷

¹⁶ Over 90 percent of the academically advanced students as measured in 3rd grade remained in the Massachusetts public schools (7,637/8,318 students).

¹⁷ Note that this analysis examines the same students over time. The top decile of 6th graders might include other Black or Hispanic students who are not part of the top 12 percent in 3rd grade.

Table 7: Racial Differences of the Academic Trajectory of Academically Advanced 3rd Grade Students

	Asian (Top 12% 3 rd Grade)	Black (Top 12% 3 rd Grade)	Hispanic (Top 12% 3 rd Grade)	Multi-race (Top 12% 3 rd Grade)	White (Top 12% 3 rd Grade)
Grade 4 Top 11% (2015)	69.9%	27.1%	37.9%	51.1%	48.4%
Grade 5 Top 10% (2016)	69.5%	26.5%	29.5%	49.1%	42.8%
Grade 6 Top 10% (2017)	71.8%	21.0%	23.3%	46.0%	43.6%

If we broaden our lens a bit to examine which students remain in the top quintile, we find that more academically advanced 3rd grade students remain in the top fifth of distribution. Overall 69.7 percent of the academically advanced students remain the top quintile. Yet, the same discrepancies between students of different races and ethnicities exist (Table 8). While 43.3 percent of the academically advanced Black 3rd grade students and 47.3 percent of the academically advanced Hispanic 3rd grade students remain in the top quintile in 6th grade, more than half are no longer in the top fifth of the distribution. In sharp contrast, 89.1 percent of the academically advanced 3rd grade Asian students and over two-thirds (69.7%) of the advanced 3rd grade white students remain in the top quintile. More than half of the top Black and Hispanic students in 3rd grade were not in the top quintile of students in math by 6th grade.

Table 8: Racial Differences, Top 20%

	Asian (Top 12% 3 rd Grade)	Black (Top 12% 3 rd Grade)	Hispanic (Top 12% 3 rd Grade)	Multi-race (Top 12% 3 rd Grade)	White (Top 12% 3 rd Grade)
Grade 6 Top 20% (2017)	89.1%	43.3%	47.3%	68.9%	69.7%

Other Student Characteristics (EL, low income, students with disabilities)

Similar gaps exist for English learners, low-income students, and students with disabilities (Table 9). Among the academically advanced low-income students in 3rd grade, only one quarter (24.8%) of those same students remain in the top decile in 6th grade. A higher share of the academically advanced English learners and students with disabilities remain in the top decile. Specifically, 39.0 percent of the top English learners and 36.0 percent of the top students with disabilities remain in

the top decile in 6th grade. Broadening our lens to look at the top fifth of the distribution, we find more students remain in the top 20 percent (Table 10). Nonetheless, less than half of the low-income students who were academically advanced in 3rd grade remain in the top fifth of the math distribution in 6th grade.

Table 9: Academic Trajectory of Advanced Students by Other Characteristics

	English Learners (Top 12% 3 rd Grade)	Low-Income (Top 12% 3 rd Grade)	Students with Disabilities (Top 12% 3 rd Grade)
Grade 4 Top 11% (2015)	43.5%	34.0%	36.4%
Grade 5 Top 10% (2016)	39.0%	29.5%	34.1%
Grade 6 Top 10% (2017)	39.0%	24.8%	36.0%

Table 10: Other Characteristics, Top 20%

	English Learners (Top 12% 3 rd Grade)	Low-Income (Top 12% 3 rd Grade)	Students with Disabilities (Top 12% 3 rd Grade)
Grade 6 Top 20% (2017)	63.2%	49.1%	54.9%

Because this is a descriptive analysis, we can describe what is happening but the analysis does not explain why this is happening. What conclusions can we draw? It is noteworthy that most of the drop off is occurring between 3rd and 4th grade for all students. From this analysis alone, we cannot say what exactly is happening, but there are several possible explanations. First, it might be the case that MCAS, as an assessment, does not do a good job of measuring the achievement of the top students and, as a consequence, there is some measurement error of the achievement of the top students. Another explanation is that the school systems are not doing a good job of supporting the needs of advanced students, perhaps in making certain they have access to challenging materials or increased levels of rigor, which leads to the drop off throughout the elementary school years. A third explanation is a concept called regression to the mean, which refers to the statistical fact that very low or higher performers tend to move toward the group average over time. While these explanations are plausible and can possibly explain part of the drop off, none of them explain why the biggest drop is between 3rd and 4th grade. A fourth explanation could focus on an analysis of the standards assessed in 3rd and 4th

grades to determine if the 4th grade standards are markedly different in their difficulty, thus helping to explain the large drop off between those two grades.¹⁸

What is clear from this analysis is that there is a steep and disproportionate drop off of academically advanced Black and Hispanic students and low-income students (some of whom are the same individual students), as compared with other academically advanced students. **These data indicate that the needs of academically advanced Black and Hispanic and low-income students are not being met.** The vast majority of the students who are in the top decile in 3rd grade are no longer in the top decile by 6th grade. Even when we broaden our lens of achievement, more than half of these top students in 3rd grade are no longer in the top quintile of math achievers by 6th grade. These findings should prompt urgency to find ways to better meet the needs of academically advanced Black, Hispanic, and low-income elementary school students.

School Level Analysis

We also examine the achievement levels of the schools that the academically advanced 3rd grade students attend in 3rd grade and 6th grade. This analysis gives us information about the schools that students attend and the achievement levels of their schoolmates. To do this, we examine the overall student growth percentile (SGP) for the schools that academically advanced students attend. The SGP is calculated for all students in the school – not just the academically advanced students.¹⁹ The SGP data compares the performance of students with other students like them over time, asking is their MCAS performance growing more than, less than, or at the same rate of their academic peers? A student-level SGP score of 40 to 60 is considered typical growth, meaning that the student is growing roughly the same amount as other students who scored similarly on previous years of the MCAS test (academic peers). A score above 60 is considered high growth, meaning the student is making greater gains than his or her academic peers, and a score below 40 is considered low growth, meaning that the student is making smaller gains than his or her academic peers. SGPs can be aggregated across all students in a school to give a measure of the growth of students overall in a particular school. Typically, school-level SGPs are reported as the mean (average) SGP of all students in the school.

