

Massachusetts, United States of America

Introduction

1. This note outlines the key feature of the school system in Massachusetts, U.S.A. It is intended to inform wider work on understanding high-performing education systems internationally, as an input to the Tomorrow's Schools review.
2. Massachusetts is often regarded as having the best public schooling system in the U.S.A., prompting the question of what lessons can be learned from its systems and processes.

Demographic

3. In 2017, the state of Massachusetts had a population of 6.86 million and 953,748 students in the schooling system¹, which is somewhat larger than New Zealand's population of nearly 4.8 million (with 800,334 students) in the same year.
4. Like New Zealand, the student body in Massachusetts is characterised by diversity. 38.7% of pupils in Massachusetts identify with ethnic minorities, most of which are Hispanic or Latino (19.4%), African American (8.9%) or Asian (6.7%)². This ethnic diversity has had language-related implications: 9.5% of students in Massachusetts are classified as an 'English language learner' and English is not the first language for a fifth of students.
5. Massachusetts is also characterised by significant socioeconomic disparities. While the state of Massachusetts is among the top five states in the U.S.A. for household income, it is also one of the most unequal, and 30.2% of students are classified as economically disadvantaged.

Structure of the system

6. The state of Massachusetts supports a range of choice in school and education options for primary and secondary students, as well as adult learners. These options include 'traditional' public schools, charter schools, vocational and technical schools, and virtual schools. Parents may also choose to send their child to a private or parochial schools or educate their child at home (with prior approval of the home district).
7. There are 1847 schools in Massachusetts, including 80 charter schools, two virtual schools and 25 educational collaboratives³. While most Massachusetts K – 12 students attend their local public school (76%), there is a sizeable minority attending an academic regional school (8.8%) and private schools (just under 8%). The remaining students attend vocational/technical regional schools, charter schools, an out-of-district public school, or are home-schooled.

¹ <http://profiles.doe.mass.edu/staterc/enrollment.aspx?fyCode=2017>

² In comparison, New Zealand's student population is even more diverse, with ethnic minorities representing close to half of the student body. In 2017, just 50.1% of pupils identified as NZ European, down from 65.7% two decades ago (1997). The rest of the student body are predominately Maori (24%), Asian (11.8%) and Pacifica (9.8%).

³ An educational collaborative is a written collaborative agreement to provide shared programs and services, including instructional, administrative, facility, community or any other services, as long as a primary purpose of these shared programs and services is to complement the educational programs of member school committees and charter school boards in a cost-effective manner.

Innovation

8. To respond to the diverse learning styles and circumstances of learners, Massachusetts offers some innovative educational approaches, such as:
- The Expanded Learning Time initiative: This program enables schools to significantly expand the hours and days in their school schedules to create integrated learning experiences for all students and to provide more time for additional instruction and enrichment opportunities for the core subjects⁴.
 - 21st Century Community Learning Centres (CCLC): CCLC programmes operate during out-of-school hours and engage students in challenging, creative, project-based activities that connect to and support school day learning while promoting self-expression, critical thinking and problem-solving skills⁵.
 - Innovation Schools: The 'Innovation Schools' initiative provides educators and other stakeholders with the opportunity to create new in-district and autonomous schools that can implement creative and inventive strategies⁶. Innovation Schools operate with increased autonomy and flexibility in six key areas (curriculum, budget, school schedule & calendar, staffing, professional development and school district policies), with the goal of establishing the school conditions that lead to improve teaching and learning.

Achievement

9. The Massachusetts school system is widely regarded as the best public school system in the U.S.A. Massachusetts is one of just three (along with Connecticut and Florida) who have elected to receive their PISA results at the state-level. In the 2015 PISA round (the first time state-level reporting was used), Massachusetts scored well above both the U.S.A and international averages. Because PISA result tables are typically ranked at the country level, Massachusetts does not have 'formal' PISA rankings, but these can be determined from the raw score data, as follows:
- In maths, Massachusetts scored 500 (only marginally better than New Zealand at 495). Although this was well above the U.S.A. average maths score of 470, it equates to a ranking of 20th (out of 72 countries).
 - In science, Massachusetts scored 529 (moderately above New Zealand's score of 513). This was well above the U.S.A. average of 496 and placed it 6th equal with Macau.
 - In reading, Massachusetts scored 527 (well above New Zealand's score of 509). This was also well above the U.S.A. average of 497 and placed it 2nd equal (along with Canada and Hong Kong).
10. As 2015 was the first PISA round where state-level reporting was used, it is not feasible to comment on the long-term PISA trends for Massachusetts alone. At the country level, however, the U.S.A. has generally had a good improvement

