



THE WHOLE PICTURE OF PUBLIC EDUCATION IN NEW HAMPSHIRE

a project of
**REACHING
HIGHER NH**





TABLE OF CONTENTS

3	A Message from Our Executive Director
5	Our New Hampshire
8	About the Project
9	The Role of the Family
16	The Role of the Community
24	What About Teachers?
28	Conclusion
30	Continued Reading

Image credit: Allison Shelley / The Verbatim Agency for American Education: Images of Students and Teachers in Action



A MESSAGE FROM OUR EXECUTIVE DIRECTOR

New Hampshire public schools are the builders of our state's future. Supporting our public schools is one of the most important ways to ensure that our students become contributing, productive members of society. It is also one of the most important ways to ensure that the economic future of New Hampshire is strong. The students of today will drive the future vitality of our state, and thriving schools will help to build the essential knowledge and skills so critical to success in the 21st century.

The whole picture of public education in New Hampshire is complex – far more complex than the images conjured up when thinking of “education.” National headlines identify our state as one of the top K-12 educational systems in the country, yet these high-level data points tend to mask the nuances and experiences of students from different regions of the state. What we know is that context – both within buildings and within communities – matters deeply for student learning. This project looks beyond individual classrooms and schools to explore the family, community, and statewide factors that impact learning, and begins to explore how we can best support our students.

A question we often hear is: why should we care about our schools and the broader context in which our students are learning – especially if we no longer have, or never had, children in NH's public schools? The reality is, income and educational attainment are increasingly inextricably linked. Today, **two out of three jobs demand a minimum of some education beyond high school – compared to the reverse, just fifty years ago.** Educational attainment is now critical to career and, therefore, income advancement. The combination of overall income and educational attainment levels in a community play critical roles in that community's economic trajectory - **and, the overall long-term economic vitality of our state.**

But it is not just about one specific community – it is about New Hampshire as a whole. We no longer live in a time in which we might expect that many students who graduate from high school will stay in the same town in which they grew up. Moreover, our public schools play a central role in our ability to attract skilled workers and young families to New Hampshire. **And so the economic vitality and trajectory of the state is dependent on the public schools throughout all of our school districts.**

The Whole Picture of Public Education aims to widen the aperture of our understanding of public education in our state. There is considerable power in family and community factors on student outcomes in school, specifically a family's income/economic status, and the overall educational attainment of a community in which the student lives. **Education is more comprehensive and nuanced than a school building, a teacher, or even a student in an academic setting - it reflects and involves the entire community and context in which a student is learning and growing up.**



OUR NEW HAMPSHIRE

What do you picture when you think of “education”? Perhaps it is a classroom you were once in and the decorations on the wall, a teacher you had, an assignment you completed, or some other direct experience from your own time in school. Or maybe it’s an indirect experience – if you’re a parent, you might think about your child’s teacher or school building, the drop off line, or the last parent teacher conference you attended.

We think of these images because they are familiar, and most of us have, or have had at one point in our lives, these types of educational experiences. Throughout this report, we draw on these experiences to paint a portrait of how public education affects us all, using five snapshots of families across New Hampshire. These snapshots portray our many hopes and challenges, and demonstrate how these families impact, and are impacted by, public education.

To that end, representing every family scenario would not be possible. Instead, we have woven together these snapshots by drawing upon the real experiences of a diversity of Granite Staters with whom we have met. While the stories reflect actual experiences, the names included in this report are fictional. The family profiles do not mention specific towns because we hope that you can connect with at least one of these stories, either through personal experience or through fellow community members, regardless of where you live in the state.

OUR NEW HAMPSHIRE: FIVE STORIES

THE ALI FAMILY

The Ali family recently moved to their town because they had heard and read great reviews about the town's K-8 neighborhood school. Their children are in seventh and first grade. Dad works remotely for a tech company, only needing to commute out-of-state once a month or so, and Mom owns her own graphic design firm that operates out of their home. So, when it came time to look around New Hampshire, they felt really fortunate to have flexibility. They plan to stay in this town until the kids graduate from high school, as they know the reviews mirror what they have heard about their current school. They both pride themselves on attending every event at their children's school, and when their schedules allow, they both volunteer in the building. They read to their kids every night, but they don't focus too much on the homework that comes home in the folders – it has never felt like the teachers stressed about it, and so they don't stress about it either.

THE BRANCH FAMILY

The Branch family has lived in their community for three generations. Dad's two children are in eighth and fourth grade. He is a single parent and works two jobs to make sure all of the bills are paid, food is on the table, and his daughters never have to worry about fitting in with their friends. Both jobs include long hours and a lot of physical labor. Dad went to the same elementary and middle school as his children, and they will go to the same high school when they are old enough. When his daughters were younger, he made sure to read to them as much as he could, especially since his work schedule often did not allow him to make it to parent teacher conferences or most school events. When their teachers called to schedule conferences, he was not able to take time off of work. His daughters have always been smart, and they don't ever ask for help on any of their homework anymore – even though he wishes they would.

THE CRUZ FAMILY

The Cruz family immigrated to New Hampshire from Mexico six years ago, and moved to their current city through recommendations by family friends. Mom studied Psicología at a university in Mexico, yet faced challenges with potential employers, who didn't know if this degree was comparable to one from the United States. After searching for full-time employment, she decided to stay at home because the cost of childcare was higher than what she would have made in an entry-level position. Dad works as a manager in a commercial packaging facility, and often works over 80 hours a week. They have three children: their oldest daughter is a high school junior, their middle daughter is in eighth grade, and their son is in second grade. Both parents feel most comfortable talking with their children in Spanish – although Mom has noticed that she gets looks in the grocery store when she speaks Spanish instead of English. Overall, though, the Cruz family is content to live in a community where others have immigrated from Central and South America, as it means their children have friends in class with shared cultural experiences.

THE DOWNEY FAMILY

The Downey Family has had quite a bit of change over the past few years. Two years ago, Mom moved with the three kids out of the family's house and into an apartment due to safety concerns at home. Since then, Dad has been in treatment for his substance use disorder, and has limited contact with the kids. Mom works three jobs – more nights a week than not, and works incredibly hard to keep everything balanced. She is thankful that her parents live twenty minutes away and can help with pick-ups, drop-offs, and meals when needed. But she's worried that they may not be able to help much longer: they've been talking about selling their home and moving down South, where they grew up. Since they retired, they've been having trouble keeping up with their property tax payments, and the winters are getting too harsh for them.

