



The Teacher Residency Return on Investment: A Pathway that Prepares Effective and Diverse Teachers Who Stay



**NATIONAL CENTER FOR
TEACHER RESIDENCIES**

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Kaili Sandico is a resident at the Memphis Teacher Residency. This photo was taken at Hanley Elementary School.

ABOUT NCTR

The National Center for Teacher Residencies is a non-profit organization dedicated to developing, launching, supporting, and accelerating the impact of teacher residency programs. Headquartered in Chicago, NCTR's mission is to disrupt historical educational inequities by advancing the teacher residency movement to prepare effective, diverse, culturally responsive educators. For more information about NCTR, please visit www.nctrresidencies.org

ACKNOWLEDGMENTS

Special thanks to the residencies that agreed to be featured in this publication. Thank you also to Randall Lahann and Wayne Shen at NCTR for their assistance with this publication.

This publication is made possible by the Joyce Foundation.

ON THE COVER

Top Right, Cover Page: Brandon Chase is a resident at the Memphis Teacher Residency. This photo was taken at Kingsbury Elementary School. Bottom Left, Cover Page: Emmanuel Williams, Carrie Rose, Leah Jones, and Angie Torres are residents at the Nashville Teacher Residency. This photo was taken at West Creek Middle School.

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INTRODUCTION

Multiple research studies over the last few years have looked at effective teacher preparation and retention strategies, with a consensus that there is considerable room for improvement. The teacher residency model offers a way to do it better. In the residency model, individuals learning to teach, called residents, typically spend a school year learning in an expert mentor teacher's classroom while simultaneously completing community-based, practice-oriented, clinically aligned coursework. This approach directly responds to the ongoing challenges of preparing teachers to work in particular contexts, diversifies the teacher workforce, and advances equity in public schooling.

Substantial research also suggests that the classroom teacher is the primary in-school factor influencing student achievement. Effective schooling experiences—in the hands of excellent teachers—can change a child's life trajectory. The shared conclusion of a range of research reports is that in the 21st century, we will increasingly rely on our public school system to prepare individuals to compete in a complex global economy. Given the central role that teachers play in this process, the teacher preparation field must consider that polls and surveys bear out the finding that many teachers enter the profession feeling unprepared for the rigor and realities of the classroom.

- A 2015 Teach Plus poll found that most practicing teachers felt unprepared to meet the demands of the classroom and serve all of their students in their first year of teaching. In total, 77 percent of teachers felt they were not fully prepared to be highly effective and meet the needs of many of their students.¹
- In a 2018 Educators for Excellence survey of teachers nationwide, only 31 percent of educators reported being “very well” prepared to provide rigorous academic instruction upon completion of their teacher preparation program.²

“As our residents become teachers in our district, they are coming in really prepared to begin, day one, using quality effective practices in the classroom.”

—Superintendent, Durango, CO.

Residencies put student learning at the center of the preparation experience, with intense clinical work and intentional alignment among the residency, school district, and institutions of higher education (IHEs). This coherence results in a substantial return on investment, which manifests in three distinct ways:

- More effective new teachers;
- A more diverse pipeline into the teaching profession; and
- Higher teacher retention rates.

RESIDENCIES PREPARE MORE EFFECTIVE TEACHERS

The scale and reach of teacher residencies and the residents they prepare have expanded significantly over the past few years. To date, nearly 4,300 residents have graduated from National Center for Teacher Residencies (NCTR) Network residencies.^{3,4} Of those who graduated in 2019-2020, 87 percent went to work in Title I schools; 21 percent are teaching science, technology, engineering, and math (STEM) classes; 26 percent are teaching English language learners, and; 25 percent are special education teachers.⁵

Emerging research on the outcomes of teacher residency graduates shows several promising trends. NCTR collects annual data from its network of residency partners, including comprehensive surveys of principals who host residency programs on their campuses and those who hire residency graduates. These principals overwhelmingly endorse the residency model as producing effective new teachers. In a principal perception survey gathered from NCTR's network in 2019-2020, 98 percent of principals reported that residency graduates are more effective than teachers prepared through other routes.⁶ Residents themselves also feel ready for classroom realities: 96 percent of residents agree or strongly agree that they are prepared to be teachers of record, and 93 percent of their mentors agree.⁷ These data all stand in stark contrast to national trends.⁸

