



# Counting

# The

# Cost

**A Commitment to Educational Equity  
that Yields Returns**

Executive Summary

OCTOBER 2019



# Counting the Cost:

## A Commitment to Educational Equity that Yields Returns

### THE CHALLENGE PERSISTS

This year over 50 million students will enter schools across our nation seeking the promise of a high-quality public education. They will attend over 13,500 districts and consortiums with an expectation that they are becoming more prepared for their future. What we've witnessed over the last 20 years in this work is that despite an unwavering commitment to students and their communities, districts are struggling to ensure that every student is receiving a high-quality education that sets them up for success. Many of our district partners are constantly assessing what investments they can make to increase educator effectiveness, retain educators over time, and ultimately improve student learning. The broader field spends upwards of \$18B on investments on professional development<sup>1</sup> to improve educator effectiveness and student outcomes, yet the challenge for an equitable education persists. For districts to invest their dollars strategically, they should demand better data on the effectiveness of programs to be able to support teachers and students.



**\$1,155,000**

Estimated average cost of teacher turnover to a district annually

Across our country, educators are leaving the profession at a rate of 8% every year.<sup>2</sup> New teachers feel unprepared to serve their classrooms, contributing to a lack of confidence and feeling ineffective in their roles. This leads to continued teacher turnover, a costly challenge for districts committed to driving positive student outcomes. With nearly half of new teachers leaving the profession in their first five years, the national estimated average cost of teacher turnover to a district is \$1,155,000 annually.<sup>3</sup> This cost is even greater in larger, urban districts where there is an increased population of new teachers. These districts face a higher burden with up to 17% of teachers transitioning annually based on region,<sup>4</sup> contributing to an estimated cost of \$17,872 per teacher that needs to be replaced.<sup>5</sup>

<sup>1</sup> The New Teacher Project. (2015). The mirage: Confronting the hard truth about our quest for teacher development.

<sup>2</sup> Carver-Thomas, D. & Darling-Hammond, L. (2017). Teacher turnover: Why it matters and what we can do about it. Palo Alto, CA: Learning Policy Institute.

<sup>3</sup> Ibid.

<sup>4</sup> Ibid.

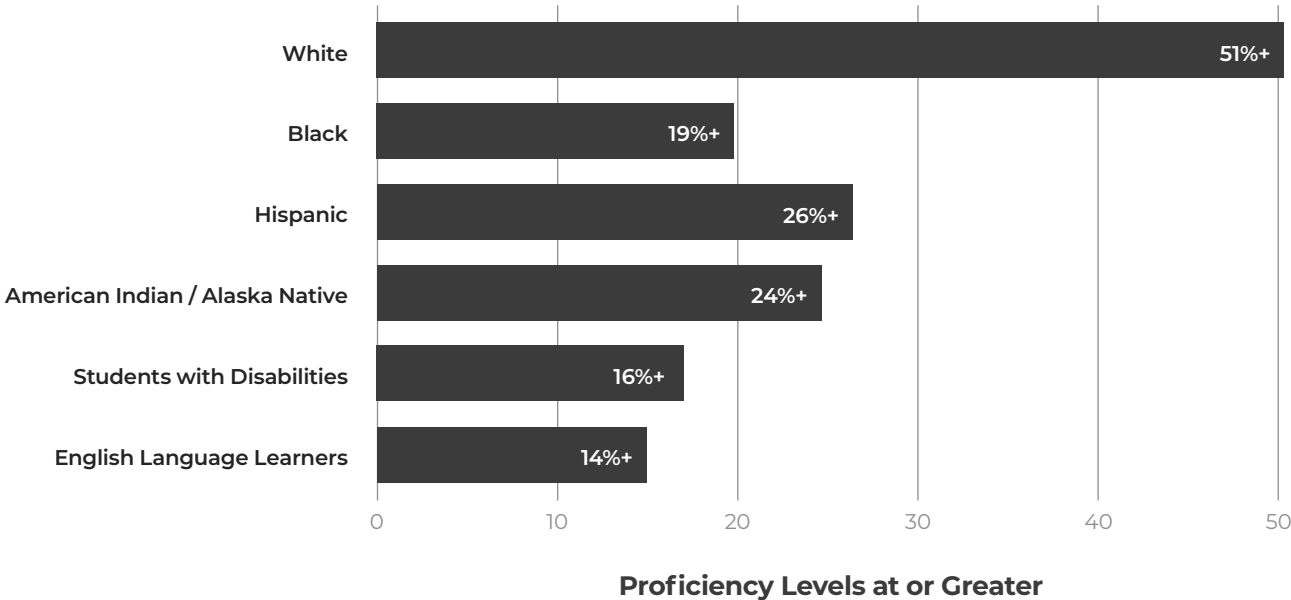
<sup>5</sup> Barnes, G., Crowe, E., & Schaefer, B. (2007). The cost of teacher turnover in five school districts: A pilot study. National Commission on Teaching and America's Future (NCTAF), Arlington, VA.

