Behavioral Influences on Reading Achievement

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According to Owens & Valesky (2007), "Whatever else a school can and should do, its central purpose is to teach; success is measured by students' progress in knowledge, skills, and attitudes" (p. 72). This sounds easy enough. Simply teach students. However, the dynamic organization called "school" is a host to a myriad of factors limiting teachers' abilities to simply teach.

No Child Left Behind Act (2001) mandates adequate yearly progress (AYP) for students who have traditionally been unsuccessful in the classroom. Administrators and teachers feel an enormous pressure to move all students toward proficiency (Vannest, Temple-Harvey & Mason, 2009). Despite their best efforts, low performing students are resistant to benefit from interventions targeting specific learning needs in all areas and specifically in reading achievement (Wilson & Heiniger-White, 2008).

Although urban schools are characterized as serving children from low-income backgrounds, low socioeconomic status (SES) alone does not contribute to reading failure. When minority students from low-SES homes were compared to their non-minority peers with the same income and amount of schooling, the disparity between reading performance only narrowed slightly. In addition to the effects that low-income backgrounds may have on poor reading achievement in urban schools, numerous other factors contribute to their underachievement in the area of reading. These factors include teacher classroom behavior management and expectations, class size, high student mobility rates, level of parents' education, and student off-task behavior (Shippen, Houchins, Calhoon, Furlow & Sartor, 2006).

Reinke, Herman, Petras, & Ialongo (2008) found the following:

> Academic achievement difficulties and externalizing behavior problems co-occur at rates far greater than would be expected by chance, with estimates ranging from 10% to more than 50%....One of the most externalizing behavior problems associated with academic problems in youth is Attention Deficit Hyperactivity Disorder (ADHD). Estimates of the prevalence of ADHD from the general population range from approximately 2-18%. Whereas the co-occurence of ADHD and reading difficulties has been estimated at 15-45%, indicating increased risk for one problem with the presence of the other (p. 760).

Some studies suggest that the association between disruptive behavior problems and academic underachievement is largely explained by co-morbid ADHD. Attention problems, with or without hyperactivity, is the most salient risk factor for poor academic achievement (Reinke, Herman, Petras & Ialongo, 2008).

According to Dunn, Cole, and Estrada (2009) "research indicates that classroom teachers are highly accurate in referring students who later result in being officially identified with a disability" (p.28). Inattention, misbehavior, and gender (male) are three main factors for referrals. Inattention and aptitude accounted for 50% of referrals, collectively. The results of a qualitative study with 15 general education teachers found that teachers used five main referral criteria: (a) inattentiveness, (b) needing assistance, (c) inability to apply the presented information, (d) inability to complete tasks, and (e) students attitude and expressions of exhibiting signs of not wanting to learn (Dunn, Cole & Estrada, 2009).

Teachers often describe children with behavior issues as clumsy, awkward, disorganized, or inattentive. These children have difficulties following teacher's instructions, focusing on their schoolwork, staying in their seat, or coping with classroom rules. When evaluated, they are labeled with ADHD, developmental coordination disorder (DCD), sensory integration dysfunction, or learning disabilities in the areas of reading, mathematical, or speech and language impairment. Some children may have issues not readily apparent to the casual observer. The term mild disability is often used in literature to describe such children. Children with mild disabilities often demonstrate underachievement that can lead to long-term consequences including dropping out of school and mental health issues into adulthood (Munkholm & Fisher, 2008).

The relationship between problem behavior and reading performance for elementary-age children in grades 4, 5, and 6 was examined by comparing the number of discipline referrals to oral reading fluency rates (Mcintosh, Horner, Chard, Dickey & Braun, 2008). The researchers reported that students with mild to moderate disabilities may have problem behavior maintained by peer or adult attention and are more likely than their non-disabled peers to escape academic tasks by using aversion tactics. Students with severe disabilities use sensory stimulation as a coping mechanism in addition to relying on adult attention and escape tactics.

This study supports what Stanovich (1986) refers to as the "Matthew effect" in which students with early literacy deficits fall further and further behind their peers and choose aversion tactics to escape academic tasks (McIntosh, Homer, Chard, Dickey & Braun, 2008).

Elementary students who lag behind their peers are at increased risk when transitioning from middle school to high school. A documented affect of transition is an increase dropout rate due to students experiencing new environments, curricula, class schedules, and new teachers. Student academic performance declines after transition to high school for many students, especially those from underrepresented groups including African American and Latino students (McIntosh, Homer, Chard, Dickey & Braun, 2008).

