



# Illinois MTSS Evidence Document

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The Illinois MTSS-Network is a multi-year, federally funded, State Personnel Development Grant that includes the following focus areas: PK-12 coaching and support, family engagement, educator preparation and an external evaluation team. In an effort to create a clear, consistent and coherent message across the various components of this project, the following document serves to provide an evidence base for the critical features of a Multi-Tier System of Supports (MTSS) implementation in Illinois. This document has gone through extensive internal and external review by the Illinois Higher Education partnership leadership team and MTSS experts across the state and provides the evidence base for each indicator based on the new Every Student Succeeds Act (ESSA) guidelines for evidence. In addition, this document provides a crosswalk with Illinois' current evaluation tools used to support MTSS implementation at the district and school levels. The Illinois 2016 version of the District Capacity Assessment (DCA) is currently guides district-level implementation and the Self-Assessment of MTSS Implementation in Illinois (SAM-I) guides the school-level implementation and support. The framework for the review originated from the Kansas Multi Tier System of Support Research Base (2009\*).

In the current iteration, the document shows the evidence base for various aspects of district and/or school level implementation of MTSS. This document may benefit the IL-MTSS Network as a whole, in that all professional learning, coaching, support, and future products can pull from this foundational work for the evidence that supports the Network's project objectives.

Next steps for the developers of this document will be to crosswalk the existing components with educator and principal preparation programs at Institutes of Higher Education to 1) determine what additional content needs to be added to the document to reflect the appropriate educator preparation knowledge and skills associated with MTSS, 2) crosswalk this document with the ELCC and IPTS standards for their respective programs, and 3) use this document as the basis for creating an Innovation Configuration map or similar tool to measure the degree to which educator and principal preparation programs are adequately integrating MTSS content into their preparation programs.

Key: D = District Capacity Assessment, S = Self-Assessment of MTSS Implementation-Illinois version, PP = Principal Preparation, EP = Educator Preparation.

L1, L2, L3, and L4 = Level 1, Level 2, Level 3, and Level 4 according to ESSA standards, respectively

\*Kansas Department of Education, Special Education Services. (2009). Kansas Multi-Tier System of Supports: Research Base, Version 2.0. Retrieved from: <https://ksdetasn.org/mtss/>

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## Annotated Bibliography

- Al Otaiba, S., Connor, C., Folsom, J., Wanzek, J., Greulich, L., Schatschneider, C., & Wagner, R. (2015). To wait in tier 1 or intervene immediately: A randomized experiment examining first grade response to intervention (RTI) in reading, *Exceptional Children*, 1(1), 11-27.
- This randomized controlled experiment compared the efficacy of two Response to Intervention (RTI) models – Typical RTI and Dynamic RTI - and included 34 first-grade classrooms (n = 522 students) across 10 socio-economically and culturally diverse schools. Typical RTI was designed to follow the two-stage RTI decision rules that wait to assess response to Tier 1 in many districts, whereas Dynamic RTI provided Tier 2 or Tier 3 interventions immediately according to students’ initial screening results. Interventions were identical across conditions except for when intervention began. Reading assessments included letter-sound, word, and passage reading, and teacher-reported severity of reading difficulties. An intent-to-treat analysis using multi-level modeling indicated an overall effect favoring the Dynamic RTI condition ( $d = .36$ ); growth curve analyses demonstrated that students in Dynamic RTI showed an immediate score advantage, and effects accumulated across the year. Analyses of standard score outcomes confirmed that students in the Dynamic condition who received Tier 2 and Tier 3 ended the study with significantly higher reading performance than students in the Typical condition. Implications for RTI implementation practice and for future research are discussed.
- Alexander, J.D., Cox, R. B., Behnke, A., & Larzelere, R. E. (2017). Is all parental “noninvolvement” equal? Barriers to involvement and their relationship to Latino academic achievement. *Hispanic Journal of Behavioral Sciences*, 39(2), 169-179.
- High parental involvement has consistently been shown to enhance academic achievement among Latino youth. Still, some youth continue to thrive academically despite low parental involvement. The Theory of Rationality suggests that the impact of even potentially negative behaviors depends on how the behavior is interpreted. To test the application of this theory to parental “noninvolvement” among Latinos, we assessed how adolescent rationales about their parents’ noninvolvement in their schooling affected grade point average (GPA). Results showed that parental lack of transportation and feeling unwelcomed at school as reasons for noninvolvement were significantly and negatively related to GPA, and conflict with work schedule was significantly and positively related to GPA. Other reasons for noninvolvement were not significantly associated with GPA. Findings indicate that the meaning adolescents attribute to parental behavior may be a stronger predictor of academic achievement than the amount of involvement alone.
- Altschul, I. (2011). Parental involvement and the academic achievement of Mexican American youths: What kinds of involvement in youths' education matter most? *Social Work Research*, 35(3), 159-170.
- Parental involvement in education is a key focus of current policies and programs aimed at improving the academic outcomes of students at risk for academic underachievement. This study examines six forms of parental involvement in education to determine which forms of involvement have the strongest relationships with youths’ academic outcomes. Using nationally representative data (N = 1,609) from the National Education Longitudinal Survey, this study focuses specifically on Mexican American families and youths, a population at high risk for academic underperformance. Findings show that the positive effects of parental involvement among Mexican American parents occur through involvement in the home, whereas parental involvement in school organizations is not associated with youths' achievement. Parents' investment of financial resources in their children's education was found to have a somewhat higher impact on achievement than forms of involvement that require parents' investment of time. Findings also suggest that the impact of these forms of parental involvement occurs prior to high school.

Balu, R., Zhu, P., Doolittle, F., Schiller, E., Jenkins, J. & Gersten, R. (2015). *Evaluation of response to intervention practices for elementary school reading. NCEE 2016-4000*. National Center for Education Evaluation and Regional Assistance.

Authors made comparisons of RTI practices between school samples, reading services between the schools, and reading impacts. They used schools that had 3 years of familiarity with RTI. Schools were divided into two samples: reference and impact. Those in the impact group were more likely to give supplemental and intensive instruction than the reference schools, even though they reported doing them the same amount. Impact schools were more likely to have staff allocated to assisting with instruction.

Barr, D. J., Boulay, B., Selman, R. L., McCormick, R., Lowstein, E., Gamse, B., . . . Brielle Leonard, M. (2015). A randomized controlled trial of professional development for interdisciplinary civic education: Impacts on humanities teachers and their students. *Teachers College Record, 117*(2), 1-52. Billions of dollars are spent annually on professional development (PD) for educators, yet few randomized controlled trials (RCT) have demonstrated the ultimate impact PD has on student learning. Further, while policymakers and others speak to the role schools should play in developing students' civic awareness, RCTs of PD designed to foster civic learning are rare. This randomized controlled trial contributes to the knowledge base on the effectiveness of PD designed to integrate civic learning, ethical reflection, and historical thinking skills into high school humanities courses. Focus of Study: The study examined the impact of a PD intervention in two areas: (a) teacher self-efficacy, burnout, and professional engagement and satisfaction; and (b) the academic, civic, social, and ethical competencies of 9th and 10th grade students in the teachers' classes. Population/Participants/Subjects: The study involved 113 teachers and 1,371 9th and 10th grade students in 60 high schools from eight metropolitan regions in the United States. Intervention/Program/Practice: The intervention, Facing History and Ourselves, provides PD through a five-day seminar, curricular materials, and follow-up coaching and workshops to help teachers develop their capacities to implement an interdisciplinary historical case study unit using student-centered pedagogy. Research Design: The study used a school-level, randomized, experimental design to investigate impacts of the intervention for teachers and their 9th and 10th grade students. Findings/Results: Intervention teachers showed significantly greater self-efficacy in all eight assessed domains, more positive perceptions of professional support, satisfaction and growth, and greater personal accomplishment. Intervention students demonstrated stronger skills for analyzing evidence, agency, and cause and effect on a historical understanding performance measure; greater self-reported civic efficacy and tolerance for others with different views; and more positive perceptions of the classroom climate and the opportunities afforded for engaging with civic matters. Fidelity analysis found these causal effects despite the fact that roughly half of the intervention teachers did not fully implement the program. Conclusions/Recommendations: Educators need evidence-based approaches for teaching complex social, civic, and political issues enabling students of diverse mindsets and backgrounds to engage constructively with one another while obtaining necessary skills and knowledge. These findings provide empirical support for a professional development approach that engages teachers in fostering academic and civic competencies critical to both participation in a democracy and success in college and career.

