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Multi-Tiered System of Supports (MTSS) Framework for Statistics and Probability Education in Vietnamese High Schools: Integrating Digital Literacy Development

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Abstract

Background/purpose. The study investigates the effectiveness of an adapted Multi-Tiered System of Supports (MTSS) framework for teaching statistics and probability in Vietnamese high schools, with a particular focus on integrating digital literacy development. It addresses the limited empirical evidence on MTSS implementation at the secondary level in developing-country contexts.

Materials/methods. A quasi-experimental design with non-equivalent control groups was implemented across three high schools (N = 243 Grade 10 students) over 12 weeks. The intervention strengthened Tier 1 instruction through explicit teaching, visual representation, differentiated task structures, and structured technology integration using spreadsheets, GeoGebra, and data-visualization platforms. Data sources included a standardized mathematics test, a digital literacy scale, curriculum-based measurements (CBM), and implementation fidelity checks. ANCOVA was used to estimate group differences while controlling for pre-test performance.

Results. The experimental group demonstrated significantly greater gains in mathematics achievement compared with the control group, with a moderate effect size (Hedges' g = 0.45). Students also showed significant improvements in digital literacy, with average increases of approximately Δ = 0.50 across the subscales of data collection, visualization, and digital product creation. Progress monitoring data indicated steeper learning trajectories and higher target-achievement rates in the intervention group.

Conclusion. The findings demonstrate that a culturally adapted MTSS framework can effectively enhance both mathematics achievement and digital literacy in high school settings. The study highlights the importance of culturally responsive Tier 1 instructional design. It provides insights into the international generalizability of MTSS-based, technology-supported models for reducing learning disparities in STEM education.

1. Introduction

Mathematics education is a foundational pillar of secondary education curricula worldwide. Yet, it remains one of the most challenging subjects for many students, particularly during the critical transition from middle school to high school (Grade 10). This transition is characterized by increased demands for abstract thinking and more complex reasoning skills (Jitendra et al., 2018). International evidence suggests that difficulties in foundational mathematical competencies are linked to reduced academic achievement and long-term learning disparities (Maamin et al., 2021).

Many countries have adopted structured, data-driven instructional frameworks such as Response to Intervention (RTI) and the Multi-Tiered System of Supports (MTSS) to address these challenges. The MTSS framework is conceptualized as a multi-level prevention system that integrates high-quality core instruction, targeted interventions, and data-driven decision-making processes to address diverse learner needs (Fuchs & Fuchs, 2017; National Center on Intensive Intervention, 2024). While a substantial body of research has demonstrated the effectiveness of MTSS in elementary education, evidence at the secondary level remains limited, particularly in non-Western and developing-country contexts (Zhang & Xin, 2024).

At the same time, recent international evidence, including large-scale assessments such as PISA 2022, indicates that meaningful engagement with digital tools in mathematics learning is associated with improved student performance, although this relationship depends on the quality of pedagogical integration rather than mere access to technology (OECD, 2023). Consistent with this perspective, the integration of digital tools—such as GeoGebra, spreadsheets, and data visualization platforms—has been increasingly emphasized as a means of strengthening students' conceptual understanding, particularly in statistics and probability, where data interpretation and contextual reasoning play a central role.

Despite these developments, research examining the integration of technology-enhanced instruction within MTSS frameworks at the secondary level remains limited. In the Vietnamese context, Nguyen (2019) provided an important empirical foundation for RTI/MTSS adaptation by demonstrating the feasibility of implementing tiered instructional approaches in Grade 10 mathematics. However, existing studies have not yet offered specific guidance on how such frameworks can be effectively applied to statistics and probability instruction, particularly with respect to the integration of digital literacy development—a domain that requires the coordinated use of mathematical reasoning, data analysis, and digital tools.

Accordingly, this study aims to address this gap by investigating the effectiveness of an adapted MTSS framework for statistics and probability education in Vietnamese high schools, with a particular focus on integrating digital literacy development.

2. Literature Review

2.1. Theoretical Foundations of RTI/MTSS in Mathematics Education

The Multi-Tiered System of Supports (MTSS) is widely recognized as an extension of the Response to Intervention (RTI) framework, emphasizing a systematic, data-driven approach to instruction that integrates universal screening, high-quality Tier 1 instruction, and continuous progress monitoring (Fuchs & Fuchs, 2017; National Center on Intensive Intervention, 2024).

Rather than focusing solely on structural components, recent research highlights the importance of how MTSS operationalizes instructional decision-making, particularly through the use of data to adjust instructional intensity and improve student outcomes (Zhang & Xin, 2024).