These trends have created a ripple effect for students, the predictability of the achievement gap and subsequent inequity in economic outcomes continue. Systemically underserved students often face a revolving door of educators who are underprepared to serve their needs, resulting in a documented achievement gap that has persisted for over 50 years.

The U.S. Department of Education has identified the following students populations as those that have been underserved:

- Students Living in Poverty**
- Black, LatinX & Indigenous Students**
- English Language Learners**
- Students with Disabilities**
- Immigrant Students**

Among these student populations, achievement gaps were almost as high as 40 percentage points among fourth-grade students:



SOURCE: 2017 Mathematics, National Assessment of Educational Progress

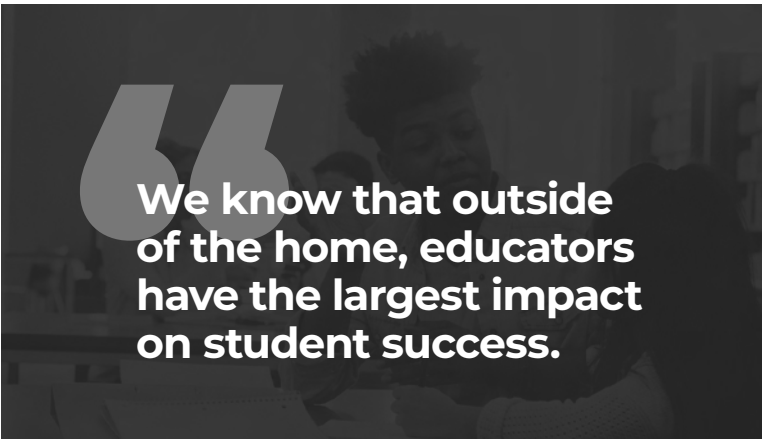
# OUR COMMITMENT TO EQUITY & PROFESSIONAL LEARNING

We believe that every student, from preschool through high school, deserves an excellent and equitable education that empowers them to reach their full potential in classrooms, communities, and beyond. In order for this to be true, we are committed to disrupting the predictability of educational inequities for systemically underserved students.

We know that outside of the home, educators have the largest impact on student success. That is why for over 20 years, we have focused on accelerating educator effectiveness. We work with our partners to build highly effective systems through a comprehensive approach to develop effective educators at every level - from teachers to system leaders - so that students have a learning experience that empowers them to reach their full potential in classrooms, communities, and beyond.

Research confirms that teaching quality is directly tied to student achievement.<sup>6</sup> One of the best ways to improve instructional practice and educator effectiveness is to provide educators at all levels, from preschool through high school, with high-quality professional learning and coaching.<sup>7</sup>

We've learned that districts must go beyond the traditional ideas of professional development, where teachers are subject to a sit-and-get experience. Rather, we have found that educators need to have high-quality instructional materials



**We know that outside of the home, educators have the largest impact on student success.**

and implementation support, including job-embedded coaching that provides actionable feedback, and evidence-based analysis and reflection, all rooted in both academic and social and emotional learning competencies. In addition to these elements, educators also need support to address the whole child, building an understanding of the importance of social and emotional learning, and learner variability.

A 2017 study showed that New Teacher Center's professional learning coaching program resulted in positive effects on student learning and teacher retention.<sup>8</sup> We wanted to dig deeper and learn more. We asked what could happen long-term, not just for educators and students but for districts and communities as well. We wanted to answer the question that holds us accountable... is this worth the investment and will it contribute to disrupting the predictability of educational inequity that lead to inequitable life outcomes?

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<sup>6</sup> Darling-Hammond, Linda. 2000. Teacher Quality and Student Achievement: A Review of State Policy Evidence. Education Policy Analysis Archives.

<sup>7</sup> Across the 43 studies included, Kraft et al. (2018) estimated a pooled effect size of 0.49 standard deviations on instructional practice outcomes (e.g., measures using validated classroom observation rubrics).

<sup>8</sup> 13 Validation Study, SRI Evaluation, 2017.