Benner, A D., Boyle, A. E., & Sadler, S. (2016). Parental involvement and adolescents' educational success: The roles of prior achievement and socioeconomic status. *J Youth Adolescence, 45*, 1053-1064.

Parental educational involvement in primary and secondary school is strongly linked to students' academic success; however, less is known about the long-term effects of parental involvement. In this study, we investigated the associations between four aspects of parents' educational involvement (i.e., home- and school-based involvement, educational expectations, academic advice) and young people's proximal (i.e., grades) and distal academic outcomes (i.e., educational attainment). Attention was also placed on whether these relations varied as a function of family socioeconomic status or adolescents' prior achievement. The data were drawn from 15,240 10<sup>th</sup> grade students (50 % females; 57 % White, 13 % African American, 15 % Latino, 9 % Asian American, and 6 % other race/ethnicity) participating in the Education Longitudinal Study of 2002. We observed significant links between

both school-based involvement and parental educational expectations and adolescents' cumulative high school grades and educational attainment. Moderation analyses revealed that school-based involvement seemed to be particularly beneficial for more disadvantaged youth (i.e., those from low-SES families, those with poorer prior achievement), whereas parents' academic socialization seemed to better promote the academic success of more advantaged youth (i.e., those from high-SES families, those with higher prior achievement). These findings suggest that academic interventions and supports could be carefully targeted to better support the educational success of all young people.

Bradshaw, C. P., Zmuda, J. H., Kellam, S. G., & Jalongo, N. S. (2009). Longitudinal impact of two universal preventive interventions in first grade on educational outcomes in high school. *Journal of Educational Psychology, 101*(4), 926-937.

This study examined the longitudinal effects of 2 first-grade universal preventive interventions on academic outcomes (e.g., achievement, special education service use, graduation, postsecondary education) through age 19 in a sample of 678 urban, primarily African American children. The classroom-centered intervention combined the Good Behavior Game (H. H. Barrish, Saunders, & Wolfe, 1969) with an enhanced academic curriculum, whereas a second intervention, the Family-School Partnership, focused on promoting parental involvement in educational activities and bolstering parents' behavior management strategies. Both programs aimed to address the proximal targets of aggressive behavior and poor academic achievement. Although the effects varied by gender, the classroom-centered intervention was associated with higher scores on standardized achievement tests, greater odds of high school graduation and college attendance, and reduced odds of special education service use. The intervention effects of the Family-School Partnership were in the expected direction; however, only 1 effect reached statistical significance. The findings of this randomized controlled trial illustrate the long-term educational impact of preventive interventions in early elementary school.

Carlson, D., Borman, G. D., & Robinson, M. (2011). A multistate district-level cluster randomized trial of the impact of data-driven reform on reading and mathematics achievement. *Educational Evaluation and Policy Analysis, 33*(3), 378-398.

Analyzing mathematics and reading achievement outcomes from a district-level random assignment study fielded in over 500 schools within 59 school districts and seven states, the authors estimate the 1-year impacts of a data-driven reform initiative implemented by the Johns Hopkins Center for Data-Driven Reform in Education (CDDRE). CDDRE consultants work with districts to implement quarterly student benchmark assessments and provide district and school leaders with extensive training on interpreting and using the data to guide reform. Relative to a control condition, in which districts operated as usual without CDDRE services, the data-driven reform initiative caused statistically significant district-wide improvements in student mathematics achievement. The CDDRE intervention also had a positive effect on reading achievement, but the estimates fell short of conventional levels of statistical significance.

Carney, K., & Stiefel, G. (2008). Long-Term Results of a Problem-Solving Approach to Response to Intervention: Discussion and Implications. *Learning Disabilities: A Contemporary Journal, 62*(2), 61-75.

Two general models exist for implementing Response to Intervention (RtI) for struggling students, the standard protocol model and the problem-solving model. This study examined the long-term outcomes of one example of the problem-solving method, the Instructional Support Team (IST), in a field setting. Academic records of 32 students were reviewed to describe their educational outcomes 3.5 school years after their initial referral to IST. Use of this model resulted in an expansion of existing services for students, a permanent intermediate stratum for students at risk. Neither level of program support (Tier I, II, or III) at the end of the study, nor risk for school failure, was predicted based on student gender or reason for referral. Implications are discussed.

Castillo, J. M., March, A. L., Tan, S. Y., Stockslager, K. M., Brundage, A., McCullough, ... Sabnis, S. (2016). Relationships between ongoing professional development and educators' perceived skills relative to RTI. *Psychology in the Schools, 53*(9), 893-910.

Widespread adoption of Response to Intervention (RtI) requires large numbers of educators to develop the knowledge and skills necessary to implement the model with fidelity. This study examined relationships between large-scale professional development on RtI and educators' perceived skills. Elementary educators (N = 4,283) from 34 pilot and 27 comparison schools in a southeastern state participated. Leadership teams composed of subsets of educators from pilot schools who were responsible for leading RtI implementation participated in 13 days of training across a 3-year period. Additionally, job embedded coaching was provided to pilot school instructional educators. Results from multilevel models indicated that leadership team membership related to increases in educators' perceptions of RtI skills applied to academics ( $\beta = .05$ ; SE = .02;  $t[6,726] = 2.60$ ;  $p < .05$ ) and of data display skills ( $\beta = .07$ ; SE = .03;  $t[6,678] = 2.45$ ,  $p < .05$ ). Educator participation at pilot schools that received job-embedded coaching related to increases in perceptions of RtI skills applied to academics ( $B = .07$ ; SE = .02;  $t[6,726] = 2.77$ ,  $p < .05$ ). Implications for future research on RtI implementation and the practice of providing large-scale professional development focused on RtI are discussed. C2016 Wiley Periodicals, Inc.

Catts, H. W., Nielson, D. C., Bridges, M., Liu, Y. S., & Bontempo, D.E. (2015). Early identification of reading disabilities within an RTI framework. *Journal of Learning Disabilities, 48*(3), 281-297.

This study looked at the use of screening and progress monitoring tools to identify early reading difficulties and then provided a Tier 2 reading intervention. While the intervention failed to deliver any effects, the screening battery administered at the beginning of kindergarten accurately predicted word reading accuracy and fluency at the end of first grade.

Christ, T. J., & Davie, J. (2009). Empirical evaluation of Read Naturally effects: A randomized control trial (RCT) (Unpublished journal article). University of Minnesota, Minneapolis.

This is a study of the Read Naturally program used as a Tier 2 intervention. The program includes repeated reading, reading with a model, reading accuracy, fluency, vocabulary and reading for meaning, with progress monitoring with feedback. The study looks at the computerized delivery version with 109 third grade students over 10 weeks. The results indicated statistically positive improvement for the treatment group. One of the findings was that this program, delivered by computer, can be scaled to provide reading instruction for larger groups of students with minimal amounts of teacher training and time.

Clarke, A., Marshall, S. A., Mautone, J. A., Soffer, S. L., Jones, H. A., Costigan, T. E., Patterson, A., Jawad, A.F., & Power, T. J. (2015). Parent attendance and homework adherence predict response to a family-school intervention for children with ADHD. *Journal of Clinical Child & Adolescent Psychology, 44*(1), 58-67.

