NEW TEACHER CENTER AT THE UNIVERSITY OF CALIFORNIA, SANTA CRUZ

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Research Brief

Does New Teacher Support Affect Student Achievement?

Some Early Research Findings

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Background

We understand the importance of having qualified, effective teachers in every classroom. We have learned from many research studies, particularly those of William Sanders and his colleagues in Tennessee, that students who are taught by effective teachers (defined by Sanders as those whose students consistently post gains in student achievement scores) for several years in a row will experience the benefits throughout the rest of their school careers and beyond. After three years with the most effective teachers, students show achievement gains significantly higher than those of students with the least effective teachers.

We can reasonably hypothesize that more experienced teachers will exceed the effectiveness of recently inducted beginning teachers. Further, as is now widely recognized in most states, new teachers need and benefit from support during their induction period. Support during the new teachers' first year or two may be just as important to their effectiveness as their pre-service training, their state certification, and their subject matter skills.

To justify assigning resources to provide support for novice teachers, legislators and school district administrators need to be convinced that such support is associated with educational outcomes beyond participant satisfaction. Researchers have shown that induction and mentoring programs may have a positive effect on teacher retention. However, few studies demonstrate any connection between new teacher induction and student achievement, the outcome that is probably of most interest to parents, educators, and legislators. Perhaps the main reason for this is that such studies are difficult to conduct.

First, it is hard to obtain the necessary data. Many schools and districts do not maintain databases connecting student test scores to teachers. Many states do not test students in all grade levels annually, and tests are changed frequently, making it difficult to compare performance from year to year. Also, induction programs vary, and many factors contribute to changes in student achievement besides the kinds of support beginning teachers receive. These include school variables, family, economic status, and social issues; other kinds of support such as teacher aides, subject-matter specialists, tutoring; teaching to the test; language issues; and students' health and mood at the time of the testing. Finally, not all educators agree on the validity of using standardized test scores to measure student learning.

Imposing an experimental design on treatment and subjects would address all of these issues, except the last. However, the most challenging aspect of this field is often securing access to a suitable control or comparison group of any sort, much less one meeting the standards of an experimental design. These dilemmas force compromises that can make interpretation more difficult.

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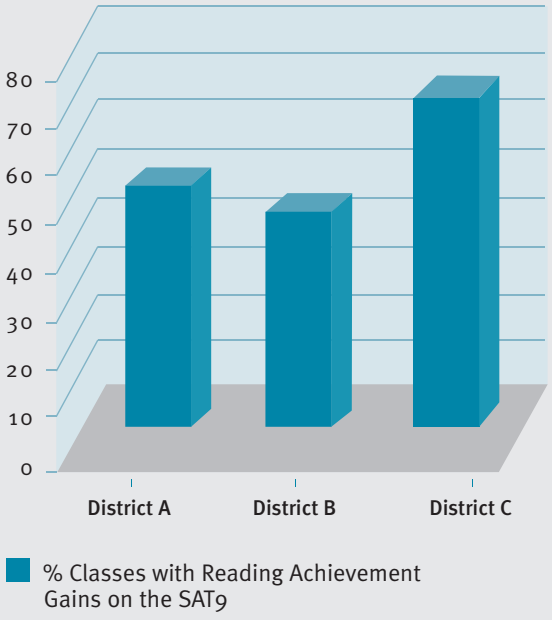
Despite these difficulties, studies are underway or are beginning to appear in print. A federally-funded, "scientifically based" study of comprehensive, one-year induction programs, using an experimental design that may provide useful findings on student achievement, is in process. Reports of a three-year induction program in a city on New York's Long Island suggest that it resulted in improved student achievement. In this case the comparison group was students from the same schools ten years earlier. The outcome measures were students attaining diplomas, and the number of students enrolled in AP classes along with their AP achievement rates. Other researchers examined the effects of new teacher support programs on student achievement by surveying third-year teachers to find out how intensive their involvement in the program had been. They then derived two groups of teachers according to self-reported high or low engagement with the program and compared them on students' achievement test scores. They found that the high engagement teachers had students who averaged slightly higher than low engagement students, but the difference was not significant.

Figure 1
Comparison of Three Different Induction Programs: Percentage of Beginning Teacher Classes with Reading Achievement Gains on the SAT 9



NTC Research Findings

At the New Teacher Center we have conducted two studies investigating the effects of induction support on student achievement. In one study we compared achievement gains among classes of elementary-level beginning teachers in three districts. Districts varied somewhat in size, baseline reading achievement levels, and number of students from poor or minority families, as seen in Table 1.