# A RETURN ON INVESTMENT FOR ALL

We know that NTC's professional learning accelerates student learning. At the same time, we know districts across the country invest significantly in professional learning for teachers - much of which does not meet their needs nor produce the impact intended. This reality, coupled with an increasingly resource-constrained landscape, creates a new level of urgency for the field and NTC to have a better understanding of areas to invest in to garner the best supports for students and teachers. NTC wants to test its hypothesis that we are a partner who can offer a return on a district's investment in meaningful and measurable ways. Our hypothesis is that if districts strategically redirect dollars that are already being invested in teacher development, this can result in improved outcomes and a return on investment for districts, educators, students, and their communities.

Using the data and results from the i3 Validation study conducted by SRI International as a foundation, NTC partnered with Metis Associates, Inc. to further explore what returns on investment our professional learning yields and to support our ability to continuously examine the effectiveness of our work using this lens.

This study yielded four key findings that we'll unpack below.

## 1 EDUCATORS INCREASE LEARNING AND STAY LONGER

Students of NTC-supported teachers in grades 4 through 8 demonstrated up to 5 months of additional learning in math and ELA compared to students of the control-group teachers, who received traditional new-teacher support.

Teacher retention rates from year one to year two were 11 percentage points higher in the NTC-supported group compared to the teachers receiving traditional support (67% compared to 78%).



**+11%**

Increase in teacher retention from year one to year two

## 2 STUDENTS LEARN AND EARN MORE

Students of NTC-supported teachers have the potential to earn an additional \$38K, on average, in their career lifetime earnings.

When districts invest in professional learning opportunities that are proven to increase student learning, students will also see greater earnings over the course of their careers. This increase has the potential to create increased opportunities and financial stability.



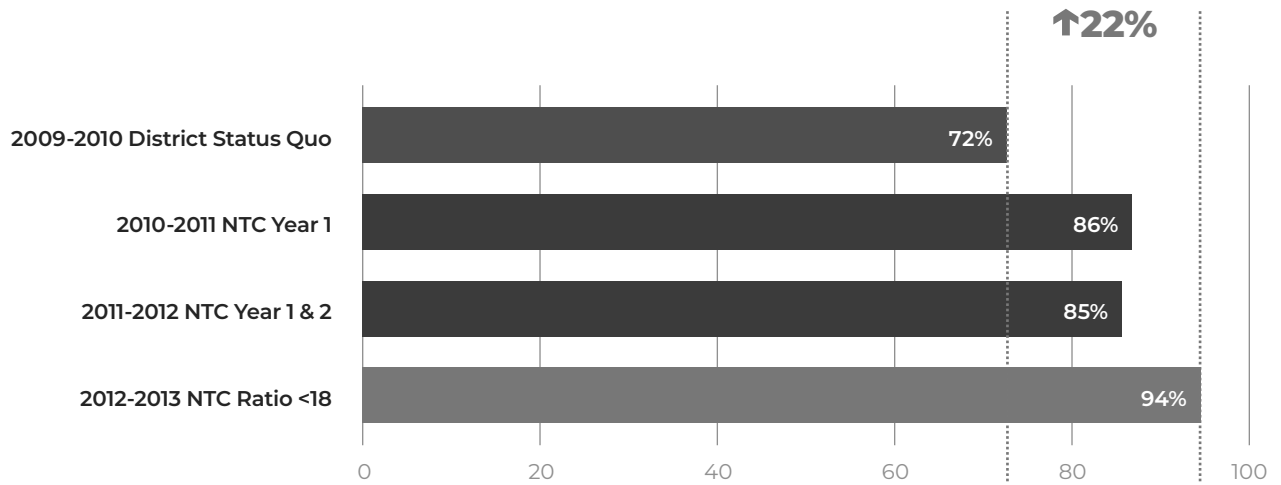
**+\$38K**

Additional lifetime career earnings on average

**3**

**DISTRICTS SPEND LESS AND SERVE MORE**

NTC’s professional learning program for new teachers yields a 22% return to the district. Based on a 5 year investment, this is equivalent to a district saving nearly \$1M.\*



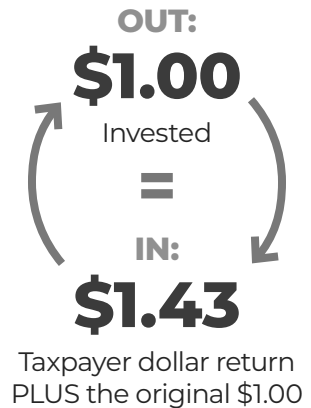
44% of teachers leave the profession within their first five years of teaching. When districts invest in programs that are proven to increase effectiveness and retention, districts spend less on recruitment and other endeavors to fill vacant positions.<sup>9</sup> In turn, districts then have the opportunity to reinvest these savings into instructional support and student programs.