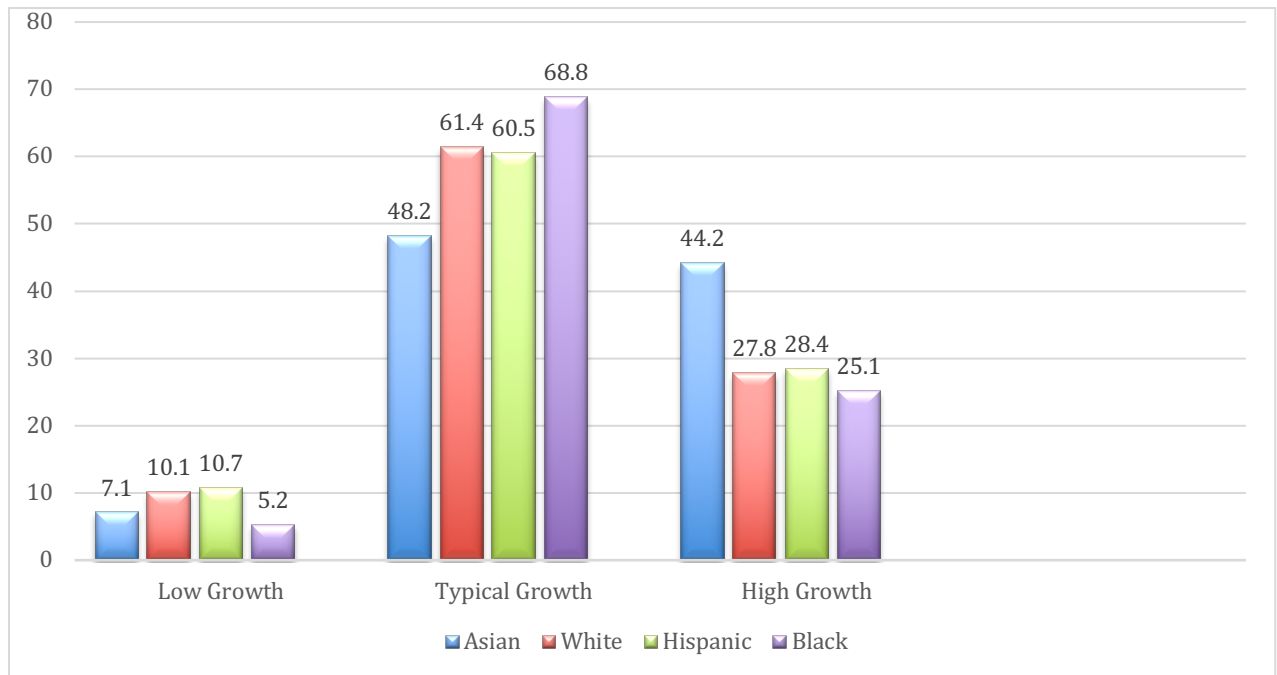
Figure 2 shows the school level growth (SGP) for schools that the advanced students attend in 3rd grade, broken down by their race. We find that almost 45 percent of the advanced 3rd grade Asian students attended a school that had a high level of student growth. In contrast, only 25 percent of the academically advanced Black 3rd graders attended a school that had a high level of growth. Academically advanced 3rd grade Hispanic students were the most likely to attend schools with low levels of growth.

¹⁸ One way to assess this question would be to do a similar analysis for 4th grade students. The analysis would identify the top decile of 4th grade students and then look at their academic trajectory over time to see if there is a comparable level of drop off as they progress.

¹⁹ Academically advanced students who attended K-3 schools are not included since those schools do not have a SGP, because 3rd grade is the first year that students take the MCAS.

Academically advanced white students were also more likely than other advanced students to attend schools with low growth in 3rd grade.

Figure 2: School Growth in 3rd Grade of Academically Advanced Students, 2014



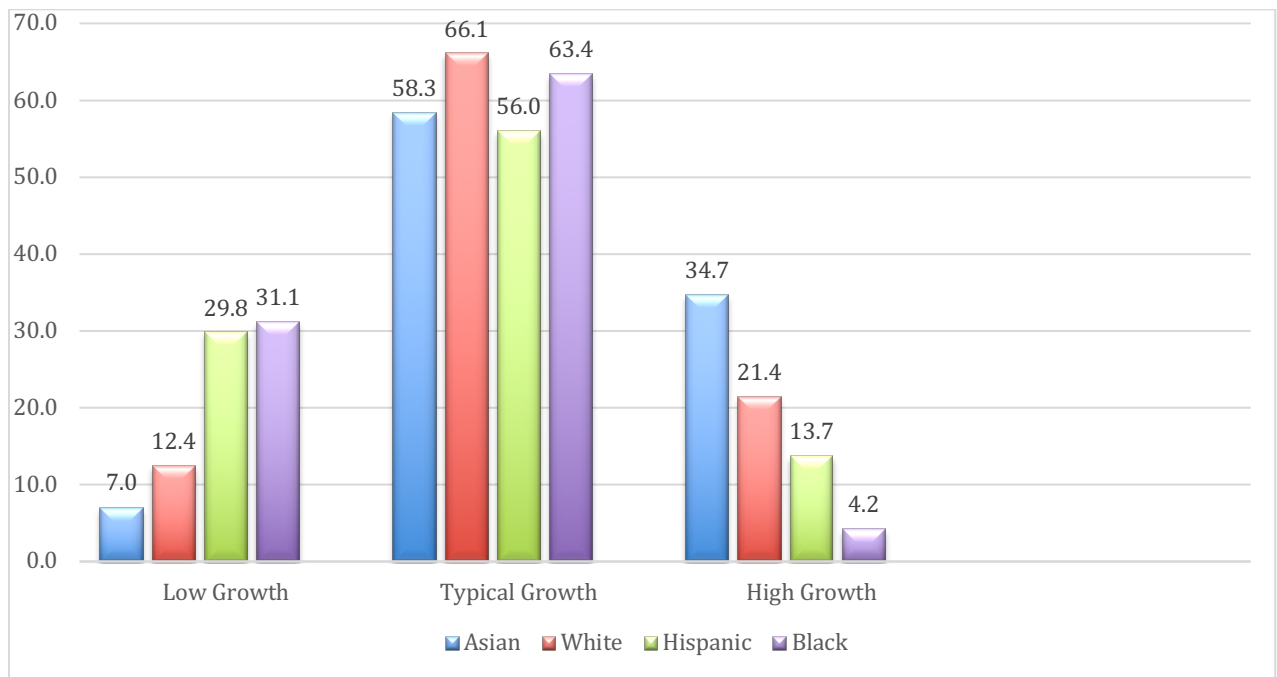
We next examine the growth levels of the schools that these same students (the academically advanced students in 3rd grade) attend in 6th grade. Between 3rd and 6th grade, most students (87%) have transitioned to a new school. In 3rd grade, many are in K-5 schools, and in 6th grade, most attend a middle school that is not the same school as their elementary school.

