

Spreading the Opportunity and Advantages of Education: Educators' Funding Recommendations for Massachusetts Legislators

+++++

Spring 2019

Copyright 2019, Teach Plus

All rights reserved

Authors

April Brunelle
Lisa Hanifan
Gavin Laughlin

Tina Petty
Gina Sheehan
Brian Lane Stanley

James Voci
Katharine Weigle

2018-19 Teach Plus Massachusetts Teaching Policy Fellows and Senior Fellows

Chantei Alves
Nick Fernald
Chris Fitzpatrick
Stephen Guerriero
Mary Jane Guthrie
Kourtney Hallice
Reuben Henriques
Tasha Jones

Rebecca Jontos
Jessica Lander
Shan-Lee Liu
Jasvir Macintosh
Mikaela Newell
Francis Pina
Cristina Stanojevich
Rikelma Vargas

INTRODUCTION

Massachusetts has a lot to celebrate with its number one education ranking in the nation for over a decade.¹ But behind that designation, disparities exist in the achievement among students of color and low-income students compared to their White and higher-income peers.² Despite the success Massachusetts has seen via the investment in education through the Massachusetts Education Reform Act of 1993 (MERA), the time has come to reevaluate and respond to the changes in our Commonwealth over the past two and a half decades in order to meet the needs of all students. Since the inception of MERA, Massachusetts has seen increased poverty levels³, a near doubling of the English language learner population⁴, and increased health insurance and special education costs.⁵ Although the state doubled local education aid from 1993 to 2000, since 2002 there has been a roughly 300 million dollar decline in state education funding when adjusted for inflation.⁶ These factors lead to the inadequate funding of our schools.

With these factors and data pointing to a growing achievement gap⁷, Teach Plus Massachusetts Teaching Policy Fellows conducted a study of how teachers perceive the impact school funding has on their ability to provide quality educational services to students in their ever-changing classrooms.

The Teach Plus Massachusetts Teaching Policy Fellows are a group of 24 Commonwealth educators spanning grades PreK-12, educational settings (public and charter), and the Commonwealth from Boston to Springfield and Haverhill to Fall River. Over the past year, we examined the mechanics of school finance and sought perspectives from educators to reveal the real-world impact of the education formula. We especially wanted to highlight the various needs and resources teachers, as classroom experts, identified in order to close the achievement gap. We aimed to:

- 1 Garner educator insights about how the current education funding formula is affecting students and staff.
- 2 Identify educator recommendations for how the state should allocate funding when more resources become available.
- 3 Synthesize educator feedback in order to provide actionable funding recommendations to the legislature.

FINDINGS

1. Educators overwhelmingly report inadequate staffing leaves teachers unable to meet the academic and social-emotional needs of all learners.
2. Educators and students need access to technology and the infrastructure to support it.
3. Educators indicate they lack resources, including training and materials, to meet the needs of their students.
4. Educators believe inadequate school facilities are unable to meet the needs of learners and educators alike.

RECOMMENDATIONS

1. Target funding to enable districts to set data-informed student-to-nurse, student-to-counselor, and class size ratios, and to increase the number of staff providing special education and English language learner services.
2. Designate funding to enable districts to provide one-to-one computer access, particularly for at-risk students.
3. Ensure districts are utilizing designated instructional materials and professional development funds for their intended purposes.
4. Ensure districts are utilizing funds designated for operations/maintenance to maintain environments conducive to teaching and holistic learning.

CONTEXT OF MASSACHUSETTS' CURRENT FUNDING FORMULA

In 1993, Massachusetts passed the landmark Massachusetts Education Reform Act (MERA), overhauling the state education system. MERA established both a new education funding formula and accountability measures through the Massachusetts Comprehensive Assessment Systems examinations (MCAS). The education foundation budget, or Chapter 70, is the Commonwealth's mechanism for distributing state aid to school districts. The formula accounts for the cost to provide all students with their state-guaranteed constitutional right to an adequate education based on the number of students in each grade level, racial, poverty, and special education demographics, and other factors. Based on this data, a minimum budget for each district is set.

Using personal income and property values, Chapter 70 next determines how much each community should contribute toward the minimum budget for its schools. Any gaps between the minimum budget for each district and local contributions are then filled with state aid. If a community has the means to do so, they can spend additional local funds to provide schools with additional resources.