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2.2. Mathematics Intervention in Secondary Settings

Research on secondary mathematics interventions demonstrates positive but inconsistent effects. Meta-analyses highlight explicit instruction, guided practice, and conceptual scaffolding as effective components (Gersten et al., 2009; Jitendra et al., 2018).

However, secondary-level implementations often face structural barriers, including limited instructional time, teacher specialization, and increased student heterogeneity, which may constrain the effectiveness of intervention models (Solis et al., 2012).

2.3. Digital Technology Integration in Mathematics Education

The integration of digital technology into mathematics education has been increasingly emphasized as a means of enhancing both conceptual understanding and 21st-century competencies. Empirical evidence suggests a positive relationship between digital engagement and academic achievement, particularly when technology is embedded within structured instructional practices (Maamin et al., 2021).

Large-scale international assessments, such as PISA 2022, further indicate that students' use of digital tools for learning mathematics is associated with improved performance, although the effectiveness of such tools depends on pedagogical design rather than mere availability (OECD, 2023).

These findings suggest that technology-enhanced instruction aligns well with MTSS principles, particularly at Tier 1, where high-quality core instruction and differentiated support are critical for addressing diverse learner needs (Fuchs & Fuchs, 2017).

2.4. Statistics and Probability Education in High School

Internationally, statistics and probability are recognized as cognitively demanding areas requiring specialized pedagogical approaches (Bargagliotti et al., 2020). Effective instruction emphasizes data investigation processes, contextual reasoning, and visualization. Despite this, intervention research in statistics/probability lags behind algebra-focused studies. The unique cognitive demands of randomness, variability, and inference necessitate instructional structures that closely align with MTSS principles—explicit modeling, continuous assessment, and differentiated support. Current literature mainly highlights difficulties rather than offering structured models for overcoming them.

2.5. Achievement Gaps and Equity Considerations

Research on active learning and targeted support systems consistently points to reductions in achievement gaps across STEM disciplines (Gersten et al., 2009). These findings support the MTSS emphasis on universal high-quality instruction paired with systematic progress monitoring. However, few studies investigate progress-monitoring trajectories (e.g., CBM data patterns) in statistics and probability learning, particularly within culturally diverse or resource-constrained educational systems, such as those in Vietnam. This gap limits understanding of how Tier 1 and supplementary supports should be calibrated for this subject area.

2.6. Contextual and Implementation Challenges

Implementing MTSS in secondary mathematics outside Western contexts adds layers of complexity, including curriculum alignment, teacher capacity, and technological disparities (Nguyen, 2019; Solis et al., 2012). Although Vietnam's curriculum mandates the development of digital literacy, there remains limited evidence on how digital tools can be effectively integrated within tiered instruction to improve conceptual understanding in statistics and probability. Thus, adaptation rather than replication of MTSS models is needed to account for cultural, structural, and resource-related factors.

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2.7. Synthesis and Research Gaps

While the evidence base for RTI/MTSS in elementary reading and mathematics is robust, significant gaps remain in understanding effective implementation at the secondary level, particularly in international contexts. The integration of digital literacy development within mathematics intervention frameworks represents an emerging area with limited empirical evidence. Furthermore, specific guidance for implementing RTI/MTSS for statistics and probability education is scarce, despite the unique pedagogical challenges these topics present. Collectively, these observations point to a clear gap: There is a lack of guidance on direct application of MTSS in statistics and probability teaching at the high school level.

The current study addresses these gaps by examining the effectiveness of an adapted RTI/MTSS framework designed explicitly for statistics and probability instruction in Vietnamese high schools, with integrated digital literacy skill development. This research contributes to the growing international literature on secondary mathematics intervention while providing culturally responsive implementation guidance for similar educational contexts.

3. Methodology

3.1. Research Design

A quasi-experimental pretest–posttest design with nonequivalent groups was employed to estimate the effectiveness of an enhanced Tier 1 instructional model for Grade 10 students. This design was selected because random assignment was not feasible within the existing school structures; however, the inclusion of pretest covariates allowed for statistical control of initial group differences. The design aligns with MTSS research conventions, prioritizing natural classroom groupings and ecological validity.

3.2. Participants and Setting

The study involved 243 Grade 10 students from six classes across three public high schools in Lam Dong Province, Vietnam. Six mathematics teachers implemented the lessons. Experimental and control classes were matched based on school type, teacher experience, and baseline mathematics scores to strengthen internal validity. Demographic information was collected to ensure the groups were comparable in socio-academic characteristics.