Table 1
Demographic Statistics for Three Districts Using Mentor-Based Induction

	District A	District B	District C
Average Class Size	23	25	25
Average Baseline Reading Score	52	34	32
Percent minority students	27	87	87
Percent students with free/reduced cost lunch	42	60	100
Mentor/new teacher ratio, first year	1:15	1:15	1:15
Mentor/new teacher ratio, second year	1:1	1:35	1:15
Number of beginning teachers	17	31	51

In all three districts, teachers received induction support from a full-time mentor with a caseload of no more than 15 teachers for their first year of teaching. In their second year, teachers in District A received support from a colleague at the same school who received no release time, mentors in District B increased their caseload to 35 teachers, reducing contact time accordingly, and teachers in District C continued to receive the same comprehensive support. When we compared student-by-teacher gain scores in reading (from the Stanford 9 reading test) among the three districts, we found that a greater percentage of classes in District C had positive gains than corresponding classes in the other two districts. These results are depicted in Figure 1.

This finding suggests that comprehensive mentoring is important in the second year of a teacher's career. It makes sense in that first-year beginning teachers are often mostly focused on establishing systems of classroom management and becoming socialized into

school and district culture, while only in the second year are they ready to direct their attention more to instructional issues.

A second study looks further at the teachers in District C. Using five years of student achievement data from all elementary schools, we compared the gain scores of students organized into 271 classrooms of beginning teachers (1–2 years of experience), mid-career teachers (3–9 years) and veteran teachers (ten years or more). Teacher categories were kept mutually exclusive. From the scatter plot of average class gain reading scores for the three groups (Figure 2), several conclusions may be drawn. First, there are more beginning teachers (represented by black dots) in the lower half of the chart than in the upper half. This means that beginning teachers tend to be assigned more often than not to classes of lower performing students. Second, there are more beginning teachers on the right side of the chart than on the left side. This means that more than half have classes that achieve reading gains as measured by averages on the Stanford Achievement Test (SAT9). As a result, there is a preponderance of beginning teachers in the lower right quadrant, showing that

Figure 2
Plot of Class Reading Gain Scores over Five Years According to Teacher Years of Experience

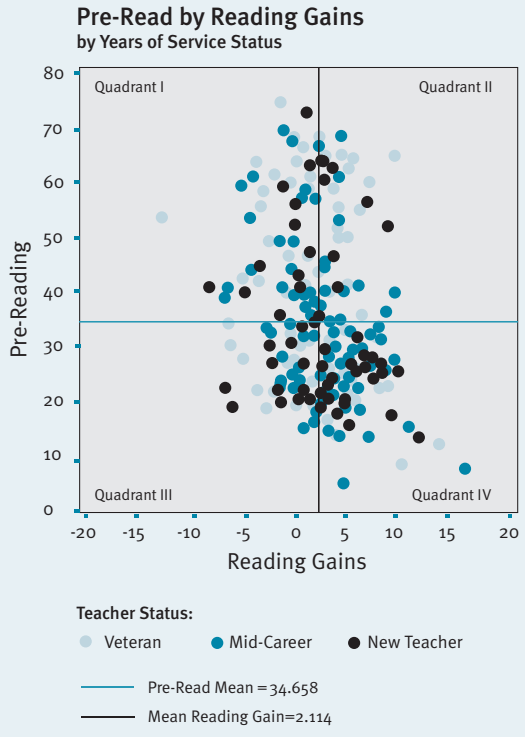


Table 2
Percent Class Assignments Above the District Mean and Percent Reading Gains for Under-Achieving Classes by Experience Group

Teacher Experience	Assigned to Classes with Above Average Readers for the District (34.658)	Under-Achieving Classes with Above-Mean Reading Gain (2.114)
New Teacher	41%	68%
Mid-Career	26%	66%
Veteran	48%	58%

these beginning teachers who are receiving induction support from full-time mentors over two years tend to have low performing students, more than half of whom make gains in reading achievement. These data are presented in a different manner in Table 2. Forty-one percent of classrooms assigned to new teachers are above average readers for the district (compared with only 26% for mid-career teachers and 48% for veteran teachers). We found no statistically significant difference in the gains among the three groups. Sixty-eight percent of new teacher under-achieving classes show gains that are above the mean for the district, compared with 66% for the mid-career group and 58% for the veterans. Contrary to what might be expected, the students of new teachers are achieving reading gains at rates that are not significantly different from those of more experienced teachers. Since this study was not an experimental design (i.e. there was no random selection or assignment to groups) we cannot make any causal connections. However, we may reasonably interpret the findings to suggest that the comprehensive induction support received by the beginning teachers was instrumental in their classes achieving at levels that were not significantly different from the classes of more experienced teachers.

Summary and Conclusions

Investigating the possible link between new teacher induction support and student achievement is difficult and complex. This explains why very few such studies exist, none of which are yet published in refereed journals. At the New Teacher Center we have begun a

series of studies to examine the effects of mentoring and induction support on student achievement. Two of these studies are described here, and others are in progress as we attain access to the necessary data. Initial findings from these studies suggest that beginning teachers who receive comprehensive induction support for two years are more likely to have classes that achieve reading gains than those that do not receive this support. Further, their classes make gains at rates similar to those achieved by veteran teachers. This information, together with that from studies of teacher retention and teacher development, will result in a body of research knowledge that can inform educators and policymakers about the implications of induction support for teacher quality.

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