

Research on the Intervention Strategies Guide

As reported in a paper by the National Joint Committee on Learning Disabilities (2005), the focus of Response to Intervention (RtI) is on the accountability of the teaching and learning process in general education. A key component of RtI is early intervention at the first sign of academic and/or behavioral difficulties with the end result being the improvement in achievement of all students, including any students who may have a specific learning disability (SLD).

Due to the increased focus on accountability and assessment in the legislation of the No Child Left Behind Act, researchers Ernst, Miller, Robinson, and Tilly (2005) note how critical it is that appropriate evaluative measures and intervention practices be in place for students who are not performing at the expected standard. Marston, Muyskens, Lau, & Canter (2003) report a positive finding on the use of RtI in Minneapolis Public Schools.

Individuals with Disabilities Education Act of 2004 (IDEA) and *No Child Left Behind Act* (NCLB, 2001) advocate the use of interventions and instruction based on defensible research. Both require effective reading and behavior programs that result in improved student performance and fewer students needing special education services. Provisions of IDEA 2004 allow school districts to use scientific, research-based interventions as an alternative method for identifying students with SLD.

IDEA also identified math calculation, math reasoning, and written expression as areas to address when identifying students. NCLB, influenced by the 2000 National Reading Panel Report, states that scientifically-based reading instruction includes the essential components of reading that have been identified through research: phonemic awareness, phonics instruction, fluency, vocabulary development, and text comprehension. This legislation serves as a stimulus for the areas addressed in the *Intervention Strategies Guide*.

Mentoring Minds developed the *Intervention Strategies Guide* as a teacher tool to augment teaching reading, writing, and mathematics by identifying interventions, strategies, or techniques for each of the following areas: phonemic awareness, phonics, fluency, vocabulary, comprehension, mathematics calculation and reasoning, and behavior. The Styles of Learning section establishes a foundation from which to provide interventions and offers instructional variance to meet individual needs. The section on instructional strategies contains evidence-based strategies essential to any classroom environment that places student success as the driving force for teaching and learning.

There are several reasons which substantiate a campus implementing the Rtl approach. Rtl is regarded by researchers Gresham (2002) and Marston (2001) as an alternative approach for identifying learning disabilities (LD) due to the concerns raised about the discrepancy model. Another reason Rtl looks promising is it is seen as a means to serve struggling learners earlier and provides a way to reduce referrals to special education by offering high-quality instruction and intensified intervention in general education. Still another reason for the support of an Rtl approach centers on the research of reading. Numerous research studies by the National Institute of Child Health and Human Development (NICHD, 2000) and Lyon, et al. (2001) advocate that early identified students served by prevention programs can lead to a reduction in the number of students with reading problems by 70% and above.

All students need to develop the skill of reading. It is imperative that educators collaborate early on how to best teach all students to read. Lyon (2004) found that the application of high-quality, effective instruction and interventions, proven by research to work, help achieve this goal. Research conducted through the National Institute of Child Health and Human Development (NICHD) at universities throughout the country and reviewed by the National Reading Panel (NICHD, 2000) eliminated some long-held beliefs about reading and disabilities.

NICHD has found evidence to substantiate the characteristics of early language that predict future reading and writing skills. Adams (1990) and Catts (1997) report that studies which show 80 percent of preschool age children with language disorders later display some degree of reading difficulty. These researchers also report that children who overcome early language difficulties before the age of five are not at risk. When children enter kindergarten, research purports that about 20 percent of them have significant difficulty learning to read.

The research, conducted and documented over the past 30 years, provides us with knowledge of the essential skills children must have to become successful readers. The use of an Rtl approach, where struggling learners are identified early and provided with immediate optimal interventions, implemented with fidelity from the beginning, will prevent students from falling further behind.

The content of the *Intervention Strategies Guide* offers a multitude of intervention strategies that can be readily implemented with identified students who are not achieving due to specific academic and/or behavioral concerns. A campus identifies the specific area of need and selects an intervention that matches. The strategies suggested in the Styles of Learning and Instructional Strategies sections can be used at any tier. Teachers may employ these strategies at Tier-1 as they provide high-quality instruction for all students.