The children are in fourth, sixth, and eleventh grade. Mom cares deeply about her children's education, but is stretched thin trying to keep their lives in order. She reads everything that comes home in her fourth grader's backpack, but does not have time to communicate with all of their teachers, especially since her children are in three different schools. Her eleventh grader has recently gotten a job after school to help her mom cover the monthly rent, and often works late hours during the week.

THE EDWARDS FAMILY

The Edwards family has been thinking about downsizing their home soon, especially since their youngest child is a junior and close to graduating from high school. Their older child got a job right out of high school and moved away. Both parents have been successful in their careers without finishing college. During dinner recently, they both shared with their son that he did not need to go to college, and that they would actually prefer that he did not go if he wasn't sure what he wanted to do with his life. They don't want him to have student loan debt without knowing what his career path will be.

We will revisit these families to help illuminate our findings, in order to answer the questions:

How do family and community factors relate to students' educational experiences?

How do these learning experiences differ between communities?

About the Project

The Whole Picture of Public Education uses data from state and national databases to provide our communities with comprehensive research into student learning and outcomes, community factors, and school finance.

In addition to this report, the project includes articles exploring interactive data visualizations and individual school district and town profiles, with the goal of helping readers build a better understanding of their own communities.

Through this project, we set out to answer one overarching question: what influences student learning in NH?

As you read through the findings, here are some questions for your own reflection:

- How do family and community factors affect student learning?
- What parts of a student's life, like food security, health and wellness, or safe environments, do we unintentionally leave out when we think of "school"?
- How can we create inclusive and effective learning environments to support all of our students?
- Following our five families, how do their experiences of school differ? Why is that?

THE ROLE OF THE FAMILY

how economic security affects our
youngest learners



Image credit: Allison Shelley / The Verbatim Agency for American Education: Images of Students and Teachers in Action

Examining Findings: The Impact of Family Income

Thinking about the experiences of our five families, let's begin exploring the findings of the project.

We begin with fourth grade students and the *individual student's family*. **For younger students, student outcomes were most strongly associated with family income.**

When considering fourth grade students, their access to the outside world is based on their family and household. For example, in order for a fourth grade student to arrive at school on time, they likely need their parent/guardian/adult caretaker to get them ready for school, make sure they have eaten breakfast, ensure they have their backpack and materials, and drive them or get them to the bus stop. So it is unsurprising that we found a strong connection between elementary school students and their specific families.

Why might a family's income be important to a fourth grader?

Think about the children from the Branch family. Their father works hard, but they know he struggles. They see the toll that physical labor, and working two jobs, takes on him. Even Leslie, his fourth grader, overhears conversations with bill collectors and the bank.

The girls don't want to ask for too much. Leslie wants to participate in the school's robotics club, but her dad works nights and isn't able to pick her up at that time. She knows that other students use the classroom math app on their tablets at home - some are even a whole unit ahead. She secretly hopes that he will get her one for her birthday because she loves math, and wants to keep working at it - but she's also heard him talk about needing a new furnace, and all of their extra money will have to go to that.

Measuring Family Income

For our research purposes, we used student eligibility for the federal Free and Reduced Price Lunch program in 2017, as published by the New Hampshire Department of Education, as a measurement of family income and a threshold for student poverty. Students are eligible for free- or reduced-price lunches if they live in households that earn less than 185% of the Federal Poverty Level.

In 2017, students were eligible for free or reduced price lunches if they lived in households that had total incomes equal to or less than:

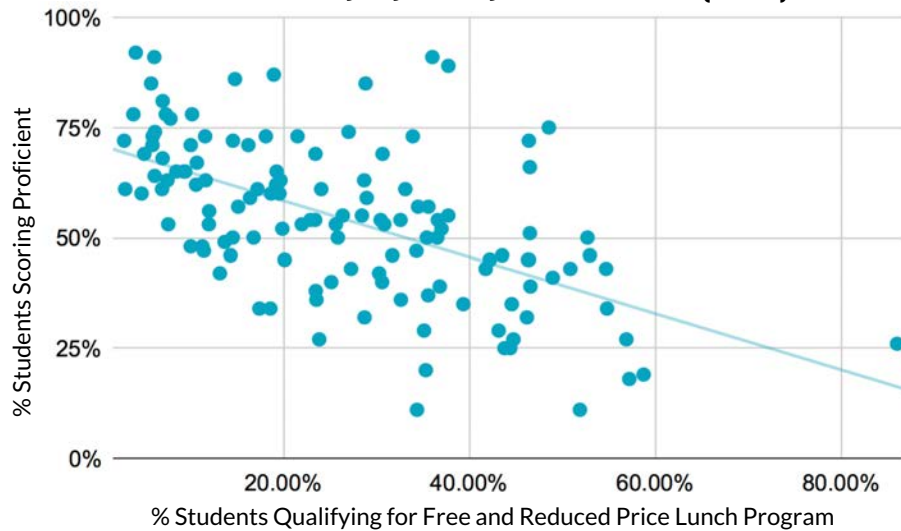
FAMILY OF TWO	\$30,044
FAMILY OF FOUR	\$45,510
FAMILY OF SIX	\$60,976

Source: US Department of Health and Human Services Federal Register

Examining the Data

Figure 1 shows fourth grade student proficiency in math by family income. We found that with higher concentrations of students navigating poverty, measured by student eligibility for the federal Free and Reduced Price Lunch program, there were lower rates of reading proficiency. This relationship was significant.

