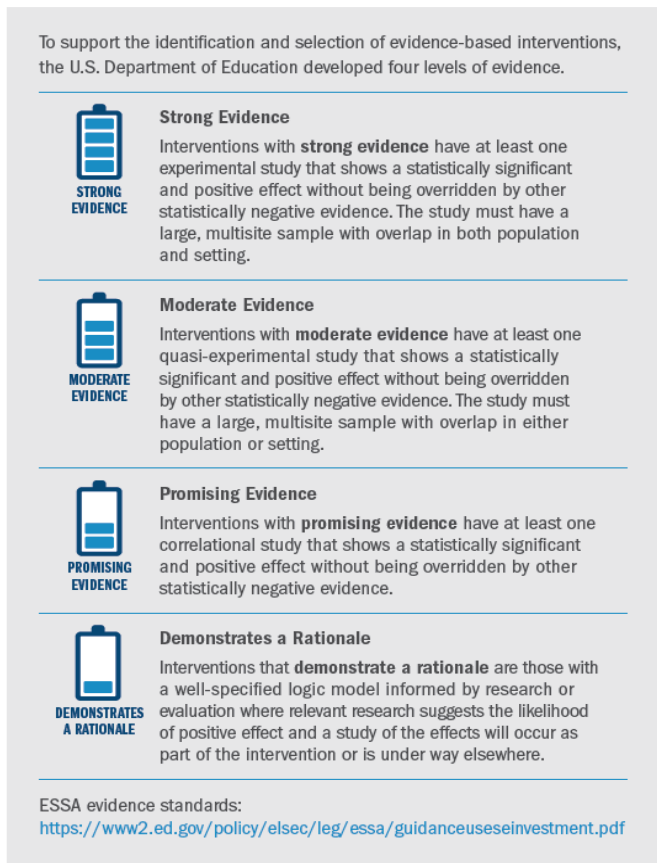


Evidence-Based Practices to Support Equity: A GTL Center Snapshot

Mentoring and Induction

Results from the latest National Assessment of Educational Progress (NAEP) show that the achievement gap remains one of the most persistent and challenging education policy issues of our time (The Nation’s Report Card, n.d.). The inequities students face in terms of access to high-quality teachers are a key contributing factor to this achievement gap (Chetty, Friedman, & Rockoff, 2011; Hanushek, 2014). The evidence shows that schools with high numbers of students living in poverty, students of color, and English learners are more likely to have teachers who are ineffective, inexperienced, and teaching out-of-field (Goldhaber, Lavery, & Theobald, 2015; Goldhaber, Quince, & Theobald, 2016; Isenberg et al., 2016; Sass, Hannaway, Xu, Figlio, Feng, 2012). Therefore, improving access to effective educators for disadvantaged students and in low-performing districts and schools is an essential component, and perhaps a condition, for school improvement.

Figure 1. Levels of Evidence



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 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 from ESSA presents an opportunity for states to invest in programs and strategies with a solid evidence of impact.

Snapshot Purpose

The purpose of these GTL Center snapshots is to inform state- and district-level policy

decisions by providing information about the evidence base that underpins strategies for supporting great teachers and leaders and addressing inequities in access to them. The snapshots describe a common strategy, how states and districts implement the strategy, and the empirical studies and evidence demonstrating the strategy’s effect on teacher and student outcomes.

Equity Strategy: Mentoring and Induction (M&I)

Providing M&I programs for new teachers is a common strategy to address equity gaps. M&I is a set of supports provided to new teachers to facilitate their transition from pre-service preparation to in-service practice. In M&I, beginning teachers are paired with more experienced teachers who are responsible for providing individual guidance, support, and mentoring. M&I may also include orientation to the school and community, ongoing professional learning and networking opportunities, reduced workload for new teachers, and other practices.

Teachers tend to appreciate the support that M&I provides. For example, 68 percent of teachers 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. For example, teachers in low-income schools and STEM teachers are less likely to report receiving high-quality M&I supports than others (Kardos & Johnson, 2010).