We find big differences in the student growth of the schools the academically advanced 3rd graders are now attending as 6th graders (Figure 3). Fewer than 5 percent of the academically advanced 3rd grade Black students attend schools with high growth in 6th grade and more than 30 percent of the academically advanced 3rd grade Black students attend schools that have low levels of growth in 6th grade. Nearly 30 percent of the academically advanced Hispanic students were also attending schools with low growth. In sharp contrast, almost 35 percent of the academically advanced Asian 3rd grade students are attending schools with high growth in 6th grade and fewer than 10 percent are attending schools with low growth.

In the previous analysis, we saw a large drop off in math achievement between 3rd and 4th grade for the academically advanced students. These data about the achievement levels of schools that academically advanced Black and Hispanic

students attend in 6th grade do not bode well for their future academic trajectory beyond 6th grade. The schools that academically advanced Black and Hispanic students attend in 6th grade are more likely to have low student growth, meaning that the students in those schools are making smaller academic gains, compared with their academic peers.

Figure 3: School Growth in 6th Grade of Academically Advanced 3rd Graders, 2017



Academic Research on Equity of Access and Opportunity for Advanced Learners

Numerous studies have documented the fact that low-income students and other traditionally underrepresented students have less access to gifted programs and other opportunities for learning. Jonathan Plucker and Scott Peters focus on what they call “excellence gaps.” They define excellence gaps as “differences between subgroups of students performing at the highest levels of achievement.” They find that very few low-income students score at the advanced level on any national tests. Similarly, they document large excellence gaps between students of different races and ethnicities (Plucker & Peters, 2016).

Massachusetts has some of the largest excellence gaps in the country, despite the fact that the percentage of students in Massachusetts scoring advanced on state and national assessments has increased (Plucker & Peters, 2016). At the national level, researchers have found that the mathematics excellence gap has increased over time (Rambo-Hernandez, Peters, & Plucker, 2016; Rambo-Hernandez, Peters, & Pluck 2017). To be clear, the excellence gap is not the same as the achievement gap which is focused on making certain that all students achieve basic proficiency. The excellence gap is focused on ensuring that all advanced learners can develop their

talents. A recent report *No. 1 For Some: Opportunity and Achievement in Massachusetts* raises questions about inequities, in and out of the school system in the Commonwealth. While they identify inequitable access to rigorous coursework in high schools as a concern, they do not refer to inequitable opportunities for advanced or gifted students (*No. 1 For Some*, 2018). The overall high ranking of Massachusetts conceals important racial, ethnic, and socioeconomic gaps.

Plucker and Peters suggest that it is critical that public schools offer advanced learner opportunities for all students. Otherwise, if not offered, families who are aware of supplementary options and can afford them will seek out opportunities at their own cost that are outside of the public schools, which then exacerbates gaps in educational achievement (Plucker & Peters, 2016). The lack of opportunity in schools for traditionally underserved students to develop their skills will inevitably lead to increases in the excellence gap, as families with financial resources and other forms of social capital will seek opportunities outside of school to enhance their children's learning.

Researchers have identified different strategies that can reduce the excellence gaps. A key opportunity exists with the process of identifying advanced students. Parent and teacher referrals, common methods of identification, have been shown to systematically miss potentially qualified students. In one research project, after a universal screening program for 2nd grade students was implemented, the number of economically disadvantaged students and minorities placed in gifted programs increased substantially. These increases were the result only of implementing universal screening; the eligibility standards did not change (Card & Giuliano, 2015). Universal identification strategies, which have been shown to be effective at increasing the number of traditionally underrepresented students, however, presume that a service or program exists to offer the students who are identified.

Using local norms is another strategy to increase the number of traditionally underserved students who participate in gifted education programs (Yaluma & Tyner, 2018). In this approach, the highest achieving students at each school are identified. The reference group for the gifted identification process is the student's same-grade peers at their school. For example, the cut score might be the top decile of students in each building. The underlying idea is that because these highest performing students are most likely to go underchallenged, they need additional services to be appropriately challenged. Although students within schools will meet different standards for inclusion than those across the district, using a local norm process is likely to yield greater socioeconomic and ethnic diversity in a district's gifted program. Researchers confirm that when districts use a local norm to identify students for gifted programming, the share of underrepresented students increases (Peters, Rambo-Hernandez, Makel, *et al.*, 2019).

Increasing teacher diversity is a third strategy to increase the participation of traditionally underrepresented students in gifted education. Researchers find that schools with larger numbers of Black teachers or a Black principal have greater

representation of Black students in gifted programs. They find similar results for Hispanic teachers and representation of Hispanic students in gifted programs. Diversification of the educator workforce appears to be an effective strategy to ensure greater access to gifted services for students of color (Grissom, Rodriguez, & Kern, 2017).

Researchers have identified strategies to increase the number of traditionally underserved students in gifted programs. Using universal screening and local norms have been shown to have a positive impact. In addition, a diverse educator workforce is also correlated with greater participation in gifted programs by Black and Hispanic students. These strategies, however, presume that a service or program exists to offer the students who are identified. The current hands-off approach of Massachusetts is not serving gifted students well, and this approach, with few gifted programs and not much attention to gifted education, has likely exacerbated the excellence gap. Academically advanced students who are black, Hispanic or low-income are not being well served.

The Challenge Program at Waltham Public Schools

Third graders are learning about the geometry of a hexagon. They are making two- and three-dimensional hexagons from different shapes. In another class on the science of precipitation, which builds on what all students learned in second grade about the water cycle, they learn about the phases of matter. They learn what it means to go from solid to liquid to gas, and what determines a solid, liquid, or gas. Building on that lesson, the teacher will make a cloud and bring in different types of snowflakes. Looking at the snowflakes under a microscope, the students will identify the hexagons and also learn about Wilson Bentley, a man who photographs and classifies snowflakes. Finally, in this unit, the students write a creative writing piece following the prompt, "Once upon a hexagon..."

