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WWC Review of the Report "Impacts of Comprehensive Teacher Induction: Final Results from a Randomized Controlled Study"[1,2]

The findings from this review do not reflect the full body of research evidence on comprehensive teacher induction.

What is this study about?

The study examined the effects of a comprehensive teacher induction program for beginning teachers (i.e., teachers new to the profession) on teacher and student outcomes in 17 school districts across 13 states. The program includes mentoring, monthly professional development sessions, study groups with other beginning teachers, and opportunities to observe veteran teachers.

From the 17 districts participating in the study, 418 elementary schools with a total of 1,009 beginning teachers were randomly assigned to either an intervention group or a comparison group. In the first year of the study, beginning teachers in the intervention schools received the comprehensive teacher induction program. Beginning teachers in the comparison schools received the standard induction services, if any, provided by their district. In the second year of the study, researchers selected a subset of the original districts to receive a second year of the teacher induction program. In these districts, the schools that were originally assigned to receive the intervention continued to offer the intervention services for a second year to beginning teachers.

Study authors assessed the effects of the program on both teacher outcomes (practices, satisfaction, preparation, and retention) and student outcomes (achievement) over a 3-year period. The only analyses that meet WWC standards (with or without reservations) were those examining impacts on teacher retention, and therefore, only impacts on these outcomes are described in this WWC report.[3] Impacts after the first year of the study were based on data from all participating districts, all of which received the intervention during the first year. Impacts after the second and third years of the study were presented separately for districts receiving 1 or 2 years of the intervention.

Features of Comprehensive Teacher Induction

In this study, beginning teachers in the intervention schools were assigned to full-time mentors according to a 12 to 1 ratio. Mentors were selected from experienced teachers in the study districts and were provided with curriculum materials and training over the summer and throughout the school year. Mentors were expected to spend approximately two hours each week on in-person activities with each mentee, including engaging in conversations, observing lessons, reviewing lesson plans and materials, providing demonstrations of lessons, and reviewing students' work. In addition, mentees had access to monthly professional development sessions, study groups, opportunities to observe veteran teachers, and an end-of-year colloquium. Teachers who participated in the program for a second year received modified induction support that emphasized more advanced topics. Two program providers—Educational Testing Service of Princeton, New Jersey, and the New Teacher Center at the University of California, Santa Cruz—provided support for the intervention.

What did the study find?

Study authors reported, and the WWC confirmed, that the comprehensive teacher induction program had no statistically significant effects on teacher retention, relative to teachers who received the standard induction services provided by their school.

WWC Rating

The research described in this report meets WWC evidence standards without reservations

Strengths: The study is a well-implemented randomized controlled trial that meets WWC evidence standards for assessing impacts on teacher retention for the entire sample at the end of year 1 of the study, and for the subset of districts that received only 1 year of the intervention at the end of years 2 and 3 of the study.

Cautions: The majority of the analyses conducted by this study—including impacts on teacher practices, preparation, satisfaction, and some retention outcomes (year 2 and 3 results for districts receiving 2 years of the intervention), along with all student achievement impact analyses[4]—either do not meet WWC evidence standards or were deemed to be ineligible for review by a content expert.

Appendix A: Study details

Glazerman, S., Isenberg, E., Dolfin, S., Bleeker, M., Johnson, A., Grider, M., & Jacobus, M. (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.

Additional citations:

Glazerman, S., Dolfin, S., Bleeker, M., Johnson, A., Isenberg, E., Lugo-Gil, J., Grider, M., & Britton, E. (2008). *Impacts of comprehensive teacher induction: Results from the first year of a randomized controlled study* (NCEE 2009-4034). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Isenberg, E., Glazerman, S., Bleeker, M., Johnson, A., Lugo-Gil, J., Grider, M., Dolfin, S., & Britton, E. (2009). *Impacts of comprehensive teacher induction: Results from the second year of a randomized controlled study* (NCEE 2009-4072). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

Setting

The study was conducted in 418 elementary schools in 17 urban school districts in 13 states.