Reinforcing survey findings of stakeholders' perceived effectiveness of teachers who participated in residency programs, achievement data also support the idea that teacher candidates who train in a residency program are more effective in the classroom. For example, each year, Tennessee evaluates the graduates from 40 teacher preparation programs across the state. Measures include the placement and retention of new teachers in public schools and how well those teachers perform

“Our retention of teachers in high need schools with these cohorts is astounding. The diversity we’re bringing in as role models and teachers for our students is extraordinary.”

—Leslie Harris, president Board of Directors, Seattle Public Schools

with students, as evidenced by student achievement scores. The state's 2020 Educator Preparation Report Card recognizes the Nashville Teacher Residency (NTR) as the teacher preparation program in the state with the highest value-added scores. Additionally, in terms of diversity, among non-historically Black college and university (HBCU) preparation programs in the state, it is the most diverse.

NTR is not alone in finding that residency-trained teachers have the potential to advance student achievement. In New York City, the Urban Teacher Residency (UTR) at New Visions for Public Schools develops new teachers who are accelerating student achievement. UTR is a partnership between [New Visions for Public Schools](#), [Hunter College](#), and the [New York City Department of Education](#).¹⁰ Between 2009 and 2014, the program developed and placed more than 150 new English, mathematics, science, and special education teachers for high-need secondary schools.

In 2018, an independent evaluator concluded that “a selective admissions process, a skill-and confidence-building full year in the classroom, built-in accountability—all seemed to have paid off. UTR was increasing the numbers of teachers—effective teachers—in the pipeline.”¹¹ The same evaluators also determined that UTR-trained teachers outperformed those developed through other pathways. “In 27 comparisons of [state test] scores where differences between students taught by UTR-and non-UTR-trained teachers were statistically significant, the UTR group’s performance was higher 89% of the time.” Researchers also found that as UTR-trained teachers gained more experience in the classroom, their effect on student achievement grew stronger.¹²

Furthermore, special education students taught by UTR-trained teachers had higher attendance rates and earned more high school course credits than those in schools with no UTR-trained teachers.¹³ These benefits were especially notable among Black and Hispanic students.¹⁴ One can posit that UTR-trained teachers are contributing significantly to higher graduation rates among their students, as both increased attendance and credits earned correlate strongly with graduation rates.¹⁵

Education Resource Strategies (ERS) assessed the return on investment of residency programs in high-need schools by examining the teacher’s impact on student learning. ERS concluded that if a high-need school were to place a graduate from a rigorous teacher residency program into a hard-to-staff job instead of a long-term substitute or a less effective substitute, the students in that class could realize up to four additional months of learning in one year.¹⁶

“I was looking for a program that was going to be more than just going to classes and completing coursework. This (residency) program was not only offering me a master’s degree but I knew that I would be spending a year in a classroom and I would receive consistent feedback, which is what I was looking for.”

—Resident teacher, Dallas, TX.



Elizabeth Olvey is a resident at the Memphis Teacher Residency. This photo was taken at Grizzlies Prep Charter School.

RESIDENCIES PREPARE MORE DIVERSE TEACHERS

Today's teacher workforce looks very different from the students served in U.S. public schools. The percentage of white teachers in 2017-2018 was 79 percent, while the percentage of minority students (inclusive of Black, Latinx, Asian, Pacific Islander, American Indian, and students of two or more races) was 52 percent.^{17,18} In 2018, enrollment of Hispanic students in public schools increased to 27 percent (from 22 percent in 2009), yet only 9 percent of all teachers are Hispanic or Latinx.^{19,20} Similarly, 15 percent of students were Black, as compared to only 7 percent of teachers.^{21,22,23} Racial gaps between student and teacher diversity exist in every state,²⁴ making this a nationwide challenge.