Academic underachievement and behavior challenges rarely exist in isolation. Students with emotional and/or behavioral disorders are twice as likely to drop out of school than students compared to typical students. The inclusion of students with emotional behavior disorder (EBD) into the general education classroom increases pressure for teachers not trained in specific behavioral interventions. Reading intervention was cited as critical to improving AYP for students with EBD (Vannest, Temple-Harvey & Mason, 2009). The co-morbidity of reading failure with behavioral issues compounds the pressure teachers feel to ensure students with EBD meet academic standards.

Substantial research affirms that behavior challenges and reading failure coexist. Rapid automatic naming, academic processing speed, academic fluency, and process speed are terms shared by researchers studying its affect on reading disability (RD), ADHD, and EBD. In separate studies, processing speed was found to be a shared cognitive risk for RD and ADHD, which could help explain their co-morbidity (Shanahan, Pennington, Yerys, Scott et al, 2006).

The double-deficit hypothesis suggests that reading deficits are more severe in individuals with weaknesses in phonological awareness and rapid automatic naming (RAN). An abundance of research validates these two components as strong predictors of reading achievement and spelling success (Savage & Frederickson, 2006). As part of a familial study, adults of children having reading difficulties received a full evaluation of their reading ability. Slightly more than half of the parents reported struggling to read as a child. RAN and phonological awareness were the two strongest predictors of reading ability in adults, as well (Miller, Bloom, Jones, et al, 2006). Phonemic awareness is highly predictive of reading success in earlier grades but its predictive qualities yields to priority to vocabulary (picture naming) in later schooling years. However, when phonemic awareness tests are coupled with rapid naming, it offers a high predictive rate for reading achievement (Wood, Hill, Meyer & Flowers, 2005).

In children with emotional and behavior disorders, processing speed deficits were statistically significant and predicted all social adjustment domains including attention problems, above and beyond language or academic skills (Benner, Allor & Mooney, 2008). Research supports that not only do reading disability, ADHD, and behavior problems co-exist, there is also a cognitive element (processing speed) common to all three. Therefore, any intervention aimed at improving reading achievement must utilize effective teaching methods that assist children with ADHD and behavior issues to focus, attend, self-regulate, and successfully manage their own behavior.

Foorman (2007) states, “Effective teachers have excellent classroom management, balanced teaching of skills, scaffolding and differentiated instruction, cross-curricular connections, and encouragement of student self-regulation.” (p. 25). The ability

to self-regulate is an essential skill in monitoring one's behavior. Self-regulation refers to a child's ability to monitor behavior throughout the school day and is essential for success in school and reaching state testing benchmarks.

Williams and Shellenberger (1996) describe self-regulation as:

> the ability to attain, maintain, and change arousal appropriately for a task or situation. Self-regulation involves many neurological connections in the brain, including the brain stem, reticular formation, hypothalamus, thalamus, autonomic nervous system, cerebellum, limbic system, all sensory systems including the vestibular system, and cortex (p. 5).

Children with mild disorders may have poorly functioning visual, auditory, or vestibular systems contributing to their lack of attention, task avoidance, behavior issues, and self-regulation (Wilson & Heiniger-White, 2008).

Vestibular deficits in children affect a child's health, ability to learn, and overall academic achievement (Mehta & Stakiw, 2004). Children with vestibular disorders may require extra help with learning due to impaired spatial orientation, memorization tasks, balance problems affecting their ability to sit upright in their chairs, and unstable neck muscles creating fatigue posture at the desk. Young children frequently cannot describe vestibular symptoms and teachers lack of awareness of vestibular problems lead to misdiagnosis or under-diagnosis of this condition (Mehta & Stakiw, 2004).

Children with or without vestibular issues may have hearing loss that is not readily identified. However, 12% of the 52 million school-age children in the United States have some degree of hearing loss that could affect communication, learning, psychosocial development, and academic achievement (Goldberg & Richburg, 2004).