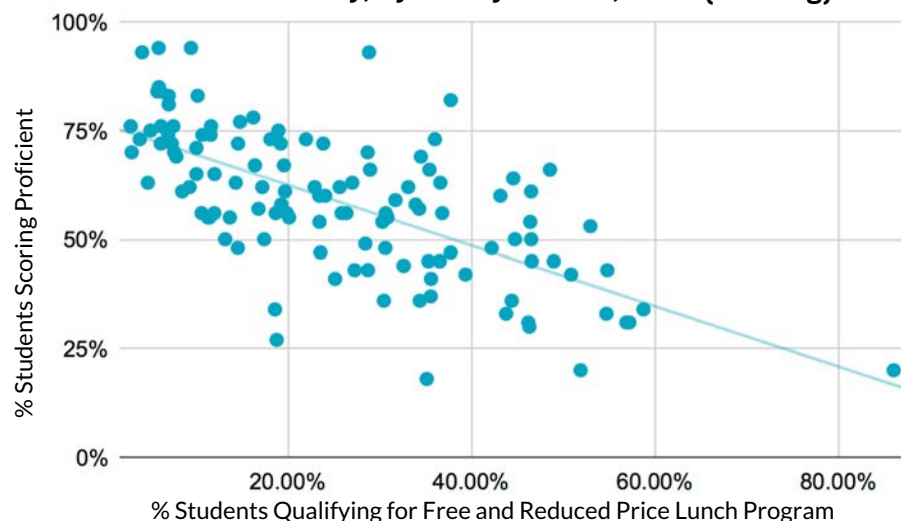
Figure 1: 4th Grade Student Proficiency, by Family Income, 2017 (Math)



Source: NH Department of Education, 2017

We found that the relationship between family income and reading proficiency was also significant, as shown in Figure 2. Districts with higher concentrations of students eligible for the federal Free and Reduced Price Lunch program were less likely to score proficient on statewide reading assessments.

Figure 2: 4th Grade Student Proficiency, by Family Income, 2017 (Reading)



Source: NH Department of Education, 2017

Interpreting the Data: How to Read Figures 1 & 2

Figures 1 and 2 are visual displays of data called scatterplots. Scatterplots capture two different pieces of information about a subject (i.e. an individual, an entity like a U.S. state, a business product, etc.).

For our purposes, each dot represents a specific New Hampshire school district.

Where the dot is located on the horizontal axis, or as your eyes move from left to right, represents the percentage of that district's public school students who are eligible for Free and Reduced Price Lunch, a proxy measure for poverty. Those districts to the far left have a very small number of students who are eligible, while those districts to the far right have a relatively high number of eligible students.

Where the dot is located on the vertical axis, or as your eyes move up and down, represents the percentage of that district's fourth grade public school students who tested proficient on New Hampshire's statewide standardized test. Districts at the very top had a high number of students achieve this benchmark on their exam,

Moving from Proficiency to Growth

New Hampshire currently determines student outcomes based on one exam, given annually. The Department of Education reports outcomes based on a school or district's percentage of students who score proficient or above on this single test. However, the state is moving toward a growth-based measure of learning, where the Department of Education will track individual student performance between academic years.

while districts at the bottom had a smaller number of students reach proficiency.

The overall pattern (shown by the light blue trend line moving to the right and down) shows that, in general, proficiency levels tend to decline in conjunction with higher rates of poverty. These relationships were statistically significant.

Wondering what "statistical significance" means?

Statistical significance is a statement of reliability. It means that the result we found is unlikely to be a mistake. We have defined "significant" as $p < 0.05$, which means that if we say a result is "statistically significant," there is a five percent chance or less that the result was the product of chance or error.





Image credit: Allison Shelley / The Verbatim Agency for American Education: Images of Students and Teachers in Action

It is important to remember that for fourth graders, the family's income was the best predictor of student proficiency. We also analyzed student-to-teacher ratios, district size, and the relative wealth of the community, but they fell flat when compared to family income.

The relationship between student proficiency scores and individual family income (measured by their eligibility for the Free and Reduced Price Lunch program) was even stronger than the relationship between student proficiency scores and the community's median household income.

But to be clear, this does not mean that students are not capable of scoring proficient on these tests. The unique challenges that many students navigate – food insecurity, housing instability, and lack of basic needs like a healthy

environment and access to doctors when they are sick – have proven to be particularly difficult to overcome. However, there are family, school, and community-based interventions that can help remove barriers to learning and create environments where students can thrive.

Yet, we often hear that the Granite State's economy is booming, unemployment rates are low – so how many New Hampshire students could possibly be affected by poverty?

Poverty in New Hampshire

In nearly every community in the state, there are families who are navigating poverty. Economic insecurity and hard times are not isolated to what individuals might think of as “low income” communities. And, the number of families navigating poverty is growing.

IN EVERY COUNTY IN NEW HAMPSHIRE, CHILDREN ARE SIGNIFICANTLY MORE LIKELY THAN SENIOR CITIZENS TO LIVE IN POVERTY



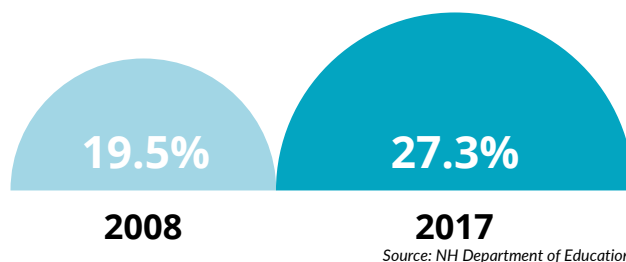
THE PERCENTAGE OF STUDENTS LIVING IN POVERTY HAS INCREASED, EVEN AS THE OVERALL STUDENT POPULATION HAS DECREASED 12% SINCE 2008.

Sources: NH Fiscal Policy Institute; NH Department of Education

Poverty is not just a “city” issue: it affects every part of the state. Here are some more facts about poverty in our state:

- In every county in New Hampshire, children are significantly more likely than senior citizens to live in poverty; and, in six out of the ten counties, children are more likely than adults to live in poverty.¹
- The state's median household income increased by 10% between 2006 and 2016, while inflation increased about 14% in that same period.²
- One in four New Hampshire students is navigating poverty. This represents an increase of 40% in just under ten years.³
- In 2017, 34,000 New Hampshire children faced food insecurity due to financial struggles.⁴
- In 2017, there were approximately 4,000 homeless students in New Hampshire, representing a 3% increase over the previous year.⁵

The percentage of students navigating poverty in New Hampshire increased by 40% in nearly a decade.



- In 2016, one-third of New Hampshire children lived in households that had high housing cost burdens.⁶

State Resources for Schools

When considering the power of a family's income, let's examine how the state helps schools in supporting students who are navigating poverty.

How formula changes affect school funding

Consider Abigail Downey, who is a junior in high school in Town A. Her school district receives \$2,092 less from the state in support of her education than it received when she started school. Her town has made up the difference by cutting programs, increasing class sizes, and increasing the local property tax rate.