Although the formula accounts for inflation, it does not reflect actual costs districts face today. This fact was highlighted by the 2015 bipartisan Foundation Budget Review Commission, which researched the strain on schools based on reports from the field and a lack of consistent results for all students on statewide accountability measures. The findings of the bipartisan commission were presented as four recommendations for increased funding: health insurance benefits, special education programming, English as a second language programming, and the education of students experiencing poverty.

The Commission found that in the area of healthcare benefits, the rate of inflation factored into the law has not accounted for the actual rise in healthcare costs from the mid-90's to today. Similarly, districts are spending more on special education services than the budget supports because the formula accounts for fewer students with special needs than are currently enrolled in our schools. These two structural deficits, the cost of healthcare and special education servicing, provide a combined shortfall of \$2.63 billion in FY 2017 across the Commonwealth.⁸ Financially-stressed districts are therefore reallocating money from other areas in their budgets in order to make up this deficit.

METHODOLOGY

We created and distributed a survey across the Commonwealth on the subject of school funding, reaching 300 educators spanning 57 districts.

Among our survey participants:

- + Ninety-two percent of respondents currently work in a public school setting; eight percent work in a public charter school.
- + Most of the respondents are from urban or suburban areas around the state.

FINDINGS

Our survey respondents overwhelmingly reported that our schools are underfunded. Whether it is inadequate staffing, technology, resources or facilities, the educators' responses emphasize one conclusion: school funding is insufficient, and the current funding formula hinders the ability of educators to provide high-quality instruction.

FINDING 1. EDUCATORS OVERWHELMINGLY REPORT INADEQUATE STAFFING LEAVES TEACHERS UNABLE TO MEET THE ACADEMIC AND SOCIAL-EMOTIONAL NEEDS OF ALL LEARNERS.

Overwhelmingly, when respondents were asked how the level of funding impacted their ability to provide high-quality instruction, many teachers described insufficient staffing as a limit. Teachers reported that insufficient staffing led to large general education class sizes, lack of services for high-need sub-groups such as English language learners and special education, and lack of student access to school counselors and school nurses.

One teacher illustrated what many teachers and educators described across the state.

Because my school is underfunded, I am not only the English language arts and ESL teacher, I am also the social studies teacher, because that job was cut. I am the librarian, because that job was cut. I am often a counselor. I am the registrar creating grade reports and the attendance officer calling home and submitting paperwork for truant students. Because I must be the jack of all trades, I am a master of none.

Another teacher highlighted the reality of year to year budget cuts.

One of this district's middle schools may lose half of its remaining ELL teachers to budget cuts, even though their ELL enrollment has gone up. The same department was cut last year for the same reason.

Many districts are not meeting the current formula allocation for staffing because of the need to compensate for the underestimation of staffing required for special education servicing.

FINDING 2 EDUCATORS AND STUDENTS NEED ACCESS TO TECHNOLOGY AND THE INFRASTRUCTURE TO SUPPORT IT.

Teachers cited a lack of technology and the infrastructure to effectively utilize technology as a barrier to delivering high-quality instruction. In 2016, the Commonwealth adopted Frameworks for Digital Literacy and Computer Science,⁹ yet there is no means of ensuring that functioning, modern technology is accessible to all students and teachers. Participation in today's society requires the ability to understand and utilize technology for learning, working, and living. One teacher reported:

Old technology which can no longer run at an efficient speed bogs down class time, and takes away from the learning process.

Teachers believe that additional funding for technology will not only support at-risk students but improve education overall. Research reinforces this point. According to a 2014 Alliance for Excellent Education report, technology enhances student achievement by “providing multiple means and methods for learners to grasp traditionally difficult concepts”.¹⁰

Despite the various personalized online resources available to teachers and students, some of which are available at no cost, access to those programs is denied to all students due to inadequate technology and tools.

Technology is very out of date, and as a result, we often end up purchasing items out of pocket, such as headphones or speakers, said another teacher.

Without equitable access to functioning technology and programming, students will face substantial barriers to lucrative technology-based careers.

We don't offer computer science in our school and we should when downtown Boston and Cambridge have many high paying tech companies, commented another teacher.

FINDING 3. EDUCATORS INDICATE THEY LACK RESOURCES, INCLUDING TRAINING AND MATERIALS, TO MEET THE NEEDS OF THEIR STUDENTS.

Teachers across the Commonwealth reported a lack of necessary basic supplies such as paper, pencils, and whiteboard markers to use in their classrooms. To alleviate this issue, many teachers spend their own money to ensure that each student has the ability to participate in their learning. Said one teacher:

We do not have an appropriate supply budget for simple needs such as dry erase markers, pencils (all of which I buy) or for more expensive items such as Chromebooks.