Children with minimal hearing impairment (MHI) are difficult to identify. Their hearing loss may not be detected during typical school hearing screenings. MHI can be caused by ear infections, wax build-up, or middle-ear fluid. A common myth is that children with MHI who pass the screening test should have no difficulties learning in the classroom. Children with MHI may not understand the teacher due to speech-in-noise perception abilities (Bradlow, Kraus & Hayes, 2003). The intelligibility of the teacher is essential for learning with ease. Even after passing a hearing screening, students with MHI remain at risk for lagging behind peers in language and literacy skills due to speech being too rapid to hear, not hearing consonant and vowel sounds correctly, and consciously having to think about and process what is heard. Studies suggest that by the age of 4 years, children with normal hearing are able to produce fully intelligible speech. Students 4 years and older having difficulty with speech production should be considered at risk for speech perception and language difficulties. Early intervention in correcting the cause of the hearing loss is critical, along with increased phonemic awareness activities. By grade 3, 6, and 9, children with MHI scored lower than their peers on tests of reading, spelling, and language learning (Goldberg & Richburg, 2004).

Researchers Goldberg and Richburg (2004) state, “These students need to work harder, both physically and mentally, to listen in the classroom than did the children with normal hearing” (p. 157).

Dyslexia studies suggest that reading challenges may be a problem with integrating visual and auditory information (Anonymous, 2003). Visual auditory integration is the ability to match auditory information with visual information (Oregon Optometric Physicians Association, 2000). School vision screenings traditionally

evaluate children using the Snellen Acuity Chart. This tool has serious limitations and rarely identifies vision problems that will interfere with school performance. Studies indicate that children who have visual processing or visual acuity issues perform poorly on reading tasks compared to peers. Children with vision deficits may show signs of poor concentration, frustration, incompletion of assignments, and aggressive behavior (Oregon Optometric Physicians Association, 2000). When vision deficits are coupled with auditory deficits, a child's prognosis for reading achievement decreases (Wilson & Heiniger-White, 2008).

Performance assessments are heavily used in early childhood and special education settings. Because preschool students are limited in their communication skills and are still in the process of being socialized into the school culture, assessment information is obtained by observing learning readiness skills including gross and fine motor development, verbal and auditory acuity, and visual development, as well as social behaviors. Important social behaviors include listening to the teacher, following a schedule, waiting one's turn, respecting others, following rules, working in cooperative groups, sharing toys, and maintaining self-control (Airasian & Russell, 2008). This valuable information, carefully gathered in the preschool setting is often left at the preschool doors. In primary grades, preschool performance assessments focusing on learning readiness are replaced with cognitive assessments focusing on academic skills.

Reading specialists have moved into a leadership role for teachers, school, and the community. As leaders they must help teachers address instructional needs of students experiencing reading difficulties and provide guidance to classroom teachers (Quatroche & Wepner, 2008). As discussed earlier, if behavior challenges coexist with reading

difficulties, collaboration with specialists trained to intervene with behavioral modifications and identify deficit sensory areas is essential to closing the gap between low performing students and their peers. Preschool teachers, often on different campuses than articulating kindergarten programs, must become part of the collaboration team to ensure information gathered about physical, social, sensory, and emotional issues are provided to primary school staff.

Because problem behaviors are often task specific, meaning, the more difficult the task, the more off-task children tend to be, teachers must be aware of different types of academic interventions that have been proven effective in reducing problem behavior (Filter & Horner, 2009). The earlier the intervention, the better the odds of improving behavior issues.

Response-to-Intervention (RTI) is a promising method to monitor on-going progress and intervention for children before they are diagnosed with a learning disability (Stecker, Fuchs & Fuchs, 2008). A major change in special education law, the Individuals With Disabilities Act (IDEA) changes the emphasis on the identification process from the discrepancy model to an identifying process that provides support and intervention for struggling students earlier rather than waiting for a discrepancy to occur (Mesmer & Mesmer, 2008). With reading achievement and behavior undeniably linked through extensive research, effective teaching at the first level of a Response-to-Intervention (RTI) model must provide on-going monitoring of behavior as well as academics. If behavior is impacting academic achievement, teachers must be highly trained in dealing with avoidance behavior and disruptive behavior that reduces time on task for students and instructional time provided by teachers.

As previously discussed, research validates a high correlation between behavior problems and poor academic achievement. Yet, despite this correlation, academic intervention models focus primarily on cognitive skills and deal with behavior on the side. Response-to-Intervention (RTI) models focus primarily on reading skills because 80% of students identified for special education struggle with literacy (Mesmer & Mesmer, 2008). Though, RTI literature discusses behavior as a key component in intervention, models do not incorporate behavior plans as part of their two or three tier process.

RTI models can only assist with identifying students if instruction is effective at every tier level (Murwalski & Hughes, 2009). Teachers must deliver high-quality instruction and on-going process monitoring. The data generated from performance and achievement tests is used collaboratively by teachers, reading specialists, school psychologists, and parents to develop more intensive intervention strategies (Mesmer & Mesmer, 2008).