Emerging research indicates that while teachers of color confer benefits to all students, they are particularly advantageous for students of color. Black educators have been shown to contribute significantly to student achievement among Black students in both reading and math, and lower-performing students benefit substantially from a teacher of the same race.²⁵ Black students who have a single Black teacher in grades three through five are more likely to graduate from high school and consider college, particularly Black males.²⁶

Research has also shown that Black students, especially Black males, experience less exclusionary discipline and fewer office referrals when they are taught by a Black teacher.²⁷

“It’s nice to have the idealism of a brand new teacher in the classroom, and that energizes me. It makes me want to work harder. It makes me want to have that energy also.”

—Mentor teacher, Aurora, CO.


NCTR's residency model has proven to be an attractive pathway into the profession for people of color.

- In 2019-2020, 62 percent of NCTR residents identified as people of color, compared to 22 percent of new teachers nationally.²⁸
- To date, NCTR Network residencies have graduated more than 3,000 teachers of color.
- Each year, these teachers educate, mentor, and counsel approximately 170,000 students.

Residencies are designed to serve a specific community or school district, and they often make focused and strategic efforts to recruit residents from those communities into their programs. In this way, residency programs enroll teacher candidates who are committed to serving and living in the community right from the outset.

A close look at two of NCTR's network programs provides a glimpse into how the residency model is transforming the pipeline in their communities. Since 2010, Alder has developed 665 teachers through their residency pathway. In both the 2018 and 2019 school years, 78 percent of Alder's residents were people of color.²⁹ This is by design. Alder leverages the residency model to develop effective early career teachers with their school, county, and district partners. Similarly, in the last five out of six cohorts of more than 60 percent of the residents in the the St. Paul Public Schools Urban Teacher Residency (SUTR) identified as a person of color. This is also true for the Minneapolis Special Education Teacher Residency (MSTR) program. Four out of five of their last cohorts included more than 60 percent of residents who identified as a person of color. This is in contrast to just 19.5 percent of St. Paul teachers who identify as a person of color.

MENTORS: A CLASSROOM-BASED TEACHER LEADERSHIP PATHWAY



A key tenet of the residency model is that residents learn in a trained, supported, and effective teacher's classroom for an entire school year. Being a mentor teacher provides an important career opportunity and leadership pathway for more experienced and effective teachers.

Mentors often call their work as a mentor teacher the very best professional development they have ever received because it demanded that they examine their practice. One mentor explained, "Being a mentor teacher forces you to dive deeper and see your instruction in a different way."³⁰ While the improvement of classroom practice is important, it also keeps a school's best teachers in the classroom, further reduces turnover among faculty, and builds a strong culture of collaboration among teachers and staff.

In 2019-2020, 93 percent of principals reported that hosting a residency program in their schools helped mentor teachers grow into more effective practitioners.

- 100 percent of mentors agreed that mentoring a resident made them more effective teachers.
- 99 percent of mentors reported that participation in the residency has made them more effective teachers.³¹

NCTR now has research showing that its model confers unique benefits to the mentor as well. External research conducted by Glass Frog Solutions examined the value-add of hosting a resident on the effectiveness of a mentor.³² For the year mentors hosted a resident in NCTR residency programs, mentors experienced “more significant gains,” meaning their effectiveness as teachers improved.³³

RESIDENCIES PRODUCE TEACHERS WHO STAY LONGER

There is a well-documented and substantial financial cost with high rates of teacher turnover. Each time a teacher leaves her position, districts must recruit, hire, and train a replacement. Those costs are a drag on the resources districts have available to grow and improve their teacher talent pipelines. Replacing a teacher can cost urban school districts more than \$20,000.³⁴

For Chicago Public Schools, which loses thousands of teachers each year, replacement and hiring costs can exceed \$85 million annually.³⁵ These considerable costs make the strong retention rates among residency-trained teachers particularly attractive to school administrators and state policymakers because each year a resident stays, a school district saves at least the amount of money it takes to replace a departing teacher.

While some teacher turnover is unavoidable and not all bad, high teacher turnover rates also contribute to non-financial organizational challenges. Discontinuity in professional development, difficulty staffing hard-to-staff subjects, loss of teacher leadership, and a reduction in teaching effectiveness amount to a huge impact on students and the communities in which they live. With more diverse recruitment and rigorous clinical preparation, residencies offer a steady, reliable source of effective teachers committed to teaching underserved students. More than 85 percent of residency graduates teach for at least three years in the partner school district where they were prepared compared to 50 percent of teachers in other high-needs schools.³⁶

“Whatever my resident is learning, I’m learning it as well, and I think, okay, this is something that I have to model to the resident so that they can get better at that. And so it makes me do that more consistently, and then that has made me become a better teacher.”

