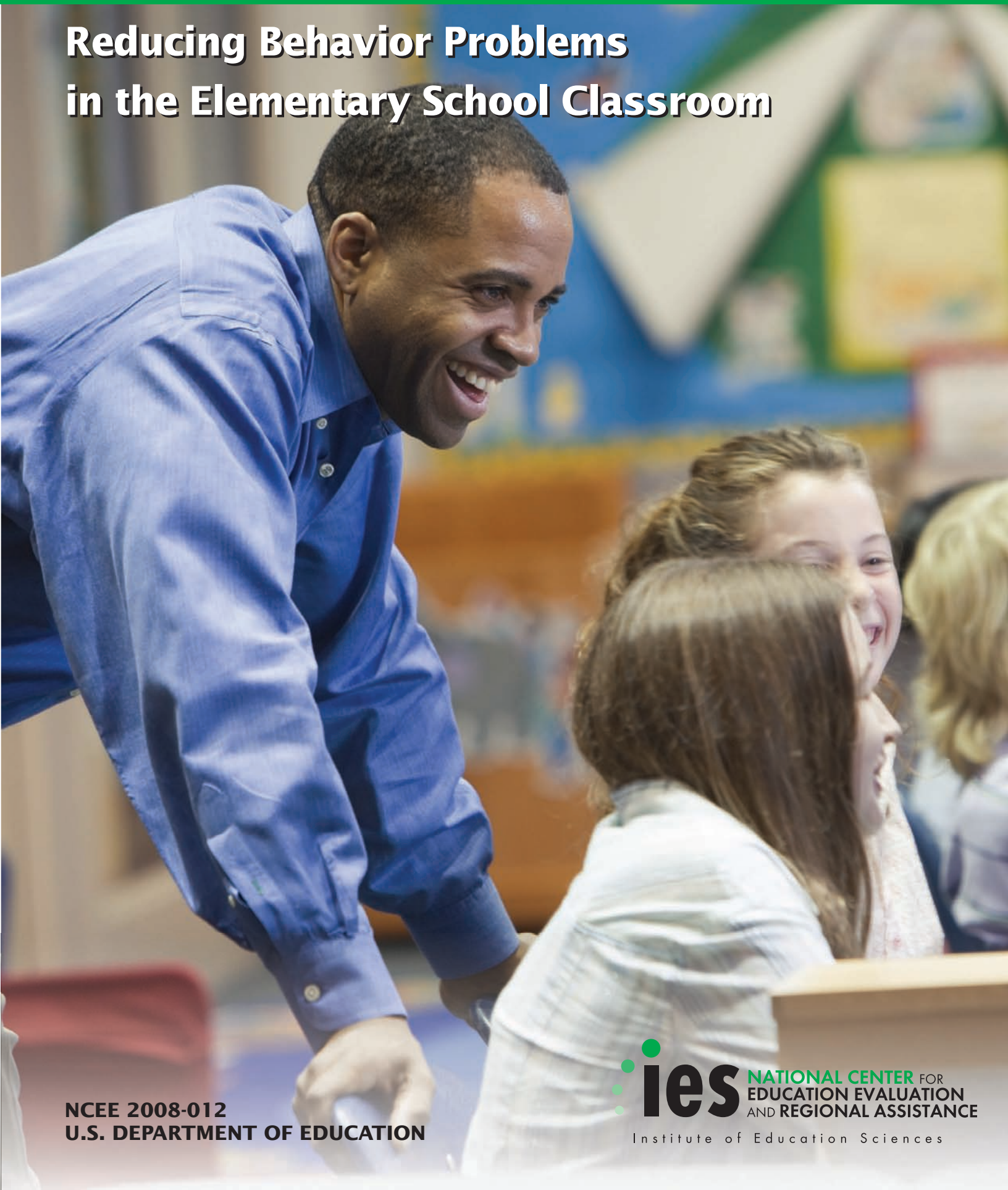
Reducing Behavior Problems in the Elementary School Classroom



NCEE 2008-012
U.S. DEPARTMENT OF EDUCATION

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The goal of this practice guide is to formulate specific and coherent evidence-based recommendations for use by educators to address the challenge of reducing behavior problems in elementary school classrooms. The guide provides practical, clear information on critical behavior-related topics and is based on the best available evidence, as judged by the panel. Recommendations presented in this guide should not be construed to imply that no further research is warranted on the effectiveness of particular strategies for preventing and intervening with behavior problems.

IES PRACTICE GUIDE

Reducing Behavior Problems in the Elementary School Classroom

September 2008

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This report was prepared for the National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences under Contract ED-07-CO-0062 by the What Works Clearinghouse, which is operated by Mathematica Policy Research, Inc.

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September 2008

Epstein, M., Atkins, M., Cullinan, D., Kutash, K., and Weaver, R. (2008). *Reducing Behavior Problems in the Elementary School Classroom: A Practice Guide* (NCEE #2008-012). Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education. Retrieved from http://ies.ed.gov/ncee/wwc/publications/practiceguides.

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Reducing Behavior Problems in the Elementary School Classroom

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Introduction

This guide is intended to help elementary school educators as well as school and district administrators develop and implement effective prevention and intervention strategies that promote positive student behavior. The guide includes concrete recommendations and indicates the quality of the evidence that supports them. Additionally, we have described some, though not all, ways in which each recommendation could be carried out. For each recommendation, we also acknowledge roadblocks to implementation that may be encountered and suggest solutions that have the potential to circumvent the roadblocks. Finally, technical details about the studies that support the recommendations are provided in Appendix D.

We, the authors, are a small group with expertise in various dimensions of this topic and in research methods commonly used in behavior research. The evidence we considered in developing this document ranges from experimental evaluations, to single-subject research studies,[1] to expert analyses of behavioral intervention strategies and programs. For questions about what works best, high-quality experimental and quasi-experimental studies,[2] such as those meeting the criteria of the What Works Clearinghouse (http://ies.ed.gov/ncee/wwc), have a privileged position. In all cases, we pay particular attention to patterns of findings that are replicated across studies.

The process for deriving the recommendations began by collecting and examining research studies that have evaluated the impacts of individual, classwide, and schoolwide behavioral interventions. Research conducted in the United States in the last 20 years was reviewed by the What Works Clearinghouse (WWC) to determine whether studies were consistent with WWC standards.

Behavioral interventions almost always include multiple components. This bundling of components presents challenges when reviewing levels of evidence for each recommendation because evidence of the impact of specific intervention components on students' behavior cannot formally be attributed to one component of an intervention. Identification of key components of each intervention therefore necessarily relied, to a significant degree, on the panel's expert judgment.

After identifying key components of individual interventions, the interventions and their key components were placed in a working matrix that helped us identify features that were common to multiple interventions and, therefore, were logical candidates for generally successful practices.

1. Single-subject studies rely on the comparison of intervention effects on a single participant or group of single participants, where outcomes of the participant are compared in nontreatment (baseline) phases and in treatment phases. Some single-subject methods use subsequent withdrawal and reapplication of treatment to estimate effects. Others estimate effects using several baselines with variable-length durations for different subjects (see Horner et al. 2005).

2. Experimental studies, often called randomized controlled trials, estimate effects of interventions by comparing outcomes of participants who are randomly assigned to experimental and one or more comparison groups (Schwartz, Flamant, and Lellouch 1980). Using random assignment rules out any pre-existing differences between groups as a reason for different outcomes and the intervention becomes the probable cause of those differences. Quasi-experimental studies, such as studies that match intervention participants with individuals who are similar on a range of characteristics, also are used to estimate effects of interventions. However, because quasi-experimental approaches cannot rule out pre-existing differences between participants and the group created by matching as reasons for different outcomes, they are considered to be less valid approaches for estimating intervention effects.

The panel determined the level of evidence for each recommendation by considering the effects of the intervention as determined by the WWC (table 1), the contribution of each component to the impacts found in the evaluation, and the number of evaluations conducted on the behavioral interventions that included the component.[3]

Strong refers to consistent and generalizable evidence that an intervention strategy or program causes an improvement in behavioral outcomes.[4]

Moderate refers either to evidence from studies that allow strong causal conclusions but cannot be generalized with assurance to the population on which a recommendation is focused (perhaps because the findings have not been widely replicated) or to evidence from studies that are generalizable but have more causal ambiguity than offered by experimental designs (statistical models of correlational data or group comparison designs for which equivalence of the groups at pretest is uncertain).

Low refers to expert opinion based on reasonable extrapolations from research and theory on other topics and evidence from studies that do not meet the standards for moderate or strong evidence.

3. A number of specific classwide and schoolwide interventions are cited in this guide as examples of programs that include both components that align with the panel's recommendations of effective strategies to reduce student behavior problems and rigorous research methods in the study of program effectiveness. Other programs with similar components may be available. The panel recommends that readers consult the WWC website regularly for more information about interventions and corresponding levels of evidence (http://ies.ed.gov/ncee/wwc/reports/).

4. Following the WWC guidelines, we consider a positive, statistically significant effect or an effect size greater than 0.25 as an indicator of positive effects.

It is important for the reader to remember that the level of evidence is not a judgment by the panel of how effective each of these five recommended practices would be when implemented in a classroom or school or of what prior research has to say about an intervention's effectiveness or whether the costs of implementing it are worth the benefits it might bestow. Instead, these levels of evidence ratings reflect judgments by the panel of the quality of the existing research literature to support a causal claim that when these recommended practices have been implemented in the past, positive effects on student behaviors have been observed. They do not reflect judgments by the authors of the relative strength of these positive effects or the relative importance of these individual recommendations.

The What Works Clearinghouse standards and their relevance to this guide

For the levels of evidence in table 1, we rely on WWC evidence standards to rate the quality of evidence supporting behavioral prevention and intervention programs and practices. The WWC addresses evidence for the causal validity of programs and practices according to WWC standards. Information about these standards is available at http://ies.ed.gov/ncee/wwc/references/review_process. Each study is assessed according to standards and placed into one of three categories:

- *Meets Evidence Standards* for randomized controlled trials and regression discontinuity studies that provide the strongest evidence of causal validity.
- *Meets Evidence Standards with Reservations* for all single-subject research studies[5] and quasi-experimental studies

5. At the time this practice guide was developed, the WWC did not have standards for assessing the validity of single-subject studies (although a

Table 1. Institute of Education Sciences levels of evidence for practice guides

Strong	In general, characterization of the evidence for a recommendation as strong requires both studies with high internal validity (i.e., studies whose designs can support causal conclusions) and studies with high external validity (i.e., studies that in total include enough of the range of participants and settings on which the recommendation is focused to support the conclusion that the results can be generalized to those participants and settings). Strong evidence for this practice guide is operationalized as: • A systematic review of research that generally meets the standards of the What Works Clearinghouse (WWC) (see http://ies.ed.gov/ncee/wwc/) and supports the effectiveness of a program, practice, or approach with no contradictory evidence of similar quality; OR • Several well-designed, randomized controlled trials or well-designed quasiexperiments that generally meet the WWC standards and support the effectiveness of a program, practice, or approach, with no contradictory evidence of similar quality; OR • One large, well-designed, randomized controlled, multisite trial that meets the WWC standards and supports the effectiveness of a program, practice, or approach, with no contradictory evidence of similar quality; OR • For assessments, evidence of reliability and validity that meets the Standards for Educational and Psychological Testing.[a]
Moderate	In general, characterization of the evidence for a recommendation as moderate requires studies with high internal validity but moderate external validity, or studies with high external validity but moderate internal validity. In other words, moderate evidence is derived from studies that support strong causal conclusions but where generalization is uncertain, or studies that support the generality of a relationship but where the causality is uncertain. Moderate evidence for this practice guide is operationalized as: • Experiments or quasiexperiments generally meeting the WWC standards and supporting the effectiveness of a program, practice, or approach with small sample sizes and/or other conditions of implementation or analysis that limit generalizability and no contrary evidence; OR • Comparison group studies that do not demonstrate equivalence of groups at pretest and therefore do not meet the WWC standards but that (a) consistently show enhanced outcomes for participants experiencing a particular program, practice, or approach and (b) have no major flaws related to internal validity other than lack of demonstrated equivalence at pretest (e.g., only one teacher or one class per condition, unequal amounts of instructional time, highly biased outcome measures); OR • Correlational research with strong statistical controls for selection bias and for discerning influence of endogenous factors and no contrary evidence; OR • For assessments, evidence of reliability that meets the Standards for Educational and Psychological Testing[b] but with evidence of validity from samples not adequately representative of the population on which the recommendation is focused.
Low	In general, characterization of the evidence for a recommendation as low means that the recommendation is based on expert opinion derived from strong findings or theories in related areas and/or expert opinion buttressed by direct evidence that does not rise to the moderate or strong level. Low evidence is operationalized as evidence not meeting the standards for the moderate or high level.

a. American Educational Research Association, American Psychological Association, and National Council on Measurement in Education (1999).

b. Ibid.

with no design flaws and randomized controlled trials that have problems with randomization, attrition, or disruption.

- *Does Not Meet Evidence Screens* for studies that do not provide strong evidence of causal validity.[6]

Following the recommendations and suggestions for carrying out the recommendations, Appendix D presents more information on the research evidence that supports each recommendation.

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panel was being convened to develop evidence standards for single-subject studies). To ensure that the single subject studies cited in this report met basic criteria for supporting causal statements, a special review process was established for these studies. A review protocol was prepared to assess the design of each study. This protocol was reviewed by the chair of the panel developing evidence standards for single-subject studies. Five WWC reviewers with backgrounds in single-subject research methodology received training on this protocol and then applied the protocol to the relevant single subject studies. Reviewers were directed to identify issues that could compromise the validity of the study, and these issues were examined by a second reviewer. Only studies that reviewers deemed valid are referenced in this practice guide.

6. Studies that were eliminated included those with major design flaws that seriously undermined the technical adequacy of the research, such as comparison studies that did not establish equivalent groups at baseline. In addition, only studies conducted in the United States in the last 20 years that examine the effects on student behavioral outcomes were included in the review.

Reducing Behavior Problems in the Elementary School Classroom

Overview

Much of the attention currently given to improving students' academic achievement addresses issues of curriculum, instructional strategies, and interventions or services for struggling learners, and rightfully so. However, even after addressing these issues, barriers still remain for some students. An estimated one-third of students fail to learn because of psychosocial problems that interfere with their ability to fully attend to and engage in instructional activities, prompting a call for "new directions for addressing barriers to learning."[1] These new approaches go beyond explicitly academic interventions to take on the learning challenges posed by problematic student behavior and the ways schools deal with it. Approaches aimed at improving school and classroom environments, including reducing the negative effects of disruptive or distracting behaviors, can enhance the chances that effective teaching and learning will occur, both for the students exhibiting problem behaviors and for their classmates.

In many schools general education elementary classrooms are generally orderly, teacher-student and student-student relationships are positive, and teaching and learning go on without major disruption. Teachers in such classrooms recognize the importance of preventing significant behavior problems and are effectively using fundamental prevention tools—engaging instruction, well-managed classrooms, and positive relationships with students. Looking to these prevention fundamentals should always be the first step in promoting good behavior at school. However, some teachers have a class in which one or a few students exhibit persistent or significant problem behaviors—those that are disruptive, oppositional, distracting, or defiant. Sometimes when a number of students in a classroom demonstrate such behaviors, it can create a chaotic environment that is a serious impediment to learning for all students. In these cases teachers have exhausted their classroom management strategies without successfully eliminating the obstacles to learning that problem behaviors pose. The purpose of this practice guide is to give teachers additional tools to help them deal proactively and effectively with behaviors that seriously or consistently fail to meet classroom expectations.

This practice guide offers five concrete recommendations (see table 2) to help elementary school general education teachers reduce the frequency of the most common types of behavior problems they encounter among their students. The recommendations begin with strategies teachers can use immediately on their own initiative in their classrooms (recommendations 1–3), then broaden to include approaches that involve resources from outside the classroom. We recognize that teachers encounter situations where they need the guidance, expertise, and support of parents and other teachers or behavior professionals (for example, a school psychologist or behavior specialist) in the school or community, and that school administrators play a critical role in enabling mentoring and collaborative opportunities for staff (recommendation 4). We also acknowledge that the social and behavioral climate of a classroom can reflect the climate of the school more broadly, and we address the contributions of schoolwide strategies or programs to improving student behavior (recommendation 5).

1. Adelman and Taylor (2005).

Table 2. Recommendations and corresponding level of evidence to support each

Recommendation	Level of evidence
1. *Identify the specifics of the problem behavior and the conditions that prompt and reinforce it.* Every teacher experiences difficulty at one time or another in trying to remedy an individual student's behavior problem that is not responsive to preventative efforts. Because research suggests that the success of a behavioral intervention hinges on identifying the specific conditions that prompt and reinforce the problem behavior (i.e., the behavior's "antecedents" and "consequences"), we recommend that teachers carefully observe the conditions in which the problem behavior is likely to occur and not occur. Teachers then can use that information to tailor effective and efficient intervention strategies that respond to the needs of the individual student within the classroom context.	**Moderate**
2. *Modify the classroom learning environment to decrease problem behavior.* Many effective classroom-focused interventions to decrease students' problematic behavior alter or remove factors that trigger them. These triggers can result from a mismatch between the classroom setting or academic demands and a student's strengths, preferences, or skills. Teachers can reduce the occurrence of inappropriate behavior by revisiting and reinforcing classroom behavioral expectations; rearranging the classroom environment, schedule, or learning activities to meet students' needs; and/or individually adapting instruction to promote high rates of student engagement and on-task behavior.	**Strong**
3. *Teach and reinforce new skills to increase appropriate behavior and preserve a positive classroom climate.* We recommend that teachers actively teach students socially- and behaviorally-appropriate skills to replace problem behaviors using strategies focused on both individual students and the whole classroom. In doing so, teachers help students with behavior problems learn how, when, and where to use these new skills; increase the opportunities that the students have to exhibit appropriate behaviors; preserve a positive classroom climate; and manage consequences to reinforce students' display of positive "replacement" behaviors and adaptive skills.	**Strong**
4. *Draw on relationships with professional colleagues and students' families for continued guidance and support.* Social relationships and collaborative opportunities can play a critical role in supporting teachers in managing disruptive behavior in their classrooms. We recommend that teachers draw on these relationships in finding ways to address the behavior problems of individual students and consider parents, school personnel, and behavioral experts as allies who can provide new insights, strategies, and support.	**Moderate**

5. *Assess whether schoolwide behavior problems warrant adopting schoolwide strategies or programs and, if so, implement ones shown to reduce negative and foster positive interactions.* Classroom teachers, in coordination with other school personnel (administrators, grade-level teams, and special educators), can benefit from adopting a schoolwide approach to preventing problem behaviors and increasing positive social interactions among students and with school staff. This type of systemic approach requires a shared responsibility on the part of all school personnel, particularly the administrators who establish and support consistent schoolwide practices and the teachers who implement these practices both in their individual classrooms and beyond.	**Moderate**

Source: Authors' compilation based on analysis described in text.

Fundamental to these recommendations is the notion that behavior is learned—children's behaviors are shaped by the expectations and examples provided by important adults in their lives and by their peers.[2] In the elementary grades, general education classroom teachers are arguably the most important adults at school for the large majority of students. As such, they can play a critical role both in proactively teaching and reinforcing appropriate student behaviors and in reducing the frequency of behaviors that impede learning. Accepting responsibility for the behavioral learning of all students is a natural extension of the responsibility for the academic learning of all students that general education teachers exercise with such purpose every day. The goal of this practice guide is to help teachers carry out their dual responsibility by recommending ways to shape and manage classroom behavior so that teaching and learning can be effective.

Understanding what prompts and reinforces problem behaviors can be a powerful tool for preventing them or reducing their negative impacts when they occur. The first recommendation emphasizes teachers' gathering information about important aspects of problem behaviors in their classrooms—for example, the specific behavior a student exhibits, its effects on learning, and when, where, and how often it occurs. This information can provide important clues to the underlying purpose of the problem behavior and a foundation for developing effective approaches to mitigate it.

The second recommendation points to classroom conditions or activities that teachers can alter or adapt to influence the frequency or intensity of problem behaviors. When teachers understand the behavioral hot spots in their classroom in terms of timing, setting, and instructional activities, for example, they can proactively develop classwide and individual student strategies (such as a change in instructional groupings, the seating plan, or the order or pace of reading and math instruction) to reduce the contribution of these classroom factors to students' problem behaviors.

The third recommendation recognizes that, just as poor academic performance can reflect deficits in specific academic skills, some students' failure to meet behavioral expectations reflects deficits in specific social or behavioral skills. And just as explicit instruction can help students overcome some academic deficits, explicit instruction can help students learn the positive behaviors and skills they are expected to exhibit at school. Showing

2. Bandura (1977).

students how they can use appropriate behaviors to replace problem behaviors and consistently providing positive reinforcement when they do so can increase students' chances of experiencing social and behavioral success.

Recognizing the collective wisdom and problem-solving abilities of school staff, the fourth recommendation encourages teachers to reach out to colleagues in the school—other classroom teachers, special educators, the school psychologist, or administrators—to help meet the behavioral needs of their students. Similarly, by engaging family members, teachers can better understand their students' behavior issues and develop allies in intervening both at school and at home to help students succeed. When behavior problems warrant the services of behavioral or mental health professionals, teachers are encouraged to play an active role in ensuring that services address classroom behavior issues directly.

The fifth recommendation reflects an understanding that a teacher may be more successful in creating a positive behavioral environment in the classroom when there also are schoolwide efforts to create such an environment. Just as teachers can document and analyze the nature and contexts of behavior problems in the classroom, school leadership teams can map the behavioral territory of the school and use the information to develop prevention strategies and select and implement schoolwide programs for behavior intervention and support when warranted.

Several principles run throughout these recommendations. One relates to the importance of relationships in any focus on student behavior. Schooling is "an intrinsically social enterprise."[3] Student behavior is shaped by and exhibited and interpreted in a social context that involves multiple actors (teachers, students, support personnel, specialists), multiple settings (classrooms, hallways, lunch room, playground), and multiple goals (enhancing academic performance, encouraging development of the whole child). Positive behavior is more likely to thrive when relationships at all levels are trusting and supportive and reflect a shared commitment to establish a healthy school and community.

In the classroom, for example, positive teacher-student interactions are at the heart of the recommendation regarding modifying classroom environment and instructional factors to improve student behavior. Associations have been found between positive interactions with teachers and increases in students' social skills, emotional regulation, motivation, engagement, cooperation with classroom rules and expectations,[4] and academic performance. Associations also have been noted between negative interactions with teachers and increases in students' risk for school failure.[5] Teachers show the warmth, respect, and sensitivity they feel for their students through small gestures, such as welcoming students by name as they enter the class each day, calling or sending positive notes home to acknowledge good behavior, and learning about their students' interests, families, and accomplishments outside of school. Teachers also can help students develop peer friendships by having them work together, thereby learning to share materials, follow directions, be polite, listen, show empathy, and work out disagreements. Fostering students' social and emotional development can improve their interactions and attitudes toward school, thereby reducing problem behaviors.[6]

3. Bryk and Schneider (2002), p. 19.

4. Greenberg et al. (2003); Hamre and Pianta (2005); Pianta et al. (2002); Solomon et al. (1992); Wentzel (2003); Zins et al. (2004).