**4**

**ECONOMIC IMPACT FOR COMMUNITIES**

Successful students lead to greater long-term economic impact in their communities. This increased career earning power yields a \$2.43 return to communities for every \$1 invested in our program.

Sales taxes to the county, state, city, and tax levies all support public education. When a student is able to “earn” more throughout their career, they contribute more to their communities through future consumer spending and an increased tax base.



\* Based on 100 new teachers each year, over 5 years

<sup>9</sup> Ingersoll, Richard M.; Merrill, Elizabeth; Stuckey, Daniel; and Collins, Gregory. (2018). Seven Trends: The Transformation of the Teaching Force – Updated October 2018. CPRE Research Reports.



## THE METHODOLOGY

New Teacher Center regards its return on investment estimate as a “first approximation.” We consider this to be the beginning, not the end, of this kind of analysis of our work and its impact on teachers, students, and communities.

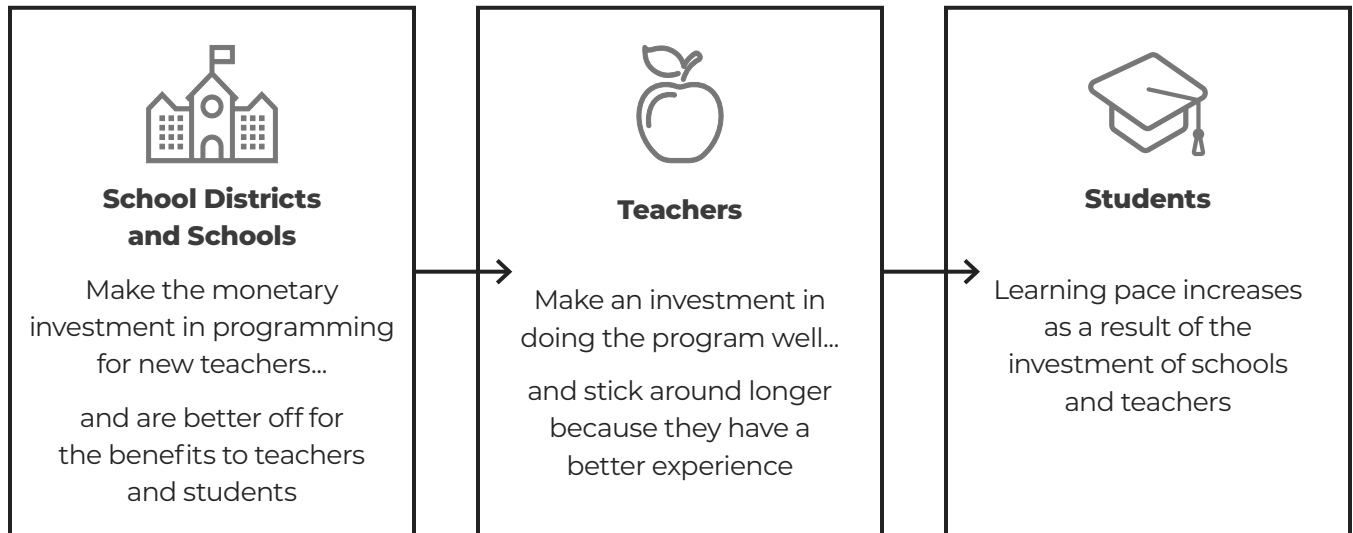
The model was kept simple with a focus on the two most scrutinized program benefits: student testing achievements and teacher turnover. From 2013 to 2017, the New Teacher Center (NTC) received a federal i3 Validation grant to provide high-intensity mentor support to new teachers in a large urban school district. NTC partnered with Metis Associates to compare the grant spending to the estimated monetary value of the observed effects of the program on student performance and teacher attrition.


These monetary returns to a district’s investment are further enhanced by the more intangible benefit of having an educational system where the newest teachers are supported and nurtured. These results, an extrapolation of earlier findings about the empirical benefits of new teacher induction, suggest that the New Teacher Center model is worthy of the investment of schools and school districts.

# COST SAVINGS TEACHER INDUCTION LOGIC

## Who invests and who draws returns?

Sales taxes to the county, state, city, and tax levies all support public education. When a student is able to “earn” more throughout their career, they contribute more to their communities through future consumer spending and an increased tax base.



