

# SYNOPSIS OF “THE USE OF READING AND BEHAVIOR SCREENING MEASURES TO PREDICT NONRESPONSE TO SCHOOL-WIDE POSITIVE BEHAVIOR SUPPORT: A LONGITUDINAL ANALYSIS”

## INTRODUCTION

*Preventing academic problems before they occur and remedying them through early intervention is a core purpose of universal screening and progress monitoring, two critical components of the Response to Intervention (RTI) framework. Averting reading difficulties and/or problem behavior has been the focus of RTI models in many schools. A prevention model that effectively addresses student difficulties in both reading and behavior will take into account how they relate to each other. Determining the pathways through which learning problems and behavior problems develop and how they affect each other is of particular importance as schools work to intervene as early as possible with struggling students. McIntosh, Horner, Chard, Boland, & Good (2006) set out to investigate these pathways by conducting a retrospective longitudinal analysis of the interaction between reading skills and problem behavior among elementary school students. The authors sought both to explore the relationship between reading and problem behavior and to determine the usefulness of screening assessments in reading in predicting responses to school-wide positive behavior support.*

*This synopsis outlines their hypotheses concerning how behavior problems and reading difficulties interact, describes the results of their analysis of data from reading and behavior measures, and discusses implications of these results for prevention of and intervention in both reading and behavior problems.*

**McIntosh, K., Horner, R. H., Chard, D. J., Boland, J., and Good, R. H., III. (2006). The use of reading and behavior screening measures to predict nonresponse to school-wide positive behavior support: A longitudinal analysis. *School Psychology Review*, 35, 275-291.**

## METHOD & RESULTS

To investigate the ways in which academic and behavior problems develop, McIntosh et al. conducted a retrospective analysis of existing reading and behavior data from students from kindergarten through Grade 5 in a school district that was implementing universal support systems for both reading and behavior. All students in kindergarten, Grade 2, and Grade 4 were given reading screening measures (multiple DIBELS measures in kindergarten and Oral Reading Fluency (ORF) in grades 2 and 4). As a measure of problem behavior, the number of office discipline referrals they received during that grade was recorded. Data from each group were then analyzed to determine how many office discipline referrals<sup>1</sup> they received. Both the number of referrals received in kindergarten, Grade 2, or Grade 4, and students' fall, winter, and spring reading scores were used to predict whether students had received two or more office discipline referrals in Grade 5. While the predictive power of reading scores was of particular interest to the authors, they expected that the number of office discipline referrals received in early grades would also predict behavior problems in Grade 5.

The authors conducted a logistic regression analysis to test their hypotheses. They conducted three analyses to attempt to determine when the link between reading and behavior difficulties was most predictive of behavior problems in Grade 5.

Because the authors were interested in finding links between early reading and behavior

difficulties and later behavior difficulties, it was not possible for them to conduct a true experiment. Students cannot be randomly assigned to have early reading or behavior problems for the sake of finding out the effect of these variables on later behavior problems. However, the authors purposefully selected the schools involved in the study to minimize the influence of variables other than early reading and behavior on later behavior problems. All schools contributing data to the analysis used the same reading and positive behavior support curricula. Both curricula had been in use for 10 years prior to the data analysis. Fidelity of implementation was monitored by University of Oregon researchers who conducted evaluations of both reading and behavior for the district; all schools received high scores for fidelity. Additionally, of the seven schools that contributed data, six were Title I schools, making socioeconomic status similar across students. Because of these characteristics of the schools, significant sources of potential variance that could have affected the results of the analysis were held in check, making it more likely that any predictive relationship between early reading and behavior difficulties and later behavior difficulties was not due to external factors.

The results indicated that reading measures in all three grades were statistically significant predictors of receiving two or more office discipline referrals in Grade 5. For Grade 4, both winter ORF scores and office discipline referrals

<sup>1</sup> Office discipline referrals document 1) observation of a behavioral violation, 2) a written referral to document the incident, 3) sending the student to the office, and 4) determination of actions taken.