5. Hamre and Pianta (2005).

6. Zins et al. (2004).

Enabling the development of strong teacher-teacher relationships in support of collaborative problem-solving regarding student behavior is central to the fourth recommendation. Schools with strong, trusting staff relationships are more likely to have teachers who are willing to engage in new practices and, consequently, who can help to produce gains in student outcomes.[7] The fifth recommendation also reflects the importance of relationships in seeking to establish "a schoolwide culture of social competence."[8] Changes in practices, structures, or programs within schools are unlikely to be implemented, sustained, or effective in the long term without concerted attention to enhancing the fundamental relationships within schools.

Another principle that underlies the panel's recommendations is the critical need for increased cultural competence in developing positive relationships in school and community contexts. As our school and community populations become increasingly diverse, all school staff are challenged to learn about, become sensitive to, and broaden their perspectives regarding what may be unfamiliar ways of learning, behaving, and relating. Teachers can establish an inclusive classroom environment through practices such as using and reinforcing language that is gender neutral and free of stereotypes, selecting curricular materials that reflect and honor the cultures and life experiences of students in the class, encouraging and respecting the participation of all students in classroom activities, and holding high expectations for all learners.[9] School leaders can be proactive in supporting opportunities for expanding the cultural competence of school staff through "a vigorous, ongoing, and systemic process of professional development"[10] that involves building trusting relationships among school staff, taking on issues of personal culture and social disparities, and engaging the entire school community in creating a welcoming environment for all students and their families.

Additionally, the panel recognizes the need for and ability of school staff to translate the recommendations into actions that are appropriate to their specific contexts. One clearly important contextual factor is the age and developmental stage of the students with whom teachers work. The ways that recommendations involving rewards for positive behavior are carried out, for example, will necessarily look different in 1st and 5th grade classrooms, because different forms of motivation are appropriate to students' developmental stages. Schools in large urban districts often encounter different kinds and intensities of behavior issues than schools in affluent suburbs and have different forms and levels of resources in and outside the school to address them. The panel honors the insights of school staff in understanding what will work in their schools, classrooms, and communities. Thus, recommendations emphasize processes and procedures that can be adapted to a wide range of contexts rather than providing specific recipes that may have limited applicability.

Finally, the recommendations emphasize the importance of being data driven. This means having current, timely information about behavior problems and successes at the school, classroom, and student levels, such as where and when the behavioral hot spots occur in the school and during the school day, which classroom instructional periods or transitions are associated with increased behavioral disruptions, which students exhibit the most

7. Bryk and Schneider (2002).

8. Vincent, Horner, and Sugai (2002), p. 2.

9. Davis (1993); Gay (2000); Harry and Kalyanpur (1994); Shade, Kelly, and Oberg (1997).

10. Howard (2007), p. 16.

challenging behaviors and when they are most likely to occur, and what strategies teachers have found to be effective in improving classroom behavior. Without a solid foundation in these kinds of data, interventions might not just be ineffective, but might even exacerbate the problems they are meant to solve. Observation and documentation of student, classroom, and school behavior challenges can be invaluable in targeting resources and changing strategies to improve behavior at school. Monitoring the effectiveness of strategies by continuing to collect and review data also can support continuous improvement to achieve maximum results. Challenging behaviors are learned over a long period of time; acquiring positive behaviors also takes time. Monitoring progress and celebrating small achievements along the way can help sustain the efforts needed to bring success.

Scope of the practice guide

The purpose of this practice guide is to help school staff promote positive student behavior and reduce challenging behaviors in U.S. elementary schools—those serving students in kindergarten through 5th grades. Because most students, including students who receive special education services, spend the majority of their school day in general education classrooms,[11] the teachers in those classrooms play a central role in influencing students' behaviors. Thus, they are a primary focus of this practice guide. Elementary school principals and other administrators also are an audience for the recommendations presented here because they establish the structures and direct the resources needed to support teachers and other school staff in promoting positive environments in classrooms and schoolwide.

In the panel's view, improving the behavioral climate at school must begin with an emphasis on prevention—heading off behavior problems through programs and approaches that set, encourage, and reinforce positive behavioral expectations for all students. These "universal prevention programs"[12] often are described as the first component of a three-tiered prevention model[13] and, when applied to children's behavioral health, are considered to be effective in preventing behavior problems for 80–90 percent of students.[14] This emphasis on prevention is reflected in many of the panel's recommendations that involve, for example, collecting data on incidents of problem behaviors, communicating expectations and reinforcing positive behaviors, and managing classrooms effectively to avoid negative behaviors. We draw on the considerable research that explicitly addresses prevention strategies and intervention programs related to children's behavior and mental health needs in this guide. But the research on the most intensive interventions that are provided to students with the most serious behavior problems (tier 3), often outside the general education classroom, is not the primary focus of this guide. Rather, the panel suggests strategies to help general education classroom teachers address the needs of students for whom preventive approaches are insufficient to head off behavior problems but whose behavior does not warrant removal from their classrooms.

A focus on providing recommendations to help general education teachers deal with problem behaviors in part reflects the fact that many teachers come to the classroom poorly prepared to manage the range of behaviors common among today's students.[15] Indeed, only one-third of principals believe that their teachers are well prepared to maintain order in the classroom, and only 30 percent believe that teachers are well prepared to meet the needs of students with disabilities.[16] Improving teachers' preparation in classroom and behavior management at colleges and universities could be an important step in improving students' behavior at school.

Further, ongoing professional development provided by districts or schools is

11. Wagner, Marder, and Chorost (2004).

12. Kutash, Duchnowski, and Lynn (2006).

13. Commission on Chronic Illness (1957). The three-tiered model of behavioral supports includes an emphasis on matching the intensity of the intervention to the severity of the behavior problem, including primary or universal (schoolwide) strategies, secondary targeted intervention efforts, and tertiary or intensive individual support for students with the most severe problems (Sugai et al. 2000).

14. Office of Special Education Programs (2008); Sugai et al. (2000); Sugai, Sprague, et al. (2000).

15. Levine (2006); MetLife, Inc. (2006).

16. Levine (2006).

much more likely to focus on building the instructional skill set of teachers than on strategies for managing classroom behavior. For example, a national study that involved general education teachers who had students with disabilities in their language arts classes indicated that teachers received an average of 60 hours per year of professional development, or 180 hours over a three-year period. Yet only 36 percent of students had teachers who reported receiving at least 8 hours of professional development related to behavior management in that time, whereas 81 percent had teachers who received that level of professional development related to reading and language arts instruction.[17] These data raise the question of whether increasing teachers' capacity to promote positive student behavior and to deal effectively with problem behavior should be a higher priority for both preservice and ongoing professional development.

17. Special Education Elementary Longitudinal Study, Wave 1 Teacher Survey (2001).

Recommendations for changes to teacher preparation and teacher professional development programs are beyond the scope of this practice guide. However, such changes must be addressed by institutions of higher education and school districts if teachers and their schools are to be fully successful in addressing the diversity of students' behavioral support needs.

Finally, the charge presented to the panel in developing this guide stressed that we focus on students' behavior. Therefore, any academic outcomes that might be attributed to interventions were not considered to be evidence for their effectiveness. Only behavioral outcomes were considered in evaluating the strength of evidence for an intervention. Also, we did not consider the effects of interventions on adults (parents or teachers) in evaluating the evidence for their effectiveness.

Within these parameters, the panel reached consensus on the five recommendations that follow and on the implementation steps associated with them.

Checklist for carrying out the recommendations

Recommendation 1. Identify the specifics of the problem behavior and the conditions that prompt and reinforce it

☐ Concretely describe the behavior problem and its effect on learning.

☐ Observe and record the frequency and context of the problem behavior.

☐ Identify what prompts and reinforces the problem behavior.

Recommendation 2. Modify the classroom learning environment to decrease problem behavior

☐ Revisit, re-practice, and reinforce classroom behavior expectations.

☐ Modify the classroom environment to encourage instructional momentum.

☐ Adapt or vary instructional strategies to increase opportunities for academic success and engagement.

Recommendation 3. Teach and reinforce new skills to increase appropriate behavior and preserve a positive classroom climate

☐ Identify where the student needs explicit instruction for appropriate behavior.

☐ Teach skills by providing examples, practice, and feedback.

☐ Manage consequences so that reinforcers are provided for appropriate behavior and withheld for inappropriate behavior.

Recommendation 4. Draw on relationships with professional colleagues and students' families for continued guidance and support

☐ Collaborate with other teachers for continued guidance and support.

☐ Build collaborative partnerships with school, district, and community behavior experts who can consult with teachers when problems are serious enough to warrant help from outside the classroom.

☐ Encourage parents and other family members to participate as active partners in teaching and reinforcing appropriate behavior.

Recommendation 5. Assess whether schoolwide behavior problems warrant adopting schoolwide strategies or programs and, if so, implement ones shown to reduce negative and foster positive interactions

☐ Address schoolwide behavior issues by involving a school improvement team.

☐ Collect information on the hot spots throughout the school, such as the frequency of particular schoolwide behavior problems and when and where they occur.

☐ Monitor implementation and outcomes using an efficient method of data collection and allow ample time for the program to work.

☐ If warranted, adopt a packaged intervention program that fits well with identified behavior problem(s) and the school context.

Recommendation 1. Identify the specifics of the problem behavior and the conditions that prompt and reinforce it

Every teacher experiences difficulty at one time or another in trying to remedy an individual student's behavior problem that is not responsive to preventative efforts. Because research suggests that the success of a behavior intervention hinges on identifying the specific conditions that prompt and reinforce the problem behavior (that is, the behavior's "antecedents" and "consequences"), we recommend that teachers carefully observe the conditions in which the problem behavior of an individual student is likely to occur and not occur. Teachers then can use that information to tailor effective and efficient intervention strategies that respond to the needs of the individual student within the classroom context.

Level of evidence: Moderate

The panel judged the level of evidence supporting this recommendation to be *moderate*. A number of single-subject research studies demonstrate the effectiveness of behavioral interventions that are designed to address and modify what prompts and reinforces the problem behaviors of special and general education elementary school students.[1] Three recent single-subject studies examined the effectiveness of interventions chosen for individual students after teachers gathered data on the antecedents and consequences of students' problem behaviors, as opposed to interventions selected without attention to these factors.[2] Findings demonstrated greater success in reducing inappropriate behaviors through the use of approaches based on the gathered data. An emerging literature provides further evidence that general educators can play a key role in this information-gathering process by identifying the context of a problem behavior (when, where, and why a problem behavior occurs) and selecting appropriate strategies that meet students' needs. But more research is needed to determine whether consistent results can be obtained when the strategies are implemented by a teacher without professional consultation.[3]

Brief summary of evidence to support the recommendation

Research suggests that identifying the problem behavior's specific antecedents and consequences and then tailoring an intervention to address the distinct needs of the individual student in the classroom context are more likely to yield positive outcomes than an intervention applied without attention to the factors prompting

1. Much of the evidence for this recommendation is from studies involving students with school-identified emotional and behavioral disabilities—some receiving a majority of their education in self-contained classrooms. The panel believes the evidence is relevant for general education teachers because many students with disabilities spend part or all of their day in a general education environment. In addition, behaviors exhibited by students with disabilities are similar to those exhibited by students without school-identified disabilities in the general education population. Studies include Broussard and Northup (1995); Ervin et al. (2000); Lane et al. (2007); Moore, Anderson, and Kumar (2005); Sasso et al. (1992); Stahr et al. (2006); Umbreit (1995). For research reviews, see Ervin et al. (2001); Heckaman et al. (2000); Kern et al. (2002).

2. Ingram, Lewis-Palmer, and Sugai (2005); Newcomer and Lewis (2004); Payne, Scott, and Conroy (2007).

3. Kamps, Wendland, and Culpepper (2006); Lane, Weisenbach et al. (2007); Mueller, Edwards, and Trahant (2003).

and reinforcing it.[4] In fact, strategies not linked to the specific context of a problem behavior are associated with increases in the occurrence of the problem behavior, perhaps because such strategies can inadvertently reinforce the misbehavior.[5]

The practice of analytically identifying the purpose of a behavior before selecting and applying an intervention forms the foundation of functional behavioral assessments[6] conducted to support students with emotional disabilities or severe behavior problems. It is important to clarify that although the panel has drawn on the research evidence from studies in which teachers contributed to functional behavioral assessment processes, we are not suggesting that general education teachers conduct formal functional behavioral assessments and analyses on their own. However, we do believe that teachers can benefit from observing and collecting data on where, when, and why a specific problem behavior occurs so they can establish effective and efficient behavioral supports for all students in their classrooms. This information can assist teachers in fulfilling their important classroom duties by neutralizing events that may trigger problem behaviors, maintaining consequences for appropriate behaviors, and eliminating the rewarding consequences of inappropriate behavior (recommendations 2 and 3).

Three single-subject studies have demonstrated the success of an approach that specifically identifies and modifies what is prompting and reinforcing problem behaviors in general education settings, with general education teachers taking substantive roles in data gathering and in the design and implementation of behavioral strategies. In these studies investigators successfully trained general education elementary school teachers to respond effectively to inappropriate behaviors by following a reinforcement protocol developed for each student who exhibited problem behaviors—all while teachers fulfilled regular classroom responsibilities and routines.[7]

These studies do not provide enough evidence to conclude that these practices will be effective for all students or in all settings. The studies differ in data collection methods (using a variety of both direct and indirect assessment measures such as observations and interviews), in the extent of assistance from behavioral consultants (for example, in-school specialists such as school psychologists or outside resources such as community-based behavioral experts), and in the methods used to select interventions and strategies on the basis of accumulated knowledge about the problem behavior. As a result, some researchers have called for additional studies to be conducted with a variety of target behaviors across different settings because of concerns regarding inconsistencies when the approach involves different types of students, school-based personnel, and assessment methods.[8]

4. Ingram, et al. (2005); Newcomer and Lewis (2004); Payne, Scott, and Conroy (2007).

5. Ibid.

6. A functional behavioral assessment identifies and measures a specific problem behavior by describing and analyzing the student's interactions in his environment to understand variables that contribute to the occurrence of the misbehavior. There is no standard set of resources and procedures to conduct a functional behavioral assessment, but often it includes a variety of indirect assessments (for example, teacher interviews, parent interviews, or school records review), direct assessments (such as classroom observations or standardized behavior checklists), and data analysis conducted by the school psychologist or other behavioral experts to determine whether there are patterns associated with the behavior. For a review of sample methods and procedures to conduct a functional behavioral assessment, see O'Neill et al. (1997).

7. Kamps et al. (2006); Lane, Weisenbach, et al. (2007); Mueller et al. (2003).

8. Gresham (2004); Gresham et al. (2004); Sasso et al. (2001); Scott et al. (2005).

Nevertheless, the evidence suggests that the practice of understanding a problem behavior's context can yield an effective intervention to change the behavior. We offer guidelines and examples on how general education teachers can adopt these practices. Still, teachers who believe they are not equipped to handle a student's behavior problem alone should seek ways to collaborate with other school staff, including general education teachers, special education teachers, school counselors, school psychologists, and administrators (as described in recommendation 4). As teachers gain experience and confidence in their ability to observe and collect data on target behaviors, we believe their capacity for selecting and designing effective strategies to engage students with behavioral difficulties will grow.

How to carry out the recommendation

1. Concretely describe the behavior problem and its effect on learning.

When a student repeatedly displays off-task behavior, it is important to define the specific behavior and pinpoint the setting (or settings) in which it occurs. We recommend that teachers describe the behavior problem in concrete terms that are easy to communicate to the student and simple to measure. If descriptions of behaviors are vague (for example, "Jacob is always disruptive"), it is difficult to assess the extent of the problem, when and where it most often occurs, and how to intervene appropriately. Examples of concrete descriptions of problem behaviors are:

- Abraham blurts out answers without raising his hand during whole-class instruction.
- Thanh is physically aggressive toward his peers (hits, kicks, punches) during recess.
- Silvia frequently leaves her seat without permission during small-group instruction.

It is equally important to assess the behavior's impact on student learning. Misbehavior that is brief and does not seriously interfere with learning (such as short instances of daydreaming, talking during transitions, or momentary inattention) should be addressed without interrupting instruction through eye contact or physical proximity, for example.[9] Behavior warrants immediate and additional attention if it:

- Persists, escalates, or spreads to other students.
- Lessens the student's or other students' ability to successfully engage in learning.
- Detracts from a positive classroom climate.
- Deviates significantly from the developmentally appropriate behavior of other students.
- Causes other students or adults to avoid interacting with the student.
- Threatens the safety of students or the teacher.[10]

Teachers also should weigh other important factors as they try to understand a student's behavior:

- Could the behavior reflect a cultural difference? Some behaviors, such as a student's persistent lack of eye contact or unwillingness to compete against

9. Evertson, Emmer, and Worsham (2006).

10. Wolery, Bailey, and Sugai (1988) review characteristics of problem behaviors that warrant attention due to the behavior's impact on classroom climate and instructional time.

peers, may be indicative of a student's cultural background.[11] Teachers should account for differences in cultural background when assessing the severity of students' behavior problems.

- Does the student have the academic or behavioral skills necessary to meet expectations? Students with skill deficits may exhibit behavior problems to help them avoid or escape tasks that are difficult for them. Teachers should frequently assess students' abilities and help them build requisite skills for appropriate behavior (see recommendation 3).

- Could the behavior reflect episodic stress or trauma? A student's behavior may be a temporary reaction to a difficult event, such as the death or illness of a family member. Regular communication with students' families helps teachers be understanding and supportive when events in students' lives affect them in school.

2. Observe and record the frequency and context of the problem behavior.

Teachers should carefully observe and record key information about a student's persistent problem behavior in different settings and during different activities (for example, during solitary time, group assignments, unstructured peer interactions) to understand better the contexts in which it does and does not occur. Depending on the frequency of the behavior problem, teachers should make note of its occurrence over the course of a few days to a week until clear patterns emerge between the behavior and environmental conditions.[12] Key information to note about each instance of the behavior includes:

- Time of day.

- Classroom location (for example, computer center, reading area).

- Subject matter being taught.

- Type of learning activity.

- Difficulty of the task.

- Presence of particular peers or adults.

Teachers might also consult with parents about whether they see similar behavior at home and, if so, the specific context of its occurrence (for example, with adults or peers). Once these data are collected, teachers may decide to discuss the findings with colleagues or local school or district behavior experts (see recommendation 4). Patterns revealed by this information will provide important clues as to what prompts the problem behavior, when it is most likely to happen, and what reinforces it.

3. Identify what prompts and reinforces the problem behavior.

Because students learn to behave in ways that satisfy a need or result in a desired outcome, we recommend that teachers examine the frequency and context data they have collected to figure out the prompts and payoffs for a particular student's misbehavior.

Teachers should carefully examine triggers that may prompt a student's misbehavior by asking themselves when, where, and with whom problem behaviors are most likely to occur. Common environmental triggers usually cluster in three general categories:

- Curricular variables (tasks that are too hard, easy, boring, or unstructured for the student).

11. See, for example, Gay (2000); Harry and Kalyanpur (1994); Shade et al. (1997).

12. O'Neill et al. (1997). See roadblock 1.1 for further recommendations on how (and how often) to document behavior problems.

- Social variables (small or large group settings or the presence of particular individuals).

- Setting variables (for example, time of the day or week; distractions at home or in class; or the student's physical states, such as fatigued, ill, or hungry).[13]

We recommend that teachers also carefully reflect on what usually happens after the behavior occurs, including how they react, how other students react, and the consequences that may be reinforcing the behavior. Reinforcers of a student's persistent problem behavior usually derive from two common outcomes—the student's attempt either to get something, such as attention or access to a preferred activity, or to escape something, such as demands, reprimands, or difficult tasks.[14]

Consider this example:

Michael's disruptive behavior during math instruction is distracting others from participating and learning. When the teacher asks three students to solve a problem at the board, Michael teases the students when they walk past his desk. The snide remarks continue while they are solving the problems, and at one point, Michael takes the pencils off one of the student's desk and hides them in his desk. When the teacher's reprimand is not effective, she moves closer to his desk to monitor his behavior. This only causes Michael's misbehavior to escalate and further disrupt the lesson, so she sends him out of class to the principal's office.

To anticipate Michael's disruptive behavior and adjust environmental triggers and reinforcers, his teacher noted what happened before the misbehavior to prompt it (its antecedents) and after the misbehavior to reinforce or decrease it (its consequences).

What happened before (antecedent): A difficult concept in math was modeled to the class and students were called on to work problems at the board.

Behavior: Michael distracted and teased students who were participating in whole class exercises in math. The disruptive behavior recurred two days later during a math lesson.

What happened after (consequence): Verbal reminders, physical proximity, and finally removal from class (allowing student to avoid doing the math lesson).

The teacher observed that the disruptive behaviors only occurred during math, indicating that Michael may have wanted to avoid engaging in the lesson. The teacher asked herself if the concept was too difficult or too easy to sustain his attention and gauged the developmental appropriateness of Michael's behavior against the instructional and disciplinary strategies in play. She realized that removal of Michael from the classroom may have inadvertently reinforced his disruptive behavior because it allowed him to avoid doing the task. Because the context for the disruptive behavior was identified, the teacher planned to adjust the antecedent and consequences by using the developmentally appropriate strategies described below, and to continue to observe his behavior to evaluate the success of her new approach.

Adjusted antecedents: Forewarn Michael when new concepts will be introduced in math and tell him he will be one of the students called on to offer an answer to a problem. Gauge Michael and his classmates' understanding of the new concept by asking several questions and offering a variety of problems for students to solve.

13. O'Neill et al. (1997).

14. Ibid.

Adjust the difficulty of the problems on the basis of the students' success.

Consequences: If misbehavior occurs, take Michael aside and remind him of behavior expectations during whole-group lessons. Describe how the observed behavior affects students' learning. If behavior persists, give Michael a choice of participating in the lesson or relocating to a designated area to work on problems independently until he is ready to return to the whole group.

As demonstrated in the example, teachers' attention to the antecedents and consequences of reoccurring behavior problems can inform the development of more effective and efficient behavioral support strategies to prevent or reduce behaviors that interfere with successful classroom learning.

Potential roadblocks and solutions

Roadblock 1.1. *"I don't know how to collect all this information about behavior problems when I'm trying to teach a room full of students."* General education teachers in public schools must attend to, on average, more than 20 students in their classroom,[15] so to add data collection responsibilities to their tasks can seem impractical or impossible.

Suggested Approach. We recommend keeping methods of information gathering very simple. For example, if the problem behavior occurs several times a day, we recommend that teachers record occurrences over just a few days. If the problem behavior occurs infrequently (such as a few times a week), we recommend that teachers gather data over one or two weeks to be sure to include enough instances of the behavior to inform a plan for intervention. For daily observations teachers can use a chart of their daily classroom schedule and make a simple tally under the time of day and lesson activity when the target behavior occurs (see table 3).[16] Over time patterns should become apparent, showing when the behavior is more likely and less likely to occur. For a behavior of low frequency teachers can make a very brief entry in a notebook or journal during transition periods (for example, at recess or between lessons) or at the end of the day about the immediate antecedents and consequences of the target behavior (see table 4).[17] After recording and reviewing a number of these observations, teachers should be able to denote patterns in the frequency and triggers of the misbehavior.

