Impact of the New Teacher Center's New Teacher Induction Model on Teachers and Students

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SRI Education's evaluation of the New Teacher Center's (NTC's) Investing in Innovation (i3) Validation grant revealed positive impacts of NTC's induction model on student achievement in mathematics and English language arts. Using randomized controlled trials in two districts—Broward County Public Schools and Chicago Public Schools—SRI Education examined the impact of the NTC induction model on teacher practice and student achievement. In addition to the positive student outcomes, the study found that NTC-supported teachers scored similarly on teacher practice measures and had similar rates of retention into their third year of teaching as teachers receiving typical district supports.

New teachers often face the realities of their first classroom on their own and in isolation. Supporting new teachers so that they can be effective instructionally and retaining them in the profession are pressing needs, particularly in hard-to-staff schools and schools serving high poverty students. Those schools tend to have high proportions of new teachers and often lack the capacity to support them adequately. As a result, half leave teaching within 5 years.[1]

In this context, SRI Education conducted an independent evaluation of the New Teacher Center's (NTC's) Investing in Innovation (i3) Validation grant. This brief reports on findings from randomized controlled trials of NTC's 2-year new teacher induction model in Broward County Public Schools (BCPS) in Florida and Chicago Public Schools (CPS) in Illinois.[2] SRI found that NTC's induction program had overall positive effects on student achievement in English language arts (ELA) and mathematics.[3]

The New Teacher Center's New Teacher Induction Model

NTC has long worked with district partners to implement a high-quality mentoring and induction program. Under the i3 Validation grant, NTC formalized key components of its induction model (Figure 1). NTC provides professional development, research-based resources, and online formative assessment tools for beginning teachers, mentors, and school leaders, as well as technical assistance and capacity building for program leaders.

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[1] Alliance for Excellent Education, February 2008, *What Keeps Good Teachers in the Classroom? Understanding and Reducing Teacher Turnover* [Issue Brief]. Washington, DC: Author.

[2] Grant Wood Area Education Agency (GWAEA), a consortium of districts in Iowa, also implemented the NTC model. Because the model was implemented with all new teachers, SRI used a difference-in-differences approach to study impact in GWAEA. Data collection was delayed because of a lack of centralized data and a state testing calendar that allows for fall, winter, and spring test administration. Thus, findings from GWAEA will be published in a subsequent report.

[3] District results varied; see the methods appendix for individual district results.

More specifically, the induction model features carefully selected full-time mentors housed in district-level teacher development offices. These mentors receive more than 100 hours of training annually from NTC program staff, both during institutes and through in-field support from lead coaches. The mentors, who are supervised centrally, support first- and second-year teachers across multiple schools at a ratio of 15 beginning teachers to 1 mentor. New teachers receive 2 years of coaching, meeting with their assigned mentors weekly for a minimum of 180 minutes per month. Mentors and teachers work through a system of NTC-developed online formative assessments, including tools to guide observation cycles and to develop teachers' skills in lesson planning and analyzing student work.

Figure 1. Components of the NTC Induction Model

Component	Description
New Teacher Center supports	NTC staff and i3 program leads: • Advocate for and develop district understanding of the full-time mentoring model • Engage principals to support beginning teachers and develop mentor-principal relationships • Build capacity for a district-led mentoring program after NTC involvement • Provide program standards, formative assessment tools, training curricula, and an online mentor platform
Mentor selection and assignment	Mentors are: • Selected through a rigorous process • Released from teacher assignments to serve as a full-time mentor • Assigned no more than 15 first- and second-year teachers to mentor
Mentor development and accountability	Mentors receive intensive training, including: • Mentor Academy • Mentor Forums • Mentor-to-mentor shadowing • Site lead support and feedback • Peer coaching and goal-setting
Provision of high-quality mentoring	Mentors: • Use the formative assessment system • Meet one to one for 60–90 minutes 3–4 times a month with new teachers • Document reflections on mentoring work with new teachers • Focus on instructional practice and on equity and universal access

Evaluation of the New Teacher Induction Model

In the evaluation, SRI used rigorous mixed quantitative and qualitative methods to measure implementation fidelity and impact on teacher and student outcomes in the participating sites over a 3-year period (2013–14 to 2015–16). In each district, the evaluation followed two cohorts of new teachers for 2 years each—Cohort 1 began teaching in 2013–14 and Cohort 2 in 2014–15.

The implementation study assessed how well NTC and the sites implemented the full model under typical district conditions. Implementation fidelity was rated for each district annually on each key component of the NTC induction model (see Figure 1).

For the impact study, randomized controlled trials were used with school-level random assignment in BCPS and CPS to compare the outcomes of teachers who received NTC induction mentoring (the treatment condition) with the outcomes of teachers who received business-as-usual new teacher supports (the control condition). Participating schools with beginning teachers were randomly assigned to the treatment or control condition during the summer before implementation.