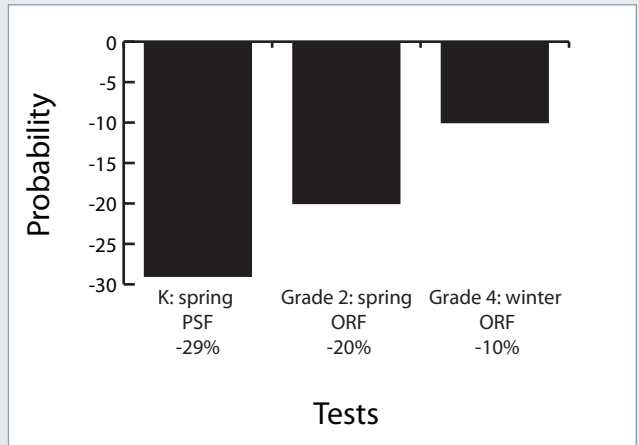


were statistically significant predictors, as were Grade 2 spring ORF scores and office discipline referrals. Of the measures given in kindergarten, only the spring Phoneme Segmentation Fluency (PSF) score was a significant predictor (too few students received office discipline referrals in kindergarten to result in sufficient predictive ability). The strength of the predictive relationship was similar in all three grades. In each analysis, the combination of reading and behavior measures predicted close to half of the variance in receiving two or more office discipline referrals in Grade 5—a very powerful result.

The authors also described the predictive power of the reading and behavior measures by determining the incremental effect of scores on the probability of receiving two or more office discipline referrals in Grade 5. As chart 1 illustrates, a 10-point increase in winter ORF raw scores in Grade 4 lowered the probability of receiving two or more office discipline referrals in Grade 5 by 10%. For Grade 2, a 10-point increase in spring ORF raw scores lowered the probability by 20%, and in kindergarten, a 10-point increase in spring PSF raw scores lowered the probability by 29%.

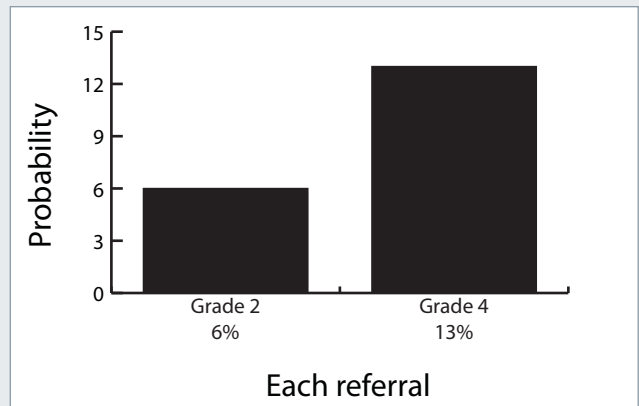
*For more information about implications for policy and practice stemming from this research, please visit <http://www.nasponline.org/publications/spr/sprsupplemental.aspx>*

**Chart 1: Effect of a 10-Point Increase in Reading Scores on the Probability of Receiving 2+ Office Discipline Referrals in Grade 5**



Each office discipline referral received in Grade 4 increased the probability of receiving two or more office discipline referrals in Grade 5 by 13%, as Chart 2 shows. In Grade 2, each office discipline referral increased the probability by 6%. Referrals in kindergarten were not significant predictors.

**Chart 2: Effect of Office Discipline Referrals on the Probability of Receiving 2+ Office Discipline Referrals in Grade 5**



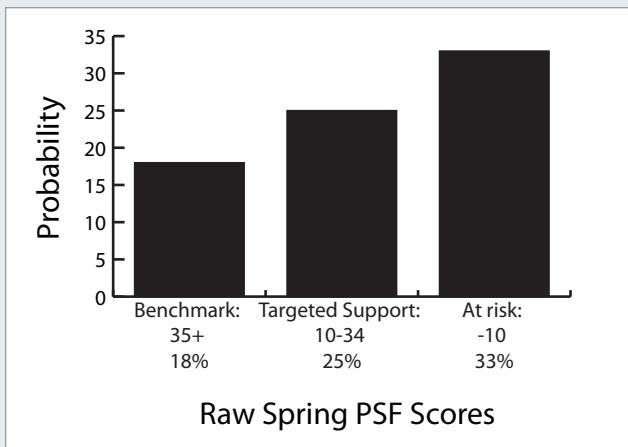
Further investigation into the kindergarten results indicated that students whose spring PSF scores were above the benchmark (raw score of 35 or greater) had an 18% chance of receiving two or more office discipline referrals in Grade 5 (see

*continued >*



Chart 3). For those in the targeted support range (scores of 10-34), the probability was 25%. For those most at risk (scores below 10), the probability was 33%.