When Abigail was in second grade,
the state provided her district:

\$7,095



Abigail is now in high school, and the
state provides her district:

\$5,003

¹ Vieira, Julia, and Phil Sletten. "Measuring New Hampshire's Municipalities: Economic Disparities and Fiscal Capacities." *New Hampshire Fiscal Policy Institute* (2018). http://nhfpi.org/wp-content/uploads/2018/08/Issue-Brief-Measuring-New-Hampshires-Municipalities_Economic-Disparities-and-Fiscal-Capacities.pdf

² American Community Survey 5-Year Estimates. *U.S. Census Bureau*. <https://www.census.gov/>

³ Free/Reduced School Lunch Eligibility by District, 2016-2017. *New Hampshire Department of Education*. (2017). <https://www.education.nh.gov/data/attendance.htm>

⁴ The number of children identified as “food insecure” includes children under the age of 18 who live in households where, in the previous 12 months, there was uncertainty of having, or an inability to acquire, enough food for all household members due to insufficient money or other resources. Source: “Children Living in Households That Were Food Insecure.” KIDS COUNT Data Center. *Annie E. Casey Foundation* (September 2019). <https://datacenter.kidscount.org/>

⁵ Education for Homeless Children and Youth Program (EHCY). *New Hampshire Department of Education* (2019). https://www.education.nh.gov/instruction/integrated/title_x.htm

⁶ American Community Survey 5-Year Estimates. *U.S. Census Bureau*. <https://www.census.gov/>

The formula that the state uses to fund its schools is relatively new: it has been in place since 2012. Before 2012, the formula gave more resources to the state's most vulnerable districts. The current formula provides schools with a set amount per student, with additional grants for students who qualify for the federal Free and Reduced Price Lunch program and/or other services.⁷ The result has been a decrease in state funding for the state's most vulnerable communities, even before adjusting for inflation, as displayed in Table 1.⁸

Table 1: Changes in State Funding Per Student, 2008-2017

	2008 (Former Formula)	2017 (Current Formula)
Town A <i>North Country</i>	\$7,095	\$5,003
Town B <i>Western New Hampshire</i>	\$5,989	\$4,832
Town C <i>Central New Hampshire</i>	\$5,695	\$4,903
Town D <i>Southeastern New Hampshire</i>	\$5,690	\$4,876

Source: NH Department of Education State Aid Programs Report, 2017

KEY TAKEAWAYS

- Fourth grade outcomes were most strongly associated with family income, and this relationship was even stronger than community factors.
- In nearly every community in the state, there are families who are navigating poverty.
- Poverty is not isolated to "low income" or "property-poor" communities.
- The percentage of students who are navigating poverty has increased over the past decade, while state resources to schools that serve families navigating poverty have largely dropped.

⁷ In 2017, the education funding formula provided "differentiated aid" for students who: qualified for the federal Free and Reduced Price Lunch program; had an Individualized Education Program (IEP); received English Language Learner (ELL) services; or were not proficient in reading on the third grade statewide assessment.

⁸ Vulnerable communities are those with low property wealth, compared to the state average, **and** high concentrations of students eligible for the federal Free and Reduced Price Lunch program.

THE ROLE OF THE COMMUNITY

harnessing the power of the community
for the benefit of our students



Image credit: Allison Shelley / The Verbatim Agency for American Education: Images of Students and Teachers in Action

Examining Findings: The Impact of the Community's Educational Attainment

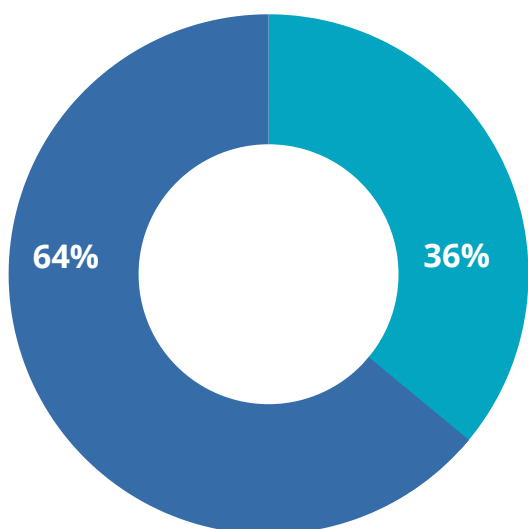
In elementary school, the family's income is the best predictor of proficiency. **As students get older, however, we see a change occur: the educational attainment of the community becomes an additional key predictor of academic proficiency.**

In our analysis, for both eighth and eleventh grades, students in communities with higher educational attainment - specifically, high concentrations of four-year college graduates -

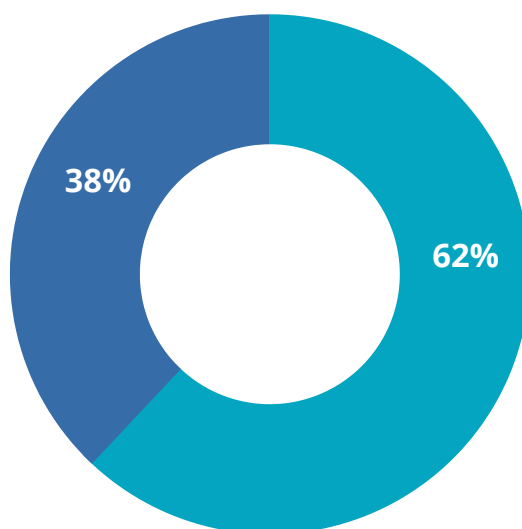
tended to outperform their counterparts in communities with lower educational attainment levels, in both reading and math.

As we present these findings, we also offer two considerations. The first focuses on opportunities for students within their communities; the second focuses on the availability of data. Above all, these findings present important areas for future research.

IN DISTRICTS WHERE MOST
COMMUNITY MEMBERS HAVE
UP TO AN ASSOCIATE'S DEGREE,
**36% OF EIGHTH GRADE STUDENTS
WERE PROFICIENT IN MATH**



IN DISTRICTS WITH HIGH
CONCENTRATIONS OF
FOUR-YEAR COLLEGE GRADUATES,
**62% OF EIGHTH GRADE STUDENTS
WERE PROFICIENT IN MATH**



Source: NH Department of Education, 2017



Image credit: Allison Shelley / The Verbatim Agency for American Education: Images of Students and Teachers in Action

Hypothesis 1: Opportunities

Reflecting back on what we saw with fourth grade students and the size of their universe, consider middle and high school students: they are further incorporated into their community through sports, jobs, and other activities.