3.3. Intervention

The 12-week intervention emphasized explicit teaching of core S&P concepts, guided practice to reinforce problem-solving processes, visualization through simulations and charts, and tiered task structures to personalize learning pace. Progress monitoring was conducted every 2–4 weeks to inform instructional adjustments regarding the intensity of support. The control group continued with the schools' regular instructional practices without the enhanced components. To strengthen internal validity, risks such as teacher differences, unscheduled modifications, and implementation fidelity were controlled through structured classroom observations and short post-lesson interviews with teachers.

3.4. Measures

Four data sources were employed:

(1) S&P Achievement Test: The assessment included 20 multiple-choice items and two constructed-response tasks. Content validity was established through expert review by the mathematics department. Item difficulty and discrimination indices were calculated, and low-performing items (discrimination < .25) were revised or removed. Internal consistency reliability was acceptable (Cronbach's $\alpha = .81$).

(2) Digital Literacy Scale (self-assessment, 1–5 Likert): Comprising three subscales (data collection/processing, visualization, digital product creation). Confirmatory factor analysis supported a three-factor structure. Reliability indices were strong (α = .84–.89), and item-total correlations exceeded .40.

(3) CBM: Administered biweekly to track growth trajectories. CBM probes were standardized across schools and demonstrated high temporal stability (test–retest r = .78).

(4) Implementation Monitoring Tools: This included fidelity checklists, classroom observations, and semi-structured interviews with teachers. Qualitative data were analyzed through a structured thematic coding process (open → axial → selective coding). Two coders independently analyzed the data, achieving an inter-coder agreement of 87%. Triangulation across observations, checklists, and interviews strengthened interpretive validity.

3.5. Data Analysis

ANCOVA was employed to compare post-test outcomes between the experimental and control groups, while controlling for pre-test scores. Assumptions of ANCOVA—normality of residuals, linearity between covariate and outcome, homogeneity of regression slopes, independence of errors, and homoscedasticity—were checked through residual plots, Levene's test, and interaction terms. All assumptions were met prior to conducting the final analysis. Effect sizes were reported using Hedges' g to account for unequal sample sizes.

Missing data were minimal (<3%) and were handled via listwise deletion. For CBM data, multiple imputation was used when consecutive measurement points were missing.

3.6. Ethical Considerations

The study followed institutional ethical guidelines. Students and guardians provided informed consent, and all data were anonymized. Participation was voluntary and had no bearing on academic grading.

4. Results

4.1. Mathematics Achievement Outcomes

The quantitative analysis of statistics and probability achievement scores revealed significant differences between the experimental and control groups. As presented in Table 1, both groups showed improvement from pre-test to post-test, with the experimental group demonstrating substantially greater gains. The experimental group improved from a mean score of 5.15 ± 1.10 at pre-test to 6.58 ± 1.07 at post-test, representing a mean change (Δ) of 1.43 ± 0.95. In contrast, the control group showed more modest improvement, increasing from 5.12 ± 1.09 to 5.82 ± 1.08, with a mean change of 0.70 ± 0.92.

The ANCOVA results, controlling for pre-test performance as a covariate, demonstrated a statistically significant difference between groups on post-test mathematics achievement, $F(1, 240) = 9.84$, $p = .002$, with a medium effect size of Hedges' $g = 0.45$ (Table 2). This finding indicates that the enhanced Tier 1 intervention, incorporating explicit instruction, visualization strategies, and differentiated task structuring, had a meaningful impact on students' statistics and probability learning outcomes beyond what could be attributed to initial group differences.

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Table 1. Descriptive Statistics for Statistics and Probability Test Scores by Group

Group	n	Pre-test (M ± SD)	Post-test (M ± SD)	Change (Δ ± SD)
Experimental	120	5.15 ± 1.10	6.58 ± 1.07	1.43 ± 0.95
Control	123	5.12 ± 1.09	5.82 ± 1.08	0.70 ± 0.92

Note. Δ = Post-test - Pre-test; M = mean; SD = standard deviation.

Table 2. Summary of ANCOVA for Post-test Achievement Scores

Source	SS	df	MS	F	p	Hedges' g
Group	11.20	1	11.20	9.84	.002	0.45
Error	273.60	240	1.14			

4.2. Digital Literacy Self-Assessment Outcomes

Students' self-assessed digital literacy capabilities improved across all three measured dimensions in both groups, with greater gains in the experimental group (Table 3). For data collection and processing skills, the experimental group showed a mean improvement of 0.52 ± 0.40 compared to 0.25 ± 0.35 for the control group. Similar patterns emerged for data visualization skills (experimental: 0.51 ± 0.40; control: 0.28 ± 0.35) and digital product creation (experimental: 0.52 ± 0.40; control: 0.26 ± 0.35).