Roadblock 1.2. *"This class has so many behavior problems, I don't know where to start."* Students' problem behaviors can be a source of great frustration and confusion to teachers, especially when they are persistent and appear to be inexplicable.

Suggested Approach. Multiple problem behaviors, such as disruption, inattention, and noncompliance, often originate from similar student needs, so by concentrating on one behavior in one setting, teachers may have a positive impact on others. We suggest that the teacher identify one priority behavior problem—not necessarily the most troublesome or disruptive—on which to focus initial efforts. By assessing the antecedents and consequences that prompt and reinforce the problem behavior and developing strategies that specifically link to the underlying function of the student's

15. U.S. Department of Education (2004).

16. The example data collection tool was adapted from O'Neill et al. (1997), p. 29. In table 3, each tally mark represents an occurrence of the high-frequency target behavior.

17. The example data collection tool was adapted from O'Neill et al. (1997), p. 33. Using table 4, teachers can enter information about low-frequency problem behaviors by describing the behavior in concrete terms and its antecedent(s) and consequence(s).

Table 3. Example tally-mark data collection tool for a high-frequency behavior problem

Name:

Directions: Mark a tally under the time and day when behavior problems occur with the student.

Time/Lesson	Mon	Tues	Weds	Thur	Fri	Mon	Tues	Weds	Thurs	Fri
Opening 7:50–8:05										
Language Arts 8:05–9:05				I				I		
Recess 9:05–9:25										
Social Science/Science 9:25–10:25										
Math 10:25–11:45	I I I	I	I I	I I I I	I	I I	I I	I I I	I I	I I I
Lunch 11:45–12:15										
Reading 12:15–1:15		I		I I	I					
PE/Technology 1:15–2:15										
Closing/Dismiss 2:15–2:30				I I						

Source: Authors' adaptation from O'Neill et al. (1997), p. 29.

Table 4. Example entry sheet for a low-frequency problem behavior

Name:

Date:

Class Period:

Antecedents: What happens before the problem behavior? (curricular, social, and setting variables)	**Behavior: What does it look like?** (frequency, duration, intensity)	**Consequences: What happens after the problem behavior?** (reactions and reinforcers)
When, where, and with whom is the problem behavior most likely to occur? Least likely to occur? (for example, during solitary time, group assignments, or unstructured peer interactions)	How often does the problem behavior occur? How long does it last? How serious is it?	How do you react? How does the student react? How do other students react?

Source: Authors' adaptation from O'Neill et al. (1997), p. 33.

behavior, there may be immediate relief of problems across multiple settings and even across other problem behaviors and students. When such improvements are noted, however small, celebrate those successes with the students involved to encourage behavior improvements in other contexts.

Roadblock 1.3. *"I identified the trigger for the problem behavior and applied an intervention, but the student is still misbehaving."* Sometimes problem behaviors persist following careful selection and implementation of an intervention.

Suggested Approach. First, it is important to be sure that the intervention has been given enough time to work. As a general rule, teachers should stick with an intervention for about a month or more to adequately assess its effect on problem behavior. It is not uncommon for teachers to observe a rebound effect, the worsening of behavior problems following an initial decrease, so patience and persistence are important. It also is important to remember that a single problem behavior may stem from multiple triggers, so sometimes a succession of changes in classroom conditions is required to remedy one problem behavior. Thus, we suggest that teachers continue to collect data and observe any recurrences of a problem behavior after an initial intervention has been implemented, identify antecedents and consequences, and assess if there might be another explanation for the behavior. With this additional information, teachers can try another approach that responds to the function of the misbehavior and continue to collect data to assess the effectiveness of the intervention.

Roadblock 1.4. *"The problem isn't in my classroom—it travels into my classroom from the playground."* Some teachers recognize that disruptions outside the classroom can carry over and disrupt learning within it, but they are unsure how to deal with it or do not feel it is their responsibility to correct such problems.

Suggested Approach. To maintain positive behaviors in the classroom, we recommend that teachers agree together to invest time and attention in monitoring behaviors that ensue throughout the school (see recommendation 5). By stepping out of the classroom and observing lunchtime or recess activities, teachers can identify where behavior problems tend to erupt, the antecedents and consequences of those problem behaviors, and where increased adult supervision or behavioral interventions may be warranted to improve the situation. Brief but regular conversations between general education teachers and other staff (for example, lunchroom and recess aides, P.E. teachers, and music teachers) can bridge support systems responsible for supervising students' behavior inside and outside the classroom. Teachers also can inform students that their behavior will continue to be monitored outside the classroom and that in-class rewards and consequences will be administered accordingly.

In addition, to calm and focus students after they reenter the classroom from an outside activity or class, teachers can implement a brief cool down period before beginning a lesson. The structure and duration of the cool down can be adjusted to the students' developmental levels. For example, younger elementary students could be expected to refocus their attention after the conclusion of a song; older elementary students may need just a 10-second countdown before proceeding with instruction.

Recommendation 2. Modify the classroom learning environment to decrease problem behavior

Many effective classroom-focused interventions to decrease students' problematic behavior alter or remove factors that trigger them. These triggers can result from a mismatch between the classroom setting or academic demands and students' strengths, preferences, or skills.[18] Teachers can reduce the occurrence of inappropriate behavior by revisiting and reinforcing classroom behavior expectations; rearranging the classroom environment, schedule, or learning activities to meet students' needs; and/or individually adapting instruction to promote high rates of student engagement and on-task behavior.

Level of evidence: Strong

The panel rated the level of evidence for this recommendation as *strong*. This recommendation reflects best practices in elementary classroom management and pedagogy, as defined and articulated by experts in the field since the early 1970s.[19] Research across decades has demonstrated that consistent implementation and reinforcement of well defined classroom rules is associated with positive student behavior in both the classroom and other school settings, such as the playground and hallways.[20] More recently, three randomized controlled trials,[21] one quasi-experimental design,[22] and six single-subject research studies[23] demonstrate empirical support for (1) preventative classroom management, with particular emphasis on teachers' attention to specific environmental variables that evoke problem behaviors;[24] and for (2) direct and differentiated instructional strategies to increase student engagement and decrease problem behaviors.[25]

Brief summary of evidence to support the recommendation

Research demonstrates that teachers who proactively decrease problem behaviors implement classroom management approaches that:

- Establish an orderly and positive classroom environment by teaching and reinforcing rules and routines.

18. Kern and Clemens (2007) provide a rationale for the use of antecedent strategies that focus on structuring the classroom environment to prevent behavior problems and enhance student motivation.

19. For example, Axelrod and Mathews (2003); Bear (1998); Brophy (1983); Doyle (1992); Evertson et al. (2006); Evertson and Harris (1995); Good and Brophy (2003); Hall and Hall (1998–2004); Kellam (1999); Kounin (1970); Walker (1995); Walker, Colvin, and Ramsey (1995).

20. For example, see reviews by Kern and Clemens (2007); Sugai and Horner (2002); Sugai, Horner, and Gresham (2001).

21. Evertson (1989); Ialongo et al. (2001); Ialongo et al. (1999).

22. Heller and Fantuzzo (1993).

23. Dunlap et al. (1994); DuPaul et al. (1998); Kern, Bambara, and Fogt (2002); Kern et al. (1994); Kern, Mantegna, et al. (2001); Nelson, Johnson, and Marchand-Martella (1996).

24. Dunlap et al. (1994); Evertson (1989); Ialongo et al. (2001); Ialongo et al. (1999); Kern, Bambara, and Fogt (2002); Kern et al. (1994); Kern, Mantegna, et al. (2001). For relevant research reviews, see Davis et al. (2004); Kern and Clemens (2007).

25. DuPaul et al. (1998); Heller and Fantuzzo (1993); Nelson, Johnson, and Marchand-Martella (1996).

- Reinforce the appropriate behavior of individuals and groups of students.
- Practice instructional principles that incorporate presentation of new materials with modeling and practice.
- Offer a variety of activities and materials at a pace and level of difficulty appropriate to the range of student abilities in the class.
- Encourage collaborative peer support (peer tutoring) as an instructional strategy.

Three randomized controlled trials[26] and one single-subject study[27] have demonstrated that group contingency programs—where teachers clearly specify behavioral goals and their students work in teams to maintain appropriate behavior—are effective in both preventing and then intervening with behavior problems when implemented in well managed classrooms. Significant benefits of group contingency programs[28] modeled after the *Good Behavior Game*[29] have been shown across grade levels and settings, for different target behaviors (for example, shyness and aggression), and both immediately and five years after the intervention with hundreds of students.

In addition, two randomized controlled trials evaluated the effectiveness of training teachers to use comprehensive classroom management approaches with the goals of reducing students' time off task (the *Classroom Organization and Management Program*) and disruptive behaviors in the classroom (the *Incredible Years Training for Teachers Series*).[30] Participants in both programs were trained to create and maintain well-organized classrooms and to use the instructional and skill-building strategies as prescribed. Only the investigators examining the *Classroom Organization and Management Program* were able to demonstrate that students significantly increased their task engagement and reduced their inappropriate behavior as a result of their teachers' participation in the training.[31]

Studies examining direct instruction practices in a single-subject alternating treatment design suggest that lessons delivered in small steps, at the appropriate level of difficulty, and with ample opportunities for practice result in higher levels of on-task behavior and student engagement.[32] Single-subject research data also support the practice of increasing the number of opportunities that students have to respond to academic or social prompts, thereby increasing academic engaged time

26. Dolan et al. (1993); Ialongo et al. (2001); Ialongo et al. (1999).

27. Lohrmann and Talerico (2004).

28. Teachers use contingency programs when they apply techniques to reinforce appropriate behavior to the class as a whole in order to benefit from students' peer support in enhancing the behavior of an individual or group of students. For example, teachers can divide the class into teams, reward teams with checkmarks when they display appropriate behavior during an activity, and allow the winning team with the most checkmarks a special reward, such as extra computer time.

29. Barrish, Saunders, and Wolf (1969). The *Good Behavior Game* manual is available at: http://www.jhsph.edu/prevention/Publications/gbg.pdf.

30. Evertson (1989); Webster-Stratton, Reid, and Hammond (2004).

31. Evertson (1989). In the study of the *Incredible Years Training for Teachers Series* (Webster-Stratton, Reid, and Hammond 2004), the authors reported statistically significant reductions in conduct problems after 6 months. However, when WWC reviewers applied a multiple comparison adjustment to the analyses, the findings showed no statistically significant differences between the outcomes of the intervention and comparison students.

32. Nelson et al. (1996). See relevant research reviews by Adams and Engelmann (1996); Rivera, Al-Otaiba, and Koorland (2006); Rosenshine and Stevens (1986).

and fluency with the material and reducing inappropriate behavior.[33]

A series of four single-subject research studies also have demonstrated the effectiveness of increasing opportunities for student choice as an intervention that decreases inappropriate behaviors. Choice can be embedded in academic tasks in various ways, including by offering students a choice of the specific task to complete,[34] materials to use,[35] and the sequence of activities to tackle.[36]

Finally, one randomized controlled trial and one single-subject study have demonstrated the effectiveness of structured classwide peer tutoring programs, such as the *Peer Assisted Learning Strategies*, for improving the classroom behavior of students with behavior problems.[37] Peer tutoring, where students work in pairs as a tutor and tutee, has been shown to improve students' academic engagement and learning, help students develop cooperative work habits, increase positive social interactions among students, and reduce off-task behaviors.

How to carry out the recommendation

1. Revisit, re-practice, and reinforce classroom behavioral expectations.

Teachers should actively teach expectations for appropriate student behavior and corresponding classroom routines to students at the beginning of the year and revisit them regularly, showing students clearly what to do and what not to do.[38] A key assumption underlying the panel's recommendation is that consistently implementing and reinforcing well defined classroom rules and expectations will result in positive student behavior in both the classroom and in other key school settings, such as the playground and hallways.[39] Expectations should be conveyed daily through explicit teaching strategies, modeling positive behavior, and building positive relationships among students and adults. Students need concrete, positively-stated guidelines on how to conduct themselves in a variety of situations, including:

- Arriving at and leaving the classroom.
- Distributing materials and turning in assignments.
- Requesting help from the teacher.
- Transitioning to new activities or settings.
- Experiencing interruptions in routines, such as fire drills or substitute teachers.
- Working independently and in groups.
- Returning from recess or another class (art, music, or P.E.).

We recommend that teachers provide students with ample time to learn each step in

33. Sutherland, Alder, and Gunter (2003).

34. Dunlap et al. (1994); Kern, Bambara, and Fogt (2002).

35. Kern et al. (1994).

36. Kern, Mantegna, et al. (2001).

37. Heller and Fantuzzo (1993); DuPaul et al. (1998). For reviews of relevant research, see Rivera et al. (2006); Ryan, Reid, and Epstein (2004). For information about Peer Assisted Learning Strategies (PALS), see Fuchs et al. (2008); http://kc.vanderbilt.edu/pals/.

38. Sugai and Horner (2002) provide helpful guidelines in establishing a small set of positively-stated classwide rules. One important principle to keep in mind is that classroom rules should align with and support schoolwide rules, as described more fully in recommendation 5.

39. For example, see reviews by Kern and Clemens (2007); Sugai and Horner (2002); Sugai et al. (2001).

the desired routine and to practice them, with more time and practice provided to younger elementary students who are new to learning how to behave in a school environment and among peers. In fact, for students in the primary grades teachers should consider practicing behavioral expectations daily for the first few weeks of school, and then reserving at least brief (about 10 minutes) instructional and practice periods in their weekly class schedule or as needed, such as when new expectations arise or students lapse into inappropriate behaviors. Younger elementary students also can benefit from constant visual reminders, such as pictures that are enlarged and posted in the classroom of students exhibiting expected behaviors (for example, sitting at their desk, cleaning a learning center, or lining up for recess). Older elementary school students might also need reminders about behavioral expectations, particularly after vacations. Taking time at the beginning of the school year and revisiting expectations regularly will develop students' ownership of a positive classroom environment.

Teachers who start the school year with well-ordered classrooms might still find occasions when students need behavioral expectations to be reestablished.

Consider this example:

Mr. Boyle has been frustrated with his 4th grade students' behavior since returning from winter break. More and more students have become loud and distracting during whole-class lessons. When working with small groups, he is interrupted by students wanting help on their individual assignments. Other students wander around the room, talk with their seat mates, and make little progress on their own work.

The class may benefit from Mr. Boyle restating and posting instructions and expectations for behavior during group and individual assignments and providing additional practice and praise for expected behaviors while withholding reinforcers for inappropriate behaviors. Mr. Boyle also can consider implementing individual contingencies (for example a token system where individual students who follow a specific expectation earn points or tokens that can be exchanged for a reward of choice, such as a preferred activity) or group contingencies (where rewards are contingent on individual student behavior or the behavior displayed by the whole class) to increase student motivation and compliance with classroom rules and routines.

Research has demonstrated the effectiveness of group contingency programs for both preventing and intervening with behavior problems.[40] When students know and master classroom behavioral expectations, we recommend that teachers gradually reduce prompts for appropriate behavior and allow routines to be initiated by normal events (the bell ringing).[41] Similarly, artificial rewards, such as tokens, gradually can be replaced by other forms of reinforcement and natural consequences, such as allowing students who clean up quickly to use their extra time to do a preferred activity.

2. Modify the classroom environment to encourage instructional momentum.

For persistent behavior problems we recommend that teachers identify and modify specific environmental variables that precede problem behavior, such as the classroom layout, agenda, procedures and routines, and teaching strategies, so that the classroom environment no longer contributes to problem behaviors.

40. For example, Barrish et al. (1969); Dolan et al. (1993); Ialongo et al. (2001); Ialongo et al. (1999); Lannie and McCurdy (2007); Lohrmann and Talerico (2004).

41. Harvey et al. (2003); Lewis et al. (2004).

We recommend that teachers revisit their daily lesson plans and schedule and ask themselves, for example:

- *Do I schedule the most academically demanding activities during the times of day when most students' engagement is high?* Teachers also should consider scheduling preferred activities after rigorous lessons to increase students' incentive to participate (for example, conducting math lessons before recess).

- *Is my teaching strategy appropriate for the lesson?* Teachers should consider using multiple strategies (for example, whole-class, small-group, and individual-work formats) in various locations in the classroom (for example, at desks, on the floor, in group settings, and in learning centers) to keep students engaged in learning tasks.

- *Is the length and pacing of my lesson suited to my students' developmental abilities?* Many experienced teachers have observed that younger elementary students have a limited attention span—perhaps no more than 10 or 15 minutes, depending on their developmental level—and so they frequently switch activities and incorporate movement into their lessons to keep younger students engaged in learning tasks.

- *Do I offer my students choices in how they participate in learning activities?* Because students' engagement often increases and disruption decreases when they are offered choices in their lessons,[42] we recommend that teachers occasionally provide students with options in how they participate in learning tasks. This does not mean students get to choose everything they want to do, but teachers can incorporate some choice when options are negotiable, such as the order or number of activities, the choice of materials to use, alternative ways to demonstrate mastery (for example, writing a poem or story), or the structure of the task (such as working with a partner or independently).

- *Do I manage transitions quickly and efficiently?* In many classrooms a significant proportion of class time (about 25 percent, on average) is spent on transitional activities such as gathering and putting away materials, listening to nonacademic directions, and waiting for help or for the next activity to begin, resulting in a large loss to academic engaged time.[43] To minimize this loss of instructional momentum, we recommend that teachers prepare carefully for transitions by warning students about the close of one activity and the opening of another, providing brief but clear directions, having materials immediately available, actively monitoring and reinforcing appropriate student behavior, and beginning the new activity quickly and with a high degree of enthusiasm.

We recommend that teachers also reconsider the arrangement of the classroom to promote a smooth rhythm and traffic flow that avoids areas getting congested or going unsupervised. For primary elementary classrooms teachers might need to define the appointed activity spaces in the classroom, such as by putting carpet squares or signs in places where the children are expected to sit during group activities. In all grades teachers may need to designate certain shelf areas for putting away specific materials or for turning in work. Seating plans can be designed to support different student interactions (such as small groups and whole-class) and

42. Dunlap et al. (1994); Kern et al. (1994); Kern, Mantegna, et al. (2001).

43. Doyle (1986); Rosenshine (1980).

access to instructional materials, while providing the teacher with enough room to move freely about the classroom and monitor student engagement. The desks of students with frequent problem behaviors can be positioned where there is less traffic and distraction and greater access to the teacher and work materials.

3. Adapt or vary instructional strategies to increase opportunities for academic success and engagement.

Research shows that when there is a mismatch between a student's ability level and the difficulty or length of an academic task, inappropriate behavior is more frequent.[44] If teachers observe that a recurring problem behavior is exhibited primarily during academic activities, we recommend that teachers identify the specific aspects of the task that challenge or frustrate the student and accommodate their instruction to the student's abilities and rate of learning.

Most teachers understand that to tailor instruction to students' needs, they must provide students with academic tasks that are neither too difficult nor too easy. To gauge students' level of learning and increase their academic engagement, teachers can pose frequent questions at a level most students can succeed in answering and intersperse more complex tasks.[45] Guidelines for teaching students with behavioral difficulties recommend that teachers elicit four to six responses per minute from students during the presentation of new material, with a target of 80 percent accuracy in the students' answers; the number of responses doubles, with a target of 90 percent accuracy, during practice drills.[46] Students' on-task behaviors increase when they experience more opportunities for academic success, for example answering questions correctly. In contrast, their disruptive behaviors increase when they are faced with queries that are too difficult.[47]

Researchers also have found that instruction delivered at a brisk pace contributes to higher levels of on-task behavior and student engagement, as does instruction that incorporates presentation of new materials with modeling, guided practice, and student independent practice.[48] Teachers might also use differentiated instructional strategies to reach all students at their particular academic and behavioral levels of performance by varying their materials, processes, and assessment strategies. For example, materials selected for a language arts lesson could include nonfiction and fiction at a variety of reading levels, video clips, and newspaper or magazine articles. Teachers might work with the whole class, small groups, individual students, or a combination of formats. Finally, teachers could allow students to choose between various options, such as a written essay, an oral presentation, or an art project, to demonstrate their mastery of the content.[49]

Peer tutoring also has been demonstrated to be effective in promoting appropriate behavior as well as academic gains.[50] Students work in pairs as a tutor and tutee or in groups where each student takes a

44. For example, Davis et al. (2004); Kern et al. (2001); Lee, Sugai, and Horner (1999); Umbreit, Lane, and Dejud (2004).

45. Adams and Engelman (1996); Cotton (1989); Council for Exceptional Children (1987); Davis et al. (2004); Engelmann and Carnine (1983); Slavin (1994); Sutherland et al. (2003); Sutherland and Wehby (2001).

46. Council for Exceptional Children (1987).

47. Lee et al. (1999).

48. Adams and Engelmann (1996); Nelson et al. (1996).

49. For an overview on the classroom practice of differentiated instruction, see Hall (2002).

50. DuPaul et al. (1998); Fuchs et al. (2002); Heller and Fantuzzo (1993); Spencer (2006).

turn being the tutor. The goals of this approach are to improve academic learning, develop cooperative work habits, and increase positive social interactions among students. Often, students need to be taught the social and communication skills that will make the peer-assisted learning experience more productive and positive (see recommendation 3).

Potential roadblocks and solutions

Roadblock 2.1. *"I just don't have the time to rethink my classroom practices."* Most teachers have tried-and-true methods of classroom management and instruction, and their busy schedules are a disincentive for learning and practicing new strategies that might benefit a few students with problem behaviors.

Suggested Approach. We recommend that teachers first concentrate on making just one strategic change in one setting and assessing the benefit and success of the strategy before moving on to other potentially beneficial changes. For example, a teacher could make a concerted effort to reduce transition time by picking the point in the daily schedule when a significant amount of instructional time is lost. After teaching, practicing, and reinforcing students' efficient transition to the next activity and keeping track of the time it takes the class to get ready each day, the teacher can systematically reward improvements (perhaps through a group contingency program) and assess gains made in instructional time. Teachers also may find that students can easily apply their new routines to other transition periods, reducing instructional time lost in other subjects and at other times of the day.

Roadblock 2.2. *"Making changes now to my schedule or classroom routines will just make things worse."* Some teachers are reluctant to make adjustments to their established and predictable routines, fearing that the changes will result in increased disruption.

Suggested Approach. It is true that a change in routine may result in an increase in disruption for a short time, but the time used to practice and re-practice effective routines will likely increase the quantity and quality of the classroom instructional time. Teachers also can prepare students before implementing any change in routines to minimize the disruption. For example, teachers can discuss with their students any challenges posed by ineffective routines, engage them in decision-making about adjustments, and actively teach, practice, and reinforce the new behavioral expectations. To reinforce the new routines further, students who demonstrate mastery could model the new routines for their classmates as a reward for their appropriate behavior.

Recommendation 3. Teach and reinforce new skills to increase appropriate behavior and preserve a positive classroom climate

We recommend that teachers actively teach students socially- and behaviorally-appropriate skills to replace problem behaviors using strategies focused on both individual students and the whole classroom. In doing so, teachers help students with behavior problems learn how, when, and where to use these new skills; increase the opportunities that the students have to exhibit appropriate behaviors; preserve a positive classroom climate; and manage consequences to reinforce students' display of positive "replacement" behaviors and adaptive skills.