The instruction offered in grades K-3 has an effect on whether students continue to experience difficulties in reading or not. Children enter school with a variety of experiences which affect the differences in skill level upon entry into

kindergarten. Studies show approximately 5 percent of students have absolutely no difficulties learning to read whereas about 60 percent find learning to read somewhat of a challenge. Approximately half of that 60 percent find learning to read extremely difficult (Lyon et al., 2001 as cited in Finn, Rotherham & Hokanson).

In the past, educators waited until second grade and sometimes third to provide intervention to students who exhibited reading difficulties. According to Fletcher, et al., (1994) as cited in Grossen (1997), this practice results in about 74 percent of these students continuing to have reading problems in ninth grade. Shaywitz, Shaywitz, Fletcher, and Escobar (1990) found that boys and girls are equally likely to have reading problems. More boys are usually identified to have reading problems because it appears that teacher evaluations are sometimes influenced by gender. Some teachers view boys as being more disruptive to the classroom environment than girls. The *Intervention Strategies Guide* offers behavioral intervention support so no student waits until failure to receive appropriate instruction and intervention.

When students know exactly what is expected of them in specific situations, behavior tends to be appropriate. Reed (1993) found behavior problems decreased 40% due to students being taught the desired expectations. Students should be taught each situation in a formal manner with modeling, role-playing, and repetitive practice. Research has indicated that students respond better to positive rather than negative consequences. Sidman (1993) reported that 1,000,000 students dropped out of school each year. For the most part, this statistic seemed to be due to a coercive learning environment. Further research shows 90% or more appropriate behaviors are not recognized by teachers due to the attention teachers appear to place on misbehavior. Researcher Latham (1997) found that appropriate behavior was recognized more than negative. It appears both situations exist but the important point is to create a non-coercive learning environment. Other studies such as (Heward et.al., 1995; Binder, 1996) report that high-response opportunities occur in classrooms where the risk of failure and risk of criticism is not an issue. Students must feel it is safe to be involved and this type environment seems to keep behavior problems to a minimum. Maintaining a failure risk-free environment can increase academic success of students states Pigford (1995).

The intent of Response to Intervention (RtI) is to provide a data base for making instructional decisions for particular students. Identified students respond to evidence-based academic and/or behavioral interventions in the RtI process. The response of the students provides a basis for determining the intensity and duration of additional instructional needs. RtI focuses on which interventions are most beneficial in delivering needed instruction to close learning gaps in a timely manner. In addition to carrying out interventions, educators must understand how students learn. Knowing the students' preferences for learning helps to solidify the appropriate manner for successful implementation. Instruction and

interventions which match students' strengths to targeted deficit areas appear to show favorable results in student performances. All of these reasons justified the inclusion of a Learning Styles section in the *Intervention Strategies Guide*.

Teachers must recognize there are different ways to learn, know their learners, and capitalize on their diversity to promote performance noted Blackmore (1996). Educators have known for a long time that some students prefer a particular way to learn. Knowing this information helps teachers plan for small group and individualized instruction. Students who have knowledge of learning styles can better understand themselves in regards to strengths and weaknesses. Sadler-Smith (2001) reported this understanding helps students to monitor and choose strategies that support their learning. This knowledge might improve self-confidence when students acknowledge their lack of learning might not be due to an inadequacy. Adey, Fairbrother, and William (1999) note that self-knowledge of how one learns is an advantage.

Students are apt to get more from a learning experience when they understand and use their styles of learning. Sarasin (1998) suggests using the lesser-preferred styles of learning to help strengthen the scope of students' learning and to keep them in touch with how the real world functions. Pallapu (2007) found significant differences in a study of visual and verbal learners. The results appear to indicate that learning styles do affect learning and that improvement and learning itself increase if instruction accommodates the needs of learners. Dunn and Dunn (1998;1992) stress how important it is for teachers to work differently with different learners if learners are to perform their best. They emphasize that instruction is what increases achievement. Dunn and Dunn also note the importance of educators receiving professional development on learning styles and its application.