⁴ <http://www.doe.mass.edu/redesign/elt/>

⁵ <http://www.doe.mass.edu/redesign/elt/21cclc.html>

⁶ <http://www.doe.mass.edu/redesign/innovation/>

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trajectory for its PISA scores but, like New Zealand, their PISA results also reflect significant disparity between sub-groups⁷. While equity of PISA scores in the U.S.A has improved since 2006, disadvantaged students are still 2.5 times more likely to be low performers than advantaged students in the PISA tests. Like New Zealand, the U.S.A. also has significant disparity of outcomes in PISA testing between the top performers and the bottom, accounting for 9% and 20% of U.S.A. students respectively.

11. Massachusetts was the top ranked state in the 2018 Best High School ranking⁸. These rankings based on which states have the largest proportion of their high schools earning gold and silver medals. Gold and silver medal awards reflect which schools are most successfully preparing students for college, based on data about students participating in and achieving passing scores on Advanced Placement and International Baccalaureate tests. For schools to be eligible for a gold or silver medal, students must also do well on the relevant state-wide tests and achieve high graduation rates.
12. Despite Massachusetts' leading performance in the high school rankings, it is not the top performer in respect to graduation rates. While, in the 2015/16 year, the public high school graduation rate in Massachusetts (88%) was above the U.S.A. average (84%)⁹, it was still behind Iowa (91%); New Jersey, West Virginia (90%); Kentucky, Missouri, Nebraska, Tennessee and Texas (89%).
13. Analysis of high school graduation rates broken down by cohort suggests that not all student types are well-served by the Massachusetts education system. While Massachusetts produces high school graduation rates well above the U.S.A. average for some cohorts, such as American Indian and Alaskan Natives (with graduation rates of 85% vs. the national average of 72%) and students with disabilities (72% vs. 66%), other student cohorts in Massachusetts graduate at lower rates than the national average, particularly Hispanic students (73% vs. 79%) and students with limited English proficiency (64% vs. 67%).

Legislative framework

14. The Every Student Succeeds Act 2015 (ESSA) is the core federal law for the state educational system. In 2015, the ESSA replaced the No Child Left Behind Act 2001. The law includes provisions to help support improved outcomes for all students receiving elementary and secondary education in the U.S.A. The ESSA requires every state educational agency to include a state plan articulating its vision for implementing key provisions and requirements of the ESSA as part of its application for funding. In separate legislation from the ESSA, federal law also includes provisions for students with disabilities in the Individuals with Disabilities Education Act (IDEA) and for the vocational development of the teaching professional in the Career & Technical Education Improvement Act 2006.
15. In addition to federal laws, Massachusetts also has its own state level laws relating to the education system, which are included as chapters within Massachusetts General Law.¹⁰ The state level laws traverse a broad range of matters pertaining to the functioning of the education system, including provisions for required subjects, funding, staff tenure and student behaviour. Compared to

⁷ <https://www.oecd.org/pisa/PISA-2015-United-States.pdf>

⁸ <https://www.usnews.com/education/best-high-schools/articles/how-states-compare>

⁹ https://nces.ed.gov/programs/digest/d17/tables/dt17_219.46.asp

¹⁰ <https://malegislature.gov/Laws/GeneralLaws/PartI/TitleXII/Chapter71>

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the New Zealand legislative framework, the state-level laws for education in Massachusetts appear to be particularly prescriptive. For example, in public schools in Massachusetts, it is mandatory for the first class of each day in all grades to commence with a period of silence of up to one minute for the observation of personal thoughts.