This study examined the relative contribution of two dimensions of parent engagement, attendance and homework adherence, to parent and child treatment response and explored whether early engagement was a stronger predictor of outcomes than later engagement. The sample consisted of parents of participants in a 12-session evidence-based family-school intervention for children with attention-deficit/hyperactivity disorder. Attendance was assessed using clinician records, and homework adherence was measured by rating permanent products. Outcomes included parent and teacher ratings of family involvement in education, parenting practices, and child functioning. Accounting for the contributions of baseline scores and attendance, homework adherence was a significant predictor of parental self-efficacy, the parent-teacher relationship, parenting through positive involvement, and the child's inattention to homework and homework productivity. Accounting for the contribution of baseline scores and homework adherence, attendance was a significant predictor of one outcome, the child's academic productivity. Early homework adherence appeared to be more predictive of outcomes than later adherence, whereas attendance did not predict outcomes during either half of treatment. These results indicate

that, even in the context of evidence-based practice, it is the extent to which parents actively engage with treatment, rather than the number of sessions they attend, that is most important in predicting intervention response.

Compton, D. L., Fuchs, D., Fuchs, L. S., Bouton, B, Gilbert, J. K., Barquero, L. A., Cho, E., & Crouch, R. C. (2010). Selecting at-risk first-grade readers for early intervention: Eliminating false positives and exploring the promise of a two-stage gated screening process. *Journal of Educational Psychology, 102*(2), 327-340.

This study looked at the development of a two-stage screening process to more efficiently screen for reading difficulty. The model looked at a number of assessments to determine which were the most efficient to screen out false positives. They suggest using a measure of phonemic decoding efficiency (TOWRE: Test of Word Reading Efficiency) as an initial screen before using a full battery. The article provides additional guidance on screening procedures and tools.

Compton, D. L., Fuchs, D., Fuchs, L. S., & Bryant, J. D. (2006). Selecting at-risk readers in first grade for early intervention: A two-year longitudinal study of decision rules and procedures. *Journal of Educational Psychology, 98*(2), 394-409.

The purpose of this study is to look at decision making rules for selecting students to participate in Tier 2 interventions. The authors developed four prediction models of decision making rules to examine with increasing numbers of assessments and decision rules. They determined the use of classification tree analysis was the most effective. This approach indicated that 5-8% of first graders in the sample would be identified for Tier 2 intervention. They also found that this approach provided no false positives.

Denton, C. A., Tolar, T. D., Fletcher, J. M., Barth, A. E., Vaughn, S., & Francis, D. J. (2013). Effects of tier 3 intervention for students with persistent reading difficulties and characteristics of inadequate responders. *Journal of Educational Psychology, 105*(3), 633-648.

The purpose of this study was to examine a Tier 3 reading intervention for 2<sup>nd</sup> grade students who had been unsuccessful in Tier 1 and 2. The students were randomly assigned to typical school intervention or the Tier 3 intervention. This intervention included word identification, phonemic decoding, and word reading fluency. The students participating in the treatment group demonstrated greater gains than the control group.

Diamond, K. E., Justice, L. M., Siegler, R. S., & Snyder, P. A. (2013). *Synthesis of IES Research on Early Intervention and Early Childhood Education*. (NCSER 2013-3001). Washington, DC: National Center for Special Education Research, Institute of Education Sciences, U.S. Department of Education. This report is available on the IES website at <http://ies.ed.gov/>.

First, IES-supported research shows that there are critical associations between features of pre-kindergarten classrooms, such as the quality of teacher-child interactions and the nature of teachers' feedback to children, and positive children's outcomes. For instance, the extent to which teachers are observed providing emotional support to children in their classroom is positively associated with children's growth in social competence. Second, research findings show that parents' and teachers' support for children's learning contributes to young children's outcomes. As an example, one study showed that the extent to which parents were involved in their children's schooling and their perceptions about their children's teacher were related to their children's academic and social competence. Third, research findings show that participation in higher-quality classroom environments is associated with improved learning outcomes for young children. IES-supported research found that children within classrooms characterized by relatively high levels of emotional support and instructional support show greater growth over an academic year on measures of academic and social development

Dowdy, E., Dever, B. V., DiStefano, C., & Chin, J. K. (2011). Screening for emotional and behavioral risk among students with limited English proficiency. *School Psychology Quarterly, 26*(1), 14-26.

The purpose of this study is to examine the use of behavior screening assessments for students with limited English proficiency (LEP). The sample included 110 English proficient and 142 LEP students. The teachers completed the Behavioral and Emotional Screening System – Teacher (BESS-Teacher) and the Behavior Assessment System for Children – 2<sup>nd</sup> Ed (BASC-2 TRS-C. The results indicate that the LEP students were identified as having greater school problems and fewer adaptive skills. LEP students are identified as having more attention and learning problems. The authors suggest that language proficiency may affect the screening and referral process.

- Eagle, J. W., Dowd-Eagle, S., Snyder, A., & Holtzman, E. G. (2015). Implementing a multi-tiered system of support (MTSS): Collaboration between school psychologists and administrators to promote systems-level change. *Journal of Educational & Psychological Consultation, 25*(2), 160-177. Current educational reform mandates the implementation of school-based models for early identification and intervention, progress monitoring, and data-based assessment of student progress. This article provides an overview of interdisciplinary collaboration for systems-level consultation within a Multi-Tiered System of Support (MTSS) framework. The roles of school psychologists and school based administrators are presented in relation to the implementation of MTSS practices within an implementation science model. The training and expertise of each discipline are highlighted related to respective aspects of implementation drivers (i.e., competency, organization, leadership). Functions of principals and school psychologists during team-based, problem-solving MTSS practices are described based on a problem-solving framework consistent with school-based consultation. Future directions for graduate training of school psychologists and principals and directions for consultation research are provided.
- Eklund, K., Kilgus, S., von der Embse, N., Beardmore, M., & Tanner, N. (2017). Use of universal screening scores to predict distal academic and behavioral outcomes: A multilevel approach. *Psychological Assessment, 29*(5), 486-499. This study examined the reliability and validity of the Social, Academic, and Emotional Behavior Risk Screener—Teacher Rating Scale (SAEBRS-TRS). The SAEBRS-TRS is a teacher rating scale designed to identify social, academic, and emotional risk. An additional focus was to identify the usefulness of the SAEBRS-TRS in predicting academic and behavioral outcomes. The results suggest that the instrument has acceptable reliability and is a significant predictor of reading proficiency (as measured by two Reading CBM tools) and behavior (office discipline referrals and absences).
- Freeman, J., Simonsen, B., McCoach, D. B., Sugai, G., Lombardi, A., & Horner, R. (2016). Relationship between school-wide positive behavior interventions and supports and academic, attendance, and behavior outcomes in high schools. *Journal of Positive Behavior Interventions, 18*(1), 41-51. Attendance, behavior, and academic outcomes are important indicators of school effectiveness and long-term student outcomes. Multi-tiered systems of support (MTSS), such as School-Wide Positive Behavior Interventions and Supports (SWPBIS), have emerged as potentially effective frameworks for addressing student needs and improving student outcomes. Much of the research on SWPBIS outcomes has taken place at the elementary and middle school levels, leaving a need for a more thorough examination of outcomes at the high school level. The purpose of this study was to explore the links between implementation of SWPBIS and academic, attendance, and behavior outcome measures across a large sample of high schools from 37 states. Despite some of the difficulties of SWPBIS implementation at the high school level, evidence suggests positive relationships between SWPBIS implementation and outcomes in behavior and attendance for high schools that implement with fidelity.
- Green, C. L., Walker, J. M., Hoover-Dempsey, K. V., & Sandler, H. M. (2007). Parents' motivation for involvement in children's education: An empirical test of a theoretical model of parental involvement. *Journal of Educational Psychology, 99*(3), 532-544. This study examined the ability of a theoretical model to predict types and levels of parental involvement during the elementary and middle school years. Predictor variables included parents' motivational beliefs about involvement, perceptions of invitations to involvement from others, and perceived life context variables. Analyses of responses from 853 parents of 1st- through 6th-grade students enrolled in an ethnically diverse

metropolitan public school system in the mid-southern United States revealed that model constructs predicted significant portions of variance in parents' home- and school-based involvement even when controlling for family socioeconomic status. The predictive power of specific model constructs differed for elementary and middle school parents. Results are discussed in terms of research on parental involvement and school practice.