SRI assessed the impacts of the NTC induction model on teachers' retention into their third year of teaching, on teacher practice as measured by the Framework for Teaching,[4] and on student achievement on state assessments in ELA and mathematics in grades 4 through 8.

The Framework for Teaching was chosen because it is not overly aligned with the NTC model; it is a broad measure of instructional quality used in many contexts nationally. It includes components that assess skills such as managing classroom procedures and student behavior; organizing instruction; communicating clearly; and monitoring student learning. These are skills that most new teachers must develop in their first 2 years of teaching. Trained observers scored each teacher at two time points—fall of the first year of teaching (baseline) and spring, near the end of the second year—on the components under Classroom Environment and Instruction (eight components total, see sidebar above). Observers were blind to whether teachers were in the treatment or control condition.

Framework for Teaching Components

Classroom Environment

- Creating an Environment of Respect and Rapport
- Establishing a Culture for Learning
- Managing Classroom Procedures
- Managing Student Behavior

Instruction

- Communicating with Students
- Using Questioning and Discussion Techniques
- Engaging Students in Learning
- Using Assessment in Instruction

Danielson Group (2013)

Figure 2. Average District and Study Sample Characteristics at the Time of Random Assignment

		No. of Schools	No. of Teachers in Study	School Rating	% English Learners	% Special Education	% Free or Reduced-Price Lunch Eligible	% Minority
BCPS	Treatment	43	193	2.2	10	13	71	81
	Control	44	148	2.6	11	16	68	79
	District	213	--	2.7	12	13	66	77
CPS	Treatment	65	149	2.4	22	13	84	92
	Control	75	139	2.5	24	12	84	88
	District	536	--	2.1	14	14	84	91

Note: "School Rating" refers to the state report card of quality ratings applied to each school. At the time of random assignment, BCPS assigned all schools a letter grade (A to F), and CPS used whole numbers between 1 and 3. These ratings were put on a common scale where 0 = F in BCPS and 3 in CPS, 1 = D in BCPS, 2 = C in BCPS and 2 in CPS, 3 = B in BCPS, and 4 = A in BCPS and 1 in CPS.

Source: http://cps.edu/SchoolData/Pages/SchoolData.aspx (CPS); http://www.broward.k12.fl.us/dsa/counts/1213/20DayCount1213.shtml; and schoolgrades.fldoe.org/xls/1213/SGbasic_2013.xls (BCPS)

[4] Danielson Group, 2013, *The Framework for Teaching Evaluation Instrument: 2013 Edition.* Princeton, NJ: Author.

All outcomes were analyzed using hierarchical models taking into account the nesting of students within teachers within schools. The analytic models adjusted for student, teacher, and school characteristics as well as district differences where appropriate. The models were fully interacted to account for differences in district contexts that resulted in differences in the relationships between the outcomes and the control variables by district and by cohort.

Cluster-level attrition was high on teacher practice outcomes (23 percent overall, with a 2 percentage point differential between treatment and control), but it met the What Works Clearinghouse (WWC) guidelines (version 2.1, 2012).[5] Cluster-level attrition for student outcomes also met WWC attrition standards (6–11 percent overall with 0–4 percent differential attrition). The study includes a few joiners (new teachers who joined the study after schools were randomized). The results remained the same when these teachers were excluded from the analysis. See the methods appendix for more information on the evaluation methodology and detailed results.

District Contexts

The NTC model was implemented in two districts representing very different contexts (Figure 2). The schools included in the evaluation reflected the demographics of their districts overall. On average, the CPS schools had higher proportions of English learners, students eligible for free or reduced-price lunch, and racial/ethnic minority students.

Findings

Districts implemented the NTC model with fidelity

All participating sites implemented the NTC model with high levels of fidelity (Figure 3). The sites improved their implementation of components 3 (mentor development and accountability) and 4 (providing high-quality mentoring) after the first year. Specifically, mentors more consistently participated in mentor-to-mentor shadowing, received feedback from lead coaches based on coaching observations, and used NTC's formative tools in their mentoring activities with new teachers.

In all sites, beginning teachers in treatment schools were more likely to be assigned a mentor in their first 2 years of teaching and received more intensive and more instructionally focused mentoring than teachers in control schools.[6]

Figure 3. Program Level Implementation Fidelity Scores Across Sites, by Year

Component	Year 1 (2013-14)	Year 2 (2014-15)	Year 3 (2015-16)
1. New Teacher Center supports	High	High	High
2. Mentor selection and assignment	High	High	High
3. Mentor development and accountability	Medium	High	High
4. Provision of high-quality mentoring	Medium	High	High

[5] Cluster-level attrition refers to schools that were dropped from the analysis because of teacher turnover or teacher refusal to be observed. Attrition levels did not meet standards for all individual district-level or cohort-level analyses. See the methods appendix for details.

[6] Evaluation of NTC's i3 Validation grant, new teacher surveys, spring 2014, 2015, and 2016. See methods appendix for a description of survey methods.

