

Academic Achievement and the Implementation of School-wide Behavior Support

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Recent research indicates that school-wide positive behavior is associated with decreased exclusionary, reactive and punitive discipline practices (Horner, Sugai, Todd, & Lewis-Palmer, 2005; Luiselli, Putnam, & Sunderland, 2002), increased student satisfaction (Lewis-Palmer, Horner, Sugai, Eber, & Phillips, 2002), and improved perceptions of school safety (Schneider, Walker, & Sprague, 2000). Our focus in this review is on research examining the relationship between school-wide behavior support and improved academic performance. First, we review the relationship between academic achievement and problem behavior. Second, we consider relationships between school-wide positive behavior support and improved academic performance as measured by grades and standardized test performance. Third, we explore why school-wide positive behavior support should improve academic performance. We end with the summary of relationships between achievement and behavior as well as recommendations for further research.

Academic Achievement and Problem Behavior

Higher rates of office discipline referrals (ODRs) are associated with problematic behavioral climates in schools (Irwin, Tobin, Sprague, Sugai, & Vincent, 2004). Several studies (Larsen, Steele & Sailor, in press; McIntosh, 2005; Tobin & Sugai, 1999) have found relationships between academic performance and problem behavior across grade levels. For example, McIntosh (2005) investigated how early elementary screening measures (particularly assessments in kindergarten) targeting behavior and reading predicted if a student would have two or more discipline contacts in the 3rd and 5th grade. He found, as expected, that office referrals in 1st and 2nd grade were strong predictors of ODRs in 3rd grade. His results also indicated that reading competence in kindergarten (as measured by the Dynamic Indicators of Basic Early Literacy Skills [DIBELS]) was statistically predictive of ODRs in 3rd grade. The most powerful overall predictors of 2 or more discipline contacts in 5th grade were 4th grade ODRs and low DIBELS Oral Reading Fluency scores obtained in the winter of 5th grade. The most powerful kindergarten predictor of which students would have 2 or more discipline contacts in 5th grade was the DIBELS Phoneme Segmentation Fluency assessment given in the spring of the student's kindergarten year. Additionally, those students with high levels of escape maintained behavior in fifth grade were those most likely to have significantly lower literacy skills (low DIBELS scores) than their peers, whereas, those students with high

levels of peer-attention maintained problem behavior were likely to have literacy skills that matched their peers without problem behavior.

The overall picture provided by McIntosh's results is one in which children enter kindergarten with varying reading skills. If, however, they do not respond to literacy instruction during kindergarten, and fall behind, a negative spiral of achievement and behavior becomes more likely. As the student's literacy skills do not keep pace with those of peers, academic tasks become more aversive, and problem behaviors that lead to escape from these tasks become more likely.

This relationship between academic performance and problem behaviors has also been studied at the middle school and high school levels (Fleming, Harachi, Cortes, Abbott & Catalano, 2004; Larsen, Steele, & Sailor (in press); Morrison, Anthony, Storino, & Dillon, 2001; Roeser, Eccles & Sameroff, 2000; Tobin & Sugai, 1999). Tobin and Sugai (1999) found that individual student academic failure in high school was correlated with three or more suspensions in ninth grade. They also found correlations between grade point average (GPAs) and specific types of ODR behaviors (fighting, harassing and threats of violence, nonviolent misbehavior) for boys in sixth grade. Morrison, Anthony, Storino, and Dillon (2001) reviewed the records of students who were referred to an in-school suspension program. Those students who had no previous ODRs had higher GPAs than the students who had ODRs. Roeser, Eccles, and Sameroff (2000) found the relationship strengthen over the course of middle school between problematic behavior and academic performance. Murdock, Anderman, and Hodge (2000) used a Likert discipline scale rating of 1 (never) to 5 (four or more times this year) to assess the frequency of 4 student self-reported discipline events with 9th graders. These events were: (a) being sent to the assistant principal, (b) receiving detention, (c) receiving in-school suspension, and, (d) receiving out of school suspension. The discipline scores demonstrated a negative correlation with grades. Larsen, Steele, & Sailor (in press) examined ODRs and suspensions with performance on standardized reading and math tests in an urban middle school. The number of ODRs and suspensions a student received predicted lower scores on standardized reading and math tests. The findings of these studies demonstrate that academic performance and future problematic behavior are related across grade levels and that higher rates of ODRs and suspensions are correlated with lower scores on academic assessments in the upper grades.