Griffiths, A. J., VanDerHeyden A. M., Skokut, M., & Lilles, E. (2009) Progress monitoring in oral reading fluency within the context of RTI. *School Psychology Quarterly, 24*(1), 13-23.

The purpose of this study was to examine the accuracy of using a single curriculum-based measure (CBM) for progress monitoring during reading intervention. The results found that the process worked as well as a standardized measure (Woodcock Reading Mastery Test). This study suggests that the same passage may be used for screening and progress monitoring.

Harn, B., Basaraba, D., Chard, D., & Fritz, R. (2015). The impact of school-wide prevention efforts: Lessons learned from implementing independent academic and behavior support systems. *Learning Disabilities: A Contemporary Journal, 13*(1), 3-20.

Great progress has been made in learning how to provide more responsive instructional and behavioral supports to students through efforts in Response to Intervention and Positive Behavior and Intervention Supports. This article presents information and data on a longitudinal study designed to accelerate first graders at-risk for reading difficulties until the end of third grade. Interventions are described along with outcomes following students across this time including data on students' progress across each year and information on how many continued to need instructional supports. The paper finishes with a discussion on students continuing to demonstrate significant reading difficulties even after this level of intensive support. Lessons learned and reflections are provided on how these efforts may have been improved through more coordinated academic and behavioral supports with implications for implementing Multi-tiered Systems of Support (MTSS).

Hallinger, P., & Heck, R. H. (2010). Leadership for learning: Does collaborative leadership make a difference in school improvement? *Educational Management Administration & Leadership, 38*(6), 654-678.

Although there has been a sizable growth spurt in empirical studies of shared leadership over the past decade, the bulk of this research has been descriptive. Relatively few published studies have investigated the impact of shared leadership on school improvement, and even fewer have studied effects on student learning. This longitudinal study examines the effects of collaborative leadership on school improvement and student reading achievement in 192 elementary schools in one state in the USA over a 4-year period. Using latent change analysis, the research found significant direct effects of collaborative leadership on change in the schools' academic capacity and indirect effects on rates of growth in student reading achievement. In addition, the study identified three different growth trajectories among schools, each characterized by variations in associated school improvement processes. The study supports a perspective on leadership for learning that aims at building the academic capacity of schools as a means of improving student learning outcomes.

Hauerwas, L. B., & Goessling, D. P. (2008). Who are the interventionists? Guidelines for paraeducators in RTI. *TEACHING Exceptional Children Plus, 4*(3) 1-13.

As a Response to Intervention approach begins to be utilized in our schools, there is growing confusion regarding the role of teacher assistants/ paraeducators in this problem solving approach. In this article, the authors share survey and interview data from their experiences working with Rhode Island teacher assistants – both in leading teacher assistant training on RTI and in researching implementation of RTI in RI elementary schools. Both challenges and guidelines for the use of teacher assistants in a RTI model are presented. Recommendations for the effective use of teacher assistants in general education and special education classrooms include: teacher assistants as members of school-wide intervention teams; a greater focus on

the use of teacher assistants during the assessment process; better professional development; and increased common planning time for enhanced communication about student learning.

Heller, J. I., Daehler, K. R., Wong, N., Shinohara, M., & Miratrix, L. W. (2012). Differential effects of three professional development models on teacher knowledge and student achievement in elementary science. *Journal of Research in Science Teaching, 49*(3), 333-362.

To identify links among professional development, teacher knowledge, practice, and student achievement, researchers have called for study designs that allow causal inferences and that examine relationships among features of interventions and multiple outcomes. In a randomized experiment implemented in six states with over 270 elementary teachers and 7,000 students, this project compared three related but systematically varied teacher interventions—Teaching Cases, Looking at Student Work, and Metacognitive Analysis—along with no-treatment controls. The three courses contained identical science content components, but differed in the ways they incorporated analysis of learner thinking and of teaching, making it possible to measure effects of these features on teacher and student outcomes. Interventions were delivered by staff developers trained to lead the teacher courses in their regions. Each course improved teachers' and students' scores on selected-response science tests well beyond those of controls, and effects were maintained a year later. Student achievement also improved significantly for English language learners in both the study year and follow-up, and treatment effects did not differ based on sex or race/ethnicity. However, only Teaching Cases and Looking at Student Work courses improved the accuracy and completeness of students' written justifications of test answers in the follow-up, and only Teaching Cases had sustained effects on teachers' written justifications. Thus, the content component in common across the three courses had powerful effects on teachers' and students' ability to choose correct test answers, but their ability to explain why answers were correct only improved when the professional development incorporated analysis of student conceptual understandings and implications for instruction; metacognitive analysis of teachers' own learning did not improve student justifications either year. Findings suggest investing in professional development that integrates content learning with analysis of student learning and teaching rather than advanced content or teacher metacognition alone.

Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45*(3), 740-763.

Early adolescence is often marked by changes in school context, family relationships, and developmental processes. In the context of these changes, academic performance often declines, while at the same time the long-term implications of academic performance increase. In promoting achievement across elementary and secondary school levels, the significant role of families, family-school relations, and parental involvement in education has been highlighted. Although there is a growing body of literature focusing on parental involvement in education during middle school, this research has not been systematically examined to determine which types of involvement have the strongest relation with achievement. The authors conducted a meta-analysis on the existing research on parental involvement in middle school to determine whether and which types of parental involvement are related to achievement. Across 50 studies, parental involvement was positively associated with achievement, with the exception of parental help with homework. Involvement that reflected academic socialization had the strongest positive association with achievement. Based on the known characteristics of the developmental stage and tasks of adolescence, strategies reflecting academic socialization are most consistent with the developmental stage of early adolescence.

Jung, E., & Zhang, Y. (2016). Parental involvement, children's aspirations, and achievement in new immigrant families. *The Journal of Educational Research, 109*(4), 333-350.

The authors investigated the relationships among multiple aspects of parental involvement (English proficiency, school involvement, control and monitoring of children), children's aspirations, and achievement in new immigrant families in the United States. They used data on immigrant parents

and school-age children (N D 1,255) from the New Immigrant Survey to examine immigrant families from diverse backgrounds. Structural equation modeling analyses revealed that parental English proficiency and involvement in school education are related to children's academic achievement, cognitive development, and English language ability, directly as well as indirectly, through children's educational aspirations. Parental control and monitoring is not beneficial to immigrant children's cognitive development, although variations were found across different groups. They also observed intriguing findings regarding gender and racial or ethnic diversity. Based on their findings, they provide recommendations for the fostering of academic success and the design and implementation of educational programs and practices for immigrant children.

Institute of Education Sciences. (2009). Assisting student struggling with mathematics: Response to intervention (RTI) for elementary and middle schools. *National Center for Education Evaluation and Regional Assistance*. 1-12.

This guide was developed by the What Works Clearinghouse based on both high quality research and judgement from a panel of experts. This review found moderate evidence for screening all students in math at the beginning of the year and minimal evidence for using progress monitoring. In addition, the publication offers a range of suggestions provided by the panel of experts on how to identify and support students to learn mathematics in a multi-tiered system. In addition to screening and progress monitoring, the report found strong evidence to specific approaches in math.

Institute of Education Sciences. (2009). Assisting student struggling with reading response to intervention (RTI) and multi-tiered intervention in the primary grades. *National Center for Education Evaluation and Regional Assistance*. 1-10.

This guide was developed by the What Works Clearinghouse based on both high quality research and judgement from a panel of experts. This review found moderate evidence for screening all students in reading at the beginning of the year and minimal evidence for using progress monitoring. In addition, the publication offers a range of suggestions provided by the panel of experts on how to identify and support struggling readers in a multi-tiered system. In addition to screening and progress monitoring, the report found strong evidence to support intensive systemic instruction on up to three foundational reading skills in small groups to students who scored below benchmark on screening.

Kaminski, R. A., Abbott, M. A., Aguayo, K. B., Latimer, R., & Good, R. H. (2014). The preschool early literacy indicators: Validity and benchmark goals. *Topics in Early Childhood Special Education*, 34(2), 71-82.

