The Impact of Response to Intervention/Multi-Tiered System of Supports for Literacy on Student Outcomes in a Pennsylvania Elementary School: A Quasi-Experimental Cohort Study

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Abstract

Response to Intervention/Multi-Tiered System of Supports (RTI/MTSS) for literacy is a tiered instructional framework that tailors reading interventions to students' needs. Students are placed in one of three tiers, or levels, of instruction based on benchmark scores and receive interventions according to their skill deficits and progress over time. This quantitative study compared the end-of-year literacy assessment outcomes between two cohorts of kindergarten through second grade (K-2) students in one rural, public elementary school in Southwestern Pennsylvania. The two cohorts included a pre-RTI/MTSS cohort of K-2 students that was enrolled before RTI/MTSS implementation began and a later cohort of K-2 students that was enrolled during full-RTI/MTSS implementation. Higher mean scores in the foundational skill areas of phonemic awareness and phonics were noted in the full-RTI/MTSS cohort, while there was no difference in mean oral reading fluency scores between cohorts. A large proportion of second grade students in both cohorts showed a need for supplemental reading instruction based on end-of-year tier placement. Given the need for continued interventions in the full-RTI/MTSS cohort, this site should consider evaluating the core curriculum and the fidelity of intervention delivery to further investigate how the needs of non-responders can be met.

Research Aim

Literacy is the foundation to achieving social and economic success in today's demanding society (National Academy Press, 1998). Persistent reading difficulties can decrease students' motivation and academic success which can lead to increased risk for high school drop out (Ambruster, Lehr, & Osborn, 2001; Feister, 2010). These challenging realities indicate a critical need for high-quality, early literacy instruction for all students, and many schools are turning to tiered instructional frameworks to address this need. Despite the attention RTI/MTSS has received, school-wide outcomes of a fidelity-driven RTI/MTSS framework for literacy continue to remain uncertain. The guidance provided by the Pennsylvania Department of Education (PDE) and other resources regarding RTI/MTSS poses an excellent opportunity for high quality implementation and ongoing program evaluation, which can lead to more meaningful practices in early literacy development.

The purpose of this quasi-experimental study was to examine the potential impact of a state-approved, fidelity-driven RTI/MTSS framework for literacy on student outcomes within one public elementary school in southwestern Pennsylvania. The intention of this study was to add to the existing research on RTI/MTSS while focusing on the implementation of a framework that is aligned to the PDE guidelines. This alignment supports the presence of implementation fidelity while also offering a thorough description of the framework that was studied as a systems-level change. Through the examination of a well-defined RTI/MTSS framework, more informed programmatic decisions can be made.

Research Methods

This quantitative study compared end-of-year Dynamic Indicators of Basic Early Literacy Skills (DIBELS) data from two cohorts of K-2 students: those who were enrolled in the school before RTI/MTSS implementation (2013-2014 school year) and those who were enrolled during full implementation (2017-2018 school year). DIBELS are a set of individually administered reading assessments that measure early literacy skills. Independent samples *t*-tests were conducted to compare the mean end-of-year DIBELS Composite and Subscale Scores between the two cohorts at each of the designated grade levels. The study also examined end-of-year tier placement at each grade level. Chi-square analyses examined potential differences between the cohorts in the proportions of students categorized in Tiers I, II, or III based on end-of-year DIBELS scores. Tier placement specifies the needed level of instructional support, with Tier III signifying a need for the most intensive interventions.

Research Findings

Quantitative data analyses yielded diverse findings that were relevant to the purpose of the research. The study's key findings are offered for review:

- Kindergarten and first grade students in the full-RTI/MTSS cohort had significantly higher mean scores in phonemic awareness and phonics measures compared to the pre-RTI/MTSS cohort.
- No statistically significant differences were found in first and second graders' mean oral reading fluency scores between cohorts.
- While not statistically significant, some differences in the proportions of students placed in Tiers I, II, or III were found. Kindergarten end-of-year tier placement findings were encouraging, with 85% of kindergarteners in the full-RTI/MTSS cohort falling within Tier I compared to 74% in the pre-RTI/MTSS cohort. Tier I placement is indicative of meeting grade-level goals.
- Seventy-six percent of first grade students fell within Tier I in both cohorts.
- Second grade students in both cohorts showed a substantial need for continued, intensive reading interventions, with 66% of the pre-RTI/MTSS cohort and only 55% of the full-RTI/MTSS cohort falling within Tier I based on end-of-year benchmarks.

Additional data analyses for this study are in process to determine how, if at all, RTI/MTSS implementation impacted special education outcomes at this site.

Conclusion and Discussion

This study's findings suggest that kindergarten and first grade students exposed to RTI/MTSS implementation displayed higher foundational literacy assessment scores in the areas of phonemic awareness and phonics than kindergarten and first graders who did not experience RTI/MTSS. However, this positive trend was not sustained in more advanced reading measures, such as in first and second grade students' oral reading fluency of whole passages. Additionally, a large proportion of second grade students in both cohorts were placed in Tier III based on end-of-year scores. This suggests a continued need for intensive interventions regardless of exposure to RTI/MTSS.

Research Implications

The chosen methodology in this study demonstrates that educators can effectively use existing data to monitor how new, school-wide initiatives are impacting student outcomes. Future evaluation procedures in schools implementing the RTI/MTSS framework should continue to include clear articulation of implementation features to ensure evaluation results yield meaningful conclusions and recommendations.

At this site in particular, while the full-RTI/MTSS cohort showed higher mean scores in beginning literacy skills compared to the pre-RTI/MTSS cohort, this difference did not endure when students were assessed in reading at the passage level. Because students in second grade continued to show a need for intensive interventions, further investigation is needed to examine curricular alignment across grade levels to address any gaps in instructional planning. The fidelity of interventions used with the students with the highest needs should also be examined, particularly in the area of advanced phonics and oral reading fluency. Qualitative methods, such as observations of instruction, document review, and interview procedures, might help provide further insight into the sustainability of RTI/MTSS implementation and to further explain the quantitative findings.

Author Information and Biography

Lydia M. Svetkovich is a doctoral candidate pursuing her EdD in Educational Leadership and Management with a concentration in Educational Administration at Drexel University. She earned her Bachelor of Science in Developmental Psychology at Edinboro University of Pennsylvania followed by a Master of Science with an Educational Specialist degree in School Psychology from California University of Pennsylvania. Lydia is a K-12 School Psychologist in a Pennsylvania school district, where she completes psycho-educational evaluations and functional behavior assessments, provides consultation for educational programming decisions, and supports the development of school-wide initiatives. Her current professional interests include early literacy development, the use of Response to Intervention (RTI) for identifying students with specific learning disabilities, and the development of social-emotional programming for students with emotional and behavioral needs. Lydia will be completing her dissertation defense in Summer 2019.

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