Governance and administration

16. The key institutions at the state level are:

- The Massachusetts Board of Elementary and Secondary Education (BESE) which is responsible for interpreting and implementing laws relevant to public education in Massachusetts¹¹. The BESE's responsibilities include approving learning standards, voting on charter school applications and deciding when to intervene in low-performing school districts. The Board is comprised of the Secretary of Education, a student, and nine members appointed by the governor. The members must include a parent representative, a labour representative and a business representative.
- The Massachusetts Department of Elementary and Secondary Education (ESE) is the state education agency responsible for public education at the elementary and secondary levels. It is governed by the BESE. The ESE's work includes licensing educators, distributing state and federal education funding, overseeing state-wide standardized tests, monitoring schools and districts and convening districts and individuals to share best practices.

Educator Advisory Groups

17. There are also formal educator advisor groups in Massachusetts:

- Teacher and Principal Advisory Cabinets (TAC & PAC): Members of TAC and PAC share their insights, suggestions and feedback with the Massachusetts education department to help refine current policies and to inform the development of new policies and resources at the state level.
- The Board of Elementary and Secondary Education Advisory Councils: These councils were established to advise the Commissioner and the Board on matters relevant to their areas of focus in the development of education reform in Massachusetts. There are 12 separate councils, each covering different elements of the education system, such as adult basic education, gifted and talented education and racial imbalance.

Funding

18. Massachusetts' has the 7th highest spend per student of all U.S.A. states (USD \$15,593 in 2016), which is well above the U.S.A. average (USD \$11,762). While funding levels alone are not the only factor contributing to the success of Massachusetts' education system, it cannot be discounted entirely.

19. While the average per student spend is relatively high, not all students are funded equally. Massachusetts uses a student-weighted formula that adds additional funding for students with specific characteristics such as English language

¹¹ <http://www.doe.mass.edu/bese/>

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learners, low-income background and special education. The additional funding for disadvantaged students is among the highest in the U.S.A¹².

20. The foundations of Massachusetts education funding approach was established under Chapter 70 of the Education Reform Act 1993, which was designed to respond to growing concerns about school funding adequacy and equity in Massachusetts¹³. Prior to this, the state contributed less money to primary and secondary education, leaving school districts more heavily dependent on the local property tax and, as a result, schools from more affluent districts had more funding.
21. Chapter 70 of the Education Reform Act 1993 is based on the following three principles:
- Adequate funding should be available to every school district to provide each child with a quality education.
 - Local communities should each contribute to their schools according to their ability to raise tax revenue, based upon local property values and income levels.
 - The state should provide enough funding for each school district to fill the gap between the baseline local ability to contribute and the funding level needed to provide each child with a quality education.

Curriculum and qualification requirements

22. Massachusetts was the first state in the U.S.A. to institute learning standards that outline what all students are expected to know and be able to do in each subject area and grade level. The standards-based system is considered to 'represent a promise of equitable education for all students,' and are intended to formalise the expectation that all students in Massachusetts should have access to the same academic content, regardless of their location, background or abilities¹⁴.

Assessment

23. The Massachusetts Comprehensive Assessment System (MCAS) is a state-wide, standards-based assessment programme. State and federal law mandates that all students who are enrolled in the tested grades and who are educated with Massachusetts public funds are required to participate in MCAS testing. If necessary, students are provided multiple opportunities to take the test to maximize the chance that they will pass.
24. MCAS tests are conducted each year from Grade 3 to 8 (inclusive) and again at Grade 10. The MCAS testing scheduled by grade is summarised in the table below:

Grade	Subjects
Grade 3	<ul style="list-style-type: none">• Reading• Maths
Grade 4	<ul style="list-style-type: none">• English Language Arts & Composition• Maths
Grade 5	<ul style="list-style-type: none">• English Language Arts

¹²http://blogs.edweek.org/edweek/top_performers/2016/12/how_massachusetts_built_a_world-class_school_system.html

¹³http://www.massbudget.org/report_window.php?loc=FACTS_10_22_10.html

¹⁴<http://www.doe.mass.edu/candi/>

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	<ul style="list-style-type: none"> • Maths • Science and Technology/Engineering
Grade 6	<ul style="list-style-type: none"> • English Language Arts • Maths
Grade 7	<ul style="list-style-type: none"> • English Language Arts & Composition • Maths
Grade 8	<ul style="list-style-type: none"> • English Language Arts • Maths • Science and Technology/Engineering
Grade 10	<ul style="list-style-type: none"> • English Language Arts & Composition • Maths