This study describes the Preschool Early Literacy Indicators (PELI) and compares the PELI to existing assessments to examine concurrent validity (DIBELS and CELF). In addition the study attempted to identify benchmarks of the PELI to predict future performance.

Kaminski, R. A., & Powell-Smith, K. A. (2017). Early literacy intervention for preschoolers who need Tier 3 support. *Topics in Early Childhood Special Education*, 36(4), 205-217.

This article describes a preschool Tier 3 intervention which was examined using a single-case multiple baseline design. The intervention, Reading Ready Early Literacy Intervention (RRELI), was implemented with six children from six different Head Start programs for 5-10 minutes a day. The intervention was delivered by trained research assistants who met weekly with fidelity observers to discuss progress. The results indicate that the intervention had a positive effect on all children, but more effective for some, but pretests alone did not predict who would benefit the most.

Kemple, J. J., Corrin, W., Nelson, E., Salinger, T., Herrmann, S., & Drummond, K. (2008). *The enhanced reading opportunities study: Early impact and implementation findings*. (NCEE 2008-4015) Washington DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education.

This report presents early findings from the Enhanced Reading Opportunities (ERO) study — a demonstration and rigorous evaluation of two supplemental literacy programs that aim to improve the reading comprehension skills and school performance of struggling ninth grade readers. The present report focuses on the first of two cohorts of ninth grade students who will participate in the study and discusses the impact that the two interventions had on these students' reading comprehension skills through the end of their ninth-grade year. The report also describes the implementation of the programs during the first year of the study and provides an assessment of the overall fidelity with which the participating schools adhered to the program design specified by the developers.

Kim, J., McIntosh, K., & Hoselton, R. (2014). *Do schools with adequate tier I SWPBIS implementation have stronger implementation at tiers II and III? Positive Behavioral Interventions & Supports*, U.S Department of Education.

Problem behavior continues to be a serious concern for educators, and to address the need for effective solutions, over 20,000 schools have adopted school-wide positive behavioral interventions and supports (SWPBIS; Horner, 2014, July). SWPBIS is a preventive and systematic approach that emphasizes high quality of implementation of evidence-based practices, use of data for decision making, and organization of support within a three-tiered public health model (Sugai & Horner, 2006). The purpose of this evaluation brief is to answer the following questions: "to what extent do schools with adequate Tier I SWPBIS implementation have stronger implementation at Tiers II and III?" And "which components of Tier 1 systems are most strongly related to the implementation of Tier II and Tier III systems?"

Kim, S., & Hill, N. E. (2015). Including fathers in the picture: A meta-analysis of parental involvement and student's academic achievement. *Journal of Educational Psychology*, 107(4), 919-934.

Extant research on parental involvement in education has been conducted largely without respect to which parent is involved. The implicit assumption is that family-school relationship frameworks function similarly for fathers and mothers. Although there is a growing body of research examining fathers' involvement in education, this assumption has not been tested. In this meta-analysis, we examined the relative strength of the association between educational involvement of fathers versus mothers and achievement of school-age children (kindergarten to 12th grade). The association of involvement with achievement over time (i.e., longitudinal studies) was stronger than for cross-sectional studies. Parental involvement in education was positively associated with student achievement and the relation between involvement and achievement was equally strong for fathers and mothers, although mothers' mean levels of involvement were higher than fathers'. Moderator analyses across the different types of involvement suggested that school-based involvement and intellectual enrichment at home was more strongly related to achievement for mothers than for fathers, although there were no differences in mean levels of involvement

King, K. R., Lembke, E. S., & Reinke, W. M. (2015). Using latent analysis to identify academic and behavioral risk status in elementary students. *School Psychology Quarterly*, 31(1), 43-57 (300).

The purpose of this study was to examine the co-occurrence of academic and behavior problems as a part of the screening process in elementary schools. The sample was divided into three groups based on risk for academic and behavior issues (group 1= low academic/ low behavior risk; 2= high academic/low behavior risks; and 3= high academic/high behavior risks). The study then compared each group to the final state assessment. Group 1 scored better than groups 2 which scored better than group 3 on the end of year state assessment.

Kowalewicz, E. A., & Coffee, G. (2014). Mystery Motivator: A Tier 1 classroom behavioral intervention. *School Psychology Quarterly*, 29(2), 138-156.

This study was to examine the impact of the Mystery Motivator (MM) as an intervention in the regular classroom (8 K-4 classrooms) that rewards students for appropriate group behaviors (group contingency). It includes two elements of uncertainty; whether or not MM is in effect on a given day;

and what reward will be given when earned. All students contribute toward a successful session and rewards are delivered to the entire group. The results of the study indicated a decrease in disruption behavior in the classroom.

Lower, A., Young, K. R., Christensen, L., Caldarella, P., Williams, L., & Wills, H. (2016). Effects of a Tier 3 Self-Management Intervention Implemented with and without Treatment Integrity. *Education & Treatment of Children, 39*(4), 493-520.

This study explored the impact of a Tier 3 intervention delivered in a regular classroom – the class-wide function-related intervention teams (CW-FIT). This includes peer partners, teacher and parent feedback to reduce disruptive behavior. The two students were included because their teachers referred them for intervention beyond Tier 1 and 2. The treatment integrity varied across the two subjects which may have led to the differences in outcomes.

Maier, M. P., Pate, J. L., Gibson, N. M., Hilgert, L., Hull, K., & Campbell, P. C. (2016). A quantitative examination of school leadership and response to intervention. *Learning Disabilities Research & Practice, 31*(2), 103-112.

This study sought to provide educational researchers, policy-makers, and professionals with quantitative data on the status of RTI implementation, as well as on which leadership behaviors have been associated with successful implementation. School psychologists and other RTI professionals rated their schools on RTI implementation using the RTI Essential Components Integrity Rubric and rated their school principals on leadership style using the Multifactor Leadership Questionnaire 5X. Descriptive data indicate that while schools have made progress, they have fallen far short of having fully implemented the RTI model. Multiple regression analysis identified transformational leadership as the predictive factor for RTI implementation, highlighting the importance of effective school leadership for this model.

May, H., Sirinides, P., Gray, A., & Goldsworthy, H. (2016). *Reading recovery: An evaluation of the four-year i3 scale-up*. Philadelphia: Consortium for Policy Research in Education.

This report presents the final results of a four-year independent external evaluation of the impacts and implementation of the scale-up of Reading Recovery, a literacy intervention targeting struggling 1st-grade students. CPRE/CRESP's evaluation of Reading Recovery includes parallel rigorous experimental and quasi-experimental designs for estimating program impacts, coupled with a largescale, mixed-methods study of program implementation under the i3 scale-up. The primary goals of the evaluation are to: provide experimental evidence of the short- and long-term impacts of Reading Recovery on student learning in schools that are part of the i3 scale-up; and assess the implementation of Reading Recovery under the i3 grant, including fidelity to the program model and progress toward the scale-up goals. Key findings are reported for four key areas: 1) the scale-up processes, challenges, and outcomes, 2) immediate impacts of Reading Recovery, 3) sustained impacts of Reading Recovery, and 4) Implementation Fidelity.

McCart, A., Wolf, N., Sweeney, H. M., & Choi, J. H. (2009). The application of a family-based multi-tiered system of support. *NHSA Dialog, 12*(2), 122-132.

Early interventionists struggle with supporting parents to prepare their children to be socially successful. Systems of support in which parents matriculate through a series of progressively intensive interventions depending on their need have been identified as a potentially promising framework for delivering family support services (McIntyre & Phaneuf, 2007). A pilot study was conducted to assess the feasibility and potential effectiveness of a family-based Multi-Tiered System of Support (MTSS) approach in an Early Head Start setting. A universal intervention was implemented with 30 families while 13 completed a targeted intervention and 4 participated in the most intensive level of support. This study offers the first known application of an MTSS within a family-based community agency. The results indicate participants were satisfied with the service

delivery and may have experienced reduced levels of stress as a result of their participation. The implications of the findings and the limitations of the study are presented.