 **Context**  
School spending, school governance, unions, poverty, minimum wages, labor market funds, trauma, racism, services for students with disabilities

## INVESTMENT

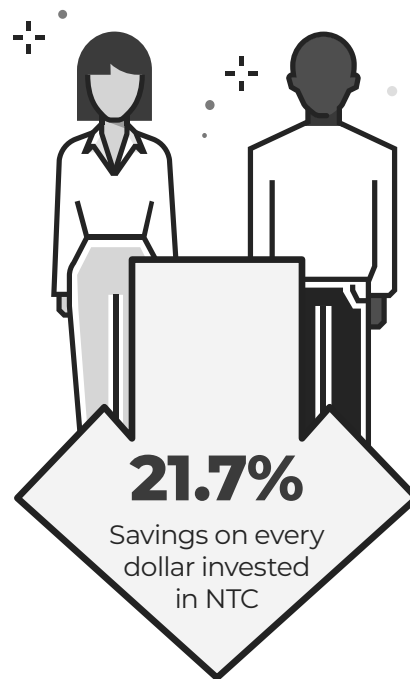
Actual program costs were provided for NTC-supported schools in study districts as part of the federal grant reporting process, which included two more districts, with different educational contexts that we excluded from this analysis due to the financial scope of this study. To estimate the cost per student, costs were pro-rated by teacher by year (excluding costs for program evaluation), and compared this to an estimated per-teacher cost for traditional new-teacher support for teachers receiving

traditional support. After distributing the costs evenly across all traditional and NTC-supported students, the per-student program cost came out to be \$270. Program costs included program administration and management, tracking software. Looking at empirical grant spending, as all costs above and beyond what a district would normally do, new teachers in control schools were also assumed to receive something extra given the number of programs available to schools in a large urban setting.



## LOWER RETENTION COSTS

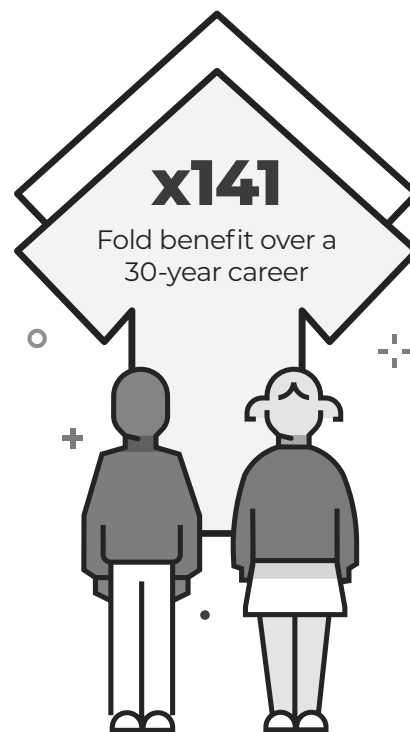
In the first cohort of teachers in the i3 Validation study conducted by SRI International, teacher retention rates from year one to year two were 11 percentage points higher in the treatment group than the comparison group (67% for control teachers and 78% retained for treatment teachers). We didn't consider the findings from a second cohort of teachers because trends in the teacher job market were dramatically distorted by looming district-wide layoffs. A review of the literature on teacher turnover cost found that hiring a new teacher in the study district costs \$17,872 per teacher that needs to be replaced.<sup>10</sup> With a program per teacher cost estimated at \$9,223 for the first cohort, and assuming that for every 100 teachers included in the program, one could expect to spend \$922,300 and save \$200,166 the following year due to increased teacher retention ( $\$17,872 * 100 * 11.2\%$ ). This implies that a district has the potential of achieving a 21.7% cost savings on every dollar invested in NTC ( $\$200,166 / \$922,300$ ).



### Lowered Costs for Educators

## INCREASED STUDENT LEARNING AND FUTURE EARNING POTENTIAL

The basis for projecting student earnings from student achievement was derived from a 2011 study conducted by Hall and Farkas<sup>11</sup> which estimated the effects of cognitive skills on career wage trajectories. Using data from the National Longitudinal Survey of Youth, Hall and Farkas provided estimates of the proportion of future starting wages and wage growth for three racial/ethnic subgroups (white, black, Latinx) separately for males and females. These estimates were weighted by the proportion of students in these subgroups from SRI's student achievement analysis to develop starting salary and wage gain estimates relevant to our student participants. Observed differences between pre- and post-achievement for treatment and control students determined average wage gains based on cognitive ability. Differences between groups were then calculated across a career of 30 years. Through this methodology, the estimated economic benefits per student in the treatment group was calculated to be \$141 for each dollar of investment across a career span of 30 years, as seen in Table 2.