Older students have the opportunity to engage with the community-at-large, both with and without the aid of their parents or guardians. They may have mentors who encourage their interests and passions, who can help guide them in choosing classes, finding internships, or seeking other opportunities to develop and pursue their goals and also support them in staying on track as they experience challenges along the way.

As middle and high school students explore interests for jobs and careers, they benefit from direct connections with role models in the community, as well as from networks of adults who provide guidance, reminders, and expectations.

Research suggests that relationships are critical to closing gaps in educational opportunity.⁹ From staying in or returning to high school, to preparing for and navigating career and education pathways, our networks can help

provide guidance, insight, and connections to make the process easier (or in some cases, make it even possible).

How do community and social connections help students?

Community and social connections are critical in supporting students through their education. Jamie Edwards, for example, relies on his network at his job to prepare for his college applications.

Jamie is a junior at his regional high school, which is in a college town. He works part-time at a coffee shop close to the college campus, where the owner graduated a few years ago. Many of the other baristas attend school there, and he often talks to them about their classes and the research they're doing. Even though his parents went to college, he knows that the process is a lot different today.

Jamie gets a lot of insight from the college students and his manager. They've even given him tips on how to apply for financial aid, and what he needs for the FAFSA - which he knows is on his parents' minds.

⁹ Fisher, Julia Freeland. "Who You Know: Unlocking Innovations that Expand Students' Networks." *John Wiley & Sons* (2018). "Why Youth Need Social Capital and How Schools Can Help." *Getting Smart*, January 3, 2019. <https://www.gettingsmart.com/2018/09/why-youth-need-social-capital-and-how-schools-can-help/>.



What does the research say about social capital?

- Gaps in opportunity are attributed to **who** students know, not just **what** they know. Schools can foster connection and networking by linking students with mentors, experts, and peers.¹⁰
- Students with more social capital, or strong relationships with members outside of their families, were less likely to drop out of high school.¹¹
- Service learning, which includes structured opportunities outside of school such as working in preschools or assisted living facilities, has positive effects on student learning.¹²
- Students who participated in school-facilitated Extended Learning Opportunities, which are credit-bearing learning experiences like internships and courses that happen outside of the traditional classroom, were more likely to graduate on time, and scored higher on the SAT.¹³
- Students who participated in work-based learning programs, such as a Career and Technical Education (CTE) center, were more likely to graduate, and were more likely to earn postsecondary credentials.¹⁴

¹⁰ ibid.

¹¹ Coleman, James S. "Social capital in the creation of human capital." *American Journal of Sociology* 94 (1988): S95-S120.

¹² Conway, James M., Elise L. Amel, and Daniel P. Gerwien. "Teaching and Learning in the Social Context: A Meta-Analysis of Service Learnings Effects on Academic, Personal, Social, and Citizenship Outcomes." *Teaching of Psychology* 36, no. 4 (2009): 233–45.

¹³ Extended Learning Opportunities (ELOs) coordinators (or other educators) work with community partners, businesses, and mentors to design learning experiences for students, while ensuring that the experience is rigorous and meets the same competencies as a course at the school. Learn more at www.reachinghighernh.org/ELO. Source: Callahan, M. Kate, Kasey Meehan, Dae Y. Kim, and Lucas Westmaan. "Results from a Two-Year Study of the Effects of Extended Learning Opportunities on Student Outcomes in New Hampshire." *Nellie Mae Educational Foundation* (2016). <https://www.nmefoundation.org/getattachment/9f8b05d0-1ac6-4364-84d3-4c8233ecd6dd/NMEF-ELO-v3.pdf?ext=.pdf>

¹⁴ Career and Technical Education (CTE) programs in New Hampshire are available to New Hampshire high school students, and provide them with hands-on, real-world learning in fields like health care, automotive technology, business, engineering, agriculture, and welding. Learn more at www.nh-cte.org. Source: Rodriguez, Jacqueline, Heather Fox, and Heather McCambly. "Work-Based Learning as a Pathway to Postsecondary and Career Success." *Illinois University, Office of Community College Research and Leadership* (2016). <https://ocrl.illinois.edu/docs/librariesProvider4/ptr/wbl-brief.pdf>



Image credit: Allison Shelley / The Verbatim Agency for American Education: Images of Students and Teachers in Action

Hypothesis 2: Educational Opportunities as a Proxy for Other Factors

We found that in New Hampshire, much like the rest of the nation, higher educational attainment leads to greater economic security: larger concentrations of community members with bachelor's degrees were associated with higher household incomes and lower unemployment rates. Educational attainment was also associated with teacher salaries in our findings: communities with greater concentrations of bachelor's and graduate degrees tend to pay their teachers more.

We suspect that the educational attainment variable indirectly reflects other community-level factors for which we do not have data. For example, we were unable to collect community-level data on health and wellness outcomes, environmental factors, community violence, substance use, mental health, and childhood trauma, abuse, and neglect, but research shows clear relationships between these factors and student learning.¹⁵ Higher education is positively associated with many of these outcomes, but we do not have the data at this time to test this hypothesis.

¹⁵ National Academies of Sciences, Engineering, and Medicine. *Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity*. National Academies Press, 2019. Smith, Kristin. "Parental Substance Use in New Hampshire: Who Cares for the Children?." (2018). American Public Health Association. *Creating the Healthiest Nation: Advancing Health Equity*. Knudsen, Eric I., James J. Heckman, Judy L. Cameron, and Jack P. Shonkoff. "Economic, neurobiological, and behavioral perspectives on building America's future workforce." *Proceedings of the National Academy of Sciences* 103, no. 27 (2006): 10155-10162. National Academies of Sciences, Engineering, and Medicine 2019. *School Success: An Opportunity for Population Health: Proceedings of a Workshop*. Washington, DC: The National Academies Press.

How can factors outside of school affect learning?