Level of evidence: Strong

The panel rated the level of evidence for this recommendation as *strong*. This recommendation is based on five randomized controlled trials[51] and three single-subject research studies[52] examining the effectiveness of teaching and reinforcing new appropriate behaviors and skills to students with problem behaviors. These studies have shown success in teaching students replacement behaviors (such as appropriate attention-seeking, social skills, problem-solving, and self-management strategies) and, as a result, in reducing inappropriate behaviors such as disruption and aggression. Furthermore, studies that span almost half a century demonstrate that positive reinforcement is associated with initial and long-term academic benefits and with increases in the frequency of appropriate behaviors among general education students.[53]

Brief summary of evidence to support the recommendation

Studies of classroom-based interventions for students with behavior problems have focused on enhancing skills, such as appropriate attention-seeking, social skills, problem-solving, and self-management strategies. One randomized controlled trial[54] and two single-subject research studies[55] have demonstrated that reductions in inappropriate behaviors, such as disruption and aggression, and increases in academic engagement are associated with skill-building instruction and reinforcement of positive behavior.

In addition, four randomized controlled trials[56] and one single-subject study[57] have demonstrated the effectiveness of specific classroom-based early interventions across dozens of schools and with hundreds of students (using the *First Step to Success*, *Promoting Alternative THinking Strategies*, and *Second Step* intervention programs). These programs are designed to reduce antisocial behaviors among elementary school students by modeling and teaching appropriate replacement skills and behaviors and rewarding students when those behaviors are exhibited. Results of the interventions demonstrated

51. Conduct Problems Prevention Research Group (1999); Daunic et al. (2006); Frey et al. (2005); Grossman et al. (1997); Walker et al. (1998).

52. Beard and Sugai (2004); Peterson et al. (2006); Todd, Horner, and Sugai (1999).

53. For example, Akin-Little et al. (2004); Cameron, Banko, and Pierce (2001); Hall, Lund, and Jackson (1968); Hall et al. (1968).

54. Daunic et al. (2006).

55. Peterson et al. (2006); Todd et al. (1999).

56. Conduct Problems Prevention Research Group (1999); Frey et al. (2005); Grossman et al. (1997); Walker et al. (1998).

57. Beard and Sugai (2004).

increases in students' adaptive and on-task behaviors and decreases in maladaptive behaviors, such as disruption and aggression.

One limitation to this body of research is that many studies have examined the collective effects of multiple components of comprehensive intervention packages, making it methodologically difficult to determine the effects of their specific components, such as parent involvement modules, teacher-delivered curriculum, and student skill-building modules.

Yet one consistent approach in these classroom-based studies is the use of positive reinforcement to encourage students' appropriate behaviors and academic engagement. As early as the 1960s, researchers demonstrated that positive reinforcement was associated with increased task engagement and reduced disruptive (or "dawdling") behavior of students in general education classrooms.[58] Since then, however, the use of rewards in education has been veiled in some controversy, primarily due to a perceived negative effect on student's intrinsic motivation.[59] The concerns are based on studies conducted since the 1970s, leading some researchers and educators to warn against the use of praise and extrinsic rewards in schools (for example, a concern that "token economies will produce token learners").[60]

To address these concerns, a number of researchers have examined the full body of empirical studies on positive reinforcement to determine overarching findings. The results from two meta-analyses concluded that little or no detrimental effect was found with the use of external reinforcers in educational settings; in fact, rewards following and linked to appropriate behavior were related to both initial and long-term academic engagement and social benefits.[61]

How to carry out the recommendation

1. Identify where the student needs explicit instruction for appropriate behavior.

Behavior problems may indicate that students do not know what behavior is expected (see recommendation 2 for a discussion about setting explicit behavioral expectations) or that they lack the skills needed to exhibit the desired behavior. Teachers often assume that students can perform a particular behavior, but research shows that many children with behavior problems have poor social skills, especially the ability to read social situations and conform to group norms for appropriate behavior.[62] This inability to respond appropriately in social situations can lead to further disruptive and aggressive behaviors.

Before assuming that a student is knowingly misbehaving, a teacher should discern whether the student has the skills and the knowledge to behave appropriately. To assess whether a student has the requisite skills for proper behavior, we recommend that teachers observe carefully whether there are any circumstances where the student can perform the behavioral skill at a level of success commensurate with his peers, and whether

58. For example, Hall, Lund, and Jackson (1968); Hall et al. (1968).

59. Intrinsic motivation refers to motivation that comes from inside an individual student (the enjoyment a student gets from the task itself or from the sense of satisfaction in completing or even working on a task), rather than from any external or outside rewards (tokens or grades).

60. For example, Deci (1971); Deci, Koestner, and Ryan (1999); Kohn (1993).

61. Akin-Little et al. (2004); Cameron et al. (2001).

62. Kerr and Nelson (1989); Merrell et al. (1992); Newman et al. (2003).

the student knows when and where the behavior is appropriate.

Another efficient way to assess a student's ability to perform academic or social skills adequately is to employ a self-monitoring strategy. Self-monitoring is a process in which students assess and record their own behavior to help them become more aware of and able to maintain appropriate behavior.[63] Teachers can use a checklist of questions to guide students in the assessment of their social and academic behaviors (Did I get started on time? Am I following directions? Am I working quietly on my assignment? Did I ask for help the right way? Did I turn in my completed work?). With this information teachers can discuss with students when and where the appropriate behaviors are expected, whether they know how to perform the behaviors, and to what extent they are successfully meeting those expectations on a regular basis.

2. Teach skills by providing examples, practice, and feedback.

If students lack the skills to behave appropriately, teachers can help them acquire the skills by providing instruction and reinforcement of new, appropriate replacement behaviors. The replacement behaviors should be just as likely to produce the same consequences sought by the student, such as teacher or peer attention, but less effortful and more socially acceptable than the problem behavior.[64] For example, teachers can help students acquire new skills by teaching them how and when to:

- Gain attention from the teacher or their peers appropriately and respectfully.
- Share, communicate, cooperate, and problem solve in group settings.
- Self-manage their social behavior and completion of academic tasks.
- Develop emotional awareness, responsibility, and self regulation (for example, how to cool down in an anger-provoking situation, or how to tolerate delays in getting help).

Instructional strategies that can help students apply and maintain their new behavioral skills in different environments and settings are similar to effective academic instructional strategies, and include:

- Explaining the appropriate behavior so that students develop a thorough understanding of school norms.
- Breaking each behavioral skill down into concrete, teachable steps.
- Modeling the skill and providing a variety of examples of its appropriate use (for example, observing other students demonstrating the behavior or reading books with messages about the target behavior).
- Offering opportunities for guided and independent practice and role playing.
- Prompting and cuing the student about the use of the behavioral skill.
- Giving specific feedback about the student's skill performance, being sure to praise successful approximations of the skill and to encourage complete mastery.
- Diminishing gradually the external prompts and rewards for displaying the skill.
- Reinforcing the use of the behavioral skills over time.[65]

63. Mace, Belfiore, and Hutchinson (2001).

64. Lewis et al. (1997).

65. McGinnis and Goldstein (1997).

Consider this example:

A number of students erupted into misbehavior (arguing and pushing each other) when they vied for positions at the computer learning center, causing a classwide disruption. The teacher reminded the students of positive behavioral expectations in the classroom, including the importance of turn taking, but as often happened in class, the students continued to be frustrated with waiting for their turns. After lunch the teacher decided to use the incident that occurred earlier that day to teach her students the appropriate skills needed to wait before doing something they desired. First, the teacher explained why turn-taking was important in the classroom, providing examples of when taking turns benefited students. Then, the teacher asked the group to think of other situations when they were asked to wait for their turn (for example, on the playground), what they did during the waiting period, and what they observed other students doing while they waited. She discussed with the students appropriate ways to ask for a turn, other options for using their time in the classroom, and how to respond to students taking their turn at the computer in a friendly and patient way. The students took turns role-playing, showing the different ways they could politely ask for a turn and use the time in productive ways. For the next month the teacher prompted the students when appropriate turn taking skills needed to be used, and recognized and responded positively when students displayed the appropriate behaviors inside and outside the classroom.

3. Manage consequences so that reinforcers are provided for appropriate behavior and withheld for inappropriate behavior.

Research has long demonstrated that a behavior will increase if it is followed by positive reinforcers, and it will decrease if it is followed by negative consequences or removal of rewarding consequences.[66] Optimally, we recommend that teachers apply this principle by redirecting inappropriate behaviors toward more appropriate behaviors. Unfortunately, it is easy to inadvertently reward inappropriate behavior by attending to it—even a reprimand can be rewarding for students who act out to gain the teacher's attention.[67]

Provide positive reinforcers for appropriate behavior. Many of the practices underlying the panel's recommendation are based on the principle that positive interactions between teachers and students increase students' social skills, emotional regulation, motivation, engagement, and abidance to classroom rules and expectations. Negative interactions between teachers and students, however, increase students' risk for school failure.[68] Teachers can foster positive relationships by engaging in socially positive and academically productive interactions with all students, especially those who exhibit problematic behavior.

One way to foster positive interactions is to increase the frequency with which students are recognized and reinforced for appropriate behavior. The amount of praise that students receive for appropriate behavior should substantially exceed the amount that they are reprimanded. In fact, a review of research shows that a ratio of about four positive statements for every one corrective statement can improve students' academic and behavioral outcomes.[69] Therefore, we recommend that teachers monitor the amount and consistency of their praise and acknowledgement of appropriate behavior

66. Skinner (1953).

67. Horner and Spaulding (in press); Maag (1999).

68. Greenberg et al. (2003); Hamre and Pianta (2005); Pianta et al. (2002); Solomon et al. (1992); Zins et al. (2004).

69. Cameron and Pierce (1994).

in the classroom. If teachers' reprimands outweigh their praise, they should consider altering their classroom management practices, such as providing students with more opportunities to learn, practice, and internalize classroom rules and routines (see recommendation 2).[70]

Research shows that rewards (such as approval, praise, recognition, special privileges, points, or other reinforcers built into the classroom management plan) are most effective in encouraging students' appropriate behavior when teachers follow simple guidelines:

- Use small rewards frequently, rather than large rewards infrequently.
- Deliver rewards quickly after the desired behavior is exhibited.
- Reward behavior, not the individual, and communicate to students the specific behavior that led to the reward (for example, "Because you've been doing so well working independently for 15 minutes, you get to take a short break and take these books back to the library for me.").
- Use several different kinds of rewards selected carefully to ensure that they are reinforcing students (for example, allow students to go on errands or to the water fountain down the hall; provide 10 minutes for students to read a book for pleasure, work on the computer, or draw a picture for display).
- Gradually begin to reduce and then eliminate rewards.[71]

It may be necessary—at least initially, and especially with the youngest elementary school students—to reinforce appropriate behaviors with some type of extrinsic reward, such as stickers, stamps on a chart, tokens in a jar, or extra time for preferred activities. Teachers also can provide rewards and privileges that support students' learning of academic, social, and self-monitoring skills, such as having additional free-reading or computer-center time, playing a game or video, or taking on classroom helper roles. Gradually, extrinsic rewards should be faded[72] or replaced with more intrinsic, naturally-occurring reinforcements that come from positive academic and behavioral experiences, such as feeling satisfaction and pride in the work produced, enjoying working in a team and gaining friendships, and having fun while learning.

Withhold reinforcers for inappropriate behavior. Instead of drawing attention to misbehavior, we recommend that teachers try to make problem behaviors ineffective for the student by systematically withholding or preventing access to reinforcing consequences. For example, if the student's problem behavior is reinforced by avoiding a task, the teacher should not dismiss the student from the activity but rather make adjustments to the setting or curricular variables to help the student achieve success. Similarly, if a student's disruptive behavior is reinforced by attention, then attention from peers and the teacher—even negative attention, such as reprimands—should be withheld when the behavior occurs again.

This is not to say that negative consequences for serious misbehavior are never warranted. Teachers should respond swiftly to serious problem behaviors,

70. Evertson et al. (2006).

71. Akin-Little et al. (2004); Brophy (1981); Cameron and Pierce (1994).

72. Fading of rewards can entail moving from a continuous schedule of reinforcement to a more variable or differential schedule of reinforcement—meaning that the reinforcement is provided less often or only during certain situations.

such as defiance, with appropriate consequences that are clearly understood by the students involved. We recommend that teachers adopt an overall positive and problem-solving approach, however, because harsh or punitive discipline is not effective in increasing the likelihood of appropriate behavior and tends to elicit student resentment and resistance.[73] Teachers who can successfully prevent disengagement and de-escalate confrontations:

- Provide brief and specific instruction in a calm voice that redirects student focus without excessive use of other verbalizations. ***Example:*** *Rather than saying, "Carl, stop talking to Stella unless you are discussing today's assignment. Besides, you are only supposed to be talking if you've finished all your work," say, "Carl, complete your work, and then you are free to talk quietly with your neighbor."*

- Present the noncompliant student with positive options and give the student a reasonable amount of time to respond (at least 10 seconds). ***Example:*** *Suggest, "You can either get back to work with the group, or you can work independently at your desk. I'll give you some time to think about your choices."*

- Approach disengaged students promptly, fairly, and privately to prevent a power struggle and any negative impacts on student learning and the classroom environment. ***Example:*** *Offer, "If you need some time to yourself, you can sit quietly without disturbing other students. Let me know if you need some help completing the assignment or have questions."*

- Use the display of a problem behavior as a teachable moment, showing the student how to label the emotion, clarify behavioral expectations, and correct her mistake. ***Example:*** *Emphasize, "It is OK to be angry, but it is not OK to call people names. Let's talk about what we do when we are frustrated and need help with an assignment."*

- Match the severity of the consequences with the severity of the behavior violation. ***Example:*** *For minor infractions, verbal redirects or warnings should be sufficient. For the most serious offenses, teachers should align disciplinary actions with the school's or district's discipline plan.*[74]

The following example illustrates a teacher's strategies to focus on the explicit instruction of new skills, the careful management of consequences, and the building of positive relationships with one of his students who exhibited behavioral challenges.

Hector received discipline referrals for disruptive and defiant behavior in the classroom and for his use of inappropriate language on the playground. The teacher observed Hector for several days and came to the conclusion that Hector's misbehaviors resulted from difficulty with social skills and self-control, and were maintained by adult and peer attention. He decided to help Hector build his social skills for gaining attention appropriately and to reinforce Hector for appropriate behavior in the classroom and on the playground. The teacher worked on building a closer teacher-student relationship with Hector, talking to him about things in which he showed an interest. At the same time, Hector's classmates were instructed to ignore

73. Learning First Alliance (2001); Sugai et al. (2001).

74. These examples are adapted from a number of resources that describe prevention and de-escalation strategies in the classroom: for example, Colvin (2004); Colvin, Ainge, and Nelson (1997); Colvin and Sugai (1989); Nelson (1996b); Walker (1995); Walker et al. (1995); Walker, Ramsey, and Gresham (2004).

his inappropriate language and to reinforce his polite and respectful behavior.

After a week or two Hector advanced to monitoring his own behavior by asking himself questions from a checklist he developed with the teacher. Each week the teacher met with Hector to review his progress and recognize his accomplishments with verbal praise and rewards, and he sent a positive note home about Hector's improvements inside and outside class.

Potential roadblocks and solutions

Roadblock 3.1. *"Teaching appropriate behavior is beyond my responsibilities as a teacher."* Some teachers see their primary responsibility as teaching academics, and they are reluctant to dedicate time and effort to teaching students appropriate behavior such as social skills.

Suggested Approach. Appropriate behavior in the classroom is learned and adapted by students' experiences, just as appropriate behavior at home—and across all settings for that matter—is learned and influenced by cognitive, behavioral, and environmental factors.[75] Teachers play a critical role in helping students learn school-based social skills and behaviors. But rather than dedicating additional time solely to the teaching of social and behavioral skills, we recommend that teachers integrate behavioral and social skill-building into their curriculum. Teachers can review their lesson plans and instructional formats to identify when social skills are prerequisites for students to engage successfully in the curriculum. If a teacher is planning a science project in which students must work in small groups and share materials, for instance, the teacher may determine that students need a number of group social skills, such as how to listen, follow directions, ask questions, share materials, provide feedback, and be courteous. Before breaking into small groups, the teacher can communicate the skills to students in concrete terms, model the skills, provide practice time and feedback, and pair these skills with directions for the science activity. Seen as part of the curriculum, social skills can support student learning without adding to teachers' responsibilities.

Roadblock 3.2. *"Too much praise and attention is harmful to students."* Some teachers fear that providing their students with extrinsic rewards will undermine students' motivation to learn and succeed without rewards.

Suggested Approach. Some researchers have cautioned that rewards that are expected, tangible, and not related to performance can erode students' engagement in learning by encouraging them to work solely to earn the reward.[76] Not all rewards have this effect, however. Research has demonstrated that positive reinforcement that is tied to student competence can increase the likelihood of appropriate classroom behavior and academic achievement without undermining students' intrinsic motivation.[77] When teachers use positive reinforcers such as praise, rewards, and privileges, and communicate a positive attitude to their students, they lay the foundation for students to try hard and reach new goals. Therefore, we recommend that teachers reward students with behavior-specific praise; use positive reinforcers to encourage student achievement, effort, and motivation; convey honest feedback to students about the quality of their work and effort; and gradually fade extrinsic rewards when students display mastery.[78] As teachers use these strategies and as

75. Bandura (1977).

76. Akin-Little et al. (2004); Deci et al. (1999).

77. Akin-Little et al. (2004); Cameron et al. (2001); Morgan (1984); Reiss (2005); Schunk (1983)

78. Brophy (1981).

students develop maturity, fewer extrinsic motivators will be needed. Many experienced teachers have found that as students become more internally motivated, their behavior issues diminish and their academic competence strengthens.

Recommendation 4. Draw on relationships with professional colleagues and students' families for continued guidance and support

Social relationships and collaborative opportunities can play a critical role in supporting teachers in managing disruptive behavior in their classrooms. We recommend that teachers draw on these relationships in finding ways to address the behavior problems of individual students and consider parents, school personnel, and behavioral experts as allies who can provide new insights, strategies, and support.

Level of evidence: Moderate

The panel rated the level of evidence supporting this recommendation as *moderate*. One quasi-experimental study[79] and one single-subject study[80] examined the effects of peer teacher relationships in improving social relationships among students or increasing student engagement in the classroom. Additionally, one randomized controlled trial[81] confirmed the effectiveness of teachers' consulting with behavioral experts in reducing behavior problems among students who exhibit inattentive and disruptive behaviors. Finally, two randomized controlled trials[82] evaluated interventions specifically aimed at establishing positive teacher-parent relationships, with one study demonstrating decreases in problem behaviors. Although two randomized controlled trials with positive outcomes support components of recommendation 4, these studies focused on (1) teachers consulting with experts on particular problem behaviors of students identified with attention deficit/hyperactivity disorder, and (2) a specific teacher-parent education and activity program. The recommendation is further supported by one quasi-experimental and one single subject study that have moderate levels of evidence. Consequently, the panel believes that a *moderate* designation is appropriate for the overall level of evidence for this recommendation.

Brief summary of evidence to support the recommendation

Chronic or serious behavior problems in the classroom can quickly exhaust the toolkit of instructional and behavior management strategies and interventions of many teachers, particularly ones who are new to the profession. In such cases the guidance and advice of other teachers who have successfully overcome similar behavior issues can be a welcomed and effective form of support. In fact, research suggests that schools with strong, trusting peer relationships among its staff are more likely to have teachers who are willing to learn and engage in new practices,[83] which can produce gains in student outcomes.

Establishing these trusting relationships can occur through one-on-one interactions as well as participation in collaborative learning teams with other grade-level teachers and school staff. Mentors and peer coaches often encourage and support their colleagues' consideration of new educational practices and can help their colleagues by conducting informative classroom observations, suggesting innovative classroom strategies and techniques, and

79. Stevens and Slavin (1995).

80. Kohler et al. (1997).

81. Dunson, Hughes, and Jackson (1994).

82. Ialongo et al. (1999); Webster-Stratton et al. (2004).

83. Bryk and Schneider (2002).

providing an environment that enables teachers to feel comfortable and confident in trying new approaches in their classrooms.[84] Although much of the current research on mentoring and peer teacher relationships revolves around their effects on teacher-centered outcomes, such as attrition, teachers' attitudes and perceptions, and procedural changes, one single-subject study explored the impact of peer coaching on student outcomes and found it contributed to increased student engagement.[85] Another quasi-experimental study found that a restructured school program that included peer coaching significantly increased the number of students' social relationships.[86]

Team-based collaborations with grade-level teachers and other professional colleagues who are experienced in behavior management, such as school psychologists and counselors, also can provide effective support to teachers with students who exhibit behavior problems. Adult learning theories suggest that collaborative learning teams have the potential to effectively engage teachers in learning and implementing new techniques.[87] Such theories also complement empirical evidence that suggests that learning teams, whether studied independently[88] or folded into broader school reforms,[89] contribute to positive student social and behavioral outcomes.

Research indicates that consultation with experts in behavior management, such as school psychologists, can help reduce severe behavior problems. A randomized controlled trial[90] found that meetings between behavioral experts and teachers to discuss strategies to control the behaviors of hyperactive students resulted in significant improvements in the teacher's perception of their student's disruptive behavior.

Families also can be powerful allies for teachers in dealing with disruptive behaviors in their classrooms. Researchers have found that family involvement in a student's education can yield numerous positive outcomes, including improved student achievement and behavior.[91] Consequently, efforts to enhance the supportive role of family members in addressing a child's emotional and behavioral challenges often are a key component of intervention programs and school reform models.[92] One randomized controlled trial specifically examined a family-school partnership intervention aimed at improving parent-teacher communication and parental strategies for child management.[93] The findings of this study indicated that this partnership succeeded in eventually reducing problem behaviors relative to comparison students.

How to carry out the recommendation

1. Collaborate with other teachers for continued guidance and support.

The current structure and organization of most elementary schools often are not conducive to collaborative teacher

84. Annenberg Institute for School Reform (n.d.); Evertson and Smithey (2000); Joyce and Showers (1982); Knight (2004).

85. Kohler et al. (1997).

86. Stevens and Slavin (1995).

87. Imel (1991).

88. Joyce et al. (1989).

89. Stevens and Slavin (1995).

90. Dunson et al. (1994).

91. Adams and Christenson (2000); Bempechat (1998); Clark (1983); Epstein (1995); Henderson and Berla (1994); Jeynes (2005); Stright et al. (2001).

92. Battistich et al. (2000); Stevens and Slavin (1995); Webster-Stratton et al. (2004).

93. Ialongo et al. (1999).

interactions, with separate classrooms that physically isolate teachers from their peers and with demanding daily responsibilities that allow for little discretionary time.[94] As a result teachers can feel isolated, as if they are "going it alone professionally,"[95] and there might be few, if any, opportunities for experienced teachers to help their peers grow professionally.[96]

To enhance teachers' effectiveness in addressing behavioral challenges, school administrators should provide time and structures for collaborative learning teams to meet. Effective teams are relatively small, interdisciplinary groups comprised of grade-level general education teachers and—when needed—administrators, special educators, or other specialists that meet weekly or bi-weekly. An action-oriented agenda and facilitation by team leaders who skillfully guide the discussions without assuming an authoritative role promote productive meetings.[97]

The goal of these team meetings should be for teachers to generate concrete strategies that can be incorporated into their instruction and classroom management. Team meetings provide teachers with an opportunity to reflect openly on the challenges they experience in their classrooms and to receive problem-solving input from peers. In addition, these meetings enable specialists and administrators to provide teachers with guidance on some of the organizational and policy issues that influence a teacher's approach to handling behavioral challenges in the classroom. For example, teachers can use meeting times to discuss:

- Observations of a specific student's behavior problem (see recommendation 1) and ideas on several actionable steps the teacher can take to address the problem or minimize its impact on the rest of the classroom.