Statistical analyses revealed significant between-group differences in improvement scores across all digital literacy dimensions ($p < .01$), with effect sizes in the moderate range (Hedges' $g \approx 0.40$-0.45). These findings suggest that the technology-enhanced instructional approach not only supported mathematics learning but also contributed to students' perceived competence in digital literacy skills.

Table 3. Changes in Digital Literacy Self-Assessment Scores by Group

Dimension	Group	n	Pre-intervention (M ± SD)	Post-intervention (M ± SD)	Change (Δ ± SD)
Data Collection & Processing	Experimental	120	3.02 ± 0.58	3.54 ± 0.55	0.52 ± 0.40
	Control	123	3.01 ± 0.60	3.26 ± 0.57	0.25 ± 0.35
Data Visualization	Experimental	120	2.89 ± 0.62	3.40 ± 0.59	0.51 ± 0.40
	Control	123	2.90 ± 0.61	3.18 ± 0.58	0.28 ± 0.35
Digital Product Creation	Experimental	120	2.95 ± 0.64	3.47 ± 0.60	0.52 ± 0.40
	Control	123	2.96 ± 0.63	3.22 ± 0.61	0.26 ± 0.35

4.3. Progress Monitoring Results

CBM data revealed differential patterns of academic progress between groups throughout the 8-week intervention period. Figure 3 illustrates that the experimental group demonstrated a steeper positive slope in mathematics performance compared to the control group across the five measurement time points (weeks 0-8). Additionally, the experimental group showed a higher proportion of students who met or exceeded the target performance thresholds. In contrast, the proportion of students showing stagnant or declining performance decreased relative to the control group.

5. Discussion

5.1. Mathematics Achievement Improvements

The significant improvement in mathematics achievement among students receiving the enhanced Tier 1 intervention provides strong empirical support for the applicability of RTI/MTSS principles in statistics and probability instruction within Vietnamese high school contexts. The observed effect size (g = 0.45), which falls within the moderate range, is consistent with meta-analytic evidence on secondary mathematics interventions, indicating that structured instructional approaches can produce meaningful learning gains even in complex educational settings (Jitendra et al., 2018).

This level of effectiveness is comparable to outcomes reported in digital-based interventions for students with mathematical learning difficulties (mean ES ≈ 0.55), suggesting that the integration of technology within Tier 1 instruction can achieve outcomes similar to more targeted intervention models.

The magnitude of improvement observed in this study aligns with prior research demonstrating the effectiveness of explicit instruction, visual representation, and systematic practice in supporting mathematical learning (Gersten et al., 2009). In particular, the enhanced Tier 1 model's emphasis on structured, sequential instruction combined with multiple representations (visual, numerical, and graphical) appears to have addressed the conceptual demands of statistics and probability, which require students to reason about uncertainty, variability, and data patterns.

These findings are especially noteworthy given the well-documented challenges of implementing effective interventions at the secondary level, where time constraints, subject specialization, and increased content complexity often limit instructional impact (Solis et al., 2012). The results suggest that carefully designed and culturally adapted MTSS-based approaches can mitigate these challenges and enhance instructional effectiveness.

Importantly, the interpretation of these achievement gains must consider the Vietnamese educational context, where large class sizes (often exceeding 40–45 students) constrain opportunities for individualized instruction. Despite these structural limitations, the moderate effect size indicates that strengthening Tier 1 instruction alone can yield meaningful improvements. However, variations in teachers' technological proficiency and instructional experience may influence implementation quality, underscoring the need for sustained professional development to support the scalability of MTSS practices in Vietnam.

5.2. Digital Literacy Development

The concurrent improvement in students' self-assessed digital literacy represents a meaningful secondary outcome that aligns with broader 21st-century educational goals. A growing body of empirical research indicates that digital literacy is positively associated with academic achievement, suggesting that the observed gains in digital competencies may not only complement but also reinforce students' mathematical learning outcomes (Maamin et al., 2021; OECD, 2023).

The moderate effect sizes observed across all dimensions of digital literacy (g ≈ 0.40–0.45) further support the effectiveness of integrating digital tools into instructional practice. These results are consistent with prior findings demonstrating that technology-enhanced learning can produce substantial improvements in student performance when supported by appropriate pedagogical design and teacher guidance.