— Mentor teacher, Dallas, TX.

The focus on teacher diversity in teacher residencies might contribute to the improved retention rates. Graduates of NCTR Network partner programs report that the opportunity to teach students of color was a key factor in their decision to enter into their residency program because of their desire to work with a specific, underserved student population. From the outset, resident graduates are dedicated to high-need students and communities in ways traditionally trained teachers often are not. This is one reason why residency-trained teachers have retention rates that are nearly twice that of the average teacher.



Jason Hudson is a resident at the Chicago Teacher Residency. This photo was taken at Haley Elementary School.

An example of this is Seattle Teacher Residency (STR). In its seventh year of operation, the STR has developed 118 teachers for Seattle Public Schools. STR’s program focuses specifically on recruiting and developing teachers for Title I schools in Seattle. STR’s teacher preparation curriculum emphasizes issues of equity and identity related to race, culture, language, socio-economic status, disability, and gender. The program’s focus on selecting candidates from diverse backgrounds produces residents who better represent the diversity of the students they serve, and the clinical nature of the residency model results in teachers who are prepared for the challenges of the city’s high-need schools. These factors contribute to high retention rates: 88 percent of STR-trained teachers are still teaching in Title I schools three years after graduating from the program. The high retention rates in turn are yielding substantial savings for Seattle Public Schools. Using the Learning Policy Institute’s [“Cost of Teacher Turnover Calculator,”](#) we can estimate that STR’s strong retention rates have saved the school district approximately \$1.24 million—money the district would have spent filling and refilling those jobs under normal teacher attrition rates.

“It doesn’t help to put somebody in that classroom who is not prepared, because they’re going to roll right back out. It’ll be a revolving door. It’s better to spend money upfront screening for people who are serious about this as a career, and have a heart and a passion for working with students in our challenged schools.”

—Residency director, Richmond, VA.

RESIDENCIES OFFER A SUPERIOR RETURN ON INVESTMENT

The return on investment offered by teacher residencies can be assessed in several ways. In one approach, NCTR has modeled a classroom with residency-trained teachers who are more effective, more diverse, and who stay in the classroom longer. This model accounts for the cost per residency graduate (versus traditional preparation) and, importantly, considers student learning to be the summary return. Even conservative assumptions for teacher effectiveness and retention show that the residency-supplied classroom (Classroom R) can yield the same student learning in less time and at a lower cost than a traditionally supplied classroom (Classroom T). In the context of our model, we could expect Classroom R to achieve 10 years of learning in two fewer years, and for 80 percent of the cost, compared to Classroom T.

In another approach, we can consider students' earning potential as the return on investment in residency preparation of teachers. One study on the impact of teachers examined the long-term outcomes for students assigned to teachers with different value-added scores.³⁷ The study found that a teacher with a value-added score that is one standard deviation above that of another teacher can:

- Raise a student's cumulative lifetime income by \$39,000. This means that an investment in a teacher who is one standard deviation more effective for a 25-student classroom can yield an increase in lifetime earnings of \$1 million for each year of teaching.³⁸
- Increase the probability (by .82 percent) of them attending college (at age 20).
- Improves the quality of the colleges they attend.
- Increases earning trajectories.
- Improves the quality of the neighborhood the student lives in as an adult.³⁹

The total cost per resident across NCTR's network of residencies ranges from \$35,000 to \$65,000. These costs include recruitment into the program, stipends, tuition, mentoring, and induction into the partner school district after graduation. Because residencies can save districts nearly all of the typical cost of replacing a teacher, the effective total cost is as much as \$20,000 less.⁴⁰ Federal funding, districts, schools, IHE partners, philanthropy, public funds, and residents fund these expenses in different combinations. But even if the districts were to pick up the whole tab, the economic value they could expect their communities to get in return would almost certainly exceed the investment, and likely by a wide margin.