- Current lesson plans to determine if there are any activities or techniques that can reduce behavior problems by elevating student engagement.

- Strategies to approach parents who are difficult to engage or who react negatively to suggestions that their child has behavior problems.

- School policy issues such as bullying or removing students from the classroom. These discussions might require feedback from the school principal or another administrator who can be asked to join in on a particular team meeting or address such issues schoolwide during a teacher inservice.

During collaborative team meetings and professional development sessions, some teachers with interpersonal skills that enable them to foster collaboration and problem-solving with their grade-level and cross-grade level colleagues will begin to emerge as effective peer leaders. These peer leaders can play a particularly useful role as liaisons between teachers and administrators, facilitators of learning collaborations, classroom observers, mentors, and peer coaches.[98] School administrators should provide these peer leaders with the time and resources needed to develop and apply their mentoring and peer coaching skills to enhance other teachers' classroom management and student engagement.[99] Effective peer coaches and mentors may need training to understand how to support adult learners while providing teachers with strategies, tools, and communication skills to use in handling behavior

94. Novick (1999).

95. Darling-Hammond (1994).

96. Hoerr (1996).

97. Imel (1991).

98. Annenberg Institute for School Reform (n.d.).

99. Neufeld and Roper (2003).

challenges. By providing peer coaches and mentors with the skills to support other teachers successfully, school administrators can promote a culture of continuous learning and collaborative problem-solving that can increase students' time spent learning.

2. Build collaborative partnerships with school, district, and community behavior experts who can consult with teachers when problems are serious enough to warrant help from outside the classroom.

Behavioral consultants, who may be school personnel such as school psychologists, counselors, and resource teachers, or other behavioral specialists, can offer expertise in behavioral practices along with technical support in implementing evidence-based, packaged intervention programs.[100] However, teachers have the most knowledge of a student's daily behavior and can give a consultant the context necessary to identify a student's particular needs. Teachers can provide valuable input regarding the feasibility of implementing a behavioral intervention in the classroom, such as how well a particular intervention would fit, and what might be some potential problems with the intervention. Once the intervention is initiated, teachers can help promote its success by consistently implementing classroom practices or tasks entailed in the intervention, reporting any progress or setbacks in the student's behavior throughout the school day, and responding promptly to the consultant's queries to help the consultant determine the intervention's effectiveness and revise accordingly. The panel recommends that teachers, with the support of the consultant, use the interventions for 4–6 weeks before determining whether or not the intervention is working.

In turn, teachers should expect behavioral consultants to show respect for their partnership by scheduling meetings at times and locations that are convenient for the teacher and other members of the student's behavior team, providing regular updates on the intervention's progress, and making sure that all communication is clearly articulated and avoids the use of jargon or unfamiliar terminology. Additionally, there may be times when behavioral consultants will benefit from observing the child's behavior in the classroom. In such cases teachers should provide them access to the classroom, along with guidelines for minimizing any classroom disruption. Such guidelines may include expectations that consultants will establish a predetermined day and time when observations will occur, enter the classroom during breaks in the class schedule so as not to interrupt an ongoing lesson, and maintain a low profile in the classroom by sitting in an unobtrusive area and allowing the teacher to instruct without interruptions.

3. Encourage parents and other family members to participate as active partners in teaching and reinforcing appropriate behavior.

Building a strong, trusting relationship with the parent of a student who is disrupting the learning process can be challenging, particularly when there are racial and cultural differences. Some parents distrust school personnel as a result of their own negative memories and experiences with schools. Other parents have limited English language and educational experiences. Still other parents must spend all of their efforts in meeting basic economic needs. Teachers who are proactive in reaching out to parents to make connections and asking for parents' input and help in mitigating behavior problems will demonstrate a belief in the importance of involving parents in reshaping the student's behavior and school experiences.

100. For a comprehensive review of the literature on behavioral consultation, see Martens and DiGennaro (2007) and Hughes, Lloyd, and Buss (2007).

By communicating encouraging messages to students about the value of education and ways to succeed in school, parents and teachers together can support students' motivation, engagement, positive behavior, and persistence.[101] Ideally, teachers should make a concerted effort to build positive relationships with their students' families before any identification of behavior problems. Some suggestions for engaging parents in working together to help promote school success and positive behavior include sending positive emails or notes home, providing a parent signature log with the child's homework assignments, communicating regularly by phone, and inviting parents to participate in school functions, celebrations, and parent conferences.[102]

When a student's behavior problem has emerged, teachers can approach parents as partners by encouraging them to apply the classroom's behavioral rules and expectations at home and by asking for their ideas on ways to correct their child's behavior. For behavior issues that are generally mild and confined (such as refusing to follow directions, talking out of turn, or book slamming), parents should be contacted if the behavior problem persists (for example, if it occurs during math lesson for several days in a row). If the behavior is more severe or dramatic (such as stealing, throwing objects, or hitting other students), parents should be contacted immediately to discuss the behavior problem with the teacher and, in severe cases, with an administrator over the phone or in person.

Before any parent conference teachers should prepare by reviewing school records to learn if there have been recent or multiple moves or other family changes that may be impacting the student and family. Also, teachers might need to conduct a conference in the family's home language and should determine whether translation services are needed for the meeting. We recommend that teachers inform parents about their child's behavior problems in a respectful and collaborative way by:

- Pointing out one to three strengths that the child exhibits, both behaviorally and academically.
- Clearly identifying one or two problem behaviors by giving examples and having documentation on the nature and frequency of the behaviors (see recommendation 1).
- Describing strategies that have been implemented in the classroom, and their results.
- Asking the family for help in solving the problem at school by learning what works at home.

After the meeting teachers can encourage ongoing contact with the family by accommodating the parent's best mode of communication (telephone, personal conferences, or email).

Teachers also can help parents acquire the tools they need to support learning and positive behavior at home. Research shows that reinforcement at home, including rewards and negative consequences based on teacher reports, can improve student behavior in the classroom.[103] If needed or requested, teachers can direct parents to school or community resources that provide information about how to set limits and rules effectively, apply appropriate consequences, and reinforce expected behaviors with positive parenting approaches.

In addition, many behavioral interventions are founded on the principle that family

101. Bempechat (1998).

102. Hoover-Dempsey et al. (2005).

103. Christenson and Sheridan (2001).

involvement can be critical to an intervention's success.[104] In some cases, a student's behavioral goals can best be achieved through evidence-based programs that involve family members directly in addition to student-centered interventions. Such family-focused interventions seek to enhance the parenting skills and supportive role of family members to address a child's emotional and behavioral challenges successfully.[105]

Potential roadblocks and solutions

Roadblock 4.1. *"Meeting with other teachers will just be a waste of time, like all our faculty meetings."* Many teachers have trouble finding the time to meet with colleagues or are concerned that time spent in team meetings will take away from instruction.

Suggested Approach. School administrators can dedicate time for collaborative team meetings as they develop the master schedule, thereby emphasizing the school's commitment to promoting a culture of professional learning. Teachers and school administrators can find ways to be creative and resourceful with their time. For example, incorporate learning collaborative meetings into naturally-occurring group settings, such as grade-level meetings and in-service trainings. In addition, schools can use technology creatively to create virtual meeting opportunities through email, discussion boards, online forums facilitated by behavior experts, and video conferencing with peer coaches and mentors. Technology also can be used effectively to build a resource bank that includes classroom and behavior management strategies, lesson plans, and modifications or adaptations of curricula that encourage student engagement and are readily accessible to all teachers.

Although one aspect of collaborative learning is to give teachers a place to share the behavioral challenges they experience in the classroom, the goal of collaborative learning teams should be joint problem-solving and consideration of options that result in concrete, measurable behavior goals and intervention strategies. To maximize the value of meetings, teachers should come prepared with a clear definition of the behavior problem, data on the frequency and duration of its occurrence, and a list of strategies that have or have not worked to help focus the reflective problem-solving process. Ground rules and an agenda should be established by the team, roles such as time-keeper and recorder should be assigned for team members, and a peer leader should facilitate the meeting to ensure that members stay on task. Finally, at the end of each meeting team members should evaluate its helpfulness and provide feedback on how to improve the collaborative process.

Roadblock 4.2. *"Behavior consultants expect too much from me; I don't have time to meet with them regularly or to implement everything they suggest."* Some teachers feel overwhelmed when consultations take considerable time or result in numerous strategies that are too difficult or time-consuming to implement effectively.

Suggested Approach. The initial consultation is an opportune time for the teacher and consultant to work collaboratively as they design an intervention that is both effective and feasible in its implementation. For example, a student's behavior problem might exist throughout the day, but the teacher might decide that it is too difficult to implement an intervention each time a disruptive behavior occurs. Instead, the teacher and consultant can devise a strategy to intervene intensively for a particular type of disruptive behavior

104. Christenson and Christenson (1998); Sheridan, Eagle, Cowan, and Mickelson (2001).

105. Substance Abuse and Mental Health Services Administration, Center for Mental Health Services (2007).

(for example, distracting peers during independent work time), or ones that occurs at a specific time of the day (bullying behavior that occurs during lunchtime).

Roadblock 4.3. *"Parents won't participate."* In schools that do not have high levels of involvement and support from families, staff might feel that efforts to engage family members in addressing their students' challenging behaviors are fruitless.

Suggested Approach. Efforts to engage parents in planning and decision-making about behavior issues are likely to be more effective when teachers have laid a foundation of regular communication with family members. Teachers can begin the school year by sharing their academic and behavioral expectations of the students, as well as their expectations regarding family involvement. Teachers can then follow up with regular and ongoing communication by sending notes or emails or making phone calls to the child's home, praising positive achievements, and expressing concerns for problem behaviors tactfully and without blame. In reaching out to parents, teachers and other team members should limit the use of professional terminology or other language that could be confusing or intimidating to family members. School staff can help family members access a family advocate, interpreter, or other forms of support to help them in interacting with the school, for example, by clarifying issues or unfamiliar terminology that come up during meetings. School staff also can have a list of support groups and resources readily available for parents should they express an interest in seeking support for themselves or for their child.

Recommendation 5. Assess whether schoolwide behavior problems warrant adopting schoolwide strategies or programs and, if so, implement ones shown to reduce negative and foster positive interactions

Classroom teachers, in coordination with other school personnel (such as administrators, grade-level teams, and special educators), can benefit from adopting a schoolwide approach to preventing problem behaviors and increasing positive social interactions among students and with school staff. This type of systemic approach requires a shared responsibility on the part of all school personnel, particularly the administrators who establish and support consistent schoolwide practices and the teachers who implement these practices both in their individual classrooms and beyond.

Level of evidence: Moderate

The panel judged the level of evidence supporting this recommendation to be *moderate*. One quasi-experimental study investigated the impact of schoolwide changes in structure, organization, and practices and determined that these changes increased the number of social relationships among students.[106] In addition, four randomized controlled trials [107] and one single-subject[108] study examined the impact of specific schoolwide intervention programs, each study finding statistically significant positive effects for several of its behavioral outcomes. Although there are several randomized controlled trials to support one component of recommendation 5 (specific schoolwide intervention programs), other components of the recommendation (such as changes to the overall structure and organization of the school, and peer mediation programs implemented outside the classroom) are supported only by quasi-experimental or single subject studies. Consequently, the panel believes the overall level of evidence for this recommendation is *moderate*.

Brief summary of evidence to support the recommendation

Currently, more than 7,400 schools nationwide are implementing schoolwide behavior supports.[109] Although these practices vary with the nature of the problems schools experience and the specific needs of their students, the core of many of schoolwide programs consists of a commitment and ongoing collaboration between administrators, teachers, other school personnel, and families and a systems-level approach focused on teaching positive social behaviors rather than using punitive tactics for disciplinary infractions. These two components were apparent in the six studies that explored schoolwide approaches to reducing negative behaviors and improving social outcomes.[110]

106. Stevens and Slavin (1995).

107. Conduct Problems Prevention Group (1999); Frey et al. (2005); Grossman et al. (1997); Ialongo et al. (1999).

108. Cunningham et al. (1998).

109. Bradley et al. (2007).

110. There is a growing body of literature that supports schoolwide approaches to address student behavior. The panel recommends that readers consult the Office of Special Education Program's Positive Behavioral and Intervention Support website (http://www.pbis.org/researchLiterature.htm) for a list of current studies pertaining to schoolwide positive behavior support.

One quasi-experimental study examined the effects of schoolwide reform measures that restructured and reorganized the use of school time and space in an effort to increase students' in-school and school-family interactions, as a way to promote positive academic and behavioral outcomes.[111] The numerous changes in organizational and educational practices included establishing a building-level steering committee to support the implementation of the schoolwide approach, mainstreaming students with learning disabilities into regular education classrooms, increasing peer coaching and collaborative opportunities for teachers, and providing new academic curricula that promoted positive social values. Results of the impact of these changes on behavioral outcomes revealed an increase in the number of student social relationships, which authors interpreted as suggesting that the schoolwide approach had a positive impact on students' social competence.

Several of the studies exploring schoolwide approaches evaluated curriculum-based programs, designed to be implemented by teachers in all classrooms throughout the school[112] (see recommendation 3 for additional information on classroom-based intervention programs). Additionally, one school level program addressed behavior problems that occurred outside the classroom. [113] The findings from this single-subject study revealed that a peer mediation program effectively reduced aggressive behavior on school playgrounds.

How to carry out the recommendation

1. Address schoolwide behavior issues by involving a school improvement team.

Building-level steering or advisory committees can provide valuable input on the design and implementation of schoolwide behavior practices.[114] Accordingly, we recommend that school principals charge a newly-formed or existing school improvement team with considering prevention and intervention strategies to address schoolwide behavior issues. A typical team should be comprised of an administrator, a teacher from each grade level, and a representative of the school support staff. It also could benefit from a behavioral expert, such as a school psychologist or counselor, and representation from a parent group.

The school improvement team has several responsibilities. Initially, its role is to assess the existing schoolwide discipline program or, if one does not exist, conduct a needs assessment that addresses specific behavior problems experienced throughout the school. Next, the team should develop an action plan involving schoolwide discipline policies and procedures that are positively stated and based on high behavioral expectations and present their plan in an effort to garner the support and commitment of the entire school staff. When the practices have been implemented throughout the school, the team will play an important role in monitoring the progress of the schoolwide approach by meeting regularly to review and update the action plan as needed, in an effort to ensure the sustainability of these practices in the school.

Although school principals must allocate time and support for this team, teachers also play a key role in the success of a schoolwide approach. They have knowledge of and influence on their students' behaviors, which enables them to provide information necessary to develop and implement schoolwide behavior practices, making their active participation on the team essential.

111. Stevens and Slavin (1995).

112. Conduct Problems Prevention Group (1999); Frey et al. (2005); Grossman et al. (1997); Ialongo et al. (1999).

113. Cunningham et al. (1998).

114. Nelson (1996a); Stevens and Slavin (2005).

2. Collect information on the hot spots throughout the school—namely, the frequency of particular schoolwide behavior problems and when and where they occur.

To determine the most effective approach to address schoolwide behavior concerns, the school improvement team needs to assess systematically where and when behavioral hot spots are apparent in the school. Hot spots often are areas where large groups of students gather with little supervision and no structured activities, such as hallways, bathrooms, the cafeteria, and the playground. Similarly, behavior problems are most likely to arise before or after school, during lunch, or at recess, when students congregate without structured activities or much adult supervision. These hot spots can be identified in a number of ways:

- Completing teacher surveys that provide general impressions of hot spots around teachers' classrooms and in other areas of the school (for example, the bathrooms closest to their classrooms).

- Allotting time during staff meetings to discuss schoolwide behavior problems and identify specific times and locations when those behavior problems most often occur.

- Organizing teachers and other school personnel in charge of common areas, such as cafeteria and school yard staff, to observe and document behavior problems throughout the school.

- Collecting and analyzing office referral data.

Understanding when and where these hot spots arise is essential when developing and implementing a schoolwide approach. However, even if schoolwide systems are not in place, teachers can identify and monitor hot spots outside their classrooms and develop and implement strategies to overcome behavior problems in these areas (for example, revisit classroom behavioral expectations or use positive and negative consequences to reinforce positive behavior). Disruptions outside the classroom often can carry over and disrupt learning within it. Additionally, successful classroom management can rapidly deteriorate when students exit the classroom and encounter these hot spots, making it difficult to reestablish positive behavior when they return to the classroom. Thus, teachers can increase their ability to maintain positive behaviors in the classroom by recognizing and reacting effectively to behavior problems that ensue throughout the school.

3. Monitor implementation and outcomes using an efficient method of data collection and allow ample time for the program to work.

Changes made schoolwide might initially result in seemingly imperceptible changes to student behavior, seen only through patterns that emerge from data. Thus, we believe that ongoing documentation of student behavior is fundamental to this recommendation. School improvement teams need behavior-related data to establish baseline behavior characteristics that help them appropriately identify and address the major behavior concerns within the school. Regular monitoring is then necessary to determine whether the programs and strategies implemented are successfully reducing the targeted behavior problems and maintaining positive behaviors. If not, the data can determine what elements of the program need to be revisited or revised.[115]

There are numerous sources of information that can inform school personnel about patterns of schoolwide student behavior. For instance, office discipline

115. Scott and Barrett (2004).

referrals can be a useful source of data, as studies have shown that they are both sensitive to the general behavioral climate of the school and an accurate index of the effectiveness of behavioral interventions.[116] [117] To ensure that an effort to collect office discipline referral and other data is sustainable over time, data collection methods should follow several core principles. Namely, data collection systems should be:

- *Efficient*. For data collection techniques to be implemented widely and continuously, they should be easily learned and quickly administered. Efficient data collection techniques can range from simple procedures, such as tally marks for observed behavior problems on notepads carried by teachers, to more complex procedures, such as computerized data collection systems that automatically record office discipline referrals.

- *Timely*. A response to a reported behavior problem is most effective when it is administered soon after the behavior has occurred. Thus, data collection systems should incorporate strategies to promptly relay relevant information to all appropriate people (teachers, support staff, or parents) in order to provide a swift response to the child's actions. For example, if a student exhibits aggressive behavior during recess, a system should be in place to report this behavior to the student's teacher before the students reenter the classroom and to the student's family on the day the behavior problem occurs.

- *Meaningful*. A "less is more" approach to data collection often is more effective than attempting to collect a large amount of information that may become frustrating to digest and difficult to interpret. Data collection systems should focus on the few elements that are most valuable to the school (such as the frequency of occurrence of a behavior that is the focus of a schoolwide intervention program), and consistently monitor those elements throughout the school year.

To augment information generated through a schoolwide data collection system, teachers have an ideal vantage point to witness specific behavior incidents as they arise and provide informal, yet essential, data on students' behavior. By situating themselves in areas where problem behaviors are readily observed, teachers can document information about the specific behavior problems witnessed and report on the immediate results of any actions administered.[118]

No matter how effective a schoolwide intervention strategy ultimately is, it might take several months or more before a schoolwide behavioral intervention generates significant changes in problem behaviors schoolwide. For example, the violence prevention curriculum used in the study by Grossman and others (1997) was taught in 30 lessons, given once or twice a week. The positive behavioral effects found in this and other experimental studies of schoolwide programs cannot be expected to become evident until after completion of the entire curriculum or intervention or toward the end of the school year. Broader reform efforts can take even longer to reach fruition.

116. Irvin, Tobin, Sprague, Sugai, and Vincent (2004).

117. The panel acknowledges that office discipline referrals are influenced by teacher judgment. Consequently, office discipline referral may be considered a measure of teacher behavior as well as student outcomes. Outcome monitoring that identifies the changes in student responses to interventions would provide a more accurate measure of program effectiveness.

118. See roadblock 5.2 for additional suggestions about teacher roles in data collection.

4. If warranted, adopt a packaged intervention program that fits well with identified behavior problem(s) and the school context.

As the school improvement team develops its action plan for a schoolwide behavior program, it might find that the best approach to address the school's behavior issues is through one or more packaged intervention programs implemented schoolwide. Many such programs contain the fundamental components needed to respond to a variety of behavior problems. For example, evidence-based interventions, such as *Second Step*[119] and *Promoting Alternative THinking Strategies*,[120] provide classroom-based curricula consisting of specific lessons aimed at increasing prosocial behaviors in students. However, to ensure that these programs will be implemented with fidelity and work effectively, the school improvement team should consider the appropriateness of a program, given the unique characteristics and capacities of the school.

Some questions that may assist the team when selecting an intervention program are:

- What are the types of behaviors we want to promote in our school and what are some specific behaviors we want to reduce or eliminate? For example, do we want our students to develop social skills with peers and adults? Is bullying a problem that needs to be addressed?

- Is our school willing and able to spend money and other resources, such as time for training all teachers on the intervention procedures, to implement a packaged intervention program to address particular problem behaviors?

- Are we looking for an intervention that is administered by outside consultants or do we prefer to train existing school personnel?

- What are the unique features of our school (such as, size, geographic location, culture, and composition of staff and students), and how will the intervention fit these features? For example, if a school has a large percentage of bilingual students, can an English-language intervention be modified to accommodate all students?

- What do our observations tell us? For instance, are there certain student populations, such as older students, that are particularly prone to behavior problems and that could benefit from specific interventions?

- How will an intervention fit into our current school schedule and curriculum? For example, are we willing to take time away from academic instruction to invest in a rigorous, year-long behavior curriculum or would a less intensive intervention that can be easily incorporated into our existing schedule better fit our school's needs?

To respond to these queries, the principal should be either a member of the school improvement team or readily available to meet and discuss these issues as the team develops its action plan. In addition, the school improvement team would benefit from broader input of other teachers and other school personnel, either through surveys or discussions during staff meetings. By addressing these types of questions, the team can tailor packaged intervention programs to fit within the school context, thereby increasing the chances that they will be readily implemented and sustained.

Potential roadblocks and solutions

Roadblock 5.1. *"There's no schoolwide system at my school, and it doesn't seem possible for me to change behavior problems*

119. Frey et al. (2005); Grossman et al. (1997).

120. Conduct Problems Prevention Group (1999).

outside my classroom." Many teachers work in schools that do not have schoolwide systems in place or administrators willing to consider implementing such a program. Consequently, these teachers feel stymied when it comes to applying disciplinary practices outside their classroom.

Suggested Approach. The panel believes that a schoolwide approach to behavior issues is both feasible and advisable for many schools. Consequently, this recommendation encourages a sense of shared responsibility between teachers and administrators when supporting a schoolwide approach to behavior management and support. However, for teachers in schools that do not plan to develop a schoolwide system to address students' behavior, some of the implementation guidelines provide specific tasks that teachers can accomplish on their own. For example, teachers might notice that a few students often return from lunchtime with increased behavior problems. By stepping out of the classroom and informally observing lunchtime activities, they can identify the cafeteria as a hot spot where behavior problems tend to erupt and where increased adult supervision could improve the situation. They then could inform these students that they will continue to monitor their behavior in the cafeteria and that consequences will be administered in the classroom for those who misbehave and rewards will be provided to those who exhibit positive behaviors.