Quality assurance and system improvement

25. Massachusetts' state system puts schools and districts on a five-level scale, ranking the highest performers in Level 1 and the lowest performers in Level 5. A district is generally classified into the level of its lowest-performing school, unless it has been placed in Level 4 or 5 by the BESE or has been required by the Department of Education to develop a Level 4 District Plan to aid in turning around its Level 4 schools.
26. All schools in Massachusetts with sufficient data are classified into Levels 1-5. 80% of schools are classified into Level 1 or 2. Schools are classified into Level 3 if they are among the lowest 20% relative to the other schools in their grade span state-wide, if they serve the lowest performing sub-groups, or if they have persistently low graduation rates. The lowest-achieving, least improving Level 3 schools become candidates for classification into Levels 4 or 5¹⁵.
27. This classification determines the level of autonomy a school has (and assistance it receives), as summarised below:

	Accountability		Assistance	
Level	District Action	State Action	District Action	State Action
1	Review & approve district & school improvement plans	Conduct district reviews for randomly selected districts	Review level of implementation of district & school plans, and promising practice examples	Provide voluntary access to district analysis & review tools for every district & school
2	Use district analysis & review tools to review & approve district & school improvement plans.	Conduct district reviews for randomly selected districts	Review & revise district & school plans with respect to the level of implementation of the 'District Standards & Indicators'	Suggest assistance; targeted assistance for identified student groups, professional development, etc.

¹⁵ <http://www.doe.mass.edu/accountability/framework.pdf>

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3	Use ESE's self-assessment process to revise plans & monitoring strategies	Conduct selected district reviews	Complete ESE's self-assessment process; develop plans to implement the 'Conditions for School Effectiveness' at each identified school.	Give priority assistance; targeted assistance as per Level 2 schools + guided self-assessment, planning guidance, etc.
4	Collaborate with ESE to implement (existing Level 4 schools) or develop for ESE approval a redesign plan that addresses rapid implementation of 'Conditions for School Effectiveness'. If required, develop a Level 4 district plan to accelerate district improvement & strengthen supports & interventions in lowest-performing schools			
5	Operate under joint district-ESE governance			

28. The two key guidance documents (which are referred to in the table above) which underpin the school and district accountability in the Massachusetts' school system are:

- District Standards & Indicators (DSI): The DSI identifies the characteristics of effective districts in supporting and sustain school improvement, with a focus on the following six areas: leadership and governance, curriculum and instruction, assessment, human resources and professional development, student support, and financial and asset management.
- Conditions for School Effectiveness (CSE): The CSE identifies research-based practices that all schools, especially struggling schools, require to effectively meet the learning needs of all students. This document sets out the conditions for school effectiveness across the following 11 areas:
 - Effective district systems for school support and intervention
 - Effective school leadership
 - Aligned curriculum
 - Effective instruction
 - Student assessment
 - Principal's staffing authority
 - Professional development and structures for collaboration
 - Tiered instruction and adequate learning time
 - Students' social, emotional and health needs
 - Family-school engagement
 - Strategic use of resources and adequate budget authority

Teacher and leadership quality

Licensing

29. Educators in Massachusetts are required to be appropriately licenced to carry out their role within the education system. There are four broad categories of licence types:

- Teacher licences
- Administrator licences – e.g. principals, superintendents
- Teacher Specialist licenses – e.g. specialist teachers for instructional technology

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- Professional Support Personnel licenses – e.g. school nurse, school counsellor
30. To obtain an initial teaching licence, prospective teachers are required to:
- Hold at least a Bachelor's degree;
 - Pass all required MTEL (Massachusetts Tests for Educator Licensure) tests for their position;¹⁶
 - Complete an approved educator preparation programme¹⁷ in Massachusetts.¹⁸
31. Initial teaching licences are valid for five years and can be extended once (for an additional five years). Initial teaching licences are intended to be a 'stepping stone' towards a professional licence (which are valid for a five year period and renewable every 5 years thereafter). To obtain a professional teaching licence, the applicant must hold an initial licence in the same field and:
- Have been employed under the initial licence for at least three years;
 - Completed a one-year induction programme with a mentor and at least 50 hours of a mentored experience beyond the induction year;
 - Completed an approved licensure programme, a master's degree (or other advanced graduate program) with relevant subject matter knowledge, or a program leading to eligibility for master teacher status.