Mendez, L. R., Ogg, J., Loker, T., & Fefer, S. (2013). Including parents in the continuum of school-based mental health services: A review of intervention program research from 1995 to 2010. *Journal of Applied School Psychology, 29*(1), 1-36.

In this study, the authors reviewed journal articles published between 1995 and 2010 that described student mental health interventions involving parents delivered in school settings. Their review identified 100 articles describing 39 interventions. On the basis of participant selection criteria provided by the authors of the reviewed articles, the authors of this study grouped interventions into universal (Tier 1), selected (Tier 2), targeted or indicated (Tier 3), or multitier programs. Interventions were identified across Tiers 1, 2, and 3, although interventions involving all three tiers were rare (n= 2). Common intervention goals were prevention of substance abuse and reduction of externalizing behavior problems. The majority of programs involved parents through group parent training. Example programs were selected at each tier to provide a description of how parents were recruited, how services were delivered to families, and outcomes for participants. Implications for school psychologists who wish to promote greater parent involvement in interventions at their schools and directions for future research are noted.

Murray, C. S., Woodruff, A. L., & Vaughn, S. (2010). First-Grade Student Retention Within a 3-Tier Reading Framework. *Reading & Writing Quarterly, 26*(1), 26-50.

This study looked at the impact of a three tiered reading framework on retention rates of first graders in 6 schools. The schools implemented a 3 tiered reading intervention system with professional development, principal support and a school site coordinator and looked, in particular, at Tier 2 interventions. All classroom teachers participated in professional development to improve core instruction in Tier 1. The Tier 2 intervention targeted retained students over three cohorts and included letter and sound identification, word reading and spelling, passage reading, and comprehension, fluency and vocabulary. Over the course of the two years, retention rates decreased by 47%. However, the work also indicated there is some evidence that the retentions were, in part, on behavior rather than strictly on academic failure.

Murray, D. W., Rabiner, D., Schulte, A., & Newit, K. (2008). Feasibility and integrity of a parent–teacher consultation intervention for ADHD students. *Child Youth Care Forum, 37*, 111-126.

This study examined the feasibility and integrity of a daily report card (DRC) intervention in a small sample of randomly assigned elementary students with previously diagnosed ADHD and classroom impairment. In order to enhance implementation, a conjoint behavioral consultation approach was used in which parents were engaged as active participants in the treatment. Intervention parents and teachers maintained moderately high levels of adherence over 4 months based on multiple methods of implementation assessment, and acceptability ratings were all very favorable. Intervention participants demonstrated significant improvement in academic skills and productivity at post-test as compared to control participants, with moderately large effect sizes. Results suggest that a DRC intervention implemented within conjoint parent–teacher consultation may help to reduce the research to practice gap in evidence-based school interventions.

Oakes, W. P., Harris, P. J., & Barr, L. C. (2009). A model for supplementing reading instruction for young children with behavioral risk factors. *Beyond Behavior, 18*(3), 10-18.

This study explored the development of a Tier 2 intervention for teaching reading and behavior. Students were screened for reading difficulty and support within the classroom. Those that needed additional reading instruction were screened to identify those that also possessed risk for behavior problems. The students who were in need of both reading and behavior support were included in the study. The group received instruction on reading

and behavior four days a week and progress monitoring on the fifth day. The intervention lasted for up to 38 weeks and all students made sufficient progress to return to classroom and none were referred to special education.

Oslund, E., Simmons, D., Hagan-Burke, S., Kwok, O., Simmons, L., Taylor, A., & Coyne, M. (2015) Can curriculum-embedded measures predict the later reading achievement of kindergarteners at risk of reading disability? *Learning Disability Quarterly, 38*(1), 3 – 14.

This study examined the changing role and longitudinal predictive validity of curriculum-embedded progress-monitoring measures (CEMs) for kindergarten students receiving Tier 2 intervention and identified as at risk of developing reading difficulties. Multiple measures were examined to determine whether they could predict comprehensive latent first- and second-grade reading outcomes and whether their predictive validity changed concurrent with reading development. CEMs of phonemic, alphabetic, and integrated tasks were given 3 times during the kindergarten year to 299 students. Structural equation modeling indicates that CEMs explained a significant amount of variance on first- (54%–63%) and second-grade (34%–41%) outcomes. The predictive validity of specific measures varied over the kindergarten year with sound and letter identification measures being predictive early and segmenting and word reading becoming important as reading abilities progressed. Findings suggest that CEMs may be viable and helpful tools for making data-driven instructional decisions in a response to intervention framework.

Pearce, L. R. (2009). Helping children with emotional difficulties: A response to intervention investigation. *The Rural Educator, 30*(2), 34-46.

This article describes a Response to Intervention (RTI) model of service delivery implemented within a rural elementary school for students in kindergarten through fifth grade experiencing significant emotional and behavioral difficulties. A multi-tiered model is presented that includes school wide interventions in Tier 1, as well as a six separate interventions applied within Tier 2 and Tier 3. These included applied behavioral analysis, social skills training, counseling, differentiated instruction, cognitive behavioral interventions and parent involvement designed to assist identified students with improving prosocial skills. Nine children were treated within this program model over a two year period, resulting in two students being placed in special education under the category of emotional disturbance by the project's termination. Positive and negative aspects of the project's implementation are reviewed, along with directions for future research.

Pomerantz, E. M., Moorman, E. A., & Litwack, S. D. (2007). The how, whom, and why of parents' involvement in children's academic lives: More is not always better. *Review of Educational Research, 77*(3), 373-410.

A key goal of much educational policy is to help parents become involved in children's academic lives. The focus of such efforts, as well as much of the extant research, has generally been on increasing the extent of parents' involvement. However, factors beyond the extent of parents' involvement may be of import. In this article, the case is made that consideration of the how, whom, and why of parents' involvement in children's academic lives is critical to maximizing its benefits. Evidence is reviewed indicating that how parents become involved determines in large part the success of their involvement. It is argued as well that parents' involvement may matter more for some children than for others. The issue of why parents should become involved is also considered. Implications for future research and interventions are discussed.

Portwood, S. G., Brooks-Nelson, E., & Schoeneberger, J. (2015). Data and evaluation strategies to support parent engagement programs: Learnings from an evaluation of parent university. *Children & Schools, 37*(3), 145-153.

Charlotte-Mecklenburg Schools' (CMS) Parent University is an innovative, collaborative initiative designed to engage parents in their children's education. Working with community partners, Parent University offers unique courses and workshops such as Parenting Awareness, Helping Your Child Learn in the 21st Century, Health and Wellness, and Personal Growth and Development. In response to calls to demonstrate a direct link to student outcomes, the current project explored ways to leverage existing program data for evaluation. A total of 661 parents attending Parent University were

included in this study. Data for the children of these parents who were enrolled in CMS ( $n = 862$ ) and a control group of students ( $n = 835$ ) matched on age, grade, school, gender, and ethnicity were analyzed. Results indicated that Parent University is successful in engaging parents, particularly those who traditionally have been underserved, and highlighted some of the factors contributing to this success. Some positive trends in students' school performance, especially among those whose parents attended a course designed to link directly to academic outcomes, indicated that this may be a promising intervention for improving school performance and illustrate the potential for integrated data approaches to support outcome evaluation and to advance research regarding mechanisms of effective parent engagement.

Powell, D. R., Son, S., File, N., & San Juan, R. R. (2010). Parent-school relationships and children's academic and social outcomes in public school pre-kindergarten. *Journal of School Psychology, 48*, 269-292.

Two dimensions of parent-school relationships, parental school involvement and parents' perceptions of teacher responsiveness to child/parent, were examined in state-funded prekindergarten classrooms in a large urban school district. Children's social and academic outcomes were individually assessed in the fall and spring. Hierarchical Linear Modeling analyses revealed that parental school involvement positively predicted children's social skills ( $d = .55$ ) and mathematics skills ( $d = .36$ ), and negatively predicted problem behaviors ( $d = .47$ ). Perceived teacher responsiveness to child/parent was positively related to children's early reading ( $d = .43$ ), and social skills ( $d = .43$ ), and negatively to problem behaviors ( $d = .61$ ). All analyses controlled for quality of teacher interaction with children in the classroom, parental home involvement, parental education level, and child race/ethnicity.