Roadblock 5.2. *"It's too costly and burdensome to purchase and implement an intervention program or to maintain a data collection system."* Considerable time, energy, and cost can be involved in purchasing and implementing a packaged intervention program, an investment that can yield little benefit if school personnel do not know how to use the information appropriately.

Suggested Approach. Although the panel encourages all schools to consider a schoolwide approach when addressing student behavior issues, whether that approach includes the implementation of a packaged intervention program depends on the particular needs of the individual schools. Finances and time are some concerns that the school improvement team should address when formulating their action plan. If the team decides that a packaged program is warranted, they should consider the questions posed in step 4 with input from administrators and other school personnel to determine the best fit for their school.

For teams that do not believe they have the finances or time to implement a formal data collection system, it is still possible to produce and analyze valuable information for decision-making and evaluation purposes as long as the general principles of data collection (efficient, timely, and meaningful) are applied. Teachers can play a vital role as both data collectors and analysts by observing student behavior in everyday situations (for example, monitoring the hallways during transition periods) and consistently documenting these observations. In doing so, teachers can make an important contribution to understanding patterns of problem behavior, and in turn, provide valuable input into formulating an intervention to manage these specific behavior issues.

Roadblock 5.3. *"Nothing will work in our school. Our demographics and setting are too unique and challenging."* Administrators and teachers may feel it is too difficult to introduce a schoolwide system, train people, and implement this system with fidelity.

Suggested Approach. When considering an approach to improving the behavioral climate of an entire school, the critical first step is to generate acceptance and active participation from all school personnel. It has been suggested that a commitment secured from at least 80 percent of the

school staff is necessary to proceed with this approach.[121] To obtain this level of acceptance, school administrators must show enthusiasm for and commitment to establishing the structures and processes needed to change the behavioral climate of the school. In addition, administrators can proactively solicit input on concerns teachers and other personnel might have with a schoolwide approach and engage staff in developing strategies to address them. Some specific concerns might be teachers' belief that their only responsibility is to teach academic content, that implementing this approach will take time that should be invested in achieving academic goals, or that discipline policy and practices that emphasize positive reinforcement rather than punitive measures are ineffective.[122] Administrators can respond by emphasizing the fact that the schoolwide approach is comprised of evidence-based practices and providing the evidence that addresses the concerns. This strategy has been applied successfully in a wide variety of school settings with a wide range of school populations.

121. See the OSEP Technical Assistance Center on Positive Behavioral Interventions and Supports for a description of the components of an effective comprehensive schoolwide system, available at http://www.pbis.org/schoolwide.htm#SystemsApproach.

122. McKevitt and Braaksma (2004).

Appendix A. Postscript from the Institute of Education Sciences

What is a practice guide?

The health care professions have embraced a mechanism for assembling and communicating evidence-based advice to practitioners about care for specific clinical conditions. Variously called practice guidelines, treatment protocols, critical pathways, best practice guides, or simply practice guides, these documents are systematically developed recommendations about the course of care for frequently encountered problems, ranging from physical conditions, such as foot ulcers, to psychosocial conditions, such as adolescent development.[1]

Practice guides are similar to the products of typical expert consensus panels in reflecting the views of those serving on the panel and the social decisions that come into play as the positions of individual panel members are forged into statements that all panel members are willing to endorse. Practice guides, however, are generated under three constraints that do not typically apply to consensus panels. The first is that a practice guide consists of a list of discrete recommendations that are actionable. The second is that those recommendations taken together are intended to be a coherent approach to a multifaceted problem. The third, which is most important, is that each recommendation is explicitly connected to the level of evidence supporting it, with the level represented by a grade (strong, moderate, low).

The levels of evidence, or grades, are usually constructed around the value of particular types of studies for drawing causal conclusions about what works. Thus, one typically finds that a strong level of evidence is drawn from a body of randomized controlled trials, the moderate level from well-designed studies that do not involve randomization, and the low level from the opinions of respected authorities, buttressed by theory or research that does not meet criteria for high or moderate ratings (see table 1). Levels of evidence also can be constructed around the value of particular types of studies for other goals, such as the reliability and validity of assessments.

Practice guides also can be distinguished from systematic reviews or meta-analyses, such as the What Works Clearinghouse (WWC) intervention reviews or statistical meta-analyses, which employ statistical methods to summarize the results of studies obtained from a rule-based literature search. Authors of practice guides seldom conduct the types of systematic literature searches that are the backbone of a meta-analysis, although they take advantage of such work when it is already published. Instead, authors use their expertise to identify the most important research with respect to their recommendations, augmented by a search of recent publications to ensure that the research citations are up-to-date. Furthermore, the characterization of the quality and direction of the evidence underlying a recommendation in a practice guide relies less on a tight set of rules and statistical algorithms and more on the judgment of the authors than would be the case in a high-quality meta-analysis. Another distinction is that a practice guide, because it aims for a comprehensive and coherent approach, operates with more numerous and more contextualized statements of what works than does a typical meta-analysis.

Thus, practice guides sit somewhere between consensus reports and meta-analyses in the degree to which systematic

1. Field and Lohr (1990).

processes are used for locating relevant research and characterizing its meaning. Practice guides are more like consensus panel reports than meta-analyses in the breadth and complexity of the topic that is addressed. Practice guides are different from both consensus reports and meta-analyses in providing advice at the level of specific action steps along a pathway that represents a more-or-less coherent and comprehensive approach to a multifaceted problem.

Practice guides in education at the Institute of Education Sciences

The Institute of Education Sciences (IES) publishes practice guides in education to bring the best available evidence and expertise to bear on the types of systemic challenges that cannot currently be addressed by single interventions or programs. Although IES has taken advantage of the history of practice guides in healthcare to provide models of how to proceed in education, education is different from healthcare in ways that may require that practice guides in education have somewhat different designs. Even within health care, where practice guides now number in the thousands, there is no single template in use. Rather, one finds descriptions of general design features that permit substantial variation in practice guides across subspecialties and panels of experts.[2] Accordingly, the templates for IES practice guides may vary across practice guides and change over time and with experience.

The steps involved in producing an IES-sponsored practice guide are first to select a topic, which is informed by formal surveys of practitioners and requests. Next, a panel chair is recruited who has a national reputation and up-to-date expertise in the topic. Third, the chair, working in collaboration with IES, selects a small number of panelists to co-author the practice guide. These are people the chair believes can work well together and have the requisite expertise to be a convincing source of recommendations. IES recommends that at one least one of the panelists be a practitioner with experience relevant to the topic being addressed. The chair and the panelists are provided a general template for a practice guide along the lines of the information provided in this preamble. They also are provided with examples of practice guides. The practice guide panel works under a short deadline of 6–9 months to produce a draft document. The expert panel interacts with and receives feedback from staff at IES during the development of the practice guide, but they understand that they are the authors and, thus, responsible for the final product.

One unique feature of IES-sponsored practice guides is that they are subjected to rigorous external peer review through the same office that is responsible for independent review of other IES publications. A critical task of the peer reviewers of a practice guide is to determine whether the evidence cited in support of particular recommendations is up-to-date and that studies of similar or better quality that point in a different direction have not been ignored. Peer reviewers also are asked to evaluate whether the evidence grade assigned to particular recommendations by the practice guide authors is appropriate. A practice guide is revised as necessary to meet the concerns of external peer reviews and gain the approval of the standards and review staff at IES. The process of external peer review is carried out independent of the office and staff within IES that instigated the practice guide.

Because practice guides depend on the expertise of their authors and their group decisionmaking, the content of a practice guide is not and should not be viewed as a set of recommendations that in every case depends on and flows inevitably from

2. American Psychological Association (2002).

scientific research. It is not only possible but likely that two teams of recognized experts working independently to produce a practice guide on the same topic would generate products that differ in important respects. Thus, consumers of practice guides need to understand that they are, in effect, getting the advice of consultants. These consultants should, on average, provide substantially better advice than an individual school district might obtain on its own because the authors are national authorities who have to reach agreement among themselves, justify their recommendations in terms of supporting evidence, and undergo rigorous independent peer review of their product.

Institute of Education Sciences

Appendix B. About the Authors

Panel

Michael Epstein (Chair) is the Director of the Center for At-Risk Children's Services and William E. Barkley Professor of Special Education at the University of Nebraska-Lincoln. He earned his Ed.D. in special education from the University of Virginia. Dr. Epstein has published more than 200 professional papers and is the founding editor of the *Journal of Emotional and Behavioral Disorders*. He is the author of the *Behavioral and Emotional Rating Scale-2* (PRO-ED, 2004) and the *Scale for Assessing Emotional Disturbance* (PRO-ED, 1998), and a co-author of *Outcomes for Children and Youth with Emotional and Behavioral Disorders and Their Families* (PRO-ED, 2005).

Marc Atkins is Professor of Psychology in Psychiatry and Director of Psychology Training at the University of Illinois-Chicago's Department of Psychiatry. He has a Ph.D. in clinical psychology from Florida State University. Dr. Atkins has a long-standing interest in the development of effective school-based mental health services for children and families in low-income urban communities. He is a consultant to the Chicago Public Schools, the New York City Public Schools, and the Illinois Department of Mental Health.

Douglas Cullinan is Professor of Special Education at North Carolina State University. Dr. Cullinan has an Ed.D. in special education from the University of Virginia. Since 1973 he has served on the editorial boards of *Behavioral Disorders*, *Exceptional Children*, *Journal of Emotional and Behavioral Disorders, Journal of Special Education*, and other professional journals, and authored or coauthored more than 125 publications. Dr. Cullinan is the author of *Students with Emotional and Behavioral Disorders*, a textbook, and has served as President of the Council for Children with Behavioral Disorders.

Krista Kutash is Professor and Deputy Director of the University of South Florida's Research and Training Center for Children's Mental Health. She holds a Ph.D. in measurement and statistics from the University of South Florida. Dr. Kutash has conducted field research on issues related to children with disabilities and their families in 27 states and in more than 200 school districts and 60 mental health facilities. She coauthored *Outcomes for Children and Youth with Emotional and Behavioral Disorders and Their Families* (PRO-ED, 2005) and coedits the *Journal of Emotional and Behavioral Disorders*.

Robin Weaver has been Principal of Harmony Hills Elementary School in Silver Spring, MD for 21 years. Harmony Hills serves 500 students who represent more than 25 countries and speak 18 languages. Students at Harmony Hills meet or exceed local, state, and federal academic standards. Ms. Weaver received her B.A. in humanities and M.S. in library science from Case Western Reserve University, and was a Fulbright Scholar in India and a Peace Corps Volunteer in the Fiji Islands.

Staff

Michelle Woodbridge, a Senior Research Analyst at SRI International, received her Ph.D. in education from the University of California—Santa Barbara. Dr. Woodbridge has more than 13 years of experience in research and evaluation of children's behavioral and mental health services, and has authored or coauthored numerous publications regarding evaluations of interventions and programs serving children with emotional and behavioral disabilities and their families.

Jennifer Yu, a Research Social Scientist at SRI International, received her Sc.D. in maternal and child health from Harvard School of Public Health, and completed a postdoctoral fellowship in health policy from the University of California—San Francisco. Dr. Yu has considerable research experience in the design and quantitative analysis of longitudinal studies, particularly those focused on child and adolescent mental and behavioral health. She has authored and coauthored numerous papers regarding mental health and behavioral disabilities in adolescents and comorbid substance use among adolescents with learning disabilities.

Mary Wagner, Co-Director of SRI International's Center for Education and Human Services, has concentrated her work in the last 28 years in two major areas: longitudinal studies of the characteristics, experiences, and achievements of children and youth with disabilities, and evaluations of interventions and programs serving children and families. Dr. Wagner received her Ph.D. in political science from the University of North Carolina—Chapel Hill.

Appendix C. Disclosure of potential conflicts of interest

Practice guide panels are composed of individuals who are nationally recognized experts on the topics about which they are rendering recommendations. The Institute of Education Sciences (IES) expects that such experts will be involved professionally in a variety of matters that relate to their work as a panel. Panel members are asked to disclose their professional involvements and to institute deliberative processes that encourage critical examination of the views of panel members as they relate to the content of the practice guide. The potential influence of panel members' professional engagements is further muted by the requirement that they ground their recommendations in evidence that is documented in the practice guide. In addition, the practice guide undergoes independent external peer review prior to publication, with particular focus on whether the evidence related to the recommendations in the practice guide has been appropriately presented.

The professional engagements reported by each panel member that appear most closely associated with the panel recommendations are noted below.

Dr. Epstein is the author of the *Behavioral and Emotional Rating Scale-2* and the *Scale for Assessing Emotional Disturbance*. He receives royalties from PRO-ED, Inc. He has also developed interventions aimed at improving students' academic and behavioral outcomes and reported the findings in journal articles and book chapters. These instruments and interventions are not referenced in this practice guide.

Dr. Atkins has no financial stake in any program or practice that is mentioned in the practice guide. He is a consultant for the New York City Board of Education on alternative models for school counseling, which could involve training counselors on classroom behavior management programs such as those mentioned in this practice guide. He also has had a long-standing consultative relationship with the Chicago Public Schools Office of Specialized Services related to his ongoing research in Chicago Public Schools. He is currently funded by the National Institute of Mental Health to study a model of school-based mental health consultation. This model involves, in part, training community mental health providers and teachers on classroom behavior management programs, such as those described in this practice guide. He is a coinvestigator on a proposal to the Institute of Education Sciences to develop a model to support early career teachers working in urban low-income schools, which also could involve training in programs such as those described in this practice guide.

Dr. Cullinan is a coauthor of the *Scale for Assessing Emotional Disturbance*, for which he receives royalties from PRO-ED, Inc. This assessment instrument is not referenced in this practice guide. Also, Dr. Cullinan is the author of *Students with Emotional and Behavioral Disorders*, for which he receives royalties from Pearson Education, Inc. This book is not referenced in this practice guide.

Dr. Kutash is a coauthor of the book *Outcomes for Children with Emotional and Behavioral Disorders and Their Families: Program and Evaluation Best Practices* (2nd ed.) and a coeditor of the *Journal of Emotional and Behavioral Disorders*, for which she receives royalties from PRO-ED, Inc.

Appendix D. Technical information on the studies

Recommendation 1. Identify the specifics of the problem behavior and the conditions that prompt and reinforce it

Level of evidence: Moderate

The panel judged the level of evidence supporting this recommendation to be *moderate*. A number of single-subject research studies demonstrate the effectiveness of behavioral interventions that are designed to address and modify what prompts and reinforces the problem behaviors of special and general education elementary school students.[1] Three recent single-subject studies examined the effectiveness of interventions chosen for individual students after teachers gathered data on the antecedents and consequences of students' problem behaviors, as opposed to interventions selected without attention to these factors.[2] Findings demonstrated greater success in reducing inappropriate behaviors through the use of approaches based on the gathered data. An emerging literature provides further evidence that general educators can play a key role in this information-gathering process by identifying the context of a problem behavior and selecting appropriate strategies that meet students' needs. But more research is needed to determine whether consistent results can be obtained when the strategies are implemented by the teacher without professional consultation.[3]

Examples of classroom studies that demonstrate the effectiveness of interventions based on the context of problem behavior

Research suggests that identifying a problem behavior's specific antecedents and consequences and then tailoring an approach to address the distinct needs of the individual student in the classroom context are more likely to yield positive outcomes than an intervention applied without attention to the factors prompting and reinforcing it.[4] In fact, strategies not linked to the specific context of the misbehavior demonstrate increases in the occurrence of the problem behavior, perhaps because strategies used to address it inadvertently reinforce the misbehavior.[5]

For example, in one single-subject study, researchers compared the outcomes of two interventions designed for three general education elementary students with aggressive and off-task behaviors.[6] One approach was based on assessment information gathered about each student's specific behavioral context and reinforcement (antecedents and consequences), contrasted with an approach based on general classroom management principles to address the topography of the problem behavior (that is, what the behavior problem looks like versus the underlying cause). Using an alternating-treatment, multiple-baseline design across participants, the researchers found that assessment-based interventions were more effective in decreasing problem behavior. In fact, data showed

1. For example, Broussard and Northup (1995); Ervin et al. (2000); Lane et al. (2007); Moore et al. (2005); Sasso et al. (1992); Stahr et al. (2006); Umbreit (1995). For research reviews, see Ervin et al. (2001); Heckaman et al. (2000); Kern et al. (2002).

2. Ingram et al. (2005); Newcomer and Lewis (2004); Payne et al. (2007).

3. Kamps et al. (2006); Lane, Weisenbach, et al. (2007); Mueller et al. (2003).

4. Payne et al. (2007).

5. Ibid.

6. Newcomer and Lewis (2004).

higher levels of problem behavior with the non-assessment-based approach than with the baseline condition. One potential limitation of the study, however, was that in all three cases the non-assessment-based interventions preceded the assessment-based interventions, so the study did not control for treatment effect order.

In a follow-up study, researchers measured the effectiveness of assessment-based interventions with two middle school students in general education classrooms.[7] The investigators controlled for treatment order effects by counterbalancing the two intervention approaches between the two students. Similar to the earlier findings, the single-subject withdrawal design demonstrated that the assessment-based interventions were more effective in lowering the number of problem behaviors.

Recently, investigators extended the research of these previous studies by examining the efficacy of assessment-based versus non-assessment-based interventions.[8] Results of their multi-treatment single-subject design involving four elementary school students demonstrated clear and immediate decreases in problem behavior with the introduction of assessment-based interventions and strong increases in problem behavior with each introduction of non-assessment-based intervention.

7. Ingram et al. (2005). The panel believes this study, although conducted within a middle school general education environment, is generalizable to an elementary school population. The students examined in this study exhibited common problem behaviors found across elementary school grades, such as staring into space and not engaging in or completing math or science assignments. The intervention strategies (the teacher checking in with the student about his physical state and the student self-assessing his on-task and help-seeking behaviors) and rewards (extra break and computer time) were also relevant to the elementary school level.

8. Payne et al. (2007).

Examples of classroom studies that demonstrate the feasibility and effectiveness of general education teachers applying assessment-based approaches

Three single-subject research studies have demonstrated the success of an approach that specifically identifies and modifies what is prompting and reinforcing the problem behaviors in general education settings, with general education teachers taking substantive roles in the data gathering, design, and implementation of behavioral strategies. One research group successfully trained general education elementary school teachers to manipulate teacher and peer attention to problematic off-task and disruptive behaviors while fulfilling regular classroom responsibilities and routines.[9] In another study, investigators trained teachers to respond effectively to inappropriate behaviors by following a reinforcement protocol developed for each student exhibiting problem behaviors.[10] Recently, researchers used a collaborative process (including graduate school students who acted as project liaisons and consultants) with general education teachers as the primary interventionists and assessors, finding that the teachers consistently implemented assessment-based interventions that resulted in decreases in problematic behaviors.[11] However, these studies do not provide enough evidence to conclude that these practices will be effective for all students or in all settings. The studies differ in data collection methods (using a variety of both direct and indirect assessment measures, such as observations and interviews), in the extent of assistance from behavioral consultants, and in the methods used to select interventions and strategies on the basis of accumulated knowledge about the problem behavior.

9. Kamps et al. (2006).

10. Mueller et al. (2003).

11. Lane, Weisenbach, et al. (2007).

As a result, some researchers have called for additional studies to be conducted with a variety of target behaviors across different settings because of concerns regarding inconsistencies when the approach involves different types of students, school-based personnel, and assessment methods.[12] For example, in one study investigators selected staff members from four elementary schools who had been trained in how to use the outcomes of a comprehensive assessment process to develop assessment-based intervention plans.[13] They then formed school-based intervention teams and served as facilitators for a total of 31 cases. The same cases also were distributed to three national experts who selected interventions based on the identified contextual data for each case. Comparisons between team and expert intervention strategy selection revealed that school-based personnel were more likely to select punitive and exclusionary strategies, regardless of the contextual information. Thus, in real-world school settings the link between a problem behavior's antecedents and consequences and the selection of an appropriate intervention is more complex than has been recognized in the literature.

One additional limitation of the literature is that no studies to date have experimentally examined the effects of general education teachers alone identifying the antecedents and consequences of problem behaviors and selecting suitable strategies to intervene with the problem behavior on the basis of that information. All studies employed some amount of behavioral consultation in the process. However, the panel believes that because research shows a strong link between understanding a problem behavior's context and applying an effective remedy, teachers should try to acquire the skills, experience, and confidence needed to carry out this information-gathering process and seek out their colleagues and the student's family for additional help and guidance in addressing behavior problems in their classrooms when necessary.

Recommendation 2. Modify the classroom environment to decrease problem behavior

Level of evidence: Strong

The panel rated the level of evidence for this recommendation as *strong*. This recommendation reflects best practices in elementary classroom management and pedagogy, as defined and articulated by experts in the field since the early 1970s.[14] Research across decades has demonstrated that consistent implementation and reinforcement of well defined classroom rules is associated with positive student behavior in both the classroom and other school settings, such as the playground and hallways.[15] More recently, three randomized controlled trials,[16] one quasi-experimental design,[17] and six single-subject research studies[18] demonstrate empirical support for (1) preventative classroom management, with particular emphasis

12. Gresham (2004); Gresham et al. (2004); Sasso et al. (2001); Scott et al. (2005).

13. Scott et al. (2005).

14. For example, Axelrod and Mathews (2003); Bear (1998); Brophy (1983); Doyle (1992); Evertson et al. (2006); Evertson and Harris (1995); Good and Brophy (2003); Hall and Hall (1998-2004); Kellam (1999); Kounin (1970); Walker (1995); Walker, Colvin, and Ramsey (1995).

15. For example, see reviews by Kern and Clemens (2007); Sugai and Horner (2002); Sugai et al. (2001).

16. Evertson (1989); Ialongo et al. (2001); Ialongo et al. (1999).

17. Heller and Fantuzzo (1993).

18. Dunlap et al. (1994); DuPaul et al. (1998); Kern et al. (2002); Kern et al. (1994); Kern, Mantegna, et al. (2001); Nelson, Johnson, and Marchand-Martella (1996).

on teachers' attention to specific environmental variables that evoke problem behaviors;[19] and for (2) direct and differentiated instructional strategies to increase student engagement and decrease problem behaviors.[20]

Examples of studies that demonstrate the effectiveness of modifying the classroom environment

Research dating back almost four decades has demonstrated the effectiveness of group contingency programs (where students work in teams in which each individual is responsible to the rest of the group) in both preventing and intervening with behavior problems. Upon introducing these programs to students, teachers identify specific inappropriate behaviors (for example, verbal and physical disruptions or noncompliance) that, if displayed, will result in a team's receiving a checkmark. By the end of the lesson, teams that have not exceeded the maximum number of marks are rewarded, for example with a preferred activity or privilege, whereas teams that exceed the behavioral standard receive no rewards. Eventually, the teacher begins the game with no warning and at different periods during the day so students are encouraged to monitor their behavior continuously and strive to meet expectations. Researchers first documented the effects of such a program in an investigation of the *Good Behavior Game,* which demonstrated a reduction in the disruptive out-of-seat and talking behaviors of 24 4th-grade students in a general education classroom.[21]

Since then, classroom-based contingency programs modeled on the *Good Behavior Game* have been applied to other behaviors (for example, aggression or shyness), grade levels, and settings, and its impacts have been demonstrated both immediately following the intervention (at the end of 1st grade) and longitudinally (five years after the intervention) with hundreds of children.[22] Data demonstrated fewer aggressive and shy behaviors at the end of 1st grade and positive outcomes at 6th grade, especially for males displaying early aggressive behavior. Two randomized controlled trials were conducted with a sample of 678 students entering 1st grade in nine Baltimore City public elementary schools.[23] Using a randomized block design, three 1st grade classrooms in each of nine schools were randomly assigned to either a classroom-centered intervention using the *Good Behavior Game* or a family-school partnership intervention, or to a control condition. Findings revealed that in 6th grade, students who had been in the *Good Behavior Game* condition in 1st grade were significantly less likely than students in the control condition to be diagnosed with conduct disorders or to have been suspended from school. Participants in both the *Good Behavior Game* and family-school partnership interventions received significantly better ratings from their teachers for conduct problems than students in the control group.