Professional development

32. Educators applying to renew a primary licence¹⁹ are required to complete at least 150 'professional development points' (PDPs) including 15 PDPs in each of the following areas:
- English as a Second Language
 - Strategies for effective schooling for students with disabilities and instruction of students with diverse learning styles
 - Content area of the licence
 - Pedagogy

Educator Evaluation Framework

33. In 2011, the BESE adopted new regulations to guide the evaluation of all educators serving in positions requiring a licence: teachers, principals, superintendents and other administrators. The educator evaluation framework was developed to support goals such as promoting growth and development for leaders and teacher, recognising excellence, placing student learning at centre, and setting a high bar for professional teaching status.

¹⁶ The MTEL includes a test of communication and literacy skills, as well as test of subject matter knowledge (where applicable). The tests are designed to help ensure that educators can communicate adequately with students, parents and other educators, and that they are appropriately knowledgeable in the subject matter of the license/s sought.

¹⁷ Education preparation programmes are intended to ensure that new educators are ready to support the success of all students. There are 70+ preparation programmes available in Massachusetts, underpinned by common principles of continuous improvement, collaboration, capacity, subject matter knowledge, professional standards and educator effectiveness.

¹⁸ Note there is some variations on this requirement to accommodate out-of-state applicants.

¹⁹ 'Primary' in this context refers to an educators' main licence. When educators renew more than one Professional license, they must designate one of those license as the 'primary area' licence.

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34. The regulations specify several key elements of the evaluation process. All educators engage in a five-step evaluation cycle²⁰ and, throughout this process, three categories of evidence are collected including multiple measures of student learning (including MCAS results), judgement based on observations (including unannounced observations), and additional evidence relating to performance.

Role of choice

35. Children have a right to attend a public school in the city or town where they actually reside (regardless of who they live with). If the child lives in a location that operates its own school district, then they are entitled to attend schools within that district. In some school districts in Massachusetts, there may only be one school serving each grade. If a student's home district has more than one school option, however, the district's policy will determine which school pupils attend.
36. There are also several programs that allow students to attend schools outside of their home district, offering parents and pupils greater choice, including:
- The Inter-District School Choice program: This program allows a parent to enrol their child in a school outside of their home district. Because of capacity constraints, not all school districts accept out-of-district students under this program. If more students than there are spaces available, the district holds lottery to select which students are admitted. Once a student is accepted into another district under the school choice programme, they are entitled to attend that district's schools until high school graduation – they do not have to reapply each year.
 - Charter Schools: Charter schools are public schools that operate independently of local school districts. Each charter school is governed by a Board of trustees. The Board receives a charter directly from the state Board of Education to operate a public school, after going through an application process. Each charter school determines what grade levels it will serve and what particular programs it will offer. Most charter schools are 'Commonwealth' charter schools, for which any student in the state of Massachusetts can apply for admission. A few charter schools, however, are designated as 'Horace Mann' charter schools which (although still independent) have closer ties to the local school district.
 - Vocational Technical Education Programs: In Grade 9-12, students may choose to participate in vocational technical education programs (e.g. automotive technology or culinary arts) in preparation for a future career. Students in these programs take academic courses in addition to their technical courses and must meet the same requirements for high school graduation that other students must meet. Vocational technical high schools have admissions criteria and may have enrolment limits.
 - Metco: The Metco program is designed to provide opportunities for minority students in Boston to attend school in one of the suburban school districts

²⁰ The five-step evaluation cycle includes: self-assessment; analysis, goal setting and plan development; implementation of the plan; a formative assessment/evaluation and a summative evaluation.

