

Evidence-Based Practices to Support Equity | A GTL CENTER SNAPSHOT

A Snapshot on Mentoring and Induction

Figure 1. Levels of Evidence

To support the identification and selection of evidence-based interventions, the U.S. Department of Education developed four levels of evidence.



STRONG EVIDENCE

Strong Evidence

Interventions with **strong evidence** have at least one experimental study that shows a statistically significant and positive effect without being overridden by other statistically negative evidence. The study must have a large, multisite sample with overlap in both population and setting.



MODERATE EVIDENCE

Moderate Evidence

Interventions with **moderate evidence** have at least one quasi-experimental study that shows a statistically significant and positive effect without being overridden by other statistically negative evidence. The study must have a large, multisite sample with overlap in either population or setting.



PROMISING EVIDENCE

Promising Evidence

Interventions with **promising evidence** have at least one correlational study that shows a statistically significant and positive effect without being overridden by other statistically negative evidence.



DEMONSTRATES A RATIONALE

Demonstrates a Rationale

Interventions that **demonstrate a rationale** are those with a well-specified logic model informed by research or evaluation where relevant research suggests the likelihood of positive effect and a study of the effects will occur as part of the intervention or is under way elsewhere.

ESSA evidence standards:

<https://www2.ed.gov/policy/elsec/leg/essa/guidanceeseseinvestment.pdf>

The 2017 National Assessment of Educational Progress (NAEP) results confirm that the achievement gap remains one of the most persistent and challenging education policy issues of our time (The Nation's Report Card, 2017). One key contributing factor to achievement gaps is the inequities in students' access to diverse, effective teachers (Chetty, Friedman, & Rockoff, 2011; Hanushek, 2014). Schools with high numbers of students living in poverty, students with disabilities, students of color, and English learners are more likely to have teachers who are ineffective, inexperienced, or teaching out-of-field (Goldhaber, Lavery, & Theobald, 2015; Goldhaber, Quince, & Theobald, 2016; Isenberg et al., 2016; Sass, Hannaway, Xu, Figlio, & Feng, 2012). Improving access to a diverse pool of effective educators for disadvantaged students and in low-performing districts and schools is an essential component, and perhaps a condition, for both school improvement and the narrowing of persistent achievement gaps. Mentoring and induction may play a critical role in building the pool of effective educators to improve access and meet this need.

The Every Student Succeeds Act (ESSA) requires that states address disparities where low-income and minority students are taught by ineffective, out-of-field, and inexperienced teachers. ESSA further requires that activities, strategies, and interventions taken by states to address disparities

must be based on evidence. ESSA defines the term “evidence based” as “an activity, strategy or intervention that demonstrates a statistically significant effect on improving student outcomes or other relevant outcomes.” This definition is based on the standards shown in Figure 1 (Every Student Succeeds Act of 2015, 2015).

As the availability of evidence on what works in education continues to grow, this new emphasis on evidence-based information in ESSA is an opportunity for states to invest in programs and strategies with a solid evidence of impact.

WHAT IS THE SNAPSHOT SERIES?

State and district leaders can use the GTL Center’s snapshot series to make informed policy decisions that take into account the evidence base for specific strategies to improve supports for and equitable access to great teachers and leaders. Each snapshot describes a commonly adopted strategy, how states and districts implement the strategy, and the empirical studies and evidence demonstrating the strategy’s effect on educator and student outcomes.

EQUITY STRATEGY: MENTORING AND INDUCTION (M&I)

Providing M&I programs for new teachers is a common strategy that states and districts use to try to address equity gaps. M&I programs offer a set of supports to new teachers to facilitate their transition from pre-service preparation to in-service practice. Teachers tend to appreciate the support that M&I programs provide. New teachers are less likely to leave the profession if they are provided with a mentor in their content area and if they participate in formal planning and collaboration with other teachers (Ingersoll & Smith, 2004; Ingersoll & Strong, 2011). In addition, 68% of teachers who were selected as a National Teacher of the Year ranked mentoring among the top three most important supports for developing their effectiveness (Behrstock-Sherratt, Bassett, Olson, & Jacques, 2014). However, teachers also tend to report inequities in access to M&I programs. For example, teachers in low-income schools and STEM teachers are less likely to report receiving high-quality M&I supports than other teachers (Kardos & Johnson, 2010).