Waltham Public Schools educate a diverse group of 5,600 students. The share of Hispanic students is nearly double the state average (39.6% vs. 20.0%), and the share of English learners is more than double the state average (22.2% vs. 10.2%). The share of economically disadvantaged students is also higher than the state average (34.5% vs. 32.0%). In 2018, 44 percent of the students in grades 3-8 met or exceeded expectation on the math MCAS, compared with 47 percent statewide. The district is making typical progress toward meeting its improvement goals, with an average student growth between 40 and 60.

More than a decade ago, the Waltham Schools began the Challenge Program, a pull-out program that serves over 200 academically advanced and gifted students in third through fifth grade. Waltham currently has three Challenge teachers who divide their time between six elementary schools. (A new dual language program in the district will be adding a third-grade classroom next year.) The students are pulled out three times per week for 30 minutes during the intervention period to give students opportunities to understand content at deeper levels and to apply their knowledge to grade-level curriculum and beyond. The Challenge teachers also provide additional support and resources to classroom teachers.

Students are identified for the Challenge Program during the spring of second grade using the CogAT assessments in three areas: verbal, quantitative, and non-verbal. Students are nominated by teachers or referred by parents to take the assessment. For students who did not meet the criteria, they may take the assessment again the following year, and there is also a guest program if classroom teachers believe that they could benefit from the program. The guest program allows the district to include students who might have been missed by the identification process but whom could still benefit from the services provided by the program.

The district has been analyzing the demographics of the students who participate in the Challenge Program to determine whether they match the demographics of the district as a whole. They have made progress in this respect, but there are still differences. There is not yet equal representation across schools or students. Because of concerns about equity, the district is considering administering the CogAT test to all second graders.

The goal of the Challenge Program is similar to the goal for all students. It seeks to meet the needs of every child. As one teacher explains, “All kids have the right to learn.” Henry Taraz, M.Ed., the lead teacher for the elementary science and challenge program at Waltham Public Schools, developed the Project Based Learning curriculum®. The focus is on enrichment, which builds upon fundamental skills gained primarily in the grade level classrooms. The three anchors of Project Based Learning are: interdisciplinary, inquiry-based, and hands-on. It is also about engaging in evidence-based discussions. The unit about the geometry of the hexagon comes from this curriculum.

The Challenge teachers also seek to meet the social-emotional needs of the students. They do this through collaborative projects and embracing all students’ differences. The asynchronous development of gifted students often means that the development of their cognitive and social- emotional skills are uneven. If unattended, gifted students can feel lonely and as if something is wrong with them, potentially leading to depression and anxiety. The Challenge Program allows students find others like them and also supports them in their pull-out sessions by developing relationships with an understanding of their needs.

One of the Project Based Learning units that students love is the space science when they learn about black holes in fourth grade. The solar system is part of the standards in third grade for all students. The Challenge Program looks at the life cycle of the stars in fourth grade. Questions are encouraged. When a fourth-grade student asked why there is a void, and how did the Big Bang theory come up, the answer to that question will be discussed.

VIII. The Social Emotional Well-Being of Advanced and Gifted 3rd Grade Students

The social-emotional well-being of gifted students is a concern for many people, including district leaders, parents, researchers, and other stakeholders. Because Massachusetts does not have a definition of giftedness and does not collect data on gifted students, we do not have the ability to assess the social-emotional well-being of gifted students. Because this is a significant limitation, more research is needed to understand the social-emotional well-being of gifted students in Massachusetts.

In this section, we assess the social-emotional well-being of academically advanced students as measured by the Views on Climate and Learning (VOCAL) survey and also by looking at their suspension and attendance rates.²⁰

About the VOCAL Survey

The Department of Elementary and Secondary Education has recently started administering the VOCAL survey to students in grades 5, 8, and 10 to understand their views of their school climate. The questions are organized around nine topics within 3 dimensions of school climate – engagement, safety, and environment (Table 11). Because the VOCAL survey is optional for districts, schools, and students, not all students participated in it. Like the previous analysis of the academic trajectory of academically advanced third grade students, we follow academically advanced students from 3rd grade to 5th grade and analyze their views on school climate. Note: this is not the same cohort of students as in the previous section. The previous analysis examined students who were in 3rd graders in 2014. This analysis examines students who are 3rd graders in 2016.²¹ Also, because VOCAL survey is voluntary, not all students took it. We were able to match results for 5,276 students out of the 6,815 students who comprised the top 10 percent of 3rd grade students (77%). Statewide participation was 84 percent in 5th grade.²² Finally, because 2018 was the first year

Key Findings About Social-Emotional Well-Being

We do not find any meaningful differences in the views of academically advanced students and other 5th grade students regarding overall school climate, engagement, and environment. Because of the limitations of this analysis, more research is needed to understand this issue.

Racial and ethnic differences exist between the experiences of the academically advanced students as 5th graders, although these differences might reflect the different schools that the students attend.

Academically advanced black and Hispanic students report substantially less positive school climates compared with other academically advanced students.

Academically advanced economically disadvantaged students report less safe schools than other academically advanced students.

Academically advanced students with disabilities report less positive school climates than other academically advanced students.

Academically advanced female students report more positive school climates, compared with academically advanced male students.

Academically advanced students had higher rates of attendance and lower rates of suspension in 3rd, 4th, and 5th grades, compared with their peers.

²⁰ I want to thank Shelagh Peoples and Kate Sandel at the Department of Elementary and Secondary Education for their analysis of the VOCAL data (Peoples) the suspension and attendance data (Sandel).

²¹ Our years of analysis are different because 2018 was the first year that the VOCAL survey was administered.

²² Similar to the analysis in the previous section, we focus on the top 10 percent, because it gives us a larger number of students. We did the same analysis for the top 5 percent of students, and the findings are similar for the top 5 percent and the top 10 percent.

of implementation of the VOCAL survey, we do not have any longitudinal trends with which to compare this data. We also cannot examine the social-emotional well-being of these same students in middle or high school.

To help interpret the VOCAL survey, the Department has developed several indices. There is an overall school climate index score, an engagement index, a safety index, and an environment index. There is also a bullying index, which is a subset of seven questions within the safety index. These indices are a composite score based on the results of all the questions within the topic area. The indices are set to a mean of 50 and have a standard deviation of 20. A higher index number reflects more favorable school climate. Differences on the indices of about 3 to 4 points or more represent a meaningful difference in school climate. (3 points at the student level is roughly an effect size of 0.15, which is equivalent to a typical student at the 50th percentile moving up to the 56/57th percentile). This degree of difference also starts to pick up some noticeable difference in the raw item response frequencies (which make up the index scores).