Health and wellness indicators and community factors can provide roadblocks to students' academic success. Let's take Abigail, for example:

Abigail Downey is entering her senior year in high school. She still deals with the trauma of her elementary school years, when her parents lived together and her father struggled with substance misuse. Her dad is in a state-run recovery center in Massachusetts, and she doesn't have much contact with him anymore since they moved. They don't have to worry about violence in their home anymore, but there have been a few robberies in her neighborhood. Abigail struggles at school, though. She is falling behind in her homework and studying because she works 30 hours per week during the school year, which is the maximum she's allowed. When her grandparents aren't available, she skips her last class so she can get out early enough to walk her siblings home from school to make sure they arrive home safely.

Health and wellness indicators, as well as additional community factors, can provide roadblocks to students' academic success. Children who battle chronic conditions, have a family member or friend who struggles with a substance use disorder, or live in communities with higher rates of crime, face greater barriers (and an uphill climb to overcome them), than their peers who do not have these life experiences.

Finally, higher education was associated with higher household income and lower unemployment. With those and other resources, families may have greater flexibility in choosing where to live. Take the Ali family, for example. The nature of their work in tech allows them to work remotely, giving them great flexibility in choosing a home for their family. The Downey family has limited resources, which means that they do not have as much freedom in where they can live.

Harnessing the power of communities for the benefit of students

As we think about schooling and the factors that impact student learning, our second finding underscores the role of the community. As students get older, they branch out from their families and into their school and community through jobs, after-school activities, volunteer work, and more. Along the way, they pick up critical connections - or social capital - that help them. These connections include mentors, friends, and other support systems.

Schools can be powerful facilitators of social capital, helping connect students to diverse networks that are aligned with a multitude of student interests or needs, from aspirations and academic achievement, to better attendance, improved behavior, and persistence in school.¹⁶ Schools can also serve as community hubs,

where students can access services that help them arrive to class ready to learn.

Schools can help leverage the strengths of students, families, staff, and community members to create a positive, engaging, and supportive learning environment where students thrive. A crucial first step is early and often community, family, and student engagement, where stakeholders come together to build a vision for their schools, assess local needs, and partner with the broader community to offer important resources.

Student and family support in the school: creating a learning environment where students can thrive

The Cruz family knows that their school district has a translation service for when they have in-person meetings, but they prefer to speak with the two school staff members who speak Spanish, even if they aren't their children's teachers. Most school-wide forms come home in Spanish, but classroom paperwork is always in English, and their oldest daughter, Jazmin, translates it for them as needed. They hear from friends at church that other school districts do not have any staff members who speak Spanish - or a translation service. These friends travel forty-five minutes to their church, as it is the closest one in which the service is in Spanish. The Cruz family wonders how different their lives would be if they lived in a community in which they were one of the only Spanish-speaking families.

Schools frequently engage partners to provide students with additional enriching experiences. Incorporating academic support and enrichment activities like STEM clubs, internships, art programs, and more, into the school increases access and opportunities for all students.

¹⁶ Holtzman, Deborah J., et al. "Mentoring for At-Risk High School Students Research Brief." *American Institutes for Research* (2017).



Inequities in OPPORTUNITY

Some students have **limited access to important and enriching opportunities**. Students with disabilities are often underrepresented in work-based learning programs. Students of color are underrepresented in gifted and advanced programs, regardless of whether they have achieved high standardized test scores. And, unpaid internships and volunteer work in high school may not be accessible for students who are navigating poverty.

Too often, systemic barriers undermine students as they strive to realize their academic potential.

Not all students are afforded the same opportunities to succeed. Take the Downey family, for example:

Abigail Downey is about to start her senior year of high school. Her friend, Ryan, spent his summer at an unpaid internship at a Boston pharmaceutical company so that he could include it in his premed application in the fall. He received a lot of guidance from the researchers with whom he worked, which he said he found really helpful in his application.

Abigail thought the internship sounded really interesting, but she couldn't quit her job at the local manufacturing company to pursue the types of opportunities that she hears will help her college application. She works nights and weekends to help support her family, and she can't afford to take an unpaid position. She knows that her work experience can help her get into college, but she's concerned she won't be as competitive as others.

Community Schools as an evidence-based model

Community Schools are public schools that have strong family and community partnerships with a focus on “academics, health and social services, youth and community development, and community engagement.”¹⁷ This evidence-based approach recognizes both internal and external barriers to learning, and leverages the power of the community to help students overcome them.

The Community Schools model includes four pillars: 1) integrated student supports, like mental and general health services and streamlined resource coordination; 2) expanded and enriched learning time and opportunities, like internships and volunteer opportunities; 3) active family and community engagement; and, 4) collaborative leadership and practices, in which parents, students, teachers, principals, and community partners build a culture of learning, collective trust, and shared responsibility in school-based initiatives.

These pillars reinforce each other and are critical to ensuring that all students come to school ready to learn. Community Schools are rooted in local assets and needs, and are



Image from: Partnership for the Future of Learning

designed with and for students, families, and community members.

Some states that have begun to adopt the Community Schools model include Georgia, California, Minnesota, Tennessee, New York, Utah, and Maryland, among others. New Hampshire is in the early stages of exploring this approach, with several elementary schools in Manchester partnering with the Manchester Health Department and a range of community partners to directly integrate a broader range of services and supports into their schools.

To learn more:

<https://www.amoskeaghealth.org/primary-care-prenatal/manchester-community-schools-project/>

For more information on Community Schools, download the *Community Schools Playbook*, a project of the Partnership for the Future of Learning:

<https://communityschools.futureforlearning.org/>

KEY TAKEAWAYS

- As students get older, the predictors of their academic outcomes expand to include both family income **and** the educational attainment of the broader community. This opens up numerous avenues for further follow-on research.
- Our findings led us to two hypotheses:
 - Communities with higher concentrations of four-year college graduates may present students with more opportunities for mentorship, enrichment opportunities, and learning activities; and,
 - Educational attainment may be a proxy for other indicators that are not included in our data set, such as health and wellness and environmental factors.

¹⁷ Maier, Anna, Julia Daniel, and Jeannie Oakes. “Community Schools as an Effective School Improvement Strategy: A Review of the Evidence.” *Learning Policy Institute* (2017).

WHAT ABOUT TEACHERS?

how do our teachers, classrooms, and other factors influence student learning?



Photo Credit: Allison Shelley/The Verbatim Agency for American Education: Images of Teachers and Students in Action.