Another teacher reported:

I am given very little in the way of supplies to support my students. I had to spend 200 dollars of my own money to buy a whiteboard that can roll from room to room. My students come in without pencils or paper. If I don't provide those supplies, which I have to pay for myself, students cannot participate and then they disengage.

Teachers asserted that a lack of resources, especially books, impacts the academic development of their students. Research supports this point and shows that with robust classroom libraries, children spend up to 60 percent more time reading and that students interactions with books double, from four per hour to almost 8.5 per hour.¹¹ One teacher emphasized:

If I want high-interest books for students to read I have to buy them. I spend so much of my own money because our schools are underfunded. Some teachers can't do all this for their students and instruction suffers because of it.

Beyond resources, teachers reported a lack of professional development to improve their ability to best meet the needs of all learners. One teacher remarked:

My district does not currently have the funding to offer high-quality professional development so that I can deliver high-quality instruction using the curriculum materials that I use. This hinders my ability to effectively teach my students.

Despite a designation from the state's funding formula for professional development and instructional materials, the full amount is not being utilized in many Commonwealth districts. Instead, funds are used to fill the gaps of the state's underestimated costs, specifically Special education and healthcare. As a result, teachers are not only provided with inadequate professional development to meet their professional and student needs, but also many teachers find themselves purchasing their own additional materials.

FINDING 4. EDUCATORS BELIEVE INADEQUATE SCHOOL FACILITIES ARE UNABLE TO MEET THE NEEDS OF LEARNERS AND EDUCATORS ALIKE.

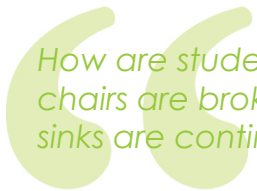
Many educators across the state reported on the poor conditions of the buildings where they teach. They cited inoperable plumbing, nonfunctional furniture, inadequate temperature and air quality, and poor acoustics. Said one teacher:



Students do not have desks that fit them.



Teachers believe the physical conditions of the school building impact students beyond academics. Research reinforces this point. According to a 2015 report "The Importance of School Facilities in Improving Student Outcomes", "school facilities affect health, behavior, engagement, learning, and growth in achievement."¹² One respondent emphasized:



How are students supposed to think they're worth a high-quality education when the chairs are broken, the floors have ripped up carpet with ugly cement, the toilets and sinks are continuously broken, etc.?



Although the state's funding formula designates funds for operations/maintenance in each district, that money is often not being spent on facilities. Instead, the funds are used to fill the gaps in other underfunded areas, specifically special education and healthcare. Based on the current outdated formula, many districts are unable to properly maintain their facilities, which directly impacts both teachers and students.

RECOMMENDATIONS

RECOMMENDATION 1. TARGET FUNDING TO ENABLE DISTRICTS TO SET DATA-INFORMED STUDENT-TO-NURSE, STUDENT-TO-COUNSELOR, AND CLASS SIZE RATIOS, AND TO INCREASE THE NUMBER OF STAFF PROVIDING SPECIAL EDUCATION AND ENGLISH LANGUAGE LEARNER SERVICES.

FUND ONE FULL-TIME PROFESSIONAL NURSE IN EACH SCHOOL

The American Academy of Pediatrics (AAP) recommends at least one full-time professional nurse at every school, ensuring the health and safety of students.¹³ According to Breana Welch Holmes, MD, chair of the AAP Council on School Health, school nursing is one of the most effective ways to keep children healthy and prevent chronic absenteeism.¹⁴

FUND ONE SCHOOL COUNSELOR FOR EVERY 250 STUDENTS

To better serve the career and social-emotional development of students, the state should target funds to hire counselors at the American School Counselors Association (ASCA) recommended ratio of one school counselor to 250 students.¹⁵

FUND OPTIONS TO PROVIDE PERSONALIZED TEACHER-STUDENT SUPPORT

+ Reduce Class Size

Smaller general education and inclusion class sizes are one way to provide students with individualized support and attention. According to a 2015 Mass Budget report, targeted class size reductions have been found to be most effective in two areas: kindergarten through third grade, with 15 students per class,¹⁶ and in classrooms with high numbers of low-income students or students of color, with class sizes of 15-18 in all grade levels.¹⁷ Hiring more teacher to reduce class sizes is one priority for districts.