The use of spreadsheet applications, data visualization tools, and interactive mathematical software appears to have provided authentic and meaningful contexts for students to engage with statistical concepts. By enabling students to explore, represent, and interpret data dynamically, these tools likely facilitated deeper conceptual understanding while simultaneously promoting the development of transferable digital skills.

This dual impact has important implications for curriculum design, as it demonstrates that subject-specific instruction—particularly in mathematics—can serve as an effective vehicle for integrating digital literacy development without diluting core academic objectives. The findings therefore support integrated models of competency development, in which disciplinary knowledge and digital skills are developed concurrently rather than in isolation.

However, the interpretation of these results must take into account contextual disparities in digital access across Vietnamese high schools. While the participating schools were adequately equipped to support technology-enhanced learning, many institutions—especially in rural or under-resourced areas—continue to face challenges related to infrastructure, device availability, and connectivity. These constraints may limit the scalability and generalizability of the observed outcomes, highlighting the need for systemic investment in technological infrastructure alongside instructional reform.

5.3. Progress Monitoring and Data-Driven Decision Making

The differential progress trajectories observed through CBM data underscore the critical role of systematic progress monitoring within RTI/MTSS frameworks. The steeper growth rates and higher achievement thresholds demonstrated by students in the experimental group provide robust evidence that strengthening Tier 1 instruction can meaningfully accelerate learning trajectories, even within relatively short intervention periods.

These findings are consistent with the core principles of MTSS, which highlight the role of continuous progress monitoring in guiding instructional decision-making and enhancing student outcomes (Fuchs & Fuchs, 2017; National Center on Intensive Intervention, 2024). The observed performance trends indicate that the enhanced instructional model more effectively supported student learning within Tier 1, enabling a larger proportion of students to achieve grade-level expectations. This pattern suggests a reduced need for more intensive Tier 2 or Tier 3 interventions, thereby contributing to greater overall efficiency within the instructional support system.

Furthermore, the systematic use of CBM data in this study demonstrates the practical feasibility of implementing data-driven instructional decision-making processes in Vietnamese high school contexts. This represents a meaningful contribution to the international MTSS literature, which has predominantly focused on Western educational systems and has provided limited evidence regarding implementation in developing-country settings.

However, these findings must be interpreted in light of contextual constraints. In Vietnam, large class sizes and heavy teacher workloads may limit the frequency, consistency, and depth of progress monitoring practices. In addition, variability in teachers' assessment literacy and data interpretation skills can influence how effectively CBM data are translated into instructional adjustments. These factors highlight the importance of sustained professional development and institutional support to ensure the effective and scalable integration of MTSS-aligned progress-monitoring systems.

6. Implications and Limitations

6.1. Implications for Educational Practice

These findings have several important implications for mathematics education practice in Vietnamese high schools and similar international contexts. First, the effectiveness of the enhanced Tier 1 model suggests that targeted improvements to general education instruction can yield meaningful improvements in student outcomes without requiring extensive additional resources or personnel. This is particularly relevant for educational systems facing resource constraints or implementation challenges.

Second, the successful integration of digital literacy development within mathematics instruction provides a model for addressing multiple curricular objectives simultaneously. This approach may be especially valuable for schools seeking to implement technology integration initiatives while maintaining focus on academic achievement goals.

Third, the feasibility of implementing systematic progress monitoring procedures in Vietnamese high school classrooms demonstrates the cross-cultural applicability of core RTI/MTSS components. This finding supports arguments for international adaptation of evidence-based educational frameworks while highlighting the importance of cultural and contextual modifications.

6.2. Limitations and Future Directions

Several limitations should be considered when interpreting these results. First, the quasi-experimental design, while appropriate for educational research contexts, limits causal inference compared to randomized controlled trials. Future research should investigate these interventions using more rigorous experimental designs when feasible.

Second, the 12-week intervention period, while sufficient to demonstrate initial effectiveness, may not capture longer-term retention or transfer effects. Longitudinal studies examining sustained impact over multiple academic terms would strengthen the evidence base for RTI/MTSS implementation in secondary mathematics.

Third, the focus on statistics and probability content limits generalizability to other mathematical domains. Future research should examine the effectiveness of similar interventions across broader mathematical content areas, including algebra, geometry, and calculus topics commonly taught in high school curricula.