Pullen, P. C., Tuckwiller, E. D., Konold, T. R., Maynard, K. L., & Coyne, M. D. (2010). A Tiered Intervention Model for Early Vocabulary Instruction: The Effects of Tiered Instruction for Young Students At Risk for Reading Disability. *Learning Disabilities Research & Practice (Wiley-Blackwell), 25*(3), 110-123.

This study examined the effects of tiered instruction on vocabulary instruction. The sample was divided into three groups (at risk-control; at-risk-treatment, and not at-risk control). All groups received Tier I instruction on vocabulary. The treatment groups received a Tier 2 intervention for 20 minutes of instruction in addition to Tier I instruction. The study suggests that Tier 1 instruction may be insufficient for at risk students and that Tier 2 interventions increase the learning for these students. However, the effect may fade over time based on long term follow up.

Ransford-Kaldon, C., Flynt, E. S., Ross, C., & Society for Research on Educational Effectiveness. (2011). *A randomized controlled trial of a response-to-intervention (RTI) tier 2 literacy program: Leveled literacy intervention (LLI)*. Society for Research on Educational Effectiveness.

The purpose of this study was twofold: (1) to determine the efficacy of the Leveled Literacy Intervention program (LLI) in increasing reading achievement for K-2 students and (2) to examine LLI program implementation fidelity. This study evaluated LLI in two U.S. school districts and used a mixed-method design to address the following key research questions: "what progress in literacy do students who receive LLI make compared to students who receive only regular classroom literacy instruction?" and "was LLI implemented with fidelity to the developers' program model?"

Rackaway, A. (2013). A comparison of the incidence rates in MTSS tiers. *ALJ in student research, 1*(1), 2325-3223.

This project sought to define the incidence rate among males and females in MTSS tiers in the study region. The study also sought initial teacher satisfaction with support for their development and training into the new MTSS system. A survey consisting of 13 items was sent to 600 randomly selected elementary public school teachers in the Kansas First Congressional District. As expected, students placed in Benchmark constituted the highest number of participants. Students across MTSS tiers in Central and Western Kansas schools are distributed according to MTSS guidelines and are gender neutral. An implication of this study is that it is vital for effective instruction in reading and mathematics to approach instruction based on students' assessment results which are gained by frequent progress monitoring and assessment. A second implication is the need for leaders in school districts to provide teachers with MTSS professional development during their first through third year of teaching.

Ruffini, S., Miskell, R., Lindsay, J., McInerney, M., & Waite, W. (2016). *Measuring the implementation fidelity of the Response to Intervention framework in Milwaukee public schools*. REL Midwest. N.p.

Regional Educational Laboratory Midwest assisted Milwaukee Public Schools in developing a system for measuring schools' progress in implementing Response to Intervention (RTI), a pedagogic method that uses tiered levels of instruction adapted to student needs. This study examined the ratings produced by that system in 2014/15 to determine the system's reliability, schools' progress in implementing RTI, and any relationship of the ratings to school characteristics. Some 53 percent of participating elementary schools that were rated using the rubric were implementing RTI with adequate fidelity. Schools with the lowest academic performance (priority schools) struggled most with implementation. Among components of the RTI framework, schools struggled most with multi-tiered instruction and evaluation. Implementation fidelity ratings were related to the percentage of teachers with advanced credentials, retention rates of licensed staff, percentage of economically disadvantaged students, and percentage of students suspended during the school year.

Sanchez, V. M., & O'Connor, R. E. (2015). Building tier 3 intervention for long-term slow growers in grades 3-4: A pilot study. *Learning Disabilities Research & Practice* (Wiley-Blackwell), 30(4), 171-181.

The purpose of this study was to develop a Tier 3 intervention for students who were not progressing in a Tier 2 setting. The 8 students identified in grades 3 and 4 were provided with an additional 40 minutes of 1-1 instruction three times a week for two months. The intervention included letter patterns, multi-syllabic word practice, sight word practice, and reading stories aloud. The participating students showed growth in word identification and reading rate, even demonstrating an improvement of reading comprehension, which was not part of the intervention. The authors could not ascertain which part of the intervention caused the improvement,

Sénéchal, M., & Young, L. (2008). The effect of family literacy interventions on children's acquisition of reading from kindergarten to grade 3: A meta-analytic review. *Review of Educational Research*, 78(4), 880-907.

This review focuses on intervention studies that tested whether parent-child reading activities would enhance children's reading acquisition. The combined results for the 16 intervention studies, representing 1,340 families, were clear: Parent involvement has a positive effect on children's reading acquisition. Further analyses revealed that interventions in which parents tutored their children using specific literacy activities produced larger effects than those in which parents listened to their children read books. The three studies in which parents read to their children did not result in significant reading gains. When deciding which type of intervention to implement, educators will have to weigh a variety of factors such as the differences in effectiveness across the different types of intervention, the amount of resources needed to implement the interventions, and the reading level of the children.

Shapiro, E. S., Dennis, M. S., & Fu, Q. (2015). Comparing computer adaptive and curriculum-based measures of math in progress monitoring. *School Psychology Quarterly*, 30(4), 470-487.

This study compared the use of computer assisted testing (CAT: items delivered via computer and subsequent items adjusted based on student response) and a curriculum-based measure (CBM) for progress monitoring. The CAT was STAR-Math with the CBM used was AIMSweb M-COMP and M-CAP)). The sample of 250 3-5<sup>th</sup> graders were administered all three assessments 7 times (every 4-5 weeks). They were compared to determine which assessments could be used as progress monitoring to predict results of the Pennsylvania System of School Assessment (PSSA). The STAR-M was the best predictor while the AIMSweb was effective in most cases.

Sheridan, S. M., Bovaird, J. A., Glover, T. A., Andrew Garbacz, S., Witte, A., & Kwon, K. (2012). A randomized trial examining the effects of conjoint behavioral consultation and the mediating role of the parent-teacher relationship. *School Psychology Review, 41*(1), 23-46.

The present study is a large-scale randomized trial testing the efficacy of a family-school partnership model (i.e., conjoint behavioral consultation) for promoting behavioral competence and decreasing problem behaviors of students identified by their teachers as disruptive. The focus of this study is on student behavioral outcomes and the potential role of parent-teacher relationships as mediating variable. Two hundred seven students, from 82 classrooms, and their families and teachers participated. Results indicated that, relative to the control group, students in the conjoint behavioral consultation condition demonstrated greater increases in adaptive behaviors and social skills over the 8-week intervention period. Compared to teachers in the control group, those in the experimental conjoint behavioral consultation demonstrated significantly greater change in their reported relationships with parents. Furthermore, improvements in teacher-reported relationships with parents mediated the effects of conjoint behavioral consultation on positive changes in children's behaviors. Interpretation and implications of these findings are discussed.

Sheridan, S. M., Witte, A. L., Holmes, S. R., Coutts, M. J., Dent, A. L., Kunz, G. M., & Wu, C. (2017). A randomized trial examining the effects of conjoint behavioral consultation in rural schools: Student outcomes and the mediating role of the teacher–parent relationship. *Journal of School Psychology, 61*, 33-5.

The results of a large-scale randomized controlled trial of Conjoint Behavioral Consultation (CBC) on student outcomes and teacher–parent relationships in rural schools are presented. CBC is an indirect service delivery model that addresses concerns shared by teachers and parents about students. In the present study, the intervention was aimed at promoting positive school-related social-behavioral skills and strengthening teacher–parent relationships in rural schools. Participants were 267 students in grades K-3, their parents, and 152 teachers in 45 Midwest rural schools. Results revealed that, on average improvement among students whose parents and teachers experienced CBC significantly outpaced that of control students in their teacher-reported school problems and observational measures of their inappropriate (off-task and motor activity) and appropriate (on-task and social interactions) classroom behavior. In addition, teacher responses indicated significantly different rates of improvement in their relationship with parents in favor of the CBC group. Finally, the teacher–parent relationship was found to partially mediate effects of CBC on several student outcomes. Unique contributions of this study, implications of findings for rural students, study limitations and suggestions for future research are discussed.