+ Expand Co-Teaching Models

A second option for giving each student more access to teacher support is to lower teacher-to-student ratios within inclusion or “push-in” settings is by funding co-teaching opportunities for all contents and grade bands K-12. Co-teaching refers to two teachers (one general education/content teacher paired with a special education, English language learner, or intervention teacher) who share the planning, delivery, and assessment of instruction for all students within one class. By co-teaching, two teachers with different areas of expertise, one in content and the other in specialized services, work together to provide services for students. Effective co-teaching in an inclusion classroom has proven benefits for both students with disabilities and their regular-education peers.¹⁸ Co-teaching must be paired with the time and professional development for these relationships to work, as discussed in the third recommendation in this report.

+ Expand Access to Interventionists for At-Risk Students

A third option, to be used in tandem with reducing class size and expanding co-teaching, is to expand access to interventionists for students with the most need in all grade bands. Interventionists work with small groups of students to provide services that cannot be delivered in a classroom setting. Intervention models recommend small group intervention ratios of three to five students designated as highest risk or Tier 3, per teacher.¹⁹

RECOMMENDATION 2. DESIGNATE FUNDING TO ENABLE DISTRICTS TO PROVIDE ONE-TO-ONE COMPUTER ACCESS, PARTICULARLY FOR AT-RISK STUDENTS.

To make all schools ready for 21st century learning, all students, especially those in high-need subgroups, need access to one-to-one technology. One-to-one technology refers to learning environments in which there is one device available for each student; in some cases, students can bring these devices to and from school to expand learning opportunities beyond the classroom walls. Studies show positive impacts on student learning when there is access to at least one device per student available throughout the school day.²⁰ With so many readily available online learning and organizational tools, continually updated curriculum resources, and audio, video, and interactive resources, reliable access to speedy internet is equally essential. When internet connections are slow or stalled due to poor WiFi or old technology, instructional time is lost and frustration in the classroom grows. To alleviate this, studies recommend faster internet connections as an important factor for at-risk students utilizing technology for learning.²¹

In order for technology to be utilized effectively, educators need access to professional development that supports best practices with technology in the classroom. Studies have shown teachers in the lowest-income areas receive less support and resources to incorporate digital tools in the classroom as compared to the highest-income areas.²² Any additional funding for one-to-one computer initiatives and increased technology infrastructure should be in conjunction with adequate supports for teacher learning about how to utilize the technology and recommended practices.

RECOMMENDATION 3. ENSURE DISTRICTS ARE UTILIZING DESIGNATED INSTRUCTIONAL MATERIALS AND PROFESSIONAL DEVELOPMENT FUNDS FOR THEIR INTENDED PURPOSES.

TARGET FUNDS FOR CONSUMABLE TEACHING AND LEARNING RESOURCES

Consumable teaching materials, from reading materials to science lab equipment to art supplies, and well-curated curriculum resources enable teachers to meet the individual needs of students. Consumable materials such as pencils, dry erase markers, notebooks, copy paper, and folders are the most requested types of school supplies.²³ Instructional materials are essential to the development of both teachers and students. According to a 2017 Learning Policy Institute report, inadequate resources for PD, including curriculum materials, hinders school-improvement efforts.²⁴ Teachers should be able to request materials for effective instruction without spending their own money or requiring students to procure their own materials, especially in low-income districts.

TARGET FUNDS FOR CLASSROOM LIBRARIES

Classroom libraries have the potential to increase student motivation, engagement, and achievement.²⁵ According to the American Library Association, classroom libraries should include a minimum of 300 titles, or at least seven books per student, including a mix of classics and newer titles.²⁶ Offering a wide range topics, the books should represent diverse perspectives and social identities as well as varied levels of text difficulty. Providing readily-available books to students alleviates the access disparity of books among low-income and higher-income students. According to a 2016 New York University study, there is a scarcity of children's books in low-income neighborhoods.²⁷ As a result, the education funding formula should target funds toward classroom libraries in lower-income school districts.

ENSURE PROFESSIONAL DEVELOPMENT FUNDS ARE UTILIZED EFFECTIVELY

In order for instructional materials to meet the needs of learners, teacher training is essential. Effective professional development is driven by student achievement and should involve collaboration, use models of effective teaching practice, provide coaching and expert support, offer feedback, and take place over a sustained period of time.²⁸ Making this level of support available to novice and veteran teachers would not only help to support school-improvement efforts but also provide mentoring opportunities. For various collaborative teaching models, including co-teaching, research recommends at least one or two periods of planning twice a week as well as ongoing professional development.²⁹ In conjunction with updates to healthcare and special education funding within the foundation budget formula, state legislature need to hold districts accountable for utilizing the designated professional development funds effectively.