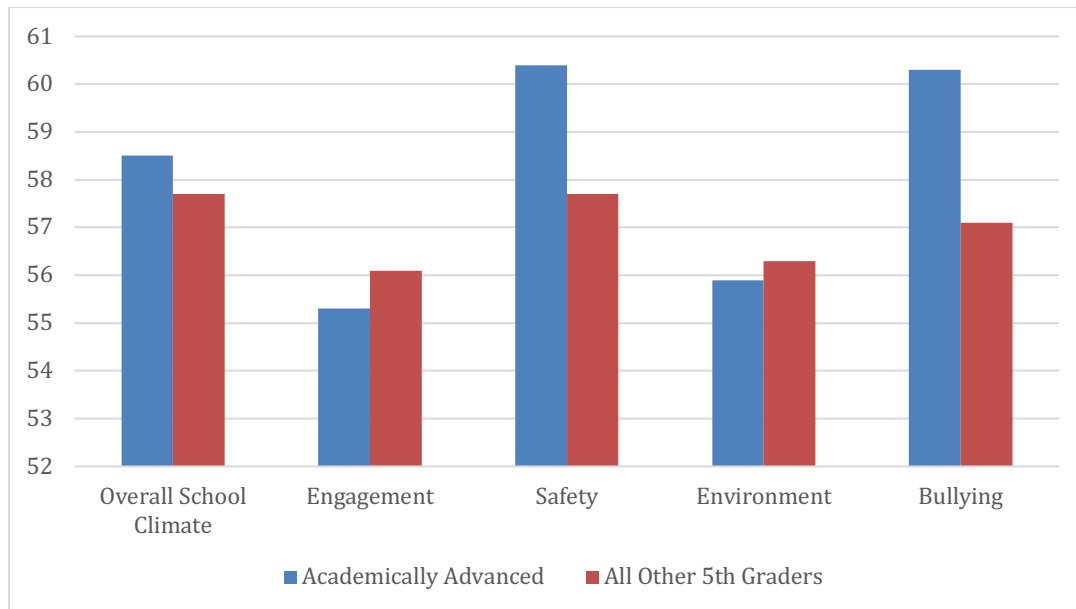
Table 11: The VOCAL Survey

Engagement	Safety	Environment
The extent students feel the adults/students value diversity, manage dynamics of differences, and avoid stereotypes.	The extent students feel a bond to the school, and the extent adults/students support the emotional needs of students.	The extent that students feel the instructional environment is collaborative, relevant, challenging and supportive of learning.
The extent students feel there is a social connection and respect between staff/teachers and students, and between students and their peers.	The extent that students feel physically safe within the school environment.	The extent that students have access to systems support that effectively support their social, emotional and mental health well-being.
The extent students feel engaged intellectually, emotionally, and behaviorally in the classroom, and the extent that students or their parents are engaged in school life.	The extent that students report different types of bullying behaviors occurring in the school and the extent that school/staff/students try to counteract bullying.	The extent that discipline is fair, applied consistently and evenly, and a shared responsibility.

We begin by comparing the VOCAL results of the top decile in the math MCAS (a scaled score of 274) of 3rd grade students in 2016 and who took the VOCAL survey as 5th graders in 2018 with the VOCAL results of all other 5th grade students. We did not find any meaningful differences in their views about overall school climate, engagement, and environment. As a group, academically advanced students

reported relatively safer schools in 5th grade, when compared with other 5th grade students. They also report less bullying.

Figure 4: Academically Advanced 3rd Grade Students in 5th Grade, Compared with Other 5th Grade Students



In addition to looking at the index measures, we also examined the results of 7 individual questions that we thought might be the most relevant to gifted students' social emotional well-being. (All of the VOCAL questions are available on DESE's website.). All questions on the VOCAL survey are based on a 4-point scale: always true, mostly true, mostly untrue, and never true.

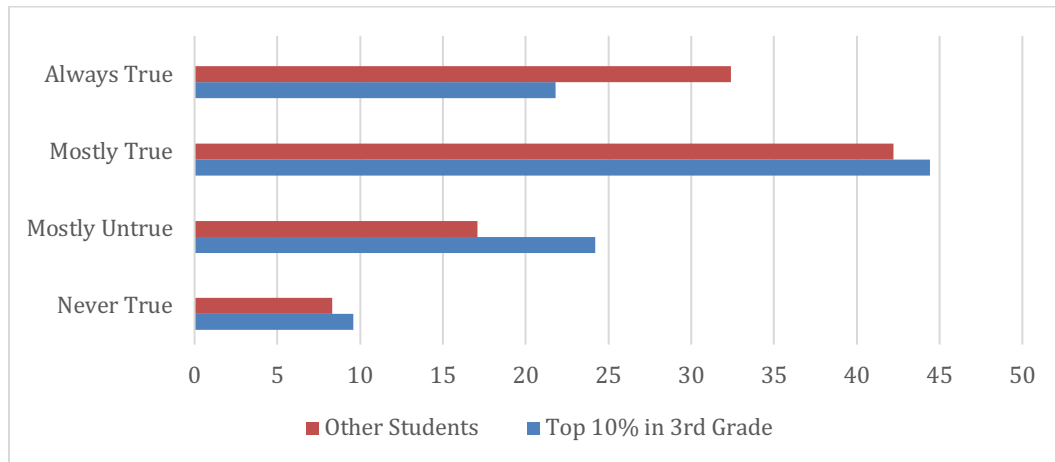
The 7 questions include:

- Teachers at this school accept me for who I am;
- I get the chance to take part in school events (e.g. science fairs, music shows);
- My teachers use my ideas to help my classmates learn;
- When I need help, my teachers use my interests to help me learn;
- I feel safe at school;
- My schoolwork is challenging (hard) but not too difficult;
- When I am home, I like to learn more about the things we are learning in school.