The most common pathway into the teaching profession is through a four-year college of education. Undergraduate preparation is an expensive model. It typically takes four years to develop each teacher; however, there is little evidence that this long runway into teaching produces effective teachers.

For example, the U.S. Department of Education found no difference in student achievement between teachers prepared by an alternative certification program and those who came to the classroom via the traditional undergraduate teacher preparation model.⁴¹

Researchers have estimated that, in 2007, the United States spent approximately \$7 billion on the pre-service training and development of new teachers through the college of education model.⁴² Using that same methodology, expenditures likely approached \$8.5 billion in 2017. Despite the billions spent developing teachers, colleges cannot guarantee that graduates are prepared for the classroom.

NEW FEDERAL INVESTMENTS CAN BE USED TO SUPPORT RESIDENCIES

Teacher residencies are mentioned as a strategy for diversifying and stabilizing the teacher workforce in the [US Department of Education's COVID-19 Handbook, Volume 2: Roadmap to Reopening Safely and Meeting All Students' Needs](#). Additionally, in April 2021, President Biden announced support for teacher residencies via the American Families Plan. An unprecedented request of \$2.8 billion was made to Congress to support teacher residencies and Grow Your Own programs. While Congress has yet to act on the President's request, several of the COVID-19-related pieces of federal legislation provide states and districts with an opportunity to develop, sustain, and improve teacher residency programs.

AMERICAN RESCUE PLAN

The American Rescue Plan (ARP) was signed into law in early March 2021. Funding will be allocated using the same formula used to allocate Title I, Part A Elementary and Secondary School Act (Every Student Succeeds Act [ESSA]) funds to states. Each state must allocate at least 90 percent of its funds to local education agencies (LEAs).

LEAs can use ARP funds to support residencies in the following ways:

1. Teacher residents and residency programs can use the funds to address learning loss (20 percent of LEA funding must address learning loss). Residents can act as tutors in schools for students in need of remediation or provide additional student-focused support in multiple environments (in school, after school, and out of school).
2. States are required to spend one percent of their allocations to implement evidence-based summer enrichment programs. Teacher residents can work in schools supporting students in need of remediation or provide additional student-focused support in summer programs.

3. LEAs can spend the remaining funds on activities authorized under ESSA. ESSA emphasizes improving systems that recruit, select, prepare, and support educators. Below is a list of allowable uses of federal funding under ESSA which can help launch, scale, or sustain teacher residencies.
 - a. Professional development for teachers, para-professionals, and other school personnel.
 - b. Recruitment and retention of effective teachers, especially those in high-need subjects to improve instruction.
 - c. Recruiting, hiring, and retaining effective teachers, particularly in low-income schools, including expert help in screening and early hiring, differential and incentive pay for educators in high-need areas, teacher leadership and career pathways, and new teacher induction and mentoring.
 - d. Recruitment of career changers.
 - e. Improving teachers' ability to serve students with disabilities and English language learners.
 - f. Providing effective professional development for teachers and principals in schools with a high proportion of English language learners.

In addition, you can spend the new funds on any allowable ESSA use to help serve underserved schools and students which means you can invest in launching, scaling, and sustaining residencies.

HOW DO DISTRICTS AND INSTITUTIONS OF HIGHER EDUCATION INITIATE DEVELOPMENT OF A TEACHER RESIDENCY

Teacher residencies are a partnership between a school district (or in some cases, more than one school district) and an institution of higher education (IHE). Residencies are by design, intended to meet the needs of a school district(s). NCTR provides resources to LEAs and partner IHEs to develop teacher residencies. NCTR can help LEAs and IHEs build a residency from scratch via our [Residency Design Academy](#) (formerly known as New Site Development). This technical assistance engagement is nationally known and is designed to help LEAs and IHEs build, scale, and sustain a high-quality teacher residency program “soup to nuts.”

[NCTR also offers customized technical assistance](#) to LEAs and IHEs that might not be ready to fully commit to building a residency, but want to spend time collaborating to determine the feasibility of developing a teacher residency. Additionally, NCTR can provide LEAs with consultative services to analyze their human capital pipeline and design an approach to diversifying their recruitment and retention efforts. The approaches NCTR recommends may include a teacher residency or possibly another approach tailored to meet the needs of the local context.