Study sample

The 17 school districts included in the study were selected because they expressed interest in study participation and met the following criteria: (a) the district had at least 570 teachers; (b) each district had at least 10 elementary schools with at least 50 students eligible for free or reduced-priced meals; (c) the district had no formal mentoring program for beginning teachers; and (d) each district had a maximum of $1000 to spend on teacher induction per new hire. Approximately 500 schools were nominated by the 17 districts to be included in the study. Study authors randomly assigned 418 elementary schools (the subset of the schools that had at least one eligible teacher) within these 17 urban districts to either receive the comprehensive teacher induction program or to serve as a business-as-usual comparison group. At the end of the first year, seven of the original 17 districts were selected to receive a second year of the intervention. The selection of districts for the second year of services was based on whether the trained mentors within the district were available for a second year, and the goal of having approximately one-half of the beginning teachers in the original study receiving a second year of services. In these districts, the schools that were originally assigned to receive the intervention continued to offer the intervention services for a second year to beginning teachers. The original study sample included 1,009 teachers. The analysis samples included up to 390 schools and 882 teachers, depending on the follow-up time period (i.e., first, second, or third year following the intervention).

Intervention group

Beginning teachers in intervention schools were assigned to full-time mentors according to a 12 to 1 ratio. The program providers sought mentor candidates with a minimum of 5 years of teaching experience in elementary school, recognition as an exemplary teacher, and experience in providing professional development or mentoring other teachers (particularly beginning teachers). Mentors were expected to spend about two hours each week on in-person activities with each mentee, including engaging in conversations, observing lessons, reviewing lesson plans and materials, providing demonstrations of lessons, and reviewing students' work.

Mentees also participated in monthly professional development sessions, study groups, observations of veteran teachers, and an end-of-year colloquium. Teachers who participated in the program for a second year received modified induction support that expanded on topics covered in the first year.

After the first year of the program, 94% of beginning teachers in the intervention group reported having a mentor, 29% reported having multiple mentors, and spending, on average, 95 minutes per week meeting with their mentors (an average of 25 minutes less than expected).

Comparison group

Teachers in the comparison group received the standard induction services, if any, that were typically provided to beginning teachers in their district.

After the first year of the program, 83% of beginning teachers in the comparison group reported having a mentor, 17% reported having multiple mentors, and spending, on average, 74 minutes per week meeting with their mentors.

Outcomes and measurement

Study authors used teacher surveys in fall 2006, fall 2007, and fall 2008 to track whether beginning teachers remained in their schools, districts, and the teaching profession. For a more detailed description of these retention outcome measures, see Appendix B.

Support for implementation

Two program providers, Educational Testing Service (ETS) of Princeton, New Jersey, and the New Teacher Center (NTC) at the University of California, Santa Cruz, provided support for the intervention. They helped districts select mentors and provided initial training to mentors and administrators. Mentors received ongoing training and curriculum materials to support the teachers' development.

The ETS model defines effective teaching using four performance domains: planning and preparation, classroom environment, instruction, and professional responsibilities. The NTC model defines effective teaching using six professional teaching standards: planning instruction and designing learning experiences, creating/maintaining effective environments, understanding/organizing subject matter, development as a professional educator, engaging/supporting all students in learning, and assessing student learning. Under both program models, the mentor's goal is to help beginning teachers use evidence from their own practice to identify and implement effective instruction. Teachers use a continuum of performance to operationalize their instructional practice at a particular point in time and to track improvements in performance.

In total, mentors received 8 to 12 days of training spread across 3 to 4 sessions during each year they participated in the program. The trainings focused on the professional development content provided to teachers and the process of being a mentor.

Reason for review

This study was identified for review by the WWC because it was cited as evidence in an Investing in Innovation (i3) grant proposal.

Appendix B: Outcome measures for the teacher retention domain

Teacher retention	
Retention in district	The percentage of study teachers who reported remaining in the school district in which they taught at the beginning of the study. This outcome was assessed at three time points: fall 2006, fall 2007, and fall 2008, corresponding to 1, 2, and 3 years, respectively, following the initial implementation of the intervention.
Retention in school	The percentage of study teachers who reported remaining in the school in which they taught at the beginning of the study. This outcome was assessed at three time points: fall 2006, fall 2007, and fall 2008, corresponding to 1, 2, and 3 years, respectively, following the initial implementation of the intervention.
Retention in teaching profession	The percentage of study teachers who reported remaining in the teaching profession. This outcome was assessed at three time points: fall 2006, fall 2007, and fall 2008, corresponding to 1, 2, and 3 years, respectively, following the initial implementation of the intervention.