Research indicates that teaching and learning improve with sound instructional practices. Strategies for these practices are described in the *Intervention Strategies Guide*. Practices include: feedback, cooperative grouping, games/simulations, homework and practice, questions, and organizers. Evidence indicates that when teachers incorporate these strategies into instruction, teaching and learning improve.

Several findings surfaced regarding homework and student practice of skills. Homework should match the appropriate instructional level of the student and provide practice on previously introduced skills (Rademacher, Deshler, Schumacher, & Lenz, 1998; Rosenberg, 1989). Newell and Rosenbloom (1981) and Anderson (1995) advocate that students must receive focused practice to achieve mastery of skills. Healy (1990) notes that it is recommended that students practice only a few skills at a time at a deeper level. Complicated tasks should be broken into smaller segments with built-in practice time states Marzano, Pickering, and Pollock (2001).

Cooperative learning is regarded as a sound instructional practice. Marzano, Pickering, and Pollock (2001) found a significant effect on learning resulted when teachers grouped students in heterogeneous learning groups a minimum of once a week. Other research validated the use of cooperative learning for achievement, time on task, motivation to learn, and transfer of learning (Cohen, 1994; Johnson and Johnson, 1999).

Games and simulations promote high levels of engagement with immediate feedback and are beneficial to all students. Hood (1997) concluded these experiences can motivate students intrinsically. Edelson (1998) shared that games can stimulate students to learn and assist them to discover concepts through exploration and enable students to discover knowledge through exploration. Cooperation, teamwork, and conflict resolution are benefits of activities such as games and simulations noted Neubecker (2003). Not only do such activities present opportunities for exploration and practice, but Dempsey, Rasmussen and Lucassen (1994) found changes in attitude also surfaced. Marzano, Pickering, & Pollock (2001) shared comprehension increases when students are given the opportunity to visualize and model concepts. Gordin and Pea (1995) stressed that classrooms that set up simulations and utilize modeling lay a strong foundation for the enrichment and extension of learning. Communication, problem solving, and collaboration are other skills students can accrue as a direct result of simulations noted Gredler (1990;1994).

Studies show that the art of asking questions with an emphasis on higher-level thinking can advance student achievement. Marzano, Pickering, & Pollock (2001) reported how teachers can increase their effectiveness in teaching and learning by using research findings on questioning strategies. An important conclusion showed learning to increase in classrooms where teachers asked questions related to essential content rather than questions teachers gleaned would interest students (Alexander, Kulikowich, & Schulze, 1994; Risner, Nicholson, & Webb, 1994). Redfield and Rousseau (1981) reported that knowledge level questions resulted in less learning than higher-level questions that encouraged students to use their analytical thought processes. Fillippone (1998) found that teachers ask lower-level questions more times than not.

Wait-time should be acknowledged before asking a question. Usually teachers give less than one second for students to respond to a question and the results are short responses or no response at all. Student-to-student interaction and quality of responses increase when wait-time is addressed noted Fowler (1975). Rowe (1974) studied the effect of questions on elementary students that were used by their teachers. Results showed three to five seconds of wait-time led to increases in student responses, student confidence, evidence supporting the response, and student conversation. This finding is consistent at the middle and high school levels when wait-time is allowed after asking a question. A recommendation is to allow five seconds of wait-time. Students must be informed

that this time is their think-time and time should also be adjusted to the cognitive level of the questions.

Organizers prepare students for learning, develop and reinforce the concept, and help clarify misunderstandings. Many researchers support the use of organizers for reading skills and vocabulary development (Brookbank, Grover, Kullberg, & Strawser, 1999; Moore & Readence, 1984). Graphic organizers allow students to use graphics, symbols, and words to present a visual display to structure learning before and during a lesson. Paivio (1986) stated students can understand information and learn more when a variety of modes are used to present content.