HIGH-QUALITY MENTORING AND INDUCTION PRACTICES

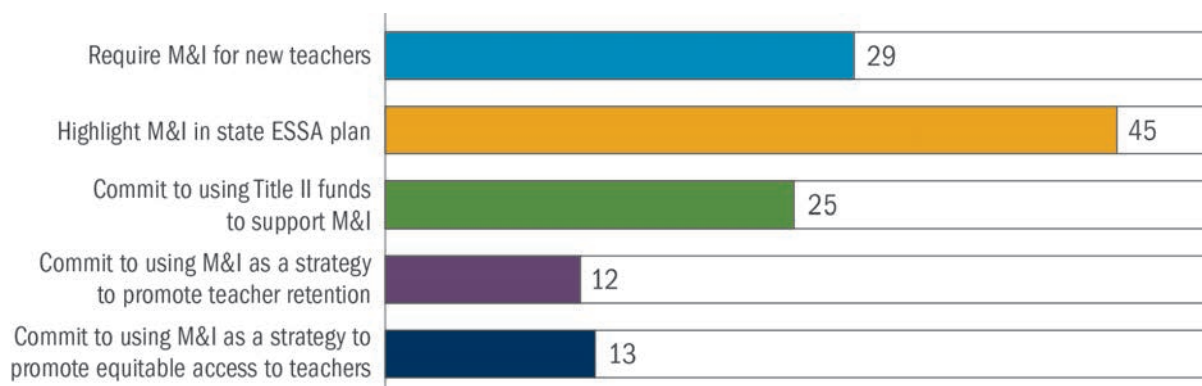
Multiple studies from the [New Teacher Center](#) (Schmidt et al., 2017; SRI Education, 2018) suggest that the following M&I implementation practices and structures are likely to be effective:

- Rigorous mentor selection based on the qualities of an effective mentor
- Ongoing professional development and support for mentors
- Sanctioned time for mentor-teacher interactions
- Multiyear mentoring
- Intensive and specific guidance moving teaching practice forward
- Professional teaching standards and data-driven conversations
- Ongoing professional development for beginning teachers
- Clear roles and responsibilities for administrators
- Collaboration with all stakeholders

MENTORING AND INDUCTION STATE-LEVEL POLICIES

M&I in some form is implemented widely in states, with varying intensity, comprehensiveness, and duration (DeCesare, Workman, & McClelland, 2016; Goldrick, 2016). As shown in Figure 2, many states discuss M&I practices in their ESSA plans, either as a means for promoting educator retention and/or ensuring equitable access to effective teachers, and many states are using Title II dollars to support M&I (Lachlan-Haché & Hayes, 2018).

Figure 2. Mentoring and Induction Policies in States



THE CURRENT EVIDENCE FOR MENTORING AND INDUCTION

Table 1 presents available evidence on M&I and whether it is effective in improving new teacher retention and performance. The GTL M&I team focused on available research and used the standards offered by the What Works Clearinghouse (WWC) to assess the relative strength of evidence. This and other snapshots will be updated once studies have been reviewed and thoroughly vetted using the ESSA criteria presented in Figure 1. We partnered with our research colleagues to complete a detailed analysis and in the process recognized the limitations in the research base, as summarized in Table 1. It is worth noting that no study in our scan reported statistically significant and negative effects of M&I on any outcome, and multiple studies have designs that would offer moderate to strong evidence to support M&I as an evidence-based practice.