“We’re not looking for people who just want to do this for a couple of years and move on. We’re really trying to address, in a long-term, sustainable way, how we ensure that we get people who have the heart and passion for this work, and then we prepare them well, and support them well, so they will remain in the classroom.”

—Residency director, Richmond, VA.

Above: Jocelyn Gaston is a mentor at the Chicago Teacher Residency. This photo was taken at Mt. Vernon Elementary School.

Regardless of the engagement with NCTR, we recognize the essential importance of comprehensive, pre-service teacher preparation to solve challenges of teacher quality, diversity, and retention. NCTR does not apply a one-size-fits-all approach and instead identifies and leverages local assets to develop a responsive and high-quality program that is authentic to PK-12 students, schools, and districts.

HOW DO STATES TAKE STEPS TO INVEST IN TEACHER RESIDENCIES?

[NCTR provides consultative services to state policymakers](#) interested in developing and sustaining high-quality teacher residencies. NCTR works with state education agencies (SEAs), governors' offices, state boards of education, and state legislators to provide consultative services designed to create supportive state policy landscapes that support teacher residency development and sustainability. Our consultative engagements typically focus on providing the following types of services.

- Develop Requests for Proposals (RFPs) or Requests for Applications (RFAs) to distribute state funding for teacher residencies.
- Draft statutory or regulatory language.
- Draft recommendations to state legislatures, governors, or state boards of education on how to direct a state's support and investments in teacher residencies.
- Provide technical assistance on how states can invest in improving working conditions for teachers of color, attract and retain them in the profession.
- Conduct landscape analyses that identify assets and gaps, existing interventions, and resources that could be directed toward improving teacher preparation, effectiveness, and retention.
- Lead stakeholder convenings to engage current and potential stakeholders in a process to collect input on the state of educator preparation in a state.
- Conduct needs assessments.
- Conduct policy audits.

“When we looked at the data on teacher retention among teachers trained in residencies, we immediately saw residencies as a strategic way to provide teacher candidates with high-quality training and keep those teachers in classrooms”

—Dr. Carey Wright, State Superintendent of Education, MS.

CONCLUSION

Without the benefit of strong preparation experiences, new teachers enter the classroom unprepared, often under challenging circumstances in under-resourced urban and rural communities. To compound the issue, less than excellent preparation for this demanding job contributes to high rates of teacher turnover, which brings with it a substantial financial cost and results in further lost learning opportunities for students. In other words, the low-cost option in teacher preparation comes with considerable hidden costs. Districts operating with tight budget constraints spend millions of dollars filling the same jobs over and over, which districts have reported as “a drain on already scarce resources that could otherwise be invested to improve teacher effectiveness.”⁴³ Investing in “quick fix” teacher preparation puts more at-risk students in the hands of ill-prepared teachers and expecting traditional programs to flip a switch is not reasonable.⁴⁴ The fact is that despite “quick fix” efforts to fill classrooms with teachers, this strategy leaves teachers under-prepared and results in higher turnover.⁴⁵ Residencies provide a flexible solution to these challenges and a long-term model for improved prep overall.

To help districts break the cycle of having unprepared teachers enter and quickly exit the classroom, the optimal approach—both in terms of cost savings and improved student experience—is to redesign the system, rather than trying to fix the existing system. The residency model of teacher preparation is an example of a redesign.