High-Quality Mentoring and Induction Practices

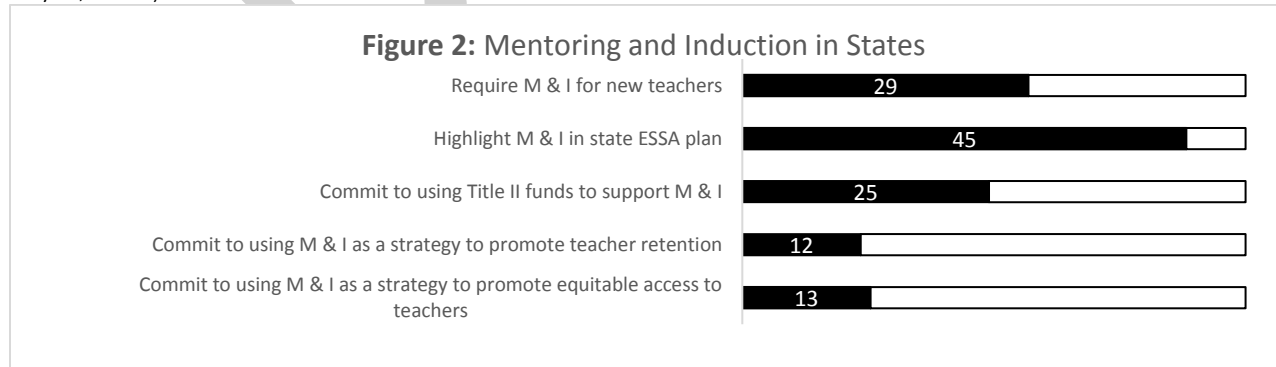
Based on its experience implementing M&I programs, a report from the [New Teacher Center \(2016\)](#) suggests that the following M&I implementation practices and structures are more likely to be effective.:

- Rigorous mentor selection based on qualities of an effective mentor
- Ongoing professional development and support for mentors
- Sanctioned time for mentor-teacher interactions
- Multi-year 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 in States

M&I in some form is implemented widely, 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 in States



The Current Evidence for Mentoring and Induction

M&I is popular with states and teachers—but is it effective in improving new teacher retention and performance? Unfortunately, the research examining the effectiveness of M&I, summarized in Table 1, is still somewhat limited. Only one experimental study (Glazerman et al., 2010) has so far been determined to meet What Works Clearinghouse design standards without reservation¹; the other studies in Table 1 have not yet been evaluated using a systematic review process.

And, although the studies are recent, having been published in the last 10 years, and have been peer reviewed, they may not include all rigorous empirical research on this topic. These studies were identified using a snowball procedure,² rather than a fully comprehensive, systematic review. Moreover, 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. Instead, these studies compare more intensive versions of M&I with “business-as-usual” M&I routines that tend to vary widely.

Because of these limitations, the GTL Center is unable to determine with confidence the relative strength of the evidence using the criteria described in Figure 1. The Center aims to update this snapshot once the evidence has been thoroughly vetted to provide solid guidance to the field. In the meantime, Table 1 is presented to inform decisions currently being made to move toward equity.

Table 1. Summary of Recent Evidence on Mentoring and Induction

Outcomes	Studies detecting statistically significant and positive effects of M&I	Studies detecting no statistically significant effects of M&I	Studies detecting statistically significant and negative effects of M&I
Retention	<p>Ronfeldt & McQueen (2017): Correlational study using national survey data across multiple years found 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</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 state-wide 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</p>	

¹ The standards and procedures for WWC reviews of individual studies can be found here: <https://ies.ed.gov/ncee/wwc/Handbooks>.

² For this snapshot, researchers began with known relevant citations and pursued relevant citations within each reference until no new citations of empirical studies were found. They also conducted keyword searches of the ERIC database using “mentoring,” “new teacher induction,” and “induction.”

	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. ³	receiving 2 years of comprehensive M&I and teachers receiving business-as-usual M&I. Hahs-Vaughn & Scherff (2008): Correlational study using national survey data showed no differences in retention between new English teachers who engaged in M&I activities versus those that didn't. ⁴	
Teaching Practice	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. ⁵	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. 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.	
Student reading achievement	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 2–3.5 additional months of learning on large-scale English language arts assessments depending on the student's grade level. 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	Rockoff (2008): Correlational study of newly hired teachers in a large city district found no differences in reading achievement among students of inexperienced teachers who received mentoring compared with newly hired teachers who in previous years had not received mentoring. However, it found that students of teachers who received more hours of mentoring had higher mathematics achievement than students of teachers who had fewer hours of mentoring.	

³ Three descriptive studies found statistically significant positive associations with teacher retention (Gray & Taie, 2015; Huling, Resta, & Yeargain, 2012; Humphry et al., 2008).

⁴ One descriptive study found no statistically significant positive associations between M&I and retention between teachers receiving district-based versus university-based M&I supports (Davis & Higdon, 2008).

⁵ In their descriptive study, Davis and 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.