Table Notes: In addition to the analysis of the three retention outcomes, the study also examined impacts on (1) student reading achievement, (2) student math achievement, (3) teacher implementation of lessons, (4) lesson content, (5) classroom culture, (6) teacher self-reported feelings of preparedness regarding instruction, (7) preparedness regarding work with others, (8) preparedness regarding work with students, (9) teacher satisfaction with the school, (10) teacher satisfaction with the class, and (11) teacher satisfaction with a teaching career. Impacts on outcomes one through five were eligible for review, but did not meet WWC evidence standards for any of the study years (1, 2, or 3 years after the intervention). Outcomes 6 through 11 were determined to be ineligible by a content area expert.

This report only includes results from the analyses of the three teacher retention outcomes, and only results based on the following school-sample and study-year combinations: (a) all schools at the end of the first year of the study, (b) schools receiving 1 year of the intervention at the end of the second year of the study, and (c) schools receiving 1 year of the intervention at the end of the third year of the study. The analyses of the retention outcomes for the rest of the school-sample and study-year combinations (that is, schools receiving 2 years of the intervention at the end of the second and third years of the study) did not meet WWC evidence standards due to high levels of sample attrition and insufficient information to demonstrate baseline equivalence for the samples.

Appendix C: Study findings for the teacher retention domain

Domain and outcome measure	Study sample	Sample size	Mean (standard deviation)		WWC calculations			*p*-value
			Intervention group	Comparison group	Mean difference	Effect size	Improvement index	
Teacher retention								
Retention in district	All teachers (after year 1 of intervention)	390 schools/ 882 teachers	0.86 (na)	0.86 (na)	0.00	0.01	0	0.92
Retention in school	All teachers (after year 1 of intervention)	390 schools/ 882 teachers	0.75 (na)	0.75 (na)	–0.01	–0.03	–1	0.77
Retention in teaching profession	All teachers (after year 1 of intervention)	390 schools/ 882 teachers	0.95 (na)	0.95 (na)	0.00	0.02	+1	0.90
Retention in district	Teachers in districts where a single year of induction was offered to intervention schools (after year 2 of intervention)	227 schools/ 476 teachers	0.79 (na)	0.80 (na)	–0.02	–0.06	–3	0.62
Retention in school	Teachers in districts where a single year of induction was offered to intervention schools (after year 2 of intervention)	227 schools/ 476 teachers	0.60 (na)	0.65 (na)	–0.04	–0.11	–5	0.28
Retention in teaching profession	Teachers in districts where a single year of induction was offered to intervention schools (after year 2 of intervention)	227 schools/ 476 teachers	0.90 (na)	0.90 (na)	0.01	0.04	+2	0.79
Retention in district	Teachers in districts where a single year of induction was offered to intervention schools (after year 3 of intervention)	224 schools/ 464 teachers	0.69 (na)	0.70 (na)	–0.01	–0.01	–1	0.91
Retention in school	Teachers in districts where a single year of induction was offered to intervention schools (after year 3 of intervention)	224 schools/ 464 teachers	0.54 (na)	0.53 (na)	0.01	0.03	+1	0.80

Retention in teaching profession	Teachers in districts where a single year of induction was offered to intervention schools (after year 3 of intervention)	224 schools/ 464 teachers	0.89 (na)	0.86 (na)	0.02	0.13	+5	0.44
Domain average for teacher retention						**0.00**	**0**	**Not statistically significant**

Table Notes: Positive results for mean difference, effect size, and improvement index favor the intervention group; negative results favor the comparison group. The effect size is a standardized measure of the effect of an intervention on teacher outcomes, representing the change (measured in standard deviations) in an average teacher's outcome that can be expected if the teacher is given the intervention. The improvement index is an alternate presentation of the effect size, reflecting the change in an average teacher's percentile rank that can be expected if the teacher is given the intervention. The WWC-computed average effect size is a simple average rounded to two decimal places; the average improvement index is calculated from the average effect size. The statistical significance of the study's domain average was determined by the WWC; the study is characterized as having an indeterminate effect because univariate statistical tests are reported for each outcome measure, and none of the independent tests, nor the domain average, were statistically significant. na = not applicable.