### Student Success

<sup>10</sup>Barnes, G., Crowe, E., & Schaefer, B. (2007). The cost of teacher turnover in five school districts: A pilot study. National Commission on Teaching and America's Future (NCTAF), Arlington, VA.

<sup>11</sup>Hall, M. & Farkas, G. 2011. Adolescent cognitive skills, attitudinal/behavioral traits and career wages. *Social Forces*, 89(4), 1261–1285.

If students earn more over the course of their careers due to participation in the program, then we can expect them to pay more in taxes to the governments that fund education. Students might pay more in income taxes, property taxes, and sales taxes.

Assuming that 23% of marginal income is likely to be spent on taxable items,<sup>12</sup> and that 73% of youth would likely remain in the urban area and pay taxes there.<sup>13</sup> If tax rates in the future are similar to tax rates today then spending would be subject to 10.25% in sales taxes to the county, state, and city, tax levies which all support public education. Estimating that for the intervention with math teachers, every \$1 invested would yield \$141 in returns over 30 years of a student's career, every \$1 invested would see \$2.43 return to tax levies over that same time period ( $\$141 * 23% * 73% * 10.25%$ ).

**Every \$1 invested would yield \$141 in returns over 30 years of a student's career, every \$1 invested would see \$2.43 return to tax levies over that same time period.**

**Table 2: Summary of Costs and Benefits per Student**

|                                |                 |  |
|--------------------------------|-----------------|--|
| <b>Program Cost</b>            | <b>\$270</b>    | The present value of costs is just the value of the costs (see program expenditures above).  |
| <b>Student Career Earnings</b> | <b>\$38,332</b> | The present value of the returns is greater the more years we project out. This is the average difference in projected earnings between treatment and control students after 30 years of employment. |
| <b>Net</b>                     | <b>\$38,062</b> | The net present value is the difference between returns and costs for a given time horizon. In other words, the returns minus the costs.   |
| <b>Return on the Dollar</b>    | <b>\$141</b>    | The return per \$1 is the ratio of the returns to costs for a given time horizon, calculated as the net present value divided by program costs.  |

<sup>12</sup> Kaeding, N. (2017). Sales tax base broadening: Right sizing a sales tax. Fiscal Fact 563, Tax Foundation, Washington, DC. Retrieved from <https://taxfoundation.org/sales-tax-base-broadening/>

<sup>13</sup> Chetty, R., Friedman, J., Hendren, N., Jones, M.R., & Porter, S.R. (2018). Opportunity Atlas. Opportunity Insights, Cambridge, MA. Retrieved from <https://opportunityinsights.org/paper/the-opportunity-atlas/>

## ABOUT NEW TEACHER CENTER (NTC)

New Teacher Center (NTC) is a national non-profit organization committed to disrupting the predictability of educational inequities for systemically underserved students to ensure every student, from preschool through high school, receives an excellent and equitable education that empowers them to reach their full potential in classrooms, communities, and beyond.

Founded by teachers in 1998, NTC works with systems to drive student learning, increase educator effectiveness, and build leadership capacity. We do this by providing PreK-12 educators with evidence-based skills and supports needed to create optimal learning environments that accelerate students' academic and social-emotional success, specifically focusing on the whole-child. NTC is improving the learning of over 1.8 million students and 25,700 educators nationwide.

## ACKNOWLEDGMENTS

### RESEARCH AND ANALYSIS:

**Metis Associates**

### AUTHORS:

**Ali Picucci**, Chief Impact & Learning Officer

**Kamilah Jones**, Chief Marketing & External Affairs Officer

**Helen Chong Rekers**, Vice President of Strategy

### NTC BOARD:

**Shruti Sehra**, Board Chair

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### NTC EXECUTIVE TEAM:

**Desmond Blackburn**, Chief Executive Officer

**Chiara Garonzik**, Chief Strategy Officer

**Atyani Howard**, Chief Program Officer

**Kamilah Jones**, Chief Marketing & External Affairs Officer

**Arthur Mills IV**, Chief Operating Officer

**Ali Picucci**, Chief Impact & Learning Officer

### ART DIRECTION:

**Judy Chu**, Hotwire Global

**Mario Mejia**, Hotwire Global

[www.newteachercenter.org](http://www.newteachercenter.org)