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NeMTSS Research Brief

A Brief Review of MTSS Evaluation Measures and Empirical Support for MTSS Implementation

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A Brief Review of MTSS Evaluation Measures and Empirical Support for MTSS Implementation: An NeMTSS Research Brief

Key Points:

- With Multi-Tiered Systems of Support (MTSS) growing in popularity and implementation nationwide, there is a critical need for fidelity measures and associated student outcomes.
- Several measures for assessing MTSS implementation fidelity exist and are briefly explained on page 3.
- A literature review on the impact of MTSS implementation found that MTSS implementation has been associated with some academic gains, social-emotional improvements, and reduced negative behavior and suspensions.
- One common theme in the literature regarding MTSS evaluation was the lack of some school's progress monitoring and consistent data tracking of MTSS implementation and student outcomes (Reedy & Lacireno-Paquet, 2015; Scott et al., 2019; Dillard, 2017).
- Having MTSS Fidelity/Implementation teams or coaches to help school personnel translate the core values of MTSS into their everyday classroom teaching practices may improve fidelity of implementation and student outcomes, which both enhance MTSS sustainability (Mathews et al., 2014).

Overview

With Multi-Tiered Systems of Support (MTSS) growing in popularity and implementation nationwide, there is a critical need for fidelity measures and associated student outcomes. The framework of MTSS is geared toward addressing the academic, social-emotional, and behavior needs of students through a tiered system of increasingly intensive and individualized interventions and supports. Effective implementation requires schools to create a progressing of evidence-based practices that are responsive to the differing levels of needs that students have across those domains (Horner, Sugai & Anderson, 2010). Interestingly, while many schools across the nation have adopted the MTSS framework, a nationwide survey revealed that only 24% of the school districts that responded had an operational MTSS model that utilized the MTSS framework daily (Spectrum K-12 School Solutions, 2011). A successful MTSS is directly related to educational leaders building a system where school staff works collaboratively to solve problems and monitors fidelity of implementation (Samuels, 2016; Sugai & Horner, 2009). MTSS evaluation and outcome measures in the current research could provide insight on how implementation and fidelity influences student achievement and systems-level change.

Student and School Outcomes Associated with MTSS Implementation

Scott et al. (2019) investigated the association between MTSS implementation fidelity and student outcomes in 29 elementary, middle, and high schools over four years in an eastern sate in the US using the Academic and Behavioral Response to Intervention School Assessment (ASA). The researchers used suspension rates and academic achievement scores in reading, math, and language to assess the influence of MTSS on the domains of behavior

and academic achievement. Results showed that schools implementing MTSS has 30% fewer suspension incidents and 5% fewer behavioral referrals than non-MTSS schools. Results were statistically significant. In terms of academic outcomes, higher fidelity in the reading domain was associated with more students at or above proficient on both the language mechanics measure and the mathematics measure, but not reading; and higher fidelity in the math domain was also associated with more students at proficient or above on the language mechanics but not in math or reading. While the academic results were not in the direction the researchers were expecting, they posit that reading and math instruction underwent significant changes and thus would need more time to accurately reflect the students gains in that domain.

Reedy and Lacireno-Paquet (2015) used the Kansas MTSS School Survey of Effective Instructional Practices to assess MTSS implementation and its association with reading and math gains in 500+ schools In Kansas. Their results showed that schools participating in MTSS training were moving toward higher stages of implementation and showed increased proficiency in state assessments, decreases in office discipline referrals, and decreases in special education referrals. Specifically, respondents (school principals) reported that to “some extent” or “to a great extent” implementing MTSS has had a positive impact on student outcomes: students scoring at benchmark (89.5%); students scoring as proficient on the state assessment (70.3%); a decrease in Office Discipline Referrals (77.1%); and a decrease in special education referrals (63.4%). However, state assessment data was inconclusive as to any patterns or trends in the achievement levels of schools implementing MTSS (Reedy and Lacireno-Paquet, 2015).