- ¹Teach Plus Teacher Preparation Flash Poll. (2015, February). Retrieved December 12, 2019, from <https://teachplus.org/teacher-polls>
- ²Educators for Excellence. (2018). Voices from the Classroom. Retrieved on November 1, 2018, from https://e4e.org/sites/default/files/2018_voices_from_the_classroom_teacher_survey.pdf
- ³National Center for Teacher Residencies. (2020). NCTR annual report. Chicago, IL. Retrieved at <https://nctrresidencies.org/wp-content/uploads/2021/01/NCTR-Annual-Report-December-2020-FINAL.pdf>
- ⁴Ibid.
- ⁵Ibid.
- ⁶Ibid.
- ⁷Ibid.
- ⁸National Center for Teacher Residencies. (2018). 2017 Stakeholder Perception Report. 2017 Stakeholder Perception Report. Chicago, IL.
- ⁹<https://www.tn.gov/sbe/committees-and-initiatives/teacher-preparation-report-card.html>
- ¹⁰These data were collected before this teacher residency program added additional university partners (namely, Queens College). We do not have updated data reflecting their current program structure.
- ¹¹Rockman, et. al. (2018). A different, more durable model. San Francisco, CA: Rockman et al Research and Evaluation. Retrieved at https://rockman.com/docs/downloads/TQPXCombinedReport_10.23.18-1.pdf
- ¹²Ibid.
- ¹³Ibid.
- ¹⁴Ibid.
- ¹⁵Ibid.
- ¹⁶Rosenberg, D., & Miles, K. (2017). Growing Great Teachers: How school system leaders can use existing resources to better develop, support, and retain new teachers—and improve student outcomes. Watertown, MA: Education Resource Strategies.
- ¹⁷National Center for Education Statistics. The condition of education. Washington, DC. Retrieved from https://nces.ed.gov/programs/coe/pdf/2021/cge_508c.pdf
- ¹⁸The number of white students is actually declining in all 50 states. See: National Center for Education Statistics. The condition of education. Washington, DC. Retrieved from https://nces.ed.gov/programs/coe/pdf/2021/cge_508c.pdf
- ¹⁹National Center for Teacher Residencies. (2020). NCTR annual report. Chicago, IL. Retrieved at <https://nctrresidencies.org/wp-content/uploads/2021/01/NCTR-Annual-Report-December-2020-FINAL.pdf>
- ²⁰National Center for Teacher Residencies. (2020). NCTR annual report. Chicago, IL. Retrieved at <https://nctrresidencies.org/wp-content/uploads/2021/01/NCTR-Annual-Report-December-2020-FINAL.pdf>
- ²¹U.S. Department of Education, 2016
- ²²National Center for Teacher Residencies. (2020). NCTR annual report. Chicago, IL. Retrieved at <https://nctrresidencies.org/wp-content/uploads/2021/01/NCTR-Annual-Report-December-2020-FINAL.pdf>
- ²³Annie E. Casey Foundation (2020). Kids count data book. Retrieved at <https://www.aecf.org/blog/the-annie-e-casey-foundation-releases-2020-kids-count-data-book>
- ²⁴U.S. Department of Education, 2016
- ²⁵Dee, T. (2004). Teachers, race, and student achievement in a randomized experiment. *The Review of Economics and Statistics*, 86(1), 195-210. Retrieved at <https://direct.mit.edu/rest/article/86/1/195/57486/Teachers-Race-and-Student-Achievement-in-a>. Egalite A., Kisida, B, & Winters, M. (2015). Representation in the classroom: The effect of own-race teachers on student achievement. *Economics of Education Review*, 45, 44-52. Retrieved at <https://www.sciencedirect.com/science/article/abs/pii/S0272775715000084>
- ²⁶Gershenson, S. Hart, C., Hyman, J., Lindsay, C., Papageorge, N. (2018). The long-term impacts of same-race teachers. National Bureau of Economic Research, Working Paper 25254. Retrieved at https://www.nber.org/system/files/working_papers/w25254/w25254.pdf
- ²⁷Lindsay, C. A., & Hart, C. M. D. (2017). Exposure to Same-Race Teachers and Student Disciplinary Outcomes for Black Students in North Carolina. *Educational Evaluation and Policy Analysis*, 39(3), 485–510. doi: 10.3102/0162373717693109
- ²⁸National Center for Teacher Residencies. (2020). NCTR annual report. Chicago, IL. Retrieved at <https://nctrresidencies.org/wp-content/uploads/2021/01/NCTR-Annual-Report-December-2020-FINAL.pdf>
- ²⁹Alder Graduate School of Education (2018). Impact. Retrieved from <https://aldergse.org/impact/>