**Chart 3: Effect of Kindergartners' Raw Spring PSF Scores on the Probability of Receiving 2+ Office Discipline Referrals in Grade 5**



Students who received one or more office discipline referrals in kindergarten had a 33% probability of receiving two or more office discipline referrals in Grade 5, while those who received no referrals had a 20% probability. In comparing students who scored above and below the PSF benchmark, McIntosh et al. found that the difference in the number of office discipline referrals received increased gradually between Grades 2 and 4 and then markedly increased in Grade 5. No students both received an office discipline referral in kindergarten and scored below the PSF benchmark, indicating that the screening measures did not identify students with both reading and behavior problems.

### **The Relationship Between Academic and Social Deficits**

McIntosh et al. posited that academic deficits are one pathway through which students develop behavior problems. These deficits put students at risk for developing behavior problems if they do not receive timely and effective academic interventions. When students don't receive such interventions, their academic difficulties lead to a pattern of acting out that is reinforced when their behavior leads to their removal from the classroom and escape from the academic tasks they are struggling to complete. The pattern reinforces itself as removal from class results in lost learning time that puts these students even further behind academically, making it more difficult for them to complete classroom work and more likely that they will act out to escape it.

Deficits in social skills are another pathway through which students may develop academic problems. Although students with social skill deficits may not have pre-existing academic deficits when they enter school, they require early intervention to prevent their problem behavior from resulting in academic difficulties.



***The evidence for the close relationship between academic and behavioral deficits calls for integrating intervention efforts through a single system that can monitor progress in both areas and respond accordingly with intervention as needed.***



The results of McIntosh et al.'s analysis lend credibility to the hypothesis that students who struggle academically in early elementary school are at increased risk for developing problem behaviors in later years. Given that the schools in which this research was conducted had implemented both universal behavior and reading support, it is likely that the predictive relationship between early academic skill deficits and later behavior problems may be even stronger in schools that have not yet put these types of prevention and early intervention systems in place. The authors highlight several important implications of the evidence that deficits in early reading skills predict behavior problems in later years.

First, it appears that behavior problems intensify for students with reading deficits as academic demands increase. Among kindergarten students who scored below the PSF spring benchmark, the increase in office discipline referrals grew over time and spiked in Grade 5. At this point in a student's academic life, reading to learn (as opposed to learning to read) has become a key focus of instruction. The increased demands for reading fluency and reading comprehension are associated with increased acting-out behavior for students who have struggled with reading skills since kindergarten. The authors hypothesize that educators may remove students from the classroom instructional situation when these behaviors occur and thus inadvertently reinforce the problem behavior by rewarding students with removal from an aversive or undesirable activity. As a result, they may create a cycle of missed learning opportunities, leading to further academic deficits, leading to more acting out to escape. The authors argue strongly for an early break in this cycle. Possible ways to break the cycle include: (a) screening and providing early reading intervention to remedy

skill deficits, (b) screening for behavior problems and providing effective early intervention, and (c) evaluating and changing the ways in which educators provide "escapes from instructional demands" as a possible reinforcement for students with behavior problems.

Additionally, McIntosh et al. point to the importance of recognizing the links between academic and behavior problems and coordinating systems for prevention and intervention in both areas. The close connections between reading and behavior mean that addressing a deficit in one area may prevent a problem from occurring in the other. When problems do occur in a student's academic performance and social behavior, coordinating intervention efforts becomes critical. Many schools are organized with separate teams to address a student's needs in the two areas. The evidence for the close relationship between academic and behavioral deficits calls for integrating intervention efforts through a single system that can monitor progress in both areas and respond accordingly with intervention as needed.

Helping educators recognize the link between academic skills and behavior is an important step in creating an environment where all of a student's needs can be addressed with appropriate supports. Teachers may be more enthusiastic about implementing behavioral prevention and intervention programs when they are equipped with knowledge concerning the close relationship between competence in academic skills and positive behavior. The findings of this study should provide added incentive for school counselors and others who typically address behavior issues to collaborate closely with those who provide academic prevention and early intervention programs, working as a team to help all students succeed.

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