	<p>among students of 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 compared groups of new teachers receiving different M&I supports. Teachers who were assigned to selected mentors and met with them regularly had students who achieved at higher levels.</p>		
Student mathematics achievement	<p>Glazer 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 students of 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.⁶</p>	<p>Wechsler et al. (2012): Quasi-experimental study found no differences in student learning in math between teachers with M&I supports and teachers with 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 students of inexperienced teachers who received mentoring compared with students of newly hired teachers who in previous years had not received mentoring. However, it found that students of teachers who received more hours of mentoring had higher mathematics achievement than students of teachers who had fewer hours of mentoring.</p>	

For education policy makers seeking to enhance student learning and equitable access to effective teachers, the studies summarized in Table 1 provide at least a rationale 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 demonstrates that intensive and comprehensive M&I programs are more likely to be effective than prevailing, short-term M&I programs. More rigorous research is needed to determine how to maximize the impact of M&I in a cost-effective manner for new teachers and their students.

⁶ 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.

Building the Evidence Base

More large-scale, multi-site 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 equity for America's students.

Want to Know More?

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

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Appendix: List of Studies Providing Evidence on Mentoring and Induction

Study	Findings
<p>Schmidt et al. (2017). <i>Impact of the New Teacher Center’s new teacher induction model on teachers and students.</i> Randomized controlled trial that assessed the impact of an M&I intervention with 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>	<ul style="list-style-type: none"> • No significant differences in teacher retention or teacher practices between the treatment group (new teachers receiving the New Teacher Center’s M&I model) and control groups (new teachers receiving business-as-usual M&I) were detected. • 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 and 2.4 to 4.5 additional months of learning in mathematics depending on the student’s grade level.
<p>Wechsler et al. (2012) <i>Examining the effects of new teacher induction.</i> Quasi-experimental study of a state-wide induction program in Illinois. M&I programs varied in terms of their organization and levels of support provided to teachers across the districts studied. 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.</p>	<ul style="list-style-type: none"> • 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, fewer than half of new teachers who were assigned a mentor reported meeting with their mentors for the required 1.5 hours per week. • No significant differences in retention or student learning were found between new teachers who received no M&I supports and those who received M&I supports regardless of measured levels of intensity or content. • Teachers who received strong M&I supports (those characterized by intense mentoring, a strong focus on instruction, and a variety of supports) reported higher levels of self-efficacy and professional growth.
<p>Glazerman et al. (2010). <i>Impacts of comprehensive teacher induction.</i> Randomized controlled trial that assessed 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.</p>	<ul style="list-style-type: none"> • No significant differences in teacher retention, teacher practices, teacher satisfaction, or feelings of preparedness between the treatment group (new teachers receiving the comprehensive M&I model for 1 or 2 years) and control groups (new teachers receiving business-as-usual M&I) were detected. • A lagged effect on student learning in reading and mathematics was detected 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 occurred in teachers’ third year of teaching—1 year after the M&I ended—and represented the equivalent of moving the

	average student from the 50th percentile up 4 percentile points in reading and 8 percentile points in math .
Fletcher & Strong (2009). Full-release and site-based mentoring of elementary grade new teachers. Quasi-experimental study which looked at fourth- and fifth-grade teachers in a large, urban, East Coast school district. One group had support from a full-release mentor, whereas teachers in the other group were assigned a site-based mentor. The 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. Despite this, students of teachers in the full-release mentor group showed greater achievement gains after 1 year. However, the opportunity to draw causal conclusions was again limited by the small sample size and a design that conflates potential teacher and school effects.
Stanulis & Floden (2009). Intensive mentoring as a way to help beginning teachers develop balanced instruction. Examined the effects of receiving the existing district induction program (which entailed mentoring, orientation, and seminars) compared to receiving intensive mentoring provided through a school–university partnership.	[here’s our promising evidence of improvement to teacher practice]
Humphrey et al. (2008). Teacher induction in Illinois and Ohio. Quasi-experimental study comparing teacher survey results from teachers who received strong induction supports versus weak induction supports.	
Rockoff (2008). Does mentoring reduce turnover and improve skills of new employees? Evidence from teachers in New York City. Quasi-experimental study of an M&I program in New York City. The study compared beginning teachers 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.	Overall, the study found no differences in student achievement gains between newly hired inexperienced teachers who received mentoring and newly hired experienced teachers who did not receive mentoring. This is not unexpected. However, the study did find that teachers who received more hours of mentoring had higher student achievement score gains, in both math and reading, than those who had fewer hours of mentoring.
Fletcher, Strong, & Villar (2008). An investigation of the effects of variations in mentor-based induction on the performance of students in California.	
Davis & Higdon (2008). The effects of mentoring/induction support on beginning teachers.	
Hahs-Vaughn & Scherff (2008). Beginning English teacher attrition, mobility, and retention.	