Table 1. Summary of Recent Evidence on Mentoring and Induction

Outcome	Studies detecting statistically significant and positive effects for M&I	Studies detecting no statistically significant effects for M&I
Retention	<p>Ronfeldt & McQueen (2017): Correlational study using national survey data across multiple years found that teachers receiving multiple M&I supports were more likely to stay in their school and in teaching even 5 years later.</p> <p>Kang & Berliner (2012): Correlational study using national survey data found that new teachers receiving particular induction supports—seminars, common planning time, and extra classroom assistance—were less likely to leave their school or district for avoidable reasons.</p> <p>Rockoff (2008): Correlational study of newly hired teachers in a large city district found that inexperienced teachers who received mentoring were more likely to stay in their school for their full first year compared with new teachers in previous years receiving no mentoring. Among those receiving mentoring, teachers receiving more hours of mentoring or whose mentor taught in their school were more likely to stay in their school for the full year.¹</p>	<p>Schmidt, Young, Cassidy, Wang, & Laguarda (2017): Experimental study found no significant differences in teacher retention after 1 year between comprehensive M&I and business-as-usual M&I.</p> <p>Wechsler et al. (2012): Quasi-experimental study of statewide M&I program found no differences in retention between new teachers who received no M&I supports and those who received M&I supports regardless of measured levels of intensity or content.</p> <p>Glazerman et al. (2010): Experimental study that meets WWC standards with no reservations found no differences in teachers’ retention over 3 years between teachers receiving 2 years of comprehensive M&I and teachers receiving business-as-usual M&I.</p> <p>Hahs-Vaughn & Scherff (2008): Correlational study using national survey data found no differences in retention between new English teachers who engaged in M&I activities versus those that didn’t.²</p>
Teaching Practice	<p>SRI Education (2018): Experimental study found significant differences in teacher classroom practices after 2 years of teachers participating in a comprehensive M&I program compared to business-as-usual M&I.</p> <p>Stanulis & Floden (2009): Quasi-experimental study found teachers receiving intensive mentoring scored higher on a measure of teaching practice than teachers who received business-as-usual M&I.³</p>	<p>Schmidt et al. (2017): Experimental study found no significant differences in teacher practices after 1 year between comprehensive M&I and business-as-usual M&I.</p> <p>Glazerman et al. (2010): Experimental study that meets WWC standards with no reservations found no differences in teaching practice between teachers receiving 2 years of comprehensive M&I and teachers receiving business-as-usual M&I.</p>

No study found in our scan reported statistically significant and negative effects of M&I on any outcome.

¹ Three descriptive studies found statistically significant positive associations with teacher retention (Gray & Taie, 2015; Huling, Resta, & Yeargain, 2012; Humphrey et al., 2008).

² One descriptive study found no statistically significant positive association between M&I and retention between teachers receiving district-based versus university-based M&I supports (Davis & Higdon, 2008).

³ In their descriptive study, Davis & Higdon (2008) found a statistically significant positive association between university-based M&I and teaching practice using the Assessment of Practices in Early Elementary Classrooms instrument as compared with district-based M&I supports.