NTC teachers and control teachers were retained at similar rates

Overall, NTC-supported teachers were retained into their third year after becoming teachers at similar rates as control teachers.[7] Across both cohorts, 79% of treatment teachers and 78% of control teachers were retained; the difference was not statistically significant.

NTC teachers and control teachers scored similarly on teacher practice measures

SRI examined change in teacher practice as a potential mediator for improving student achievement. Instructional effectiveness was measured using ratings on eight components of the Framework for Teaching, as mentioned above.

Overall, after 2 years of NTC-supported mentoring, observed treatment and control teachers in both cohorts scored similarly on teacher practice measures; the analysis showed no statistically significant differences on the eight measured components. However, teacher attrition between the first and second observation cycles resulted in a small analytic sample. Only 80 treatment and 79 control teachers were observed at both time points. The small sample size reduced the ability to detect the effects—positive or negative—of the NTC model on teacher practice, particularly if those effects were small or if teachers varied greatly in their practice.

Two years of induction support for teachers resulted in positive impacts on student achievement in ELA

On average, students in grades 4–8 of teachers who participated in NTC induction for 2 years outperformed students of control teachers by 0.09 standard deviation ($p < .05$) in ELA (Figure 4), equivalent to moving from the 48th to the 52nd percentile. On broad-scope standardized tests like the Florida Standards Assessment (FSA) and the Measures of Academic Progress (MAP), used in BCPS and CPS, respectively, an effect size of 0.09 is equivalent to an approximately 23–39 percent greater annual gain than otherwise expected for students in grades 4–8 and represents the equivalent of approximately 2 to 3.5 additional months of learning, depending on the student's grade level.

Figure 4. Impact of Two Years of Induction Support for Teachers on Student Achievement

	Adjusted Mean Test Scores		Difference (effect size)	Sample Sizes		
Subject	Treatment	Control		Students	Teachers	Schools
ELA	0.05	-0.04	**0.09***	6,147	149	99
Math	0.06	-0.09	**0.15****	4,972	129	86

Note: The effect on student achievement is a 1-year effect, as the districts provided current and prior achievement data annually, but did not consistently provide identifiers to link students across the datasets provided to researchers each year.
The 1-year impact after 2 years of mentoring includes achievement in 2014–15 for Cohort 1 teachers and 2015–16 for Cohort 2 teachers.
Adjusted mean test scores are in standard deviation units.
* $p < .05$, ** $p < .01$

[7] Teacher retention in the district was measured using district human resources (HR) data. Teachers were counted as "retained" if they were still employed by the district at the beginning of their third year, i.e., fall 2015 for Cohort 1 and fall 2016 for Cohort 2. The retention analysis included all study teachers because the districts were able to provide HR data for the full sample.

Two years of induction support for teachers resulted in positive impacts on student achievement in mathematics

Students in grades 4–8 of teachers who participated in NTC induction for 2 years scored 0.15 standard deviation ($p < .01$) higher on average than students of control teachers (Figure 4). These impacts are equivalent to moving from the 46th to the 52nd percentile. On broad-scope standardized tests like the FSA and the MAP, an effect size of 0.15 is equivalent to an approximately 27–50 percent greater annual gain than otherwise expected for students in grades 4–8 and represents the equivalent of approximately 2.4 to 4.5 additional months of learning, depending on the student's grade level.

Conclusions

NTC's 2-year induction model showed positive impacts in both ELA and mathematics for students in grades 4–8. This study contributes new evidence on comprehensive teacher induction. A 2014 study of comprehensive teacher induction reported no effects on student achievement after 2 years of induction support. After teachers' third year of teaching, impacts on student achievement in both mathematics and reading were positive and statistically significant, lagging the induction period.

However, those findings were not consistent under different approaches to estimating impact. In the current study, SRI tested the student achievement impacts under a variety of scenarios. Although we tested different scenarios than the 2014 study, in all cases, the student achievement impacts remained similar.[8] The 2014 report also found no differences in teacher practice between treatment and control teachers, consistent with this current study.[9]

SRI is investigating variation in the results across districts in the current study and analyses are forthcoming. Although the evaluation was not able to detect differences in practice outcomes between NTC-supported teachers and the control group, this result may be inconclusive because of the small sample size. However, the frequency and duration of mentor-teacher meetings—central components distinguishing the NTC induction model—were positively correlated with the student achievement results. NTC is scaling up its induction model and testing it in five additional urban sites under an i3 Scale Up grant (from 2016–17 through 2018–19), which will provide an opportunity to validate the findings from the current evaluation.

[8] See methods appendix for sensitivity analyses.

[9] S. Glazerman, E. Isenberg, S. Dolfin, M. Bleeker, A. Johnson, M. Grider, and M. Jacobus, 2010, *Impacts of Comprehensive Teacher Induction: Final Results From a Randomized Controlled Study* (NCEE 2010-4027), Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.