Two randomized controlled trials evaluated the effectiveness of training teachers to use comprehensive classroom management approaches with the goals of reducing students' time off task and disruptive behaviors in the classroom.[24] Participants in the programs were trained to create and

19. Dunlap et al. (1994); Evertson (1989); Ialongo et al. (2001); Ialongo et al. (1999); Kern, Bambara, and Fogt (2002); Kern et al. (1994); Kern, Mantegna, et al. (2001). For relevant research reviews, see Davis et al. (2004) and Kern and Clemens (2007).

20. DuPaul et al. (1998); Heller and Fantuzzo (1993); Nelson et al. (1996).

21. Barrish et al. (1969).

22. Dolan et al. (1993); Ialongo et al. (2001); Ialongo et al. (1999), Lohrmann and Talerico (2004).

23. Ialongo et al. (2001); Ialongo et al. (1999).

24. Evertson (1989); Webster-Stratton et al. (2004).

maintain well-organized classrooms and to use the instructional and skill-building strategies as prescribed, but findings were mixed regarding the impact of these approaches on students' task engagement and academic success.

One randomized controlled trial conducted with teachers from two school districts investigated the effectiveness of a classroom management program called COMP (*Classroom Organization and Management Program*).[25] COMP guides teachers in creating a well-organized classroom, establishing positive management policies, and maintaining these procedures throughout the year. The experimental study included 14 elementary school teachers assigned to the COMP intervention and 15 assigned to the control group. The COMP teachers received two 1-day workshops in the fall, with control group teachers receiving the same training at the end of the year. Observational data indicated that COMP teachers exceeded the control group in the use of key management principles, and their students showed statistically significantly greater task engagement and academic success and fewer inappropriate behaviors in the classroom.

However, another experimental study examining the effectiveness of a teacher training series that emphasized similar classroom management skills, reinforcement contingencies, and instructional and skill-building strategies showed less definitive results. Researchers examined the *Incredible Years Training for Teachers Series* in a randomized controlled group evaluation.[26] The teacher training series focused on the effective use of teacher attention, praise, and encouragement; how to manage inappropriate classroom behaviors; the importance of building positive relationships with students; and how to teach empathy, social skills, and problem-solving. Observational data indicated increases in teachers' use of praise and encouragement and reduced use of criticism and harsh discipline. But effects on concomitant student outcomes (for example increases in positive interactions with teachers and peers, improved task engagement, and reduction in aggression), although reported as statistically significant by the study's authors, could not be independently confirmed.[27]

In a series of four single-subject studies, student choice as an intervention also has been empirically demonstrated to be effective in decreasing inappropriate behaviors of students with emotional and behavioral disorders. Student choice includes many variations, such as choosing the specific task to complete,[28] materials to be used,[29] and sequence of activities.[30] For example, researchers investigated the effects of choice on the academic engagement of elementary school students with emotional and behavioral challenges using a multiphased, single-subject design.[31] In the first analysis, two participants were given choices from menus of academic tasks that were pertinent to their educational objectives in English and spelling. Reversal

25. Evertson (1989).

26. Webster-Stratton et al. (2004).

27. The authors reported that preplanned comparisons using composite scores adjusted by pretest scores of treatment and control groups showed statistically significant reductions in the intervention students' conduct problems after 6 months. However, when What Works Clearinghouse reviewers applied a multiple comparison adjustment to the analyses, the findings showed no statistically significant differences between the outcomes of the intervention and comparison students.

28. Dunlap et al. (1994); Kern, Bambara, and Fogt (2002).

29. Kern et al. (1994).

30. Kern, Mantegna, et al. (2001).

31. Dunlap et al. (1994).

designs showed that the choice condition increased task engagement and reduced disruptive behavior for both students. An additional analysis was performed with a third student in an effort to further distinguish the effects of choice from preference. In this study, one of the no-choice phases was yoked to a previous choice condition. This analysis demonstrated that the choice condition was superior to baseline and yoked-control phases, as determined by levels of task engagement and disruptive behavior.

Examples of studies that demonstrate the effectiveness of modifying classroom and individual instructional strategies

Reviews of research and retrospective observations of students who exhibit problem behaviors have concluded that these students are also likely to have poor academic performance,[32] although the direction of relationship between academics and behavior remains unclear.[33] Three single-subject studies have shown that curricular variables, such as assigning work that exceeds a student's skill level[34] or attention span, using a single and constant learning task (for example, written assignments or workbook pages) rather than a variety of activities, and delivering instruction at a slow pace or without sufficient interactive practice, can set the occasion for or exacerbate problem behaviors in the classroom.[35]

Another single-subject investigation examining the techniques of direct instruction suggested that lessons delivered in small steps, at the appropriate level of difficulty, and with ample opportunities for practice result in higher levels of on-task behavior and student engagement.[36] Single-subject research data also support the practice of increasing the number of opportunities that students have to respond to academic or social prompts, thereby increasing academic engaged time and fluency with the material and reducing inappropriate behavior. In one study researchers increased the number of teacher-presented opportunities to respond from 1.7 per minute during a baseline phase to 3.5 during an intervention phase in a class of nine students (ages 8 through 12) with emotional and behavioral disorders. The increase in opportunities to respond was associated with higher correct responding, fewer disruptive behaviors, and increased on-task behavior.[37]

There also is evidence that using effective instructional principles positively impacts students' academic and social behaviors. In one alternating-treatment design study researchers compared the effects of instruction incorporating modeling, guided practice, and student independent practice (that is, direct instruction, following guidelines derived from the literature[38]) with two other types of instruction: cooperative learning, where students participated in teams of one target student and two or three classmates, and independent learning, where participants were given individual folders detailing the lesson for the day.[39] Findings demonstrated higher rates

32. Montague, Enders, and Castro (2005); Nelson et al. (2004); Reid et al. (2004).

33. Epstein et al. (2005).

34. Lee et al. (1999).

35. Kern, Delaney, et al. (2001); Nelson et al. (1996). See a review of additional relevant research by Kern and Clemens (2007).

36. Nelson et al. (1996). See relevant research reviews by Adams and Engelmann (1996); Rivera et al. (2006); Rosenshine and Stevens (1986).

37. Sutherland et al. (2003).

38. Rosenshine and Stevens (1986) provide a synthesis of research on the practices of teachers who effectively implement direct instruction, including teaching in small steps and providing ample opportunities for students' guided and independent practice.

39. Nelson et al. (1996).

of on-task behavior and lower rates of disruptive behavior among four elementary school students with emotional disorders in a self-contained classroom who were in the direct instruction group, relative to their performance in the other two conditions. The independent learning approach resulted in increased levels of disruptive behavior and decreased levels of on-task behavior relative to the direct instruction approach. The authors concluded that the instructional system underlying direct instruction practices reduced the disruptive behavior of students, and that certain instructional methods can serve as aversive stimuli in classrooms.

Finally, peer tutoring is an instructional strategy in which students work in pairs (or groups) as a tutor and tutee(s). The goals are to improve academic learning, develop cooperative work habits, and increase positive social interactions among students. Using both experimental group and single-subject research designs, researchers have demonstrated the effectiveness of peer tutoring as an instructional strategy for students with behavior problems.[40] One randomized controlled trial examined the effects of peer tutoring and parent involvement interventions on mathematics achievement of 84 academically at-risk 4th and 5th graders. The findings demonstrated that students who participated in the peer tutoring intervention groups (with or without parent involvement) displayed higher levels of accurate mathematics computations, and both groups also showed significant behavioral improvements in the classroom (decreases in acting out behaviors and increases in task engagement, as rated by their teachers) compared with control students.[41] Additionally, a single-subject research study investigated the effects of classwide peer tutoring on the classroom behavior and academic performance of students with and without attention deficits.[42] The study included 18 students with attention problems (as reported by their parents and teachers) and 10 typically developing classmates in 1st–5th grades across schools in two districts. During the treatment condition, tutoring pairs worked with each other for about 20 minutes a day for 3 to 4 days a week on specific academic skills, switching roles (from tutor to tutee) every 10 minutes. The intervention was associated with significant increases in active engagement in academic tasks for both students with and without attention deficits, reductions in off-task behaviors for most study participants, and improvements in academic performance.

Recommendation 3. Teach and reinforce new skills to increase appropriate behavior and preserve a positive classroom climate

Level of evidence: Strong

The panel rated the level of evidence for this recommendation as *strong*. This recommendation is based on five randomized controlled trials[43] and three single-subject research studies[44] examining the effectiveness of teaching and reinforcing new appropriate behaviors to students with problem behaviors. These studies have shown success in teaching students replacement behaviors (such as appropriate attention-seeking, social skills, problem-solving, self-management skills, and self-control strategies) and, as a result, in

40. DuPaul et al. (1998); Heller and Fantuzzo (1993). For reviews of relevant research, see Rivera et al. (2006); Ryan, Reid, and Epstein (2004).

41. Heller and Fantuzzo (1993).

42. DuPaul et al. (1998).

43. Conduct Problems Prevention Research Group (1999); Daunic et al. (2006); Frey et al. (2005); Grossman et al. (1997); Walker et al. (1998).

44. Beard and Sugai (2004); Peterson et al. (2006); Todd et al. (1999).

reducing inappropriate behaviors such as disruption and aggression. Furthermore, studies that span almost half a century demonstrate that positive reinforcement is associated with initial and long-term academic benefits and with increases in the frequency of appropriate behaviors among general education students.[45]

Examples of studies that demonstrate the effectiveness of teaching new skills to increase appropriate behaviors

Studies of classroom-based interventions for students with behavior problems have focused on enhancing skills, such as appropriate attention-seeking, social skills, problem-solving, self-management skills, and self-control strategies. One randomized controlled trial[46] and two single-subject research studies[47] have demonstrated that reductions in inappropriate behaviors, such as disruption and aggression, and increases in academic engagement are associated with skill-building instruction and reinforcement of positive behavior.

For example, one recent randomized controlled trial involving 165 students in 4th and 5th grades demonstrated that teaching students problem-solving skills useful in anger-provoking situations can improve teacher-reported behavior, including self-control and aggression.[48] Teachers delivered the classwide intervention to all students (both those identified with behavior problems and their typical peers) twice a week for 10 weeks, rated the social skills curriculum positively, and reported that behavior was significantly improved relative to comparison students and maintained over several months.

Two other groups of investigators, using single-subject research designs, have shown that self-monitoring interventions with older elementary school students lead to increases in academic engagement and decreases in off-task behaviors.[49] Researchers examined the relationship between self-monitoring of on-task behavior, overall teacher perceptions of student performance, task completion, and frequency of teacher praise. The single-subject multiple-baseline design was employed across class periods for one 4th grade student with learning disabilities and problem behavior in a general education classroom. Eight male students were randomly selected from a pool of 16 to serve as comparison students. Results indicate that implementation of the self-management technique resulted in a decrease in the frequency of problem behaviors and an increase in on-task behavior and task completion. In addition, the intervention was associated with increased positive teacher perceptions of student performance.

Recently, another group of investigators examined whether a self-monitoring strategy, coupled with a student-teacher matching strategy (assessing if students' behavior ratings on a four-point scale were matched within one point to teachers' ratings), would improve the classroom social skills of five inner-city middle school students who were at risk for school failure.[50] Using a multiple-probe design across students and class periods, the researchers found that self-monitoring and student-teacher matching led to increases in appropriate social skills and decreases in off-task behavior for all five students across all class periods. Data suggested that self-monitoring is an effective procedure to

45. For example, Akin-Little et al. (2004); Cameron et al. (2001); Hall, Lund, and Jackson (1968); Hall et al. (1968).

46. Daunic et al. (2006).

47. Peterson et al. (2006); Todd et al. (1999).

48. Daunic et al. (2006).

49. Peterson et al. (2006); Todd et al. (1999).

50. Peterson et al. (2006).

promote the use of appropriate social skills across multiple general education settings, but improvements were more dramatic and consistent when a matching strategy also was used.

Additional studies, including one randomized controlled trial and one single-subject design, have demonstrated the effects of a specific classroom-based early intervention program, *First Step to Success*, designed to reduce antisocial behaviors by modeling and teaching appropriate replacement skills and behaviors and rewarding students when those behaviors are used.[51] *First Step* consists of three interconnected modules: proactive, universal screening of students for emotional and behavioral risks; a classroom-based intervention involving the teacher, peers, and the target child; and a home-based module of parent or caregiver education to support the student's school adjustment. The classroom strategy capitalizes on a brief consultative relationship established between the teacher and a behavioral coach who works with teachers for 10 days to model strategies to teach students appropriate replacement behaviors and reward students when those behaviors are used. During the school day the teacher gives the student visual cues (showing a green or red card) to indicate whether the student is on task and using appropriate behaviors. Throughout the day the student accrues points toward his or her behavioral goal. A student who makes the daily goal may choose an enjoyable activity for the whole class.[52] Using a cohort design with random assignment of 46 kindergartners to intervention or wait-list control conditions, students in the *First Step* program showed statistically significant increases in adaptive and on-task behaviors and decreases in maladaptive behaviors relative to control group students and maintained gains into the primary grades. In addition, teachers using the program in their classrooms expressed a high degree of satisfaction, remarking that it was easy to learn and implement and had favorable results with their students.[53]

The most recent study conducted by Beard and Sugai (2004) examined the effects of *First Step* on rates of problem behavior and academic engagement for six kindergarten students who were identified by their teachers as having high rates of problem behaviors. Half of the students received the classroom-based, teacher-directed intervention and the other half received the classroom- and home-based components. Using a single-subject design across students and classrooms, results showed a decrease in problem behaviors and an increase in academic engagement for all six children during the intervention phase, with effects persisting for four of the six students for 5 months after the end of the intervention.

One limitation to the collective research on *First Step*, however, is uncertainty regarding the impact of the home-based component of the dual intervention. Research to date has not been able to determine whether there is added benefit to the subscribed model of parent involvement when implemented with fidelity (6 weeks of meetings between the coach and parents or guardians).

Researchers also have examined the long-term effectiveness of the PATHS (*Promoting Alternative THinking Strategies*) curriculum, which focuses on developing students' self-control, emotional awareness, peer relations, and problem-solving skills. PATHS is a component of the *Fast Track* project, a multi-site intervention designed to prevent serious antisocial behavior and related problems in children

51. Walker et al. (1998); Beard and Sugai (2004).

52. Walker et al. (2005).

53. Walker et al. (1998).

at high risk when entering 1st grade.[54] Cohorts of participants were recruited to *Fast Track* from 1991–93, yielding a total sample of nearly 900 children. One randomized controlled trial involved 198 intervention and 180 comparison classrooms, with 1st grade teachers delivering the PATHS curriculum. Findings from classroom observations and peer ratings indicated significant reductions in students' levels of aggression and disruptive behavior.

Similarly, researchers have investigated the impact of *Second Step*, a violence-prevention, social and emotional learning program designed to reduce impulsive and aggressive behavior in elementary school students by increasing their social competence. The multi-lesson curriculum is designed for classroom teachers to deliver once or twice a week, and it includes discussion questions, modeling, coaching, and practice. At least a dozen evaluations have been conducted on *Second Step*, with two of the most rigorous studies described in more detail here. In one randomized trial, researchers used 6 pairs of matched schools, involving 790 2nd and 3rd grade students.[55] Aggressive and prosocial behavior changes were measured two weeks and six months after participation in the curriculum by teacher reports and by observation of a random subsample of 588 students in classroom, playground, and cafeteria settings. Although behavior observations collected by trained researchers revealed an overall decrease in physical aggression two weeks after the intervention and an increase in appropriate behaviors in the intervention group, with most effects persisting six months later, changes in teacher-reported behavior did not differ significantly between the intervention and comparison schools after adjusting for students' demographic differences.[56]

The most recent evaluation of *Second Step* involved 1,235 students from 15 elementary schools in 3 cities in Washington State.[57] The findings demonstrated that students who participated in *Second Step* were more likely to prefer prosocial goals, require less adult intervention, behave less aggressively, and (among girls) behave more cooperatively. Teacher ratings also showed increases in their students' social competence and decreases in antisocial behaviors in the first year of the program. But these impacts did not persist into the second year, when the students' new teachers failed to notice continued improvement in students' behavior.

One limitation of this body of research on classwide social skill-building interventions, however, is that many studies examined the collective effects of multiple components of comprehensive intervention packages, making it difficult to determine the value-added effects of specific components, such as parent involvement modules.

Examples of classroom studies that demonstrate the effectiveness of positive reinforcement

As early as the 1960s, research studies demonstrated that positive reinforcement increased the task engagement and reduced disruptive (or "dawdling") behavior of students in general education classrooms.[58] Since then, however, the use of

54. Conduct Problems Prevention Research Group (1999). For more information on the *Fast Track* project, see http://www.pubpol.duke.edu/centers/child/fasttrack/index.html.

55. Grossman et al. (1997).

56. The researchers adjusted the teacher ratings on standardized behavior scales for the students' sex, age, socioeconomic status, race, academic performance, household size, and class size.

57. Frey et al. (2005).

58. For example, Hall, Lund, and Jackson (1968); Hall et al. (1968).

rewards in education has been veiled in some controversy, primarily due to a perceived negative effect on student's intrinsic motivation. The concerns are based on studies conducted since the 1970s, leading some researchers and educators to issue warnings against the use of praise and extrinsic rewards in schools (for example, a concern that "token economies will produce token learners").[59]

To address these concerns, a number of researchers have examined the large body of empirical studies on positive reinforcement to determine overarching findings. The earliest meta-analysis reviewed 128 studies to examine the overall effects of extrinsic rewards on students' intrinsic motivation and interest in activities.[60] Findings revealed that several types of rewards—engagement-contingent rewards given for engaging in a task regardless of completion, completion-contingent rewards given for completing one or more tasks, and performance-contingent rewards given for performing up to a specific standard—significantly undermined students' return to and persistence in a target activity during a free choice period ("free-choice intrinsic motivation"), and their self-reported interest in the target activity. Positive feedback, however, enhanced both free-choice behavior and self-reported interest.

The results from two other meta-analyses ran counter to this earlier study and concluded that little detrimental effect was found with the use of external reinforcement in educational settings; in fact, rewards following and linked to appropriate behavior were related to both initial and long-term academic engagement and social success.[61] The first set of researchers reviewed more than 100 experimental studies conducted over the previous 30 years.[62] Results suggested that rewards given for low-interest tasks enhanced free-choice intrinsic motivation. On high-interest tasks, verbal rewards produced positive effects on free-choice motivation and self-reported task interest. Negative effects were found on high-interest tasks when the rewards were tangible, expected (offered beforehand), and loosely tied to level of performance. When rewards were linked to level of performance, measures of intrinsic motivation increased or did not differ from a non-rewarded control group.

More recently, the researchers examined the extrinsic-intrinsic dichotomy debate using a meta-analytic approach that drew on evidence from cognitive and behavioral literatures.[63] From this review, it was concluded that little detrimental effect was found with the use of external reinforcement. Specific recommendations on the appropriate use of reinforcement programs in educational settings were offered to counteract inadvertent negative effects when rewards were not delivered with vigilance—namely linking rewards to specific behaviors, delivering rewards frequently and immediately after the behavior, and gradually fading away rewards for appropriate behavior.

Recommendation 4. Draw on relationships with professional colleagues and students' families for continued guidance and support

Level of evidence: Moderate

The panel rated the level of evidence supporting this recommendation as *moderate*. One quasi-experimental[64] study and

59. For example, Deci (1971); Deci et al. (1999); Kohn (1993).

60. Deci et al. (1999).

61. Akin-Little et al. (2004); Cameron et al. (2001).

62. Cameron et al. (2001).

63. Akin-Little et al. (2004).

64. Stevens and Slavin (1995).

one single-subject study[65] examined the effects of peer teacher relationships in improving social relationships among students or increasing student engagement in the classroom. Additionally, one randomized controlled trial[66] confirmed the effectiveness of teachers' consulting with behavioral experts in reducing behavior problems among students who exhibit inattentive and disruptive behaviors. Finally, two randomized controlled trials[67] evaluated interventions specifically aimed at establishing positive teacher-parent relationships, with one study demonstrating decreases in problem behaviors. Although components of recommendation 4 are supported by two randomized controlled trials, one study focused on teachers consulting with experts on particular problem behaviors of students identified with attention deficit/hyperactivity disorder, and the other on a specific teacher-parent education and activity program. The other studies supporting the recommendation include one quasi-experimental study and one single subject study. Consequently, the panel believes that the overall level of evidence for this recommendation is *moderate.*

Examples of studies in which relationships with professional colleagues affect students' social relations and student engagement

A quasi-experimental study considered a comprehensive school reform model that included a relationship-building component for teachers consisting of peer coaching, classroom observations, and teacher collaborations.[68] Findings indicate that students from the comprehensive school reform programs substantially increased the number of peer social relationships relative to students in comparison schools, though it is unclear if the teacher relationship component alone was effective in establishing this outcome.

A single-subject study reported on the effects of peer coaching for four teachers representing various grade levels, content areas, and levels of teaching experience.[69] A veteran elementary teacher with experience in coaching served as their peer coach and provided the teacher participants with an all-day inservice where they were trained on a new instructional technique and curriculum. The peer coach's involvement also included seven collaborative sessions with each teacher and in-class support during these lessons. The results from this study revealed high levels of student engagement and participation for the lessons where teachers were taught and supported by a peer coach.

Example of one study in which consultation with behavioral experts reduces behavior problems

One randomized controlled trial that examined teacher partnerships with behavioral consultants revealed strong evidence that consultations with behavioral experts can reduce behavior problems in the classroom.[70] The researchers explored the effects of having teachers whose students were identified with significant inattentive or hyperactive disorder participate in several behavioral consultation sessions that were structured to help the teacher identify and analyze problem behaviors and design and implement a behavior plan. Findings reveal that, compared with teachers with no consultation, those who collaborated with a behavioral consultant reported a

65. Kohler et al. (1997).

66. Dunson et al. (1994).

67. Ialongo et al. (1999); Webster-Stratton et al. (2004).

68. Stevens and Slavin (1995).

69. Kohler et al. (1997).

70. Dunson et al. (1994).

significant reduction in their students' hyperactivity and in the incidence of behavior severity below clinical levels.