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surrounding Boston, offering greater school choice to these students. Enrolment in the program is limited, with a long waiting list. Students who are accepted into the program are assigned to the suburban district by the program; they do not choose the district that they will attend. Once enrolled, students are provided with transportation to and from the suburban district and a range of services to help them adjust academically and socially to their new district.

- Commonwealth of Massachusetts Virtual School (CMVS): CMVS is a public school operated by a Board of Trustees where teachers primarily teach from a remote location via the internet and students are not required to be located at the physical premises of the school.
- Massachusetts Academy of Math & Science: This is an independent public high school that provides an advanced course of study focussing on science and maths for 11th and 12th graders. Admission is selective.
- Private education: In addition to the public education options, parents also have the choice to send their children to private or parochial schools. These schools charge tuition which, in practice, limits this as a feasible school choice to those who can afford it.
- Home-schooling: Parents in Massachusetts also have the choice of educating their children at home. For a child of compulsory school age, the home schooling programme must be approved in advance by the superintendent or school committee of the home district.

Explaining Massachusetts education results

37. The results of Massachusetts education system prompts the question of what it is doing to contribute to the results it gets – both in respect to ‘the good’ (i.e. its high level of educational attainment at the population level) and ‘the bad’ (i.e. the large disparity in educational attainment).
38. While funding is just one of many inputs (such as teaching quality, pedagogy, student aspirations etc.) that influence educational outcomes, education funding levels are a common theme in commentary about Massachusetts academic outcomes. Prior to 1993, schools were heavily reliant on property taxes for funding which resulted in wealthier districts having substantially greater resources available for their schools. In 1993, Massachusetts implemented a ‘radical’ change in educational funding, which provided significantly more state funding for schools. Since 1993, Massachusetts has more than tripled²¹ state aid devoted to education and there has been a significant increase in the test scores of its least advantaged students (although this correlation does not necessarily imply a causative relationship).
39. Equity – in the sense of ‘levelling the playing field between the rich and poor’ – was the motivator behind this funding change. Funding alone, however, was not the only part of the equation – greater expectations were also a key part of the picture. The substantial increase in funding was paired with much higher

²¹ <https://www.seattletimes.com/education-lab/massachusetts-is-a-lot-like-us-so-why-are-its-schools-so-much-better/>

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expectations for achievement and the very real threat of state takeover for failing to meet them.

40. While the strides in Massachusetts educational attainment since 1993 may suggest that funding (attached to expectations) is likely be a contributing factor to the Massachusetts education system, other attributes of the system also support the results. Driscoll's²² (2018) publication on the Massachusetts education system points to a range of strengths in the system which may not outwardly appear to be 'ground-breaking,' but nonetheless are considered to contribute a well-performing education system such as quality leadership, support for the teaching profession and a solid measure of performance.
41. Driscoll's examination of the Massachusetts education system also provides the following recommendations for improving the system, which may also be worth considering in the New Zealand context:
 - Strike the 'grand bargain' by providing tools with accountability requirements (i.e. when schools are provided additional funding to address inequality concerns, this funding should be contingent on meeting clearly defined expectations)
 - Find a balance between supporting the strengths of the system and making needed changes
 - Focus on motivating and engaging students in their own learning
 - Encourage genuine widespread input and involvement.

Conclusion

42. Massachusetts has maintained a reputation of having the best public school system in the U.S.A., with a long track-record of performing significantly better than the national average on the National Assessment of Educational Progress (a federally administered exam for maths and reading)²³. PISA results also attest to its strong performance alongside its OECD peers (outranking New Zealand on all three subjects in the 2015 PISA round).
43. Massachusetts promising results at an aggregate level, however, conceal significant disparities among sub-groups. Like New Zealand, disaggregated achievement results in Massachusetts reveals relatively poorer educational outcomes for particular cohorts of the student body, particularly Hispanic students. Indeed, the state of Massachusetts has the third largest achievement gap in the U.S.A., and income-based disparities in academic performance have been growing over the past decade.

²² Driscoll, D. (2018). *Commitment and common sense: leading education reform in Massachusetts*.

²³ National Centre for Education Statistics (NCES), 'The nation's report card: state profiles,' Website (U.S. Department of Education)