Examining Findings: What About Teachers?

One additional variable in our research proved to be a strong predictor of student outcomes in secondary schools, especially in the eleventh grade: teacher salary.

Districts that had higher teacher salaries outperformed their counterparts with lower paid educators in both reading and math. Additionally, higher teacher salaries were associated with higher attendance rates and higher graduation rates.

As shown in Table 2, students in districts with higher teacher pay graduated high school within four years at a higher rate, compared to students in districts that did not have comparable teacher salaries. Districts with lower average teacher salaries had higher student dropout rates than districts with higher-paid teachers.

Facts About Teacher Salary in New Hampshire



Teacher salary is likely to be higher in districts that:

- Serve a larger number of students;
- Have lower student-teacher ratios; and,
- Had more property wealth per student.

But what about class size?

Class size is different than the student-teacher ratio. Class size measures the actual number of students in a classroom, whereas the student-teacher ratio measures the number of full-time equivalent teachers (including subject-specific teachers, special education teachers, and regular classroom teachers). There was no relationship between class size and teacher pay.

Table 2: New Hampshire Average Teacher Salary and Graduation Indicators, 2017

	High School Graduation Rate	High School Dropout Rate	K-12 Student Enrollment
Bottom 20% (<\$48,132)	87.4%	3.0%	13,305
Top 20% (>\$62,970)	94.5%	0.8%	37,014

Source: NH Department of Education, 2017

It is important to note, however, that there are quite a few variables we were not able to analyze when considering teachers, as the data is not currently available from the New Hampshire Department of Education. Those variables included teacher retention and attrition within districts; whether the teacher demographics of a district reflect the student demographics; the number of years in the field; and degrees and certifications in relation to teacher salary, to name a few.

We know that discussions about teacher salary often go hand-in-hand with concerns about the rising costs of educating students. And yet, our research shows that in New Hampshire, **there was no relationship between teacher salary and cost per student.** While it may be true that personnel costs are a substantial part of a school district's budget, we found no relationship between the cost per student and average teacher salary.

Geographical Differences

In New Hampshire, the amount that districts pay teachers tends to differ based on



Image credit: Allison Shelley/The Verbatim Agency for American Education: Images of Teachers and Students in Action.

There was no relationship between teacher salary and cost per student.

socioeconomic status and property wealth.

School budgets are formed by each individual district, and unlike some other states, New Hampshire does not have a minimum teacher salary.¹⁸

Districts with higher property wealth and stronger economic conditions tended to have higher teacher salaries, and this trend has grown over time.

Schools evolve to meet student needs

The proposed school budget in Michael Branch's town just came out, and the school board is proposing a 2.3% increase over last year. There have been some grumblings in town - this would be the fourth year in a row that the property tax rate has increased, and people around town are unsure why costs keep increasing. Michael has lived in this town for his entire life, and went to the same school his daughters attend. He sees clear differences between schooling, then and now - he knows that his aunt, who has Down Syndrome, was excluded from public education. At that time, many people with disabilities did not attend public school and when they did, it felt as though they were kept "hidden" from the other students. His mom would tell him this story growing up, especially if it appeared he was taking his education for granted.

His youngest daughter, Rae, now receives services and accommodations for a learning difference through an IEP. She has a paraprofessional that helps her daily, and she comes home almost every day excited to share what she learned. He knows that her continued progress is due to the supports she receives through the school.

¹⁸ As of 2016, seventeen states use statewide teacher salary schedules to guarantee minimum teacher salaries based on experience and training. Griffith, Michael. "State Teacher Salary Schedules." *Education Commission of the States* (2016).

Figure 3: Average Teacher Salary, by Upper (Blue) and Lower (Green) Quartiles of Economic Advantage



Source: NH Department of Education, 2017

Figure 3 demonstrates average teacher salary in two groups: the “upper quartile,” which are the 40 districts where less than 12% of students are navigating poverty in 2017 (depicted by the blue line), and the “lower quartile,” which are the 40 districts where more than 36% of students are navigating poverty in the same year (depicted by the green line). As shown in Figure 3, the difference in average teacher salary between these two groups of districts grew by 51% between 2008 and 2017. In 2008, districts with fewer students navigating poverty paid their teachers about \$8,000 more than

districts with higher concentrations of students navigating poverty. In 2017, the difference grew to over \$12,000.

School administrators in districts that are unable to offer higher salaries often say that they have difficulty retaining teachers.¹⁹ High rates of teacher turnover have negative effects on student learning, particularly in math and English Language Arts (ELA), and these effects are stronger in more economically vulnerable districts.²⁰

KEY TAKEAWAYS

- Teacher salary was a strong predictor of reading and math outcomes, especially in high school.
- Districts with higher teacher salaries tended to have higher high school graduation rates and lower dropout rates.

¹⁹Green, Rick. “New Hampshire Teacher of the Year Leaving Laconia for Better-Paying Job.” *The Laconia Daily Sun*, May 23, 2017. <https://www.laconiadailysun.com/news/local/new-hampshire-teacher-of-the-year-leaving-laconia-for-better/>

²⁰Ronfeldt, Matthew, Susanna Loeb, and James Wyckoff. “How Teacher Turnover Harms Student Achievement.” *American Educational Research Journal* 50, no. 1 (2013): 4-36.

Conclusion

When we asked you to envision “education,” you likely conjured up images that are shared across the state – whether you grew up on the Seacoast, in the White Mountains, or outside of New Hampshire entirely. Maybe you pictured the decorations on your classroom wall, a teacher you had, or a parent teacher conference at your child’s school.

But education is more comprehensive and nuanced than a school building, a teacher, or even a student in the academic setting - it reflects and involves the entire community and context in which a student is learning and growing up.

Families and communities are not identical across the Granite State. We have different experiences and strengths, and face different challenges.

The Whole Picture of Public Education project looks beyond individual classrooms and schools to explore the family, community, and statewide factors that impact learning, and begins to unpack how we can best support our students.

We outlined how a student’s learning is impacted by their family: specifically, how navigating poverty places enormous burdens on our youngest learners. Experiences like food insecurity, housing instability, and lack of basic needs like a healthy environment and access to doctors when children are sick, create barriers that have proven difficult to overcome.

Image credit: Allison Shelley/The Verbatim Agency for American Education: Images of Teachers and Students in Action.