Examples of studies in which relationships with families reduce behavior problems

Researchers conducted a randomized controlled trial that assessed the effects of two universal 1st grade preventive interventions on several student outcomes, including early risk behaviors for conduct disorders such as disruptive and aggressive behavior.[71] One of the two interventions explored family-school partnerships, which consisted of a combination of trainings for teachers on effective parent-teacher partnership building and communication, along with weekly home-school activities and parent workshops aimed to increase parental involvement in their child's classroom activities. The study revealed that over the course of 1st and 2nd grades, both boys and girls in the intervention had significantly fewer behavior problems by the spring of 2nd grade relative to the comparison group.

Another randomized controlled trial examined the effects of *The Incredible Years*, a parent-teacher-child training program, on social competence and conduct problems among 4- to 8-year-old children who met criteria for oppositional defiant disorder.[72] Parental involvement was the cornerstone of the parent training condition in this study, with parents attending weekly clinic visits where they participated in programs aimed to strengthen positive interactions with their children. More relevant to the recommendation on teacher relationship building, however, was the teacher training component where a constant theme was to encourage positive communication with parents and strengthen parent-teacher collaborations.[73] The study's authors reported that comparisons between the treatment groups (including the treatment groups where teachers received training) and control groups showed statistically significant reductions in conduct problems after six months of the intervention. However, when the What Works Clearinghouse reviewers applied a multiple comparison adjustment to the analyses, the findings showed no statistically significant differences in child conduct problems between the intervention and comparison students.

Recommendation 5. Assess whether schoolwide behavior problems warrant adopting schoolwide strategies or programs and, if so, implement ones shown to reduce negative and foster positive interactions

Level of evidence: Moderate

The panel judged the level of evidence supporting this recommendation to be *moderate*. One quasi-experimental study investigated the impact of schoolwide changes in structure, organization, and practices and determined that these changes increased the number of social relationships among students.[74] In addition, four randomized controlled trials[75] and one single-subject[76] study examined the impact of specific

71. Ialongo et al. (1999).

72. Webster-Stratton et al. (2004).

73. Participants were randomly assigned to one of six conditions—five treatment conditions or a comparison group. Treatment conditions included: (1) parent training alone (PT); (2) child training alone (CT); (3) parent training plus teacher training (PT+TT); (4) child training plus teacher training (CT+TT); or (5) parent, child and teacher training (PT+CT+TT).

74. Stevens and Slavin (1995).

75. Conduct Problems Prevention Group (1999); Frey et al. (2005); Grossman et al. (1997); Ialongo et al. (1999).

76. Cunningham et al. (1998).

schoolwide intervention programs, each study finding statistically significant positive effects for several of its behavioral outcomes. Although there are several randomized controlled trials to support one component of recommendation 5 (specific schoolwide intervention programs), other components of the recommendation (such as changes to the overall structure and organization of the school, and peer mediation programs implemented outside the classroom) are supported by quasi-experimental or single subject studies that have moderate levels of evidence. Consequently, the panel believes that a *moderate* designation is appropriate for the overall level of evidence for this recommendation.

Example of one study that demonstrates the effectiveness of schoolwide strategies

A quasi-experimental study was conducted on a sample of more than 1,000 2nd–6th grade students in five elementary schools to evaluate the effects of a cooperative elementary school, in which the concept of cooperation was embedded in the reorganization of the school's environment and learning processes.[77] Elements of this restructured schoolwide program included widespread use of cooperative learning and inclusion of students with learning disabilities in regular education classrooms; regular opportunities for teacher coaching and collaborative support; a building-level steering committee comprised of administrators, teachers, special services, and other faculty to develop goals for the school and act as an open forum for discussion of school management and policy issues; and numerous opportunities to encourage active family involvement at the classroom and schoolwide levels.

In addition to evaluating the academic outcomes of this schoolwide program, the researchers also considered behavioral outcomes by assessing the number of social relationships established by students. The findings indicate that the social relationships among students had greatly increased after the program was implemented relative to students in comparison schools. In addition, there appeared to be greater social acceptance of students with learning disabilities in intervention schools after the program had been implemented.

Examples of schoolwide interventions that demonstrate a reduction in behavior problems

A number of studies evaluated the effects of classroom-based curricula aimed at promoting positive outcomes in schoolwide behaviors and social competency (see recommendation 3 for a detailed description of several studies implemented in classrooms). One example involves a randomized controlled trial that explored the impact of a preventive intervention program for 1st graders at high risk for long-term antisocial behavior.[78] This program consisted of several components, such as social skills training and academic tutoring sessions that occurred during two hours of extracurricular enrichment programs provided to students and families. One of the components of the program was PATHS (*Promoting Alternative THinking Strategies*), a schoolwide curriculum that was implemented by teachers in an average of two to three lessons a week during the school year. Lessons from the curriculum addressed four domains of skills: emotional understanding and communication, friendship, self-control, and social problem-solving. The study found that by the end of 1st grade, significantly fewer aggressive and disruptive behavior problems were found among students in the intervention

77. Stevens and Slavin (1995).

78. Conduct Problems Prevention Group (1999).

schools compared with those who did not receive the intervention.

One single-subject study considered an intervention that targeted behavior problems occurring on school playgrounds.[79] Fifth grade students were trained in a conflict resolution program and were involved in peer mediation teams that intervened within 10 seconds of the start of a conflict. The study found that the peer mediators successfully resolved approximately 90 percent of the playground conflicts in which they intervened and that physically aggressive playground incidents were reduced by 51–65 percent when the mediation program was implemented.

79. Cunningham et al. (1998).

References

Adams, K., & Christenson, S. (2000). Trust and the family-school relationship: Examination of parent-teacher differences in elementary and secondary grades. *Journal of School Psychology, 38*(5), 477–97.

Adams, G., & Engelmann, S. (1996). *Research on direct instruction: 25 years beyond DISTAR*. Seattle, WA: Educational Achievement Systems.

Adelman, H., & Taylor, L. (2005). *The school leader's guide to student learning supports: New directions for addressing barriers to learning*. Thousand Oaks, CA: Corwin Press.

Akin-Little, K., Eckert, T., Lovett, B., & Little, S. (2004). Extrinsic reinforcement in the classroom: Bribery or best practice. *School Psychology Review, 33*, 344–62.

American Educational Research Association, American Psychological Association, & National Council on Measurement in Education. (1999). *Standards for educational and psychological testing.* Washington, DC: AERA Publications.

American Psychological Association. (2002). Criteria for practice guideline development and evaluation. *American Psychologist, 57*, 1058–51.

Annenberg Institute for School Reform. (n.d.). *Instructional coaching: Professional development strategies that improve instruction*. Providence, RI: Author. Retrieved February 29, 2008, from http://www.annenberginstitute.org/pdf/InstructionalCoaching.pdf.

Axelrod, S., & Mathews, S. (Eds.) (2003). *How to improve behavior series.* Austin, TX: ProEd.

Bandura, A. (1977). *Social learning theory*. New York: General Learning Press.

Barrish, H., Saunders, M., & Wolf, M. (1969). Good Behavior Game: Effects of individual contingencies for group consequences on disruptive behavior in a classroom. *Journal of Applied Behavior Analysis, 2*, 119–24.

Battistich, V., Schaps, E., Watson, M., Solomon, D., & Lewis, C. (2000). Effect of the Child Development Project on students' drug use and other problem behaviors. *The Journal of Primary Prevention, 21*(1), 75–99.

Bear, G. (1998). School discipline in the United States: Prevention, correction, and long-term social development. *School Psychology Review, 27*(1), 724–42.

Beard, K., & Sugai, G. (2004). First Step to Success: An early intervention for elementary children at risk for antisocial behavior. *Behavioral Disorders, 29*(4), 396–409.

Bempechat, J. (1998). *Against the odds: How "at-risk" children exceed expectations.* San Francisco: Jossey-Bass.

Bradley, R., Doolittle, J., Lopez, F., Smith, J., & Sugai, G. (2007). *Discipline: Improved understanding and implementation.* OSEP Part B Regulations Regional Implementation Meeting: Building the Legacy IDEA 2004, Washington, DC, January 30.

Bradshaw, C., Mitchell, M., & Leaf, P. (in press). Examining the effects of schoolwide PBS on student outcomes: Results from a randomized controlled effectiveness trial in elementary schools. *Journal of Positive Behavior Interventions.*

Brophy, J. (1981). On praising effectively. *Elementary School Journal, 81*(5), 268–78.

Brophy, J. (1983). Classroom organization and management. *Elementary School Journal, 83*(4), 265–85.

Broussard, C., & Northup, J. (1995). An approach to functional assessment and analysis of disruptive behavior in regular education classrooms. *School Psychology Quarterly, 10*(2), 151–64.

Bryk, A., & Schneider, B. (2002) *Trust in schools: A core resource for improvement*. New York: Russell Sage Foundation.

Cameron, J., Banko, K., & Pierce, W. (2001). Pervasive negative effects of rewards on intrinsic motivation: The myth continues. *The Behavior Analyst, 24*, 1–44.

Cameron, J., & Pierce, W. (1994). Reinforcement, reward, and intrinsic motivation: A meta-analysis. *Review of Educational Research, 64*(3), 363–423.

Christenson, S., & Christenson, C. (1998). *Family, school, and community influences on children's learning: A literature review* (Report No. 1, Live and Learn Project). Minneapolis, MN: University of Minnesota Extension Service.

Christenson, S., & Sheridan, L. (2001). *School and families: Creating essential connections for learning*. New York: Guilford Press.

Clark, R. (1983). *Family life and school achievement.* Chicago: University of Chicago Press.

Colvin, G. (2004). *Managing the cycle of acting-out behavior in the classroom*. Eugene, OR: Behavior Associates.

Colvin, G., Ainge, D., & Nelson, R. (1997). How to defuse defiance, threats, challenges, confrontations. *Exceptional Children, 29*(6), 47–51.

Colvin, G., & Sugai, G. (1989). *Managing escalating behavior.* Eugene, OR: Behavior Associates.

Commission on Chronic Illness. (1957). *Chronic illness in the United States* (vol. 1). Cambridge, MA: Harvard University Press.

Conduct Problems Prevention Research Group (1999). Initial impact of the Fast Track Prevention Trail for conduct problems: Classroom effects. *Journal of Consulting and Clinical Psychology, 67*(5), 648–57.

Cook, T., & Campbell, D. (1979). *Quasi experimentation: Design and analysis issues for field settings*. Chicago: Rand-McNally.

Cotton, K. (1989). *Educational time factors. Close-Up No. 8.* Portland, OR: Northwest Regional Educational Laboratory. Retrieved February 1, 2008, from http://www.nwrel.org/scpd/sirs/4/cu8.html.

Council for Exceptional Children. (1987). *Academy for effective instruction: Working with mildly handicapped students.* Reston, VA: Author.

Cunningham, C., Cunningham, L., Martorelli, V., Tran, A., Young, J., & Zacharias, R. (1998). The effects of primary division, student-mediated conflict resolution programs on playground aggression. *Journal of Child Psychology and Psychiatry, 39*(5), 653–62.

Darling-Hammond, L. (1994). National standards and assessments: Will they improve education? *American Journal of Education, 102*, 479–511.

Daunic, A., Smith, S., Brank, E., & Penfield, R. (2006). Classroom based cognitive-behavioral intervention to prevent aggression: Efficacy and social validity. *Journal of School Psychology, 44*, 123–39.

Davis, B. (1993). *Tools for teaching*. San Francisco, CA: Jossey Bass.

Davis, C., Lane, K., Sutherland, K., Gunter, P., Denny, R., Pickens, P., & Wehby, J. (2004). Differentiating curriculum and instruction on behalf of students with emotional and behavioral disorders within general education settings. In L. Bullock, R. Gable, & K. Melloy (Eds.), *Fifth CCBD Mini-Library Series: Meeting the Diverse Needs of Children and Youth with E/BD—Evidence-Based Programs and Practices*. Arlington, VA: Council for Children with Behavior Disorders.

Deci, E. (1971). *Intrinsic motivation*. New York: Plenum Press.

Deci, E., Koestner, R., & Ryan, R. (1999). A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation. *Psychological Bulletin, 125,* 627–68.

Dolan, L., Kellam, S., Brown, C., Werthamer-Larsson, L., Rebok, G., Mayer, L., Laudolff, J., & Turkkan, J. (1993). The short-term impact of two classroom-based preventive interventions on aggressive and shy behaviors and poor achievement. *Journal of Applied Developmental Psychology, 14*, 317–45.

Doyle, W. (1986). Classroom organization and management. In M. Wittrock (Ed.), *Handbook of research on teaching,*

3rd edition (pp. 392–431). New York: Macmillan.

Doyle, W. (1992). Curriculum and pedagogy. In P. W. Jackson (Ed.), *Handbook of research on curriculum* (pp. 486–516). New York: Macmillan.

Dunlap, G., DePerczel, M., Clarke, S., Wilson, D., Wright, S., White, R., & Gomez, A. (1994). Choice making to promote adaptive behavior for students with emotional and behavioral challenges. *Journal of Applied Behavior Analysis, 27*, 505–18.

Dunson, R., Hughes, J., & Jackson, T. (1994). Effect of behavioral consultation on student and teacher behavior. *Journal of School Psychology, 32*, 247–66.

DuPaul, G., Ervin, R., Hook, C., & McGoey, K. (1998). Peer tutoring for children with Attention Deficit Hyperactivity Disorder: Effects on classroom behavior and academic performance. *Journal of Applied Behavioral Analysis, 31*, 579–92.

Engelmann, S., & Carnine, D. (1983). *Theory of instruction: Principles and applications*. New York: Irvington.

Epstein, J. (1995). School/family/community partnerships: Caring for the children we share. *Phi Delta Kappan*, *76*(9), 701–12.

Epstein, M., Nelson, J., Trout, A., & Mooney, P. (2005). Achievement and emotional disturbance: Academic status and intervention research. In M. Epstein, K. Kutash, & A. Duchnowski (Eds.), *Outcomes for children with emotional and behavioral disorders and their families. Programs and evaluation best practices* (Second Edition) (pp. 451–77). Austin, TX: ProEd.

Ervin, R., Kern, L., Clarke, S., DuPaul, G., Dunlap, G., & Friman, P. (2000). Evaluating assessment-based intervention strategies for students with ADHD and comorbid disorders within the natural classroom context. *Behavioral Disorders, 25*(4), 344–58.

Ervin, R., Radford, R., Bertsch, K., Piper, A., Ernhardt, K., & Poling, A. (2001). A descriptive analysis and critique of the empirical literature on school-based functional assessment. *School Psychology Review, 30*, 193–210.

Evertson, C. (1989). Improving elementary classroom management: A school-based training program for beginning the year. *Journal of Educational Research, 83*(2), 82–90.

Everston, C., & Harris, A. (1995). *Classroom Organization and Management Program: Revalidation submission to the Program Effectiveness Panel (PEP), U.S. Department of Education*. Nashville, TN: Vanderbilt University, Peabody College (ED 403 247).

Evertson, C., Emmer, E., & Worsham, M. (2006). *Classroom management for elementary teachers* (7th Edition). Boston: Allyn & Bacon.

Evertson, C., & Smithey, M. (2000). Mentoring effects on proteges' classroom practice: An experimental field study. *The Journal of Educational Research, 93*(5), 294–304.

Field, M., & Lohr, K. (Eds.). (1990). *Clinical practice guidelines: Directions for a new program*. Washington, DC: Institute of Medicine.

Frey, K., Nolen, S., Van Schojack-Edstrom, L., & Hirschstein, M. (2005). Effects of a school-based social competence program: Linking children's goals, attributions, and behavior. *The Journal of Applied Developmental Psychology, 26*, 171–200.

Fuchs, D., Fuchs, L., Simmons, D., and Mayes, P. (2008). Peer Assisted Learning Strategies: Reading methods of grades 2-6 (Revised edition). Nashville: Vanderbilt Kennedy Center for Research on Human Development, Vanderbilt University.

Fuchs, D., Fuchs, L., Thompson, A., Al Otaiba, S., Yen, L., Yang, N., Braun, M., & O'Connor, R. (2002). Exploring the importance of reading programs for kindergartners with disabilities in mainstream classrooms. *Exceptional Children, 68*(3), 295–311.

Gay, G. (2000). *Culturally responsive teaching: Theory, research, and practice*. New York: Teachers College Press.

Good, T., & Brophy, J. (2003). *Looking in classrooms* (9th edition). Boston: Allyn & Bacon.

Greenberg, M., Weissberg, R., O'Brien, M., Zins, J., Fredericks, L., Resnik, H., & Elias, M. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist, 58*, 466–74.

Gresham, F. (2004). Establishing the technical adequacy of functional behavioral assessment: Conceptual and measurement challenges. *Behavioral Disorders, 28*(3), 282–98.

Gresham, F., McIntyre, L., Olson-Tinker, H., Dolstra, L., McLaughlin, V., & Van, M. (2004). Relevance of functional behavioral assessment research for school-based interventions and positive behavioral support. *Research in Developmental Disabilities, 25*, 19–37.

Grossman, D., Neckerman, H., Koepsell, T., Liu, P., Asher, K., Beland, K., Frey, K., & Rivara, F. (1997). Effectiveness of a violence prevention curriculum among children in elementary school. *The Journal of the American Medical Association, 277*, 1605–11.

Hall, R., Lund, D., & Jackson, D. (1968). Effects of teacher attention on study behavior. *Journal of Applied Behavior Analysis, 1*, 1–12.

Hall, R., Panyan, M., Rabon, D., & Broden, M. (1968). Instructing beginning teachers in reinforcement procedures which improve classroom control. *Journal of Applied Behavior Analysis, 1*, 315–22.

Hall, T. (2002). *Differentiated instruction: Effective classroom practices report.* Washington, DC: National Center on Accessing the General Curriculum, Center for Applied Special Technology, U.S. Department of Education, Office of Special Education Programs. Retrieved July 10, 2008, from http://www.cast.org/publications/ncac/ncac_diffinstruc.html.

Hall, V., & Hall, M. (1998–2004). *How to manage behavior series*. Austin, TX: ProEd.

Hamre, B., & Pianta, R. (2005). Can instructional and emotional support in the first-grade classroom make a difference for children at risk of school failure? *Child Development, 76*(5), 949–67.

Harry, B., & Kalyanpur, M. (1994). Cultural under-pinnings of special education: Implications for professional interactions with culturally diverse families. *Disability & Society, 9*(2),145–65.

Harvey, M., Lewis-Palmer, T., Horner, R., & Sugai, G. (2003). Trans-situational interventions: Generalization of behavior support across school and home environments. *Behavioral Disorders, 28*(3), 299–312.

Heckaman, K., Conroy, M., Fox, J., & Chait, A. (2000). Functional assessment-based intervention research on students with or at risk for emotional and behavioral disorders in school settings. *Behavioral Disorders, 25*(3), 196–210.

Heller, L., & Fantuzzo, J. (1993). Reciprocal peer tutoring and parent partnership: Does parent involvement make a difference? *School Psychology Review, 22*(3), 517–34.

Henderson, A., & Berla, N. (1994). *A new generation of evidence: The family is critical to student achievement*. Washington, DC: National Committee for Citizens in Education.

Hoerr, T. (1996). Collegiality: A new way to define instructional leadership. *Phi Delta Kappan, 77*(5), 380–81.

Hoover-Dempsey, K., Walker, J., Sandler, H., Whetsel, D., Green, C., Wilkins, A., & Closson, K. (2005). Why do parents become involved? Research findings and implications. *Elementary School Journal, 106*(2), 105–30.

Horner, R. (1994). Functional assessment: Contributions and future directions. *Journal of Applied Behavior Analysis, 27*, 401–04.

Horner, R., Carr, E., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children, 71*(2), 165–79.

Horner, R., & Spaulding, S. (in press). Rewards. *Psychology of classroom learning: An encyclopedia*. New York: Macmillan Reference.

Horner, R., Sugai, G., Smolkowski, K., Eber, L., Nakasato, J., Todd, A., & Esperanza, J. (in press). A randomized controlled trial assessing schoolwide positive behavior support in elementary schools. *Journal of Emotional and Behavioral Disorders.*

Howard, G. R. (2007). As diversity grows, so must we. *Educational Leadership, 64*(6), 16–22.

Hughes, J., Loyd, L., & Buss, M. (2007). Empirical and theoretical support for an updated model of mental health consultation for schools. In W. P. Erchul & S. M. Sheridan (Eds.), *Handbook of Research in School Consultation* (pp. 343–60). Mahwah, NJ: Erlbaum.

Ialongo, N., Wethamer, L., Kellam, S., Brown, C., Wang, S., & Lin, Y. (1999). Proximal impact of two first-grade preventive interventions on the early risk behaviors for later substance abuse, depression, and anti-social behavior. *American Journal of Community Psychology, 27*(5), 599–641.

Ialongo, N., Poduska, J., Werthamer, L., & Kellam, S. (2001). The distal impact of two first grade preventive interventions on conduct problems and disorder in early adolescence. *Journal of Emotional and Behavioral Disorders, 9*(3), 146–60.

Imel, S. (1991). *Collaborative learning in adult education*. Columbus, OH: ERIC Clearinghouse on Adult Career and Vocational Education (ERIC Digest No. 113).

Ingram, K., Lewis-Palmer, T., & Sugai, G. (2005). Function-based intervention planning: Comparing the effectiveness of FBA function-based and non-function-based intervention plans. *Journal of Positive Behavior Interventions, 7(*4), 224–36.

Irvin, L. K., Tobin, T., Sprague, J., Sugai, G., & Vincent, C. (2004). Validity of office discipline referral measures as indices of schoolwide behavioral status and effects of schoolwide behavioral interventions. *Journal of Positive Behavior Interventions, 6*(3), 131–47.

Jeynes, W. (2005). A meta-analysis of the relation of parental involvement to urban elementary school student academic achievement. *Urban Education, 40*(3), 237–69.

Joyce, B., & Showers, B. (1982). The coaching of teaching. *Educational Leadership, 40*, 4–8.

Joyce, B., Murphy, C., Showers, B., & Murphy, J. (1989). School renewal as cultural change. *Educational Leadership, 47*(3), 70–77.

Kamps, D., Wendland, M., & Culpepper, M. (2006). Active teacher participation in functional behavior assessment for students with emotional and behavioral disorders risks in general education classrooms. *Behavioral Disorders, 31*(2), 128–46.

Kellam, S. (1999). The influence of the first-grade classroom on the development of aggressive behavior. *Phi Delta Kappan, 25,* 4–8.

Kern, L., Bambara, L., & Fogt, J. (2002). Class-wide curriculum modification to improve the behavior of students with emotional or behavioral disorders. *Behavior Disorders, 27*, 317–26.

Kern, L., Childs, K., Dunlap, G., Clarke, S., & Falk, G. (1994). Using an assessment-based curricular intervention to improve the classroom behavior of a student with emotional and behavioral challenges. *Journal of Applied Behavior Analysis, 27*, 7–19.

Kern, L., & Clemens, N. (2007). Antecedent strategies to promote appropriate classroom behavior. *