- ³⁰National Center for Teacher Residencies (2019). Building systems of innovation at scale: A look at how the Denver teacher residency transformed the human capital pipeline in Denver public schools. Retrieved at <https://nctrresidencies.org/wp-content/uploads/2021/02/Building-Systems-of-Innovation-at-Scale-Single-Pgs-Web.pdf>
- ³¹National Center for Teacher Residencies (2020). NCTR annual report. Chicago, IL. Retrieved at <https://nctrresidencies.org/wp-content/uploads/2021/01/NCTR-Annual-Report-December-2020-FINAL.pdf>.
- ³²Glassfrog (2020). Exploring the ancillary benefits of residencies and differential staffing programs: Report prepared for the Overdeck Family Foundation. Retrieved at https://nctrresidencies.org/wp-content/uploads/2021/01/Ancillary-Benefits-Report-GlassFrog_Overdeck-Family-Foundation_-Deidentified_July2020-FINAL.pdf
- ³³Azar, T., Casciana, R., Puma, J., (2020). Impact of resident mentors pairs on teacher effectiveness (2020). National Center for Teacher Residencies: Chicago, IL. Retrieved at https://nctrresidencies.org/wp-content/uploads/2021/02/BRWBAY20034_NCTR_NOV-GlassFrog-Report-FINAL.pdf
- ³⁴Carver, Thomas, D, Darling-Hammond, L. (2017). Teacher turnover: Why it matters and what we can do about it. Learning Policy Institute: Washington, DC. Retrieved at https://learningpolicyinstitute.org/sites/default/files/product-files/Teacher_Turnover_REPORT.pdf
- ³⁵Barnes, G., Crowe, E., & Schaefer, B. (2007). The cost of teacher turnover in five school districts: A pilot study. New York City, NY: National Commission on Teaching and America's Future. Retrieved at <https://eric.ed.gov/?id=ED497176>.
- ³⁶National Center for Teacher Residencies (2020). NCTR annual report. Chicago, IL. Retrieved at <https://nctrresidencies.org/wp-content/uploads/2021/01/NCTR-Annual-Report-December-2020-FINAL.pdf>.
- ³⁷Chetty, R., Friedman, J., & Rockoff, J. (2014). Measuring the impacts of teachers II: Teacher value-added and Student Outcomes in Adulthood. *American Economic Review*. <https://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.104.9.2633>
- ³⁸Barnes, G., Crowe, E., & Schaefer, B. (2007). The Cost of Teacher Turnover in Five School Districts: A Pilot Study. New York City, NY: National Commission on Teaching and America's Future
- ³⁹Chetty, R., Friedman, J., & Rockoff, J. (2014). Measuring the impacts of teachers II: Teacher value-added and Student Outcomes in Adulthood. *American Economic Review*. <https://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.104.9.2633>
- ⁴⁰To access Learning Policy Institute's Calculator to determine the costs of replacing a teacher, see <https://learningpolicyinstitute.org/about-teacher-turnover-calculations> and <https://learningpolicyinstitute.org/product/the-cost-of-teacher-turnover>
- ⁴¹Constantine, J., Player, D., Silva, T., Hallgren, K., Grider, M., & Deke, J. (2009). An Evaluation of Teachers Trained Through Different Routes to Certification. Washington, DC: National Center for Education Evaluation and Regional Assistance.
- ⁴²Goldhaber, D., Kreig, J., & Theobald, R. (2017). Does the Match Matter? Exploring Whether Student Teaching Experiences Affect Teacher Effectiveness. *American Educational Research Journal*, 54(2). doi: <https://doi.org/10.3102/0002831217690516>
- ⁴³Barnes, G., Crowe, E., & Schaefer, B. (2007). The Cost of Teacher Turnover in Five School Districts: A Pilot Study. New York City, NY: National Commission on Teaching and America's Future
- ⁴⁴“Quick fix” teacher preparation refers to strategies that prioritize getting people into the classroom over quality preparation. This approach often means standards are lowered to allow people to gain entry to the profession. Research demonstrates the qualifications and experience translate into more favorable outcomes for students.
- ⁴⁵Cardlchon, J., Darling-Hammond, L., Yang, M., Scott, C., Shields, P., Burn, D. (2020). Inequitable opportunity to learn: Student access to certified and experienced teachers. Washington, DC: Learning Policy Institute. Retrieved at <https://learningpolicyinstitute.org/product/crdc-teacher-access-report>