Dillard (2017) examined the stages of MTSS implementation in schools to identify factors from implementation science that accounted for variability in perceived MTSS student outcomes reported by school principals within 135 schools in California. Their survey titled the Cavanaugh Survey (2013) showed 58 school principals reported that MTSS had been effective in improving student learning outcomes and 72 school principals said that MTSS has been somewhat effective. 46 school principals said MTSS has been effective and 82 said MTSS has been somewhat effective at improving student social-emotional behavior. Only 7 school principals reported that MTSS was ineffective at improving student social-emotional behavior. Of the respondents, only 40 school principals indicated MTSS had been effective at reducing the number of students referred to special education. Implementation drivers of competency and organization were significant predictors of MTSS improving learning, and the competency driver was found to be a significant predictor of MTSS effectiveness of improving social-emotional behavior. Descriptively, schools tended to have higher ratings in in the effectiveness of MTSS improving academic learning outcomes than improving social-emotional behavior outcomes when implementing MTSS.

Freeman et al. (2016) researched the relationship between School-Wide Positive Behavior Interventions and Supports (SWPBIS) and Academic, Attendance, and Behavior Outcomes in 883 high schools from 37 states using the Benchmarks of Quality (BoQ) (Kincaid et al., 2005) and the School-Wide Evaluation Tool (SET) (Sugai et al., 2005) assessments.

High school fidelity estimates were not related to academic outcomes in a statistically significant manner but effects were negative (−0.13, $p = .69$) for schools that had not reached fidelity and positive (0.26, $p = .54$) for schools that were implementing with fidelity. In addition, schools that were approaching or at fidelity had significantly higher levels of attendance across time than those that were not yet at fidelity criteria. In terms of behavioral outcomes, schools that were approaching or at fidelity had significantly lower office discipline referral rates than schools that were not implementing SWPBIS.

Childs et al. (2010) examined the relationship between Tier 1/Universal Level Positive Behavior Support (PBS) implementation fidelity and student outcomes in 300 elementary, middle, and high schools in Florida using the Florida Self-Assessment of MTSS Implementation (SAM). Results indicated that After the initial year of implementation, Florida elementary,

middle, and high schools implementing Tier 1/Universal Level PBS realized an overall percentage change in office discipline referrals (ODRs), days of out of school suspension, and days of in school suspension. Overall, the average number of ODRs per 100 students after 1 year of implementation was approximately 33% lower than the number of ODRs per 100 students during the average baseline year. This result was statistically significant. The average reduction in days of in school suspension per 100 students after 1 year of implementation was 16%, however this result was not significant. All levels of Florida's schools implementing Tier 1/ Universal Level PBS saw an increase in the average percentage of students scoring Level 3 or higher on the reading section of the Florida Comprehensive Assessment Test (FCAT) after their first year of implementation. Middle schools saw the greatest increase, with 3% more students achieving Level 3 or higher after Year 1 of implementation. Overall, higher implementing schools averaged a lower rate of ODRs than did lower implementing schools. Schools implementing with higher fidelity had a greater average percentage of students achieving Level 3 or higher on the reading segment of the FCAT.

MTSS Evaluation Tools Used

- **PBIS Benchmarks of Quality (BoQ)**
  - **Description**: "This assessment allows school teams to examine their Tier 1 implementation fidelity, document whether it has been effective, and identify strengths and weakness for action planning. This is the assessment's scoring form. Coaches compile team member ratings and complete the Team Summary on this form" (Kincaid et al., 2005)

- **PBIS School-wide Evaluation Tool (SET)**
  - **Description**: "The School-wide Evaluation Tool (SET) is designed to assess and evaluate the critical features of school-wide effective behavior support across each academic school year" (Sugai et al., 2005).

- **Cavanaugh Survey (2013)**
  - **Description**: "The survey instrument explores the associations between implementation influences and drivers, and the implementation of Response to Intervention (RTI) Evidenced Based Practices (EBP) in schools. Implementation influences and drivers followed those outlined by the implementation science (Fixsen et al., 2005) conceptual framework. The survey consists of thirty-one multiple choice questions" (Dillard, 2017).

- **Florida Self-Assessment of MTSS Implementation (SAM)**
  - **Description**: This instrument is intended to measure school-level implementation of MTSS. "The school leadership team that has responsibility for allocating resources to improve student learning should complete this instrument," (Florida's PBS: MTSS Project Staff, pg. 2, 2015).