Outcome	Studies detecting statistically significant and positive effects for M&I	Studies detecting no statistically significant effects for M&I
<p>Student reading achievement</p>	<p>Schmidt et al. (2017): Experimental study found students in Grades 4–8 of teachers who received 2 years of the treatment outperformed students of control teachers, representing the equivalent of 2 to 3.5 additional months of learning on large-scale English language arts assessments depending on the student’s grade level.</p> <p>Glazerman et al. (2010): Experimental study meeting WWC standards with no reservations found a lagged effect on student learning in reading among students in Grades 2–5 of teachers participating in 2 years of comprehensive M&I, but not among teachers participating in only 1 year of comprehensive induction. The positive effect represented the equivalent of moving the average student from the 50th percentile up 4 percentile points.</p> <p>Fletcher, Strong, & Villar (2008): Correlational study comparing groups of new teachers receiving different M&I supports. Teachers who meet regularly with an assigned, selected mentor with full release from classroom duties have students who achieve at higher levels.</p>	<p>Rockoff (2008): Correlational study of newly hired teachers in a large city district found no differences in reading achievement among inexperienced teachers who received mentoring compared with newly hired teachers in previous years receiving no mentoring. However, it did find that students of teachers receiving more hours of mentoring had higher mathematics achievement than teachers with fewer hours of mentoring</p>
<p>Student mathematics achievement</p>	<p>SRI Education (2018): Experimental study found a positive impact on student achievement in mathematics after 2 years of teachers participating in a comprehensive M&I program compared to business-as-usual M&I.</p> <p>Glazerman et al. (2010): Experimental study detected a lagged effect in mathematics among students in Grades 2–5 of teachers participating in 2 years of comprehensive M&I, but not among teachers participating in only 1 year of comprehensive induction. The positive effect represented the equivalent of moving the average student from the 50th percentile up 8 percentile points.⁴</p>	<p>Wechsler et al. (2012): Quasi-experimental study found no differences in student learning in math between teachers with M&I supports versus no M&I supports, regardless of content or intensity.</p> <p>Rockoff (2008): Correlational study of newly hired teachers in a large city district found no differences in mathematics achievement among inexperienced teachers who received mentoring compared with newly hired teachers in previous years receiving no mentoring. However, it did find that students of teachers receiving more hours of mentoring had higher mathematics achievement than teachers with fewer hours of mentoring.</p>

No study found in our scan reported statistically significant and negative effects of M&I on any outcome.

⁴ One additional study, Fletcher & Strong (2009), found students of teachers with a full-release mentor demonstrated greater achievement gains in mathematics than students of teachers with part-time mentors. However, their methods are not clear from their paper to categorize the study appropriately.

It should be noted that most of the studies included in Table 1 do not compare outcomes for teachers receiving M&I with teachers not receiving M&I (see Table A in the Appendix for brief descriptions of the M&I supports studied). Instead, these studies compare more intensive versions of M&I with “business-as-usual” M&I routines that tend to vary widely. Results from a preliminary study of the New Teacher Center (NTC) model (not yet determined to meet What Works Clearinghouse design standards without reservation) suggest that while teachers receiving “business-as-usual” mentoring report similar levels of support and time with their mentors, teachers working with a trained NTC mentor spent more time on lesson planning, assessing student learning, and creating an optimal learning environment. Teachers mentored using the NTC model had greater gains in student achievement in mathematics and had greater impacts on students through greater engagement in learning and teachers’ use of assessment in instruction.

Despite these promising results, our team further recognizes the small research base as well as the significant limitations to the research base with regard to how M&I programs address issues of equity. There is little research focused on examining the impact of M&I programs on low-performing schools, students of color, teachers of color, and teachers and students in rural settings.

Nevertheless, the studies summarized in Table 1 provide a rationale for education policy makers to support further implementation and testing of high-quality M&I programs for new teachers serving low-income students and students of color. Although not every study found positive effects on important teacher and student outcomes, the research suggests that intensive and comprehensive M&I programs are more likely to be associated with positive outcomes than prevailing, short-term M&I programs. Given the available research, the GTL Center has supported states and districts in the early steps of [building comprehensive induction programs](#) that align to best practices outlined in the research.

EVIDENCE OF IMPACT FOR DISADVANTAGED SCHOOLS & STUDENTS

There is a relatively small research base on M&I programs’ impact on equity, particularly in low-performing schools and rural settings, and with students and teachers of color. Studies that report average gains that are not disaggregated by different student populations may overlook disparate results for disadvantaged or minority students. For example, programs that demonstrate improved student achievement overall may not be closing the achievement gap, especially if they are not designed to work in disadvantaged schools. States using M&I as a strategy for improving equitable access to effective educators should prioritize evidence from studies that measure and report outcomes specifically for disadvantaged or minority students, and studies that include outcomes such as narrowing the achievement gap and diversifying the educator workforce.