Of these seven individual questions, we found meaningful differences (differences of 7 percentage points or greater) in 3 of the questions. We find differences in the question: I get the chance to take part in school events (e.g. science fairs, music

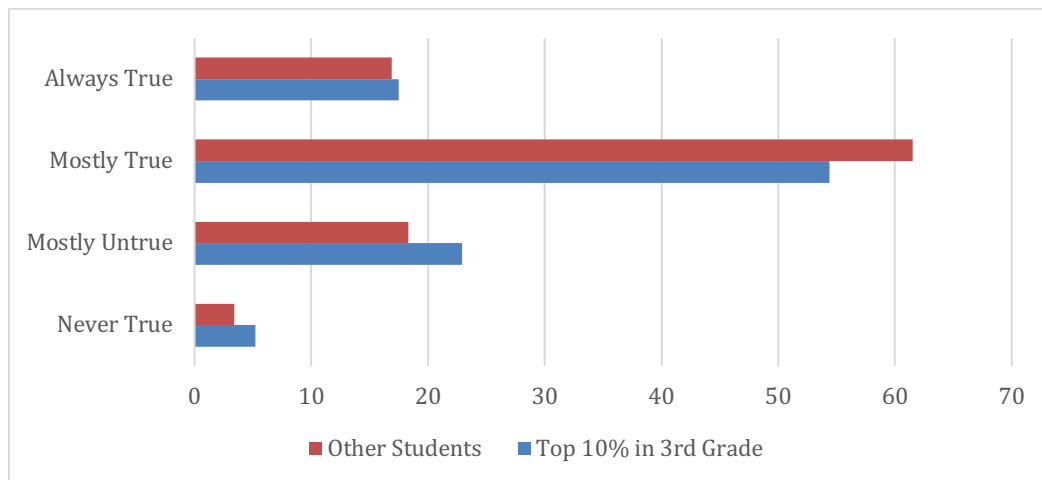
shows.). Academically advanced students were more likely than their peers to report that this is always true when they were in 5th grade (65.4% vs. 54.6). We also find differences in the responses to the question: My teachers use my ideas to help my classmates learn. When in 5th grade, academically advanced students were less likely than their peers to report that this is always true (21.8% vs. 32.4%) and more likely to report that this was mostly untrue (24.2% vs. 17.1%) (Figure 5).

Figure 5: When I Need Help, My Teachers Use My Interests to Help Me Learn



We also found meaningful differences in the responses to the question: My schoolwork is challenging (hard) but not too difficult. Academically advanced 3rd grade students were less likely than their peers to report that this was mostly true (54.4% vs. 61.5%) (Figure 6).

Figure 6: My Schoolwork is Challenging (hard) But Not Too Difficult



Racial and Ethnic Differences

We found differences in the experiences of the academically advanced Black and Hispanic students as 5th graders, as compared with their other academically advanced peers, although it appears that some of the differences reflect the different schools that the students attend, which will also be discussed. Specifically, academically advanced black students report substantially less positive school climates compared with other academically advanced students. Academically advanced Hispanic students also report less positive school climates. In addition, academically advanced Black students report substantially less safe schools and less supportive environments compared with their Asian and white peers.²³

We also analyzed the same seven individual questions, broken out by race and ethnicity. We found differences between students of different races and ethnicities in the following questions:

- Teachers at this School Accept Me for Who I am: In 5th grade, academically advanced Black students less likely to believe this, compared with other academically advanced students;
- I Get the Chance to Take Part in School Events: In 5th grade, academically Black and Hispanic students less likely to have a chance, compared with white academically advanced peers;
- My Teachers Use My Interests to Help Me Learn When I Need Help: In 5th grade, academically advanced Black students less likely to believe this, compared with other academically advanced peers;
- My Schoolwork is Challenging (hard) but Not Too Difficult: In 5th grade, academically advanced Asian students less likely to believe this, compared with other academically advanced peers; and
- I Feel Safe at School: In 5th grade, academically advanced Black students less likely to feel safe at school, compared with other academically advanced peers.

According to the VOCAL survey, academically advanced Black students, as measured in 3rd grade, report less favorable school climates on a range of topic areas in 5th grade, including safety and supportive environments, compared with other academically advanced students.

²³ We do not find meaningful differences between the reports about school climates of academically advanced Black students and other 5th grade Black students.

Other Student Characteristics (EL, Economically Disadvantaged, Students with Disabilities)

We also found differences between academically advanced (as measured in 3rd grade) economically disadvantaged students and their academically advanced peers in 5th grade and academically advanced students with disabilities (as measured in 3rd grade) and their academically advanced peers in 5th grade. Specifically:

- In 5th grade, academically advanced economically disadvantaged students report less safe schools and less favorable bullying climate, compared with other academically advanced students;
- In 5th grade, academically advanced students with disabilities report less positive views of school climate; lower engagement, less safe schools, and less supportive environments, compared with other academically advanced students; and
- In 5th grade, academically advanced English learners do not differ from other academically advanced students in their views on school climate, engagement, safety, environment, or bullying.

Both academically advanced students who are economically disadvantaged and who have disabilities report less favorable school climates compared with their academically advanced peers. We did not find not meaningful differences between academically advanced economically disadvantaged students and other economically disadvantaged students. In contrast, academically advanced students with disabilities report less positive school climates, lower engagement, and less supportive environments than other students with disabilities (those who were not academically advanced in 3rd grade).

Gender Differences

We found gender differences between the experiences of academically advanced female and male students, as measured in 3rd grade. In particular:

- In 5th grade, academically advanced female students report more positive views about their school climate, compared with their academically advanced male peers;
- In 5th grade, academically advanced female students report feeling more safe in school, compared with their academically advanced male peers; and
- In 5th grade, academically advanced female students report more supportive environments than their academically advanced male peers.

Academically advanced female students report more favorable school climates in 5th grade, as compared with academically advanced male students.

School Effects

Finally, we examined the school climates of the academically advanced students in 5th grade, as measured by their 3rd grade scores on math MCAS, with the other 5th grade students at their schools. We were not able to do this comparison for every student. We were only able to do this analysis for schools that had 10 or more students in the top decile and whose student climate index reliability was 0.7 or higher. There were 156 schools that met these requirements. As a result, we could examine the 5th grade school climate of 2,729 students who were academically advanced in 3rd grade, which was 52 percent of the full VOCAL sample. Because the results are based on a smaller number of students, the reliability of the information is limited, and the findings may not be representative of the other 48 percent of academically advanced students.

In our analysis, we did not find meaningful differences in their reports of overall school climate, engagement, safety, and environment scores between academically advanced students in 5th grade and the other 5th grade students within their same schools. This finding, while not conclusive, raises questions about how much of the other differences we found in our analyses of the VOCAL data are a result of the different schools that students attend (e.g. academically advanced Black students attend different schools compared with academically advanced Asian students). Further analysis is needed to confirm this finding, although it is noteworthy that this finding is consistent with our school-level SGP analysis that finds great variation in the overall academic achievement of the schools academically students attend.