Other research (Nelson, Benner, Lane, & Smith, 2004) has demonstrated that students with severe problem behavior experienced large academic deficits as compared to typical peers. In most areas these deficits remained stable over time, however, in the case of mathematics the deficits actually broaden over time. Finally, externalizing behaviors were more strongly related to academic performance deficits as compared to internalizing behaviors. McKinney (1989) found that outcomes are the poorest for students with problems in both areas. Fleming, Harachi, Cortes, Abbott, and Catalano (2004) found that students with higher reading scores in the middle of elementary school and those whose scores increased between

third and sixth grade engaged in significantly less problem behavior in seventh grade. One study (Lee, Sugai & Horner, 1999) demonstrated improvements in escape-maintained problem behavior when students received academic support that made them effective with the target math tasks.

School-wide Positive Behavior Support and Time in Instruction

Research has consistently shown that the amount of time that instruction is provided is highly correlated with student achievement (Brophy, 1988; Fisher, Berliner, Filby, Marliave, Cahen, Dishaw, 1980). Scott and Barrett (2004) implemented school-wide positive behavior support in an urban elementary school and with intervention, the annual rate of ODRs decreased by 562 and suspensions by 55 over a two-year time period. They estimated that when a student receives an ODR he/she loses 20 minutes of instructional time and when a student is given a suspension he/she loses 1 day of instructional time. The average instructional days gained per year through the reduction in ODRs were 29.5 days and through the reduction in suspensions were 50 days, for a total of 79.5 days. Putnam, Handler and O'Leary-Zonarich (2003) reported similar results with gains of 169 instructional days comparing the implementation of school wide positive behavior support for one half year versus a similar period in which school-wide behavior support was not implemented in a low performing urban school. Larsen, Steele and Sailor (in press) found similar results in another inner-city middle school.

In a related area of research Putnam, Handler and O'Leary-Zonarich (2003) and Putnam, Handler, Rey and O'Leary-Zonarich (2002) found that classwide behavior support increased the time students receive academic instruction. The objective of intervention was to increase time teachers instructed students. Feedback was given to teachers on the amount of time that they provided instruction, producing a 57% increase over pre-intervention levels.

Student academic engagement has been found to be correlated with improved academic achievement. For example, high-achieving students in high schools were academically engaged 75% of the time, compared to 51% for low-achieving students (Frederick, 1977). Engagement in academic responding also increases achievement as measured by academic tests and covaries with gains in reading, language, and arithmetic (Greenwood, Delquardi, & Hall, 1989). In a study of six classrooms that implemented behavior support plans, on-task behavior increased by 24% percent over the baseline levels (Putnam et al., 2003).

School-wide Positive Behavior Support and Academic Achievement

A number of initial studies have illustrated that school-wide behavior supports decrease problem behavior, increase time spent in academic instruction, and are associated with improved academic outcomes. These studies are encouraging, but remain descriptive in nature and do not have the experimental control needed to confirm a relationship between school-wide PBIS and improved academic performance.

Improving grades. Luiselli, Putnam, and Sunderland (2002) found that after the implementation of school-wide behavior support in a suburban middle school, detentions for disruptive-antisocial behavior, as well as substance abuse decreased over a four year period. School attendance also increased over the four years. A lottery drawing was conducted each quarter for each student who met or exceeded certain academic (maintaining a specific grade point average, receiving passing grades for all subjects on the report card, and having no more than two homework detentions) and behavioral (attendance, detentions, expulsions) criteria. The percent of students who were eligible for the lottery increased from 40% of the schools' population to 55% of the schools' population over the course of four years.