In the case of M&I, more rigorous research is needed to determine the extent to which high-quality M&I affects

1. the retention of teachers of color,
2. the achievement of low-income students and students of color,
3. the impact on students and teachers in urban versus rural settings, and
4. other important equity outcomes such as teacher and student absenteeism, disparity in discipline or special education referrals, and school climate in high-need schools.

BUILDING THE EVIDENCE BASE

More large-scale, multisite experimental research is needed. However, there is much to be gained from practitioners building and sharing their own evidence of what works for them through rigorous continuous improvement cycles (Bryk et al., 2015). Opportunities for developing and deepening research-practice partnerships should be leveraged where possible to understand and improve the design and implementation of M&I programs and other interventions that are likely to improve access to effective instruction.

WANT TO KNOW MORE?

For additional information on this topic or for technical assistance support, e-mail gtlcenter@air.org or contact our content experts:

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APPENDIX: M&I MODELS STUDIED

Study Citation	M&I Supports or Model Comparisons Examined in Study
Davis & Higdon (2008). <i>The effects of mentoring/induction supports on beginning teachers' practices in early elementary classrooms (K–3).</i>	Descriptive study comparing outcomes for a small number of new teachers receiving mentorship from full-release veteran teachers and participating in a network of new teachers, new teacher seminars, and regular collaboration with same-subject teachers (n = 10) versus a small number of teachers receiving business-as-usual induction supports (n = 5).
Fletcher & Strong (2009). <i>Full-release and site-based mentoring of elementary grade new teachers.</i>	Compared outcomes between two groups of teachers, one with support from a full-release mentor and the other with a mentor who was not released from their regular classroom duties. Mentors received the same training, but they differed in caseload and release time. Teachers who received the support of a full-time mentor tended to have more low-achieving and low-income students than did teachers in the other group.
Fletcher, Strong, & Villar (2008). <i>An Investigation of the effects of variations in mentor-based induction on the performance of students in California.</i>	Compared outcomes of first- and second-year teachers in three districts. Each district provided some mentoring. One provided full-release, trained mentors for 2 years with no more than 15 teachers assigned to each mentor. The second district provided full-release mentors for 2 years, but in the second year assigned each mentor up to 32 teachers. The third district provided mentors with no release from their teaching duties but with fewer teachers per mentor.
Glazerman et al. (2010). <i>Impacts of comprehensive teacher induction: Final results from a randomized controlled study.</i>	Examined the impact of one- and two-year comprehensive M&I interventions with the following characteristics: (1) centralized supports including principal engagement and program standards; (2) selected and trained mentors; (3) regular professional development for new teachers based on professional teaching standards including study groups and an end-of-year colloquia; (4) weekly mentor-teacher meetings lasting up to 2 hours; and (5) one or two observations of experienced teachers.
Gray & Taie (2015). <i>Public School Teacher Attrition and Mobility in the First Five Years: Results From the First Through Fifth Waves of the 2007–08 Beginning Teacher Longitudinal Study. First Look.</i>	Descriptively examined data from the first five waves of the Beginning Teacher Longitudinal Survey (BTLS) from 2007–08 to 2011–12, which enabled comparisons among beginning teachers reporting that they either were or were not assigned a mentor.
Hahs-Vaughn & Scherff (2008). <i>Beginning English teacher attrition, mobility, and retention.</i>	Used Schools and Staffing Survey (SASS) data from 1999–2000 and 2000–2001 Teacher Follow-Up Survey (TFS) data to compare outcomes of teachers reporting receiving more or fewer M&I supports such as: having a mentor, common planning time, reduced preparations, or access to a teacher network or new teacher seminars or a combination of the above supports.
Huling, Resta, & Yeargain (2012). <i>Supporting and retaining novice teachers.</i>	Descriptively compared retention outcomes between teachers participating in an intensive induction program versus those that participated in business-as-usual induction. The intensive induction program included the following features: half-time release mentors assigned to no more than 10 teachers, biweekly support sessions with a university-based professional development provider, and facilitated biweekly new-teacher network meetings.
Humphry et al. (2008). <i>Teacher Induction in Illinois and Ohio: Findings and Recommendations.</i>	Descriptively examined outcomes of teachers participating in a statewide M&I program that was implemented variously across districts.