Attendance and Suspension Data

We also examine attendance and suspension data of the academically advanced 3rd grade students as another measure of their social and emotional well-being. This analysis compares attendance and suspension rates of the academically advanced 3rd graders in 2016 (the same students as in the VOCAL analysis) with all other students in each year of 3rd, 4th, and 5th grade to determine whether there are any noticeable differences. Like the other analyses, this analysis is also limited by our inability to separately analyze attendance and suspension data of gifted students. In addition, the results of this analysis might differ if we examined the attendance and suspension data of older students who are academically advanced.

The attendance rate of the academically advanced students is higher than the other students in each year. The difference is about 1–1.2 percent in all three years. This difference is small but statistically significant. We also look at attendance rates broken out by race and ethnicity. Again, the academically advanced students have higher rates of attendance, compared with their racial peers, and the differences are statistically significant, except for Asian students. This remains true when we look at attendance rates for economically disadvantaged students, English learners, and students with disabilities. The differences are small but tend to be statistically

significant. The academically advanced students have higher rates of attendance, compared with their peers in 3rd, 4th, and 5th grades.

Overall, suspension rates in elementary schools are low. The academically advanced students have lower suspension rates in all years, and the differences are statistically significant. Because of the low rates, we had to group the students of color together. We find that suspension rates for academically advanced 3rd grade white students were lower than other white students, and again, the differences are statistically significant. Similarly, the suspension rates for academically advanced 3rd grade students of color (Black, Asian, Hispanic, and other) are lower than for other students of color, and these differences are statistically significant. Finally, the suspension rates for academically advanced 3rd grade economically disadvantaged, English learners, and students with disabilities are lower than other students. Overall, the suspension rates of academically students is lower than their peers.

Academic Research on the Social Emotional Needs of Gifted Students

The findings from research about social-emotional needs of gifted students is mixed. Some research finds that gifted students have unique social-emotional needs, while other research concludes that the social-emotional development of gifted students is equal or even more mature than that of their peers (Plucker & Callahan, 2014). When people claim that a lack of gifted education leads to social-emotional harms for gifted students, there is also ambiguity about the cause of the harm. The harm could result from their different social-emotional needs. Alternatively, the harm could result from the fact that all people have a need to learn, and if that need is not met, a harm ensues. A lack of systematic research about the social and emotional needs limits our knowledge base on this topic.

As an example, perfectionism is a trait often associated with gifted students. Yet, research studies are inconclusive about whether this trait is, in fact, more common in gifted students. Some of the inconsistencies may result from different definitions of giftedness, inconsistencies in the measurement of perfectionism, and different ages of the study participants. Recent efforts have started to standardize the approaches to studying perfectionism, which will hopefully yield findings about how different educational contexts may influence the development of perfectionistic tendencies of gifted students (Neumister, 2016).

Research that assesses depression in gifted children is also mixed. After reviewing the data on depression in gifted students, two researchers conclude:

Taking all of these findings into consideration, it seems that we do not have sufficient empirical evidence to support the statement that gifted students are less depressed than nongifted students. Nor do we have sufficient evidence to say that gifted students are more depressed than nongifted students (Cross & Anderson, 2016).

The researchers conclude that factors other than a person's giftedness, such as home life, educational environment, and characteristics of the student have not

adequately been taken into account. In addition, there is limited research examining multicultural differences.

Limited research findings do not mean that social emotional issues associated with giftedness do not exist. More systematic research into these issues is needed to understand the social-emotional needs of gifted students.

IX. Concluding Thoughts and Recommendations

The current approach of Massachusetts, with few gifted programs and not much attention to gifted education, is not serving students well. The Commonwealth can and should take actions to make certain that all students, including advanced and gifted students of all races, ethnicities, and socioeconomic characteristics, have opportunities to engage in meaningful learning and rise to their potential. Massachusetts will benefit from unleashing the untapped potential of high-achieving students.

As should be clear, Massachusetts is an outlier in the country in its hands-off approach to identifying and serving gifted students. Because the Commonwealth does not define giftedness or collect data on gifted students, it is not possible to quantify with precision the consequences of the state's hands-off approach.

Our analysis of the academic trajectory of academically advanced students quantifies at least part of the harm and should bring an urgency to the issue. **The needs of academically advanced Black, Hispanic, and/or low-income students are not being met.** The steep and disproportionate drop off of academically advanced Black, Hispanic, and/or low-income students between 3rd and 6th grade underscores the imperative to redouble efforts to better meet the needs of advanced learners, especially those who are traditionally underserved. If gifted programming is not offered, families with resources and access to other types of social capital will seek out opportunities outside of the public-school system (e.g. private schools, out-of-school math programs, and other types of enrichment) for their children at their own cost. Families with resources have more opportunities to make certain that their children are able to advance their learning.

Nationally, Massachusetts has some of the largest excellence gaps, defined as the gap in achievement between subgroups of the highest achieving students. The state's excellence gaps are large despite the state's overall top ranking on national tests. Our analysis documents how the excellence gap widened between 3rd and 6th grade. Three-quarters of the Black, Hispanic, and/or low-income students who started in the top 12 percent in 3rd grade were no longer in the top decile by 6th grade.

The lack of programs and policy can lead to other harms, as well. Contrary to the beliefs of some, gifted students will not just be fine on their own. According to

parents who submitted written commentary and attended the public meetings, the lack of gifted services and lack of understanding about the needs of gifted students has led to harms that include isolation, behavioral disruptions, frustration, boredom, depression, anxiety, lack of development of skills, such as persistence, loss of curiosity, and disengagement from school. Parents want policymakers to understand that these harms are real, and their children are suffering. The promise of a public-school system that serves all children, includes meeting the needs of advanced and gifted children. Because of the lack of definition and data, we don't know how many gifted students there are in Massachusetts, but a reasonable estimate is 6–8 percent of the school population, or 57,000-76,000 students, and that number would be higher if students who are capable of achieving beyond grade level are also included.