Finally, the reliance on self-report measures for digital literacy assessment introduces potential bias. Future studies should incorporate performance-based assessments of digital skills to provide a more objective evaluation of intervention effects on technology competencies.

7. Conclusion

This study provides empirical evidence that the adapted MTSS framework effectively enhances high school students' learning in statistics and probability while simultaneously supporting the development of digital literacy skills. The intervention produced moderate effect sizes ($g \approx 0.40$–0.45), which are educationally meaningful and indicate that improvements were not only statistically significant but also substantial enough to influence classroom learning in measurable ways. These effect sizes suggest that strengthened Tier 1 instruction—featuring explicit teaching, visual representations, and differentiated tasks—can produce consistent gains even in large and diverse classrooms.

The results demonstrate that the adapted MTSS model is practical, applicable, and culturally adaptable within the Vietnamese educational context. By showing that structured Tier 1 enhancements and technology integration can operate successfully under the typical constraints of

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Vietnamese high schools, such as large class sizes and varied student preparedness, the study provides practical guidance for broader implementation.

These findings hold important implications for practice. Schools may consider integrating MTSS-aligned instructional routines into regular mathematics instruction and adopting systematic progress-monitoring procedures to guide instructional adjustments. Additionally, embedding digital tool use within subject teaching can accelerate the development of essential 21st-century skills without requiring separate digital literacy courses. Future research should extend this work by examining long-term learning trajectories, exploring applications across other mathematical domains, and analyzing how different school contexts may influence the sustainability of MTSS implementation.

Declarations

Author Contributions. Nguyen Thuy Phuong Tram and Nguyen Hoang Son are solely responsible for the conceptualization, literature review, methodology, data analysis, writing original draft preparation, and review and editing of the manuscript. Both authors have read and approved the final version of the article.

Conflicts of Interest. The authors declare no conflict of interest.

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Ethical Approval. All procedures complied with ethical standards for research involving human participants. Informed consent was obtained from students and their guardians, and participation was voluntary with assurances of anonymity and confidentiality.

Data Availability Statement. The datasets are available from the corresponding author on reasonable request.

Declaration of Generative AI in Scientific Writing: The authors acknowledge that AI-assisted technologies were used to improve the manuscript's clarity, readability, and language. After using AI-assisted technologies, the authors reviewed and edited the content as needed and took full responsibility for the publication's content.

References

Bargagliotti, A., Franklin, C., Arnold, P., Gould, R., Johnson, S., Perez, L., & Spangler, D. (2020). *Pre-K–12 guidelines for assessment and instruction in statistics education (GAISE) report II*. American Statistical Association.

Fuchs, D., & Fuchs, L. S. (2017). Critique of the national evaluation of response to intervention: A case for simpler frameworks. *Exceptional Children, 83*(3), 255–268. https://doi.org/10.1177/0014402917693580

Gersten, R., Chard, D. J., Jayanthi, M., Baker, S. K., Morphy, P., & Flojo, J. (2009). Mathematics instruction for students with learning disabilities: A meta-analysis of instructional components. *Review of Educational Research, 79*(3), 1202–1242. https://doi.org/10.3102/0034654309334431

Jitendra, A. K., Lein, A. E., Im, S., Alghamdi, A. A., Hefte, S. B., & Mouanoutoua, J. (2018). Mathematical interventions for secondary students with learning disabilities and mathematics difficulties: A meta-analysis. *Exceptional Children, 84*(2), 177–196. https://doi.org/10.1177/0014402917737467

Maamin, M., Maat, S. M., & Iksan, Z. H. (2021). The influence of student engagement on mathematical achievement among secondary school students. *Mathematics, 10*(1), 41. https://doi.org/10.3390/math10010041

National Center on Intensive Intervention. (2024). Intensive intervention in education. https://intensiveintervention.org

Nguyen, T. P. T. (2019). *Applying response to intervention model in mathematics education for grade 10 students in Vietnam* [Doctoral dissertation]. Vietnam National University.

OECD. (2023). PISA 2022 results (Volume I): *The state of learning and equity in education*. OECD Publishing. https://doi.org/10.1787/53f23881-en

Solis, M., Vaughn, S., Swanson, E., & McCulley, L. (2012). Collaborative models of instruction: The empirical foundations of inclusion and co-teaching. *Psychology in the Schools, 49*(5), 498–510. https://doi.org/10.1002/pits.21606

Zhang, J., & Xin, Y. P. (2024). Mathematics RTI/MTSS implementation: A literature review from the perspective of implementation science. *Insights into Learning Disabilities, 21*(2), 103–131.

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