Speece, D. L., Schatschneider, C., Silverman, R., Case, L. P., Cooper, D. H., & Jacobs, D. M., (2017). Identification of reading problems in first grade within a response to intervention framework. *The Elementary School Journal, 111*(4), 585-607. (33)

The purpose of this study is to identify screening measures for first grade within a RtI framework. They found that the most efficient screening battery included TOWRE Sight Word Efficiency, Word Identification Fluency (WIF) and a teacher rating of reading the problems provided the best and most efficient. Adding other items did not significantly improve screening.

Toldson, I. A., & Lemmons, B. P. (2013). Social demographics, the school environment, and parenting practices associated with parents' participation in schools and academic success among black, Hispanic, and white students. *Journal of Human Behavior in the Social Environment, 23*, 237-255.

This study explored social demographic factors, school environmental factors, and parenting practices that are associated with child academic success and school-based involvement among the parents of Black, Hispanic, and White students. Analysis of 12,426 parents who completed the National Household Education Surveys-Parent and Family Involvement Survey revealed that parent's participation in school is linked to better grades and is associated with supportive schools and positive parenting practices. The study also revealed that parents who were Black and Hispanic, non-native

English speakers, lived in unsafe neighborhoods, and had less than a high school education were less likely to visit the school. The article suggests culturally responsive strategies for school leaders and parent advocates to engage parents in their children's education

VanDerHeyden, A. M., Witt, J. C., & Gilbertson, D. (2007). A multi-year evaluation of the effects of a response to intervention (RTI) model on identification of children for special education. *Journal of School Psychology, 45*(2), 225-256.

The purpose of this study was to examine the effects of implementation of a systematic response to intervention (RTI) model on the identification and evaluation of children for special education. Using a multiple baseline design, a systematic model of assessment and intervention was introduced in consecutive years for all elementary schools (N=5) in the district. Effect of the RTI model on number of evaluations conducted, percentage of evaluated children who qualified for services, and proportion of identified children by sex and ethnicity before and after implementation of the model was examined. Additionally, outcomes for children who did not have an adequate response to intervention versus those who were at-risk but responded successfully to short-term intervention were examined. A cost analysis of use of the model was provided. The degree to which data obtained were used by the decision-making team was also examined. The assessment and intervention procedures, decision rules, and schoolwide training methods are described in detail and practical implications are discussed.

Wasik, B. A., & Hindman, A. H. (2011). Improving vocabulary and pre-literacy skills of at-risk preschoolers through teacher professional development. *Journal of Educational Psychology, 103*(2), 455-469.

In a randomized control study, Head Start teachers were assigned to either an intervention group that received intensive, ongoing professional development (PD) or to a comparison group that received the "business as usual" PD provided by Head Start. The PD intervention provided teachers with conceptual knowledge and instructional strategies that support young children's development of vocabulary, alphabet knowledge, and phonological sensitivity. Results indicated that, after 1 academic year, teachers in the intervention group created higher quality classroom environments, as measured by the Early Language and Literacy Classroom Observation (M. W. Smith, D. K. Dickinson, A. Sangeorge, & L. Anastasopoulos, 2002) and Classroom Assessment Scoring System (R. C. Pianta, K. M., La Paro, & B. K. Hamre, 2007), and by videotapes of their classroom book readings. Further, children in the intervention group performed significantly better than comparison-group peers on measures of receptive vocabulary and phonological sensitivity but showed equivalent alphabet learning. Moreover, variation in classroom quality and fidelity to the intervention were linked to child outcomes, illuminating which particular aspects of teachers' improved practices were linked to children's gains. Findings provide new details about the mechanisms through which intensive and intentional PD can enhance Head Start teachers' classroom practices and, by extension, improve Head Start children's language and preliteracy outcomes.

Weisenburgh-Snyder, A., Malmquist, S. K., Robbins, J. K., & Lipshin, A. M. (2015). A model of MTSS: Integrating precision teaching of mathematics and a multi-level assessment system in a generative classroom. *Learning Disabilities: A Contemporary Journal, 13*(1), 21-41.

In the generative classroom, teachers provide well-designed learning environments that result in the combination, recombination, and reorganization of repertoires such that new untaught repertoires are likely to occur. One component that can contribute to such generativity is Precision Teaching (PT), a frequency building instructional intervention. A multi-level assessment system, combined with evidence-based practices of teaching and learning can result in systematically accelerated student progress in mathematics; thus, enhancing RtI frameworks. Additionally, PT contributes to nourishing a Multi-tiered System of Support (MTSS) implementation by creating a common language between and amongst students, teachers, families, and administrators. In this unique blended system, the data collected by administrators, teachers, and students are continuously assessed and used to inform instruction and teacher training needs. A graphic presentation of these data on the Standard Celeration Chart (SCC) guides goal setting and interventions. This paper presents a case study detailing the rapid progress of a class of students during one academic school year using PT.

Wilcox, K. A., Murakami-Ramalho, E., & Urick, A. (2013). Just-in-time pedagogy: Teachers' perspectives on the response to intervention framework. *Journal of Research in Reading, 36*(1), 75-95.

The purpose of this mixed methods research is to examine teachers' perspectives on the response to intervention (RTI) framework and its implementation in Michigan and Texas schools. Both states have been leaders in literacy, increasing preservice and in-service teacher certification standards and developing similar batteries for assessing literacy skills. Using the International Reading Association's RTI principles, the following question directed this inquiry: what are the perspectives of teachers in various educational, geographic, economic and cultural settings of the RTI? The research was developed through questionnaires, focus groups and semi-structured interviews. Findings revealed that teacher professional development, assessments and collaboration for instruction were highly integrated themes when developing RTI strategies as reforming practice and increasing student literacy. Michigan and Texas teachers were more confident and comfortable in measuring and identifying students with reading difficulties over their ability to prevent learning disabilities through their instruction.

Wilder, S. (2014). Effects of parental involvement on academic achievement: A meta-analysis. *Educational Review, 66*(3), 377-397.

The impact of parental involvement on student academic achievement has been recognized by teachers, administrators, and policy-makers who consider parental involvement to be one of the integral parts of new educational reforms and initiatives. This study synthesized the results of nine meta-analyses that examined this impact and it identified generalizable findings across these studies. The results indicated that the relationship between parental involvement and academic achievement was positive, regardless of a definition of parental involvement or measure of achievement. Furthermore, the findings revealed that this relationship was strongest if parental involvement was defined as parental expectations for academic achievement of their children. However, the impact of parental involvement on student academic achievement was weakest if parental involvement was defined as homework assistance. Finally, the relationship between parental involvement and academic achievement was found to be consistent across different grade levels and ethnic groups. However, the strength of that relationship varied based on the type of assessment used to measure student achievement.

Zhang, D., Hsu, H., Kwok, O., Benz, M., & Bowman-Perrott, L. (2011). The impact of basic-level parent engagement on student achievement: Patterns associated with race/ethnicity and socioeconomic status (SES). *Journal of Disability Policy Studies, 22*(1), 28-39.

Strong empirical evidence exists in general education that links parent involvement to student academic achievement, but such evidence is lacking in special education. Moreover, most prior research investigated parent involvement as a broadly defined term that included various types of parent engagements. Using data from the Special Education Elementary Longitudinal Study (SEELS), this study examined influences of race/ethnicity and socioeconomic status on basic-level parent engagements in school and home settings (i.e., participation in school activities, talking to their child about his/her experiences in school, and expectations for the child to graduate from high school) and the relationship of these engagements to student achievement. Engagement at home was found to have a positive impact on student achievement, but participation in school activities did not significantly affect student achievement. Discussion and implications of these findings, and recommendations for future research are provided.