Beyond parental concerns, researchers have examined opportunities for gifted students to learn while in school. A recent study found that over three years high-achieving 3rd-grade students had slower growth during the school year, compared with the growth of average students. In contrast, higher achieving students maintained the same rate of growth during the summer, while average students had no growth in the summer (Rambo & McCoach, 2015). Similarly, in another study, researchers found that the highest achieving students had the slowest growth during the school year. Karen Rambo-Hernandez, one of the study's authors, posits, "There was a real question as to whether or not those students were benefiting at all from their time in school" (Sparks, 2019). At its core, gifted education is about meeting the needs of all students, allowing them the opportunity to learn and be challenged.

Gifted programming can be thought of in two broad categories: acceleration and enrichment. Acceleration programs enable students to advance either by grade or by subject matter more quickly than their peers. In contrast, enrichment programs allow students to go deeper into the content material or access different content that is appropriate to their levels.

Gifted programming can lead to positive student outcomes. Within enrichment programs, significant variation exists in terms of goals, characteristics of students served, amount of hours, duration of program, content of the program, and other factors, as well. For instance, some programs are separate classes. Other programs pull children out of the classroom each week, while others push into the regular classroom. With the extant research, it is challenging to identify which characteristics of enrichment programs result in positive impacts for different groups of students. Research finds positive impacts for gifted students of some enrichment programs, while in other interventions there is no observed impact. While enrichment programs can build off of successful models, more research is needed to identify the attributes of effective enrichment programs and which programs might be most effective for which students.

Acceleration is an intervention that has consistently been shown to be effective for gifted students in terms of learning gains and longer-term outcomes and is also usually found to be effective in terms of social emotional adjustments for the students. Acceleration has the added benefit of being relatively low-cost and easy to implement.

One district leader with whom I spoke about gifted education reported that Massachusetts “just has not had the infrastructure or even the teacher training. It just has not been part of the culture of schools.” The leader also referred to concerns about equity and that historically more privileged families and their children have benefitted more from gifted education. He wonders, “Have we over-corrected? Probably, and how do we think about a system where there’s an equitable approach to giving gifted and talented education?”

The research findings from this report lead to the following recommendations:

✓ **Create a statewide taskforce**

This report should be viewed as a launching pad to the next steps. Many open questions remain to be determined, and a larger group of people should be a part of the conversation. The taskforce, funded by the Legislature, should include a range of stakeholders and experts, who would consider the purpose and goals of gifted education, and the goals should then guide the priorities. The taskforce will help establish a common understanding of both gifted students and gifted education. The taskforce’s charge should include (but not be limited to):

(i) **Define giftedness and measures to assess giftedness**

The lack of definition of giftedness limits all discussions of gifted students. The state needs more than a conceptual definition; the definition must be operational. Discussions about the means of identifying students through multiple measures must be held in tandem with decisions about the definition. These decisions should be guided by the following questions: What do we mean by giftedness? How will we know if a student is gifted? Will our approaches to identifying gifted students lead to equitable access to services?

(ii) **Determine the most effective way to collect data on gifted students**

Without data on gifted students, our ability to know about their academic and social-emotional well-being will always be limited. Gifted students should be identified and reported as such in school information systems to enable analysis of this subgroup of students. Part of the data should include exit surveys for all students who leave public schools. Although many districts collect exit data on students, they may fail to ask the reasons *why* the student is leaving, and currently, there is no state aggregation of data on students who leave. Policymakers should systematically examine which students are leaving the public-school system and why. This information will contribute to a broader understanding about the ability of public schools to meet the needs of students. Data on gifted students in Massachusetts will enable research on attributes of effective gifted services in our state.

(iii) Consider best practices of other states and districts

Because other states and districts have much more experience in meeting the needs of gifted students, Massachusetts should draw upon their expertise as it considers next steps for the Commonwealth. It would be worthwhile to examine evaluations and other outcome data from states that have robust gifted programs. In addition, it would be instructive to examine the policies and practices of states that have successfully narrowed the excellence gaps.

✓ Establish state policy and guidelines on acceleration.

Massachusetts currently has no policy on acceleration, despite the fact that the academic research consistently finds positive outcomes for students and does not find social-emotional harms. Acceleration can take many forms, including early entrance to kindergarten, subject-level, full-grade, and other forms as well. Acceleration offers an immediate low-cost opportunity to meet the needs of gifted students that is relatively easy to implement.

✓ Track and report on the excellence gap; identify and implement strategies to close it.

Massachusetts's #1 ranking on many national measures conceals the state's excellence gaps, which are differences between subgroups of students performing at the highest levels of achievement. The excellence gaps in our state are among highest in the country. The Department of Elementary and Secondary Education has initiatives to increase educator diversity that have the potential to help shrink some of the excellence gaps. In addition, researchers have identified a range of strategies to develop talent equitably. The analysis showing the steep and disproportionate drop-off of academically advanced Black, Hispanic, and/or low-income students should add urgency to this work. DESE should track and publicly report on the state's excellence gaps to make certain current initiatives are having their intended effect, to ensure that all advanced students have the opportunity to develop their talents, and also identify and implement additional strategies to close the excellence gaps in this state.

✓ Include instruction on the learning needs of gifted students as part of teacher training for all teachers

Teachers are responsible for the education of gifted students; yet, most teachers in Massachusetts receive little or no training about the learning and social-emotional needs of gifted students. Instruction about gifted students could be incorporated into educator preparation programs in a variety of ways. Education preparation programs should develop elective courses on teaching gifted students, but elective courses are not sufficient to ensure that all teachers have some knowledge about the needs of gifted children. One possibility would be to embed a unit on gifted children within existing required courses, such as those focused on teaching students with disabilities. Units on gifted children could also readily fit into courses on Universal Design for Learning or other courses on differentiation. The Department of Elementary and Secondary Education should audit all educator preparation courses to determine where units on gifted children would be best fit and then work with

educator preparation programs to incorporate these units into courses. As part of their preparation, all teachers should learn about giftedness, how to recognize the indicators, and strategies to meet the needs of gifted students. Even in districts with pull-out programs, students spend the majority of their time in regular classrooms. For existing teachers, a broader range of professional development opportunities should either focus on or at least include gifted students as part of the focus.

✓ Hire staff at the Department of Elementary and Secondary Education with expertise in gifted students and gifted education

A staff member is needed at the Department whose principal, if not sole responsibility, is gifted education. Districts, schools, and families need support. Districts are seeking models of gifted education programs and lessons, including from beyond Massachusetts. They would like exemplars of advanced or gifted and learning tasks, and they would like guidance on assessments and other policy issues relevant to meeting to the needs of advanced and gifted students. A staff person at the Department can help fill this current void.

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