Improving standardized test performance. There is increasing evidence that school-wide positive behavior support interventions improve standardized test results. Larsen, Steele, and Sailor (in press) completed a three year study in an inner city urban school, finding that reductions in ODRs and suspensions, and corresponding increases in mathematics test scores from baseline to year three. While reading scores did not increase from baseline, positive changes were documented from year one to year three. In a related study, Luiselli, Putnam, Handler, and Feinberg (2005) implemented school-wide behavior support at an urban school and found decreases from baseline to intervention to follow-up in ODRs and suspensions. Reading comprehension and mathematics percentile ranks on standardized tests improved from the first (pre-intervention) to the second (intervention) test dates, increasing 18 and 25 percentage points respectively. In another study, Putnam, Handler, & O'Leary-Zonarich (2003) found that reading and math scores improved on standardized testing following behavior support intervention at an urban elementary school. It should be noted that none of these studies controlled for other academic interventions that may have impacted on the student's academic performance nor had random control groups.

A recent analysis of academic performance of schools implementing school wide positive behavior support compared to schools not implementing such programs was conducted in Illinois (Horner, Sugai, Eber, & Lewandowski, 2004). Schools implementing school wide behavior support were schools that had scored 80% on the School Evaluation Tool (Sugai, Lewis-Palmer, Todd & Horner, 2001) and had 80% of their students being able to state their school wide expectations. The schools (n=52) in which school-wide positive behavior support were implemented had 62% of their 3rd grade students meeting the Illinois State Achievement Test Reading Standard. By contrast, only 47% of students met the Illinois State Achievement Reading Test Standard in schools (n=69) that had not fully implemented positive behavior support.

A comparative district-wide study (www.4j.lane.edu/ess/ebs/data/districtdata.html) of schools that had implemented school-wide positive behavior compared to those who had not was conducted across their elementary and middle schools. The four middle and thirteen elementary schools who implemented

school-wide positive behavior support demonstrated increased achievement on the Oregon State Achievement tests as compared to four middle and six elementary schools that did not implement school-wide behavior support. These schools that implemented school wide behavior support tended to be schools that began with lower scores meaning the magnitude of improvement tended to be much higher.

Horner, Sugai, Todd, and Lewis-Palmer (2005) demonstrated similar findings with another school district with nineteen elementary schools. Between the 1997-98 and 2001-2002 academic years, thirteen of the schools implemented school-wide positive behavior support and six schools did not. They compared the percentage of 3rd graders who met state wide reading standards in the academic year 1997-98 with the percentage in the academic year 2001-2002. Ten out of the thirteen schools (77%) that adopted school-wide positive behavior support practices had improved outcomes. The change in percentage of students meeting standards ranged from 2% to over 15% in these schools. Only one of the six schools (16%) that not did implement school-wide positive behavior support showed improvement.

Perspective and Recommendations for Future Research

While problem behavior does not solely lead to poor literacy, poor literacy alone does not lead to problem behavior. Multiple studies have documented that students with problem behavior are more likely to have academic deficits (Anthony, Storino, & Dillon, 2001; Larsen, Steele, & Sailor, in press; Murdock, Anderman & Hodge, 2000; Tobin & Sugai, 1999). Studies have also been completed demonstrating that school-wide behavior support can improve variables that have been suggested to improve academic performance such as student attendance (Luiselli, Putnam & Sunderland, 2002), time in school due to reduced exclusionary disciplinary practices (Putnam Handler, & O'Leary-Zonarich, 2003; Scott & Barrett, 2004), classroom instructional time (Putnam et al., 2002), and academic engagement (Putnam, Handler, & O'Leary-Zonarich, 2003). In addition, improved behavior support is related to improved academic outcomes (Larsen, Steele, & Sailor, in press; Luiselli et al., 2005; Putnam, Handler, & O'Leary-Zonarich, 2003) and schools implementing school-wide behavior support have been shown to have greater academic improvements compared to schools where school-wide behavior support were not implemented (Horner et al., 2005, Larsen, Steele, & Sailor, in press, (<http://www.4j.lane.edu/ess/ebs/data/districtdata.html>)).