RECOMMENDATION 4. ENSURE DISTRICTS ARE UTILIZING FUNDS DESIGNATED FOR OPERATIONS/MAINTENANCE TO MAINTAIN ENVIRONMENTS CONDUCIVE TO TEACHING AND HOLISTIC LEARNING.

School districts need to utilize the full funding allocated for operations and maintenance towards the upkeep and repair of its schools. Research suggests that school facilities can have a profound impact on both teacher and students outcomes. For teachers, school facilities can impact retention, stress, and absenteeism.³⁰ In regards to students, school facilities affect rates of absenteeism, engagement, performance, and achievement growth.³¹ Classroom temperature alone can have large implications for learning. According to a 2018 Harvard study, learning in a hot classroom has lasting negative impacts, both long and short-term, for students, including reduced rates of learning.³² In conjunction with updates to healthcare and special education funding within the foundation budget formula, the state legislature needs to hold districts accountable for utilizing the designated operations and maintenance funds appropriately.

CONCLUSION

Crowded classes; reductions in staff; inadequate teaching of basic subjects including reading, writing, science, social studies, mathematics, computers, and other areas; neglected libraries; the inability to attract and retain high quality teachers; the lack of teacher training; the lack of curriculum development.

This description of school conditions within Brockton, Winchendon, Leicester, and Lowell from the 1993 court case *McDuffy v. Secretary of the Executive Office of Education* prompted the Massachusetts Education Reform Act, and with it, our current funding formula.³³ Although Massachusetts is ranked number one in the country for education, many of the conditions cited in 1993 currently exist within our Commonwealth's schools, resulting in disparities that have consequences for students of color and students from low-income families.³⁴ Educators' voices were clear in 1993 and remain clear now: our state's current funding formula does not provide appropriate funding to meet the needs of all learners, especially for high-risk students. If our state intends to be number one in the country for all students and not some, Massachusetts needs to adopt a school funding policy that realistically and continuously accounts for the needs of our current students, teachers, and schools.

+++++ ENDNOTES +++++

- ¹ "Massachusetts NAEP Results Lead Nation for 12th Year". April 10, 2018. Accessed at <https://www.mass.gov/news/massachusetts-naep-results-lead-nation-for-12th-year>
- ² "#1 For Some: Opportunity and Achievement in Massachusetts", 2018. Accessed at <https://number1forsome.org/wp-content/uploads/sites/16/2018/09/Number-1-for-Some-9.25-18.pdf>
- ³ "Household Income and Poverty Rates, by State: 1990, 2000, and 2004-06", National Center for Education Statistics. Accessed at https://nces.ed.gov/programs/digest/d07/tables/df07_020.asp
- ⁴ Jones, C., "Excellence for All: Supporting English Language Learners in Massachusetts", October 26, 2017. Accessed at <http://massbudget.org/reports/pdf/Excellence-For-All.pdf>
- ⁵ "Foundation Budget Review Commission", October 30, 2015. Accessed at <https://massteacher.org/-/media/massteacher/files/initiatives/education-funding/tools-for-organizers/fbrc-report-2015.pdf?la=en>
- ⁶ Jones, C., Berger, N., & Hatch, R., "Building an Education System that Works for Everyone: Funding Reforms to Help All Our Children Thrive", July 18, 2018. Accessed at http://massbudget.org/report_window.php?loc=Building-an-Education-System-that-Works-for-Everyone.html
- ⁷ See endnote 2.
- ⁸ See endnote 6.
- ⁹ "2016 Massachusetts Digital Literacy and Computer Science (DLCS) Curriculum Framework", June 2016. Accessed at <http://www.doe.mass.edu/frameworks/dlcs.pdf>
- ¹⁰ Darling-Hammond, L., Zieleszinski, M.B., & Goldman, S., "Using Technology to Support At-Risk Students' Learning", September 2014. Accessed at <https://edpolicy.stanford.edu/sites/default/files/scope-pub-using-technology-report.pdf>
- ¹¹ Neuman, S.B., "The Importance of the Classroom Library", Scholastic. Accessed at <http://teacher.scholastic.com/products/paperbacks/downloads/library.pdf>
- ¹² "The Importance of School Facilities in Improving Student Outcomes", Center for Evaluation and Education Policy Analysis, Penn State College of Education, June 7, 2015. Accessed at <http://sites.psu.edu/ceepa/2015/06/07/the-importance-of-school-facilities-in-improving-student-outcomes/>
- ¹³ "AAP Policy Statement Recommends Full Time Nurse in Every School", May 23, 2016. Accessed at <https://www.aap.org/en-us/about-the-aap/aap-press-room/Pages/AAP-Policy-Statement-Recommends-Full-Time-Nurse-in-Every-School.aspx>
- ¹⁴ "Role of the School Nurse in Providing School Health Services", Council on School Health, June 2016. Accessed at <https://pediatrics.aappublications.org/content/pediatrics/137/6/e20160852.full.pdf>
- ¹⁵ "State-by-State Student-to-Counselor Ratio Report: 10-Year Trends", 2015. Accessed at <https://www.schoolcounselor.org/asca/media/asca/Publications/ratioreport.pdf>