Study Citation	M&I Supports or Model Comparisons Examined in Study
<p>Kang & Berliner (2012). Characteristics of teacher induction programs and turnover rates of beginning teachers.</p>	<p>Re-examined SASS data from 1999–2000 and 2000–2001 TFS to compare outcomes of teachers reporting receiving more or fewer M&I supports such as: having a mentor, common planning time, reduced preparations, or access to a teacher network or new teacher seminars or a combination of the above supports.</p>
<p>Rockoff (2008). <i>Does Mentoring Reduce Turnover and Improve Skills of New Employees? Evidence From Teachers in New York City.</i></p>	<p>Compared outcomes of beginning teachers receiving mentoring to other newly hired teachers who had prior teaching experience and hence were not eligible for mentoring. Some of the latter may have had mentoring in prior schools, hence the comparison has limitations. However, within the group receiving mentoring, Rockoff compared those who received more time with a mentor to those who received less time.</p>
<p>Ronfeldt & McQueen (2017). Does new teacher induction really improve retention?</p>	<p>Compared attrition and mobility of first-year teachers receiving more or fewer induction supports as captured in the 2003–2004, 2007–2008, and 2011–2012 SASS survey administrations who were also included in the TFS, as well as the Beginning Teacher Longitudinal Survey (BTLS). Induction supports measured included whether the teacher had been assigned a mentor, participated in seminars, had access to common planning time, engaged in supportive communication with administration or department chair, had a reduced schedule or preps, or received extra help.</p>
<p>Schmidt et al. (2017). <i>Impact of the New Teacher Center's New Teacher Induction Model on Teachers and Students.</i></p>	<p>The M&I intervention studied included the following characteristics: (1) centralized supports including principal engagement and program standards and assessment tools; (2) full-time mentors who were carefully selected and mentored no more than 15 teachers; (3) intensive mentor training including a week-long mentor academy, shadowing, and peer coaching among other supports; and (4) dedicated time for mentor-teacher interactions. Mentors met one-on-one with teachers for 60–90 minutes three to four times a month using a formative assessment system, focusing on instructional practices, equity, and universal access issues. Mentors also documented reflections on their mentoring work with new teachers using an online platform.</p>
<p>Stanulis & Floden (2009). <i>Intensive mentoring as a way to help beginning teachers develop balanced instruction.</i></p>	<p>Compared outcomes of new teachers receiving mentoring by partially released mentors with intensive university-based training and ongoing support versus new teachers receiving standard district-based mentors. All teachers in the study participated in three half-day orientation sessions before the school year began and four professional development sessions during the school year. Other induction supports included a series of university-based seminars for principals and a web-based resource. The university-trained mentors also engaged in mentor study groups for 6 hours per month and participated in 6 hours of professional development over the course of the year.</p>
<p>Wechsler et al. (2012) <i>Examining the effects of new teacher induction.</i></p>	<p>Examined a statewide M&I program that was implemented variously across districts. State guidelines for M&I required that all first- and second-year teachers receive: (1) mentorship from an experienced teacher who has received mentor training; (2) professional development; and (3) formative assessment aligned with relevant content-area standards and the state professional teaching standards. Mentors were required to meet at least 1.5 hours per week with their mentees. M&I programs were further guided by state program standards. The study found that induction experiences of new teachers varied considerably relative to the frequency of mentoring and the included activities, the availability of additional induction supports, and the overall content of induction. For example, less than half of new teachers who were assigned a mentor reported meeting with their mentors for the required 1.5 hours per week.</p>