If problem behavior and academics are linked, each affects the other, and if acceptable instruction is in place, then improving the behavioral climate of the school will allow that instruction to be more effective. There are several different paths that need to be examined. First, schools that deliver poor academic opportunities, create academic failure. Academic failure is aversive, and students engage in behaviors to avoid failure. These behaviors often result in ODRs, and loss of access to academic instruction.

Conceptualizing this, in essence, is a classic coercion model (Reid, Patterson & Synder, 2002). When a student engages in problem behavior he/she is excluded from his/her classroom and this results in the teacher having a less problematic learning situation. On the other hand, if a student experiences an

aversive task demand and engages in problematic behavior that student greatly enhances his/her chances of escaping this task. Exclusion from learning activities reduces the opportunities to gain skills that would make the task demands less aversive. Alternatively, there are academically capable students who engage in attention-maintained problem behavior. They also get excluded from academic opportunities, and even though they have the basic skills, they experience academic failure. Recall that McIntosh (2005) found that poor literacy scores are statistical predictors of later problem behavior. He found at 5th grade that those students with high levels of escape-maintained problem behavior were likely to have significantly lower literacy skills (low DIBELS scores) than their peers, and that those students with high levels of peer-attention maintained problem behavior were likely to have literacy skills that matched their peers without problem behavior.

With full implementation of school-wide positive behavior support, a behaviorally competent school would have the following conditions: a) classroom management and curriculum variables would be adapted so academic tasks become less aversive; b) reduction in ODRs would mean more minutes spent in academic instruction; c) the minutes spent in academic instruction would be more effective; d) there would be less peer support for academic failure, and; e) there would be an increase in the structured prompts, contingent feedback and support for academic behavior. We might hypothesize that with these conditions in place a school could affect the academic gains of students.

Horner et al., (2005) point out that academic and behavior supports must be intertwined. The importance of effective direct instruction in academic skills is critical to improving academic skills. Students will not learn academic skills without effective instruction and a good curriculum. They will not learn to read just being taught social skills. Of course, these same students will not learn to read in a school or classroom that is behaviorally chaotic. In order to have students receive an effective education we need effective behavior support interventions, an empirically validated curriculum as well as effective instruction.

It is clear that additional research on the impact of school-wide behavior support on academic achievement is needed. There are a number of research questions that arise from a review of this literature. First, most of the studies feature pre-post comparison or are descriptive in nature. Accordingly, research that employs more rigorous experimental control is necessary. Positive behavior support appears to be potentially an intervention that impacts academic achievement but many replication studies must be completed to establish confirmatory evidence. Secondly, it is important to identify the mechanisms that have the most impact on improvements in academic performance and the potential contributions of each of these factors. It is reported that school-wide positive behavior support increases the amount of instruction provided to students who attend a school that uses these interventions (Putnam, Handler & O'Leary-Zonarich, 2003; Scott and Barrett, 2004). Increased prompting and contingent feedback for academic skill performance is also a factor in school-wide positive behavior support. In addition, the

climate of these schools provides less peer support for academic failure. Each of these components should be investigated for its potential contributions to increased academic achievement. In addition, in which schools would school-wide positive behavior support have the greatest impact on academic achievement? We would hypothesize that schools with greater discipline issues but with an effective curriculum and instructional practices would experience larger gains than those schools that had none of these components. Finally, McIntosh (2005) found that students in fifth grade with escape-maintained problem behavior had significantly lowered literacy scores than their peers. He also found that some of these students could be identified as early as kindergarten. These findings are important and need to be replicated and linked to functional intervention strategies thereby decreasing the number of students with challenging behavior and academic failure in later years.

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