Then, we found that as students get older, their communities also become a strong predictor of their learning. They become embedded in their communities through jobs, sports, volunteer work, and more. Their social and academic networks become crucial in pursuing opportunities, from internships and other work-based learning opportunities, to mentors who serve as guides and offer encouragement through sharing their own learning pathways.

But it is important to note that opportunity is not equally distributed. There are students who are provided limited access to enriching experiences. Too often, our students face systemic barriers that undermine them as they strive to realize their full academic potential.

Our public schools have the opportunity to tear down these barriers and foster equity across student groups, demographics, and town lines.

Through this project, we learned that education is more than what happens in the classroom. When students walk through their school door every day, they carry with them all their experiences - small and great: a nutritious breakfast, a sleepless night, a chronic illness, excitement over an after-school activity, anxiety over their family situation, and so much more. Our schools serve as hubs of learning - but they also have unique and unparalleled opportunities to address systemic barriers, helping to ensure that children arrive to class positioned and able to learn.

The greatest power of our public schools is that they must support all of our learners and prepare them for their futures - whatever they choose them to be. And by harnessing the power of our families and our communities, our public schools can help all children reach their fullest potential.

Continued Reading

Abott, Carolyn, Vladimir Kogan, Stéphane Lavertu, and Zachary Peskowitz. "School District Operational Spending and Student Outcomes: Evidence from Tax Elections in Seven States." EdWorkingPaper 19-25, Annenberg Institute at Brown University (2019).

Barrick, Daniel. "School Consolidation in New Hampshire: Some Points for Discussion." *New Hampshire Center for Public Policy Studies* (2015).

Baker, Bruce D. "How Money Matters for Schools." *Learning Policy Institute* (2017).

Cotti, Chad, John Gordanier, and Orgul Ozturk. "When Does It Count? The Timing of Food Stamp Receipt and Educational Performance." *Economics of Education Review*, 66 (2018): 40-50.

Gonzales, Jason. "With 1 in 3 Students Attending Rural Schools, Coalition Recommends Focus on TN Rural Populations." *Nashville Tennessean*, June 3, 2019.

<https://www.tennessean.com/story/news/education/2019/05/31/tennessee-equity-coalition-report-focuses-complex-issues-facing-rural-schools-tennessee/1275812001/>

Hinojosa, David. "Essential Building Blocks for State School Finance Systems and Promising State Practices." *Learning Policy Institute* (2018).

Jackson, C. Kirabo. "Does School Spending Matter? The New Literature on an Old Question." No. w25368. *National Bureau of Economic Research* (2018).

Jackson, C. Kirabo, Rucker C. Johnson, and Claudia Persico. "The Effects of School Spending on Educational and Economic Outcomes: Evidence from School Finance Reforms." *The Quarterly Journal of Economics* 131, no. 1 (2015): 157-218.

Lafortune, Julien, Jesse Rothstein, and Diane Whitmore Schanzenbach. "School Finance Reform and the Distribution of Student Achievement." *American Economic Journal: Applied Economics* (2018): 10 (2): 1-26.

Levin, Henry M. "The Economic Payoff to Investing in Educational Justice." *Educational Researcher* 38, no. 1 (January 2009): 5-20.

National Academies of Sciences, Engineering, and Medicine. "School Success: An Opportunity for Population Health: Proceedings of a Workshop." Washington, DC: The National Academies Press (2019).

Norton, Steven and Greg Bird. "Education Finance in New Hampshire: Headed to a Rural Crisis?" *New Hampshire Center for Public Policy Studies* (2017).

Continued Reading

Perrin, James M., Michael C. Lu, Amy Geller, and Jennifer E. DeVoe. "Vibrant and Healthy Kids: Aligning Science, Practice, and Policy to Advance Health Equity: A Report from the National Academies of Science, Engineering, and Medicine." *Academic Pediatrics* (2019).

Rafa, Alyssa. "How Is the Opioid Crisis Affecting Schools and Students?" EdNotes. *Education Commission of the States*, April 12, 2018. <https://ednote.ecs.org/how-is-the-opioid-epidemic-affecting-schools-and-students/>

Reardon, Sean F. "The Widening Academic Achievement Gap Between the Rich and the Poor: New Evidence and Possible Explanations." *Whither Opportunity* (2011): 91-116.

Reschovsky, Andrew. "The Future of U.S. Public School Revenue from the Property Tax." *Lincoln Institute of Land Policy* (2017).

Rowe, Claudia. "Soaring Numbers of Children Are Born in Drug Withdrawal. As They Reach School Age, Here Is What One City Is Doing About It." *The Seattle Times*, May 24, 2019. <https://www.seattletimes.com/education-lab/the-littlest-children-of-opioid-addicts-are-throwing-schools-into-unprecedented-turmoil-heres-what-new-hampshire-is-doing-about-it/>

Ruglis, Jessica, and Nicholas Freudenberg. "Toward A Healthy High Schools Movement: Strategies for Mobilizing Public Health for Educational Reform." *American Journal of Public Health* 100, no. 9 (2010): 1565-1570.

Schanzenbach, Diane Whitmore. "Does Class Size Matter?" *National Education Policy Center* (2014).

Shores, Kenneth, and Matthew P. Steinberg. "Schooling During the Great Recession: Patterns of School Spending and Student Achievement Using Population Data." *AERA Open* 5, no. 3 (2019): 2332858419877431.

Smith, Kristin, "Parental Substance Use in New Hampshire: Who Cares for the Children?" *The Carsey School of Public Policy at the Scholars' Repository*. (2018). <https://scholars.unh.edu/carsey/342>

Weathers, Ericka S., Erin M. Fahle, Heewon Jang, and Demetra Kalogrides. "Is Separate Still Unequal? New Evidence on School Segregation and Racial Academic Achievement Gaps." Educational Opportunity Project at Stanford University. Stanford University, September 2019. <https://edopportunity.org/papers/reardon-segregation-working-paper-version-sept-23-2019.pdf>

Notes

[illegible]

Notes

[illegible]



ReachingHigherNH.org



[@ReachingHigherNH](https://www.facebook.com/ReachingHigherNH)



[@ReachHigherNH](https://twitter.com/ReachHigherNH)



[@ReachingHigherNH](https://www.instagram.com/ReachingHigherNH)