Study Notes: A correction for multiple comparisons was needed but did not affect significance levels. The *p*-values presented here were reported in the original study. The outcomes reported represent the regression-adjusted percentages of teachers who were retained in the same school, calculated with three significant digits of precision (which causes the WWC calculations of mean difference, effect sizes, and improvement index to differ from what would be calculated using the two significant digits shown in the intervention and comparison group mean columns). Because the outcomes are proportions, standard deviations are not reported.

Endnotes

[1] Single study reviews examine evidence published in a study (supplemented, if necessary, by information obtained directly from the author[s]) to assess whether the study design meets WWC evidence standards. The review reports the WWC's assessment of whether the study meets WWC evidence standards and summarizes the study findings following WWC conventions for reporting evidence on effectiveness. This study was reviewed using the single study review protocol, version 2.0. The WWC rating applies only to the results that were eligible under this review protocol and met WWC standards without reservations or met WWC standards with reservations, and not necessarily to all results presented in the study. A quick review of this study was released on June 2009, and this report is the follow-up review that replaces that initial assessment.

[2] Absence of conflict of interest: This study was conducted by staff from Mathematica Policy Research. Because Mathematica is also a WWC contractor, this study was reviewed by staff from subcontractor organizations.

[3] There were 11 other outcomes examined by the study that are not described in this WWC report. See the table notes in Appendix B for more information.

[4] In a previous quick review of an interim report from this study (reviewed during the transition period between version 1.0 and 2.0 standards), the WWC determined that the year-1 student achievement outcomes met WWC standards with reservations because the authors statistically adjusted for baseline achievement in their impact analyses. This current single study review examined the final report from the study and used the current (version 2.1) WWC Evidence Standards, which require that baseline equivalence of the intervention and comparison groups is assessed. The authors did not assess baseline equivalence along student achievement outcomes, and therefore, all student achievement outcomes do not meet WWC evidence standards.

Recommended Citation

U.S. Department of Education, Institute of Education Sciences, What Works Clearinghouse. (2013, September). *WWC review of the report: Impacts of comprehensive teacher induction: Final results from a randomized controlled study*. Retrieved from http://whatworks.ed.gov

Glossary of Terms

Attrition Attrition occurs when an outcome variable is not available for all participants initially assigned to the intervention and comparison groups. The WWC considers the total attrition rate and the difference in attrition rates across groups within a study.

Clustering adjustment If intervention assignment is made at a cluster level and the analysis is conducted at the student level, the WWC will adjust the statistical significance to account for this mismatch, if necessary.

Confounding factor A confounding factor is a component of a study that is completely aligned with one of the study conditions, making it impossible to separate how much of the observed effect was due to the intervention and how much was due to the factor.

Design The design of a study is the method by which intervention and comparison groups were assigned.

Domain A domain is a group of closely related outcomes.

Effect size The effect size is a measure of the magnitude of an effect. The WWC uses a standardized measure to facilitate comparisons across studies and outcomes.

Eligibility A study is eligible for review if it falls within the scope of the review protocol and uses either an experimental or matched comparison group design.

Equivalence A demonstration that the analysis sample groups are similar on observed characteristics defined in the review area protocol.

Improvement index Along a percentile distribution of students, the improvement index represents the gain or loss of the average student due to the intervention. As the average student starts at the 50th percentile, the measure ranges from –50 to +50.

Multiple comparison adjustment When a study includes multiple outcomes or comparison groups, the WWC will adjust the statistical significance to account for the multiple comparisons, if necessary.

Quasi-experimental design (QED) A quasi-experimental design (QED) is a research design in which subjects are assigned to intervention and comparison groups through a process that is not random.

Randomized controlled trial (RCT) A randomized controlled trial (RCT) is an experiment in which investigators randomly assign eligible participants into intervention and comparison groups.

Single-case design (SCD) A research approach in which an outcome variable is measured repeatedly within and across different conditions that are defined by the presence or absence of an intervention.

Standard deviation The standard deviation of a measure shows how much variation exists across observations in the sample. A low standard deviation indicates that the observations in the sample tend to be very close to the mean; a high standard deviation indicates that the observations in the sample are spread out over a large range of values.

Statistical significance Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between the groups. The WWC labels a finding statistically significant if the likelihood that the difference is due to chance is less than 5% ($p < 0.05$).

Substantively important A substantively important finding is one that has an effect size of 0.25 or greater, regardless of statistical significance.

Please see the WWC Procedures and Standards Handbook (version 2.1) for additional details.