- **Academic and Behavior Response to Intervention School Assessment (ASA)**
  - **Description**: This assessment was developed as a combined measure for MTSS fidelity in behavior and academics, as well as to provide feedback/direct coaching to schools implementing MTSS (Scott, Lingo, & Hirn, 2013).

- **Kansas Multi-Tier System of Supports Innovation Configuration Matrix (ICM)**
    - **Description**: “The ICM is a tool that may be used in multiple ways, though it’s primarily a descriptive document. The primary use is to assist in the understanding of the principles and practices of a multi-tier system and what they look like when implemented within a district, building or other community agency. Schools have also found it a helpful tool in guiding critical discussions among leadership and staff,” (Kansas State Department of Education Special Education Services, pg. 2, 2012)

Conclusion

Overall, the studies mentioned in this summary indicate that MTSS evaluation measures are critical for the purpose of assessing the impact that MTSS implementation has on student outcomes. Most studies found positive results on some academic, social-emotional, and/or behavioral measurement, however one common theme in the literature regarding MTSS evaluation was the lack of some school’s progress monitoring and consistent data tracking of MTSS implementation and student outcomes (Reedy & Lacireno-Paquet, 2015; Scott et al., 2019; Dillard, 2017). Having MTSS Fidelity/Implementation teams or coaches are essential in schools because part of the MTSS coaching role is to help school personnel translate the core values of MTSS into their everyday classroom teaching practices which may improve fidelity of implementation and student outcomes, which both enhance MTSS sustainability (Mathews et al., 2014).

References

Dillard, C. (2017). Multi-tiered system of supports (MTSS) and implementation science. http://libproxy.unl.edu/login?url=https://searchproquest.com.libproxy.unl.edu/docview/2011265281?accountid=8116

Elfner Childs, K., Kincaid, D., & Peshak George, H. (2010). A Model for Statewide Evaluation of a Universal Positive Behavior Support Initiative. Journal of Positive Behavior Interventions, 12(4), 198–210. https://doi.org/10.1177/1098300709340699

Fixsen, D., Blase, K.,Metz, A.,& Van Dyke, M. (2013b). Statewide implementation of evidence-based programs. Exceptional Children, 79(2), 213-230

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, *5*(1), 41–51. https://doi.org/10.1177/1098300715580992

Horner, R. H., Sugai, G., & Anderson, C. M. (2010). Examining the evidence base for school wide positive behavior support. *Focus on Exceptional Children, 42*, 1–14.

Kansas State Department of Education Special Education Services. (2012). Kansas Multi-Tier System of Supports: Innovation Configuration Matrix (Version 3.1). Topeka, KS: Kansas MTSS Project.

Kincaid, D., Childs, K., & George, H. (2005). School-wide bench-marks of quality. [Unpublished instrument], University of South Florida, Tampa.

Mathews, S., McIntosh, K., Frank, J. L., & May, S. (2014). Critical features predicting sustained implementation of school-wide positive behavior support. *Journal of Positive Behavior Interventions, 16*(3), 168–178. https://doi.org/10.1177/1098300713484065

Reedy, K., & Lacireno-Paquet, N. (2015). Implementation and outcomes of kansas multi-tier system of supports: Final evaluation report-2014. WestEd, 730 Harrison Street, San Francisco, CA 94107-1242. http://libproxy.unl.edu/login?url=https://search-proquest-com.libproxy.unl.edu/docview/1773212518?accountid=8116

Scott, T. M., Gage, N. A., Hirn, R. G., Lingo, A. S., & Burt, J. (2019). An examination of the association between MTSS implementation fidelity measures and student outcomes. Preventing School Failure, 63(4), 308–316. https://doi-org.libproxy.unl.edu/10.1080/1045988X.2019.1605971

Spectrum K-12 School Solutions. (2011). Response to intervention (RTI) adoption survey 2011 (Global Scholar). www.spectrumk12.com

Sugai, G., Lewis-Palmer, T., Todd, A. W., & Horner, R. H. (2005). School-wide evaluation tool (Version 2.1). Eugene: Educational and Community Supports, University of Oregon. https://www.pbisassessment.org/Evaluation/Surveys

The Academic and Behavior Response to Intervention School Assessment (ASA). Louisville, KY: Center for Instructional and Behavioral Interventions in Schools, University of Louisville.

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