- ¹⁶ Jones, C., "The Right Size for Learning: Class Sizes in Massachusetts", April 27, 2015. Accessed at http://massbudget.org/report_window.php?loc=The%20Right%20Size%20for%20Learning.html
- ¹⁷ Mathis, W.J., "The Effectiveness of Class Size Reductions", June 2016. Accessed at <https://nepc.colorado.edu/sites/default/files/publications/Mathis%20RBOPM-9%20Class%20Size.pdf>
- ¹⁸ Hehir, D., "A Summary of the Evidence on Inclusive Education", December 2016. Accessed at https://www.researchgate.net/publication/312084483_A_Summary_of_the_Research_Evidence_on_Inclusive_Education
- ¹⁹ Shapiro, E.S., "Tiered Instruction and Intervention in a Response-to-Intervention Model", RTI Action Network. Accessed at <http://rtinetwork.org/essential/tieredinstruction/tiered-instruction-and-intervention-rti-model>
- ²⁰ See endnote 13.
- ²¹ Kim, J., Lee, W., "Assistance and Possibilities: Analysis of Learning-Related Factors Affecting the Online Learning Satisfaction of Underprivileged Students", Computers & Education, 2011. Accessed at <http://itecideas.pbworks.com/w/file/fetch/121913763/Assistance%20and%20possibilities-%20Analysis%20of%20learning-related%20factors%20affecting%20the%20online%20learning.pdf>
- ²² Purcell, K., Heaps, A., Buchanan, J., & Friedrich, L., "How Teachers Are Using Technology at Home and in Their Classrooms", February 28, 2013. Accessed at <https://www.pewinternet.org/2013/02/28/how-teachers-are-using-technology-at-home-and-in-their-classrooms/>
- ²³ "School Supply Impact Report 2017", Kids in Need Foundation, May 2019. Accessed at <https://www.kinf.org/wp-content/uploads/2018/05/2017-KINF-Impact-Report.pdf>
- ²⁴ Darling-Hammond, L., Hyster, M.E., & Gardner, M., "Effective Teacher Professional Development", 2017. Accessed at https://learningpolicyinstitute.org/sites/default/files/product-files/Effective_Teacher_Professional_Development_REPORT.pdf
- ²⁵ "Statement on Classroom Libraries", National Council of Teachers of English, May 31, 2017. Accessed at <http://www2.ncte.org/statement/classroom-libraries/>
- ²⁶ See endnote 14.
- ²⁷ "NYU Study Identifies "Book Deserts" – Poor Neighborhoods Lacking Children's Books – Across the Country", July 12, 2016. Accessed at <https://www.nyu.edu/about/news-publications/new/2016/july/nyu-study-identifies-book-deserts-across-the-country.html>
- ²⁸ "The Effectiveness of the Co-teaching Model: Literature Review", Hanover Research, March 2012. Accessed at <https://www.ousd.org/cms/lib/CA01001176/Centricity/Shared/The%20Effectiveness%20of%20the%20Co-Teaching%20Model-Inclusion%20Material.pdf>
- ²⁹ See footnote 28.
- ³⁰ "The Importance of School Facilities in Improving Student Outcomes", Center for Evaluation and Education Policy Analysis, Penn State College of Education, June 7, 2015. Accessed at <http://sites.psu.edu/ceepa/2015/06/07/the-importance-of-school-facilities-in-improving-student-outcomes/>

³¹ See endnote 2.

³² Goodman, J., Hurwitz, M., Park, J., & Smith, J., "Heat and Learning", Harvard Kennedy School Faculty Research Working Paper Series, May 2018. Accessed at <https://www.hks.harvard.edu/publications/heat-and-learning>

³³ "McDuffy v. Secretary of the Executive Office of Education, 415 Mass. 545, 1993. Accessed at <http://masscases.com/cases/sjc/415/415mass545.html>

³⁴ See endnote 2.