Another effective instructional practice noted in the *Intervention Strategies Guide* is feedback. When feedback denotes where and why students have made errors, it seems significant increases in student learning result (Lysakowski & Walberg, 1982; Walberg, 1999; Tennenbaum & Goldring, 1989). One of the most important practices used to improve student achievement is student feedback, according to Hattie (1992). Walberg (1999) also reported that the level of achievement varies depending on the type of teacher feedback a student receives. Marzano, Pickering, and Pollock (2001) promote the realization of having students remain involved on a task until the standard is reached if achievement is to be enhanced. An emphasis on timely feedback appears to affect the degree of value for learning noted Bangert-Downs, Kulik, Kulik, and Morgan (1991).

Rubrics provide students with established informative criteria for success by clarifying desired learning outcomes for students. Crooks (1988) shared criterion-referenced feedback provides the guidance for improving student understanding. Self-assessment and reflection are important due to the feedback students can ascertain for themselves. Effective learning appears to result from students who provide their own feedback by monitoring their work against preset criteria presented to them in advance of the work task or assignment (Wiggins, 1993; Trammel, Schloss, & Alper, 1994).

Both the No Child Left Behind legislation (NCLB, 2001) and the Individuals with Disabilities Education Improvement Act (IDEA, 2004) focus on the quality of instruction received by students in the general education setting. IDEA 2004 and NCLB require the use of research-based instruction and interventions. The intent of the Response-to-Intervention (RtI) model, suggested by IDEA, is to change and place the identification process into the general education setting where a student receives evidence-based instruction. A tiered system of interventions increasing in intensity and duration is needed to address the diverse needs of students. Effective reading and behavior programs that result in improved student performance have become an essential focus.

The literature indicates a tiered system of interventions is necessary to adjust the type and intensity of instruction in order to address the diversity of student needs (Kovaleski, 2003; Vaughn, 2003). Vaughn found that a tiered system

demonstrates the flexibility to layer instruction over time and provides essential instruction early before a student lags too far behind. In determining the effectiveness of interventions, it appears that all students can benefit when the instruction matches their current levels of need. Research based upon several studies by Mellard, Byrd, Johnson, Tollefson, & Boesche (2004) indicated that the interventions used in an RtI approach do benefit students who experience academic difficulties if the interventions are individualized and used in a timely manner.

Data from the 2002 National Assessment of Educational Progress shows that 28% of fourth graders, 31% of eighth graders, and 24% of twelfth graders performed at or above a proficient level of writing achievement at their grade level (U.S. Dept. of Ed., 2003). Resources appear to be needed to assist in the implementation of writing instruction for students. Strategies are contained in the *Intervention Strategies Guide* to help students achieve better writing outcomes for students with or without writing difficulties. These statistics do not include students with disabilities, so additional difficulties might occur for those students in skill development for writing pending the degree of disability.

Mentoring Minds developed the *Intervention Strategies Guide* to provide educators with a tool to address intervention implementation. The Product Development Team considered the findings from the National Reading Panel (NRP, 2000) as a basis for determining the intervention areas and the development of strategies for reading. The language from IDEA (2004) was also a stimulus in identifying the reading, writing, and math areas for strategies.

The Product Development Team considered the findings from the National Reading Panel (NRP, 2000) as a basis for determining the intervention areas and the development of strategies for reading. The language from IDEA (2004) was also a stimulus in identifying the reading, writing, and math areas for strategies. The *Intervention Strategies Guide* contains numerous suggestions for intervention strategies for use with RtI. This flip chart offers interventions in the following areas: Reading (Phonemic Awareness, Phonics, Vocabulary, Fluency, Comprehension), Writing, Mathematics (Calculation and Reasoning), and Behavior.

A Styles of Learning section is included to accent styles in which students learn. This section builds the background knowledge of teachers, so teachers can use these strategies to match the students' strengths with their targeted deficit areas. A final section designates strategies that research has identified as important to effective instruction.

The number coding, following each intervention, provides the user with an easy means by which to document chosen interventions on RtI forms and student intervention plans. Interventions provide additional help or instruction that target

specific skills a student has not acquired and needs to develop to be successful in learning.

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