Recognizing that low reading achievement is caused by many different cognitive, linguistic, behavioral, educational, developmental, and societal factors should guide professionals in the selection of specific interventions and accommodations (Gregg, Bandalos, Coleman & Davis, 2008).

Consistently left out of collaboration are key personnel who specialize in assisting with physical and emotional challenges, such as Adapted Physical Education teachers, occupational and physical therapists, and school counselors (Wilson & Heiniger-White, 2008).

Bridging services with support staff including special education teachers, reading specialists, occupational and physical therapists, and adapted physical education teachers is essential for closing the achievement gap for low performing students (Wilson & Heiniger-White, 2008). With IDEA least restrictive mandates, teachers' classrooms are a mixture of children with mild to severe learning and behavior disabilities. RTI models designed to coordinate services of all support staff with classroom teachers is the most hopeful new practice merging in today's schools, however focusing only on research-based academic assessments may hinder the success of RTI implementation for children with reading disabilities and co-existing behavior issues.

S'cool Moves for Learning, a program developed through the collaborative efforts of an occupational therapist and reading specialist provides intervention techniques proven to mediate behavior challenges while improving reading achievement. In typical classrooms, children experiencing reading challenges participate in intervention programs proven effective including the five pillars of reading instruction (phonemic awareness, phonics, reading fluency, comprehension, and vocabulary development), as well as behavior strategies commonly used by occupational therapists when working with children who have emotional issues, ADHD, sensory integration dysfunction, or autism spectrum disorder. Prior to beginning reading, students complete focusing routines to integrate sensory systems and ready themselves for literacy tasks. Performing focusing routines before and during reading activities reduces aversion tactics and increases time on task. A six-year study validated improved reading fluency rates and achievement test scores for students in grades 3 through 6 using S'cool Moves techniques (Wilson & Heiniger-White, 2008).

Bringing techniques into classrooms proven successful in clinics and pull-out therapy services shows promise for closing the literacy gap for low performing students (Wilson & Heiniger-White, 2008). Teachers are provided with RTI charts to monitor student progress with self-regulating their behavior and using techniques on their own, without teacher intervention.

The question remains, "To what degree are behavioral interventions allowed to be part of RTI models?" According to Cummings et al (2008), the RTI process is about more than special education eligibility; it is ultimately a focus on school improvement to build effective systems of service delivery" (p. 29).

Within this statement, may be the answer to the remaining question. Effective schools are lead by transformative leaders who support collaborative team-building with their staff. As part of the collaborative process, staff members form a common vision of what they want students to learn and how they know when students have reached academic goals.

Vannest, Temple-Harvey & Mason (2009) state:

> Reaching academic goals requires effective teaching. Accountability and AYP do not measure changes in social behavior, but rather change in academic behavior. For children with EBD, meeting AYP requires instructional expertise in academic content as well as the behavioral and social skills typically found in curriculum and Individual Education Plan goals. Top teachers are effective and efficient in the instructional time allocated for academic instruction (p. 74).

By law, RTI performance assessments and interventions must be reliable and valid. The first step in implementing an RTI model focusing on reading achievement is to establish universal literacy practices and screening all children using the same assessments.

Step 2 requires scientifically valid interventions to be implemented and systematically evaluated by a collaborative team based on availability and expertise.

Step 3 includes monitoring of student progress with intervention instruction.

Step 4 requires individualized interventions if the student continues to struggle.

Step 5 requires a decision-making process to determine eligibility for special education services. If the student does not meet requisite benchmarks, the team is in charge of determining whether the lack of progress is indicative of a learning disability (Mesmer & Mesmer, 2008).

This linear process appears clear and trouble free. However, given the nature of schools as a bureaucratic organization, many variables get in the way of RTI success. Without effective leadership that promotes collaboration, on-going teacher training, and problem-solving teams, RTI is doomed to fail. Inherent in RTI effectiveness is effective teaching.

Effective teachers need to be skilled in choosing, developing, and scoring assessment methods appropriate for instructional decisions. Providing intervention based on research-based best practices is essential for effective instruction (Airasian & Russell, 2008). Including researched intervention programs designed to improve behavior increases the likelihood that academic interventions will decrease the achievement gap for students with co-existing ADHD, reading difficulties, sensory integration dysfunction, and/or emotional issues.

Schools must implement behavior and academic interventions together for the achievement gap to close for low-performing students struggling with reading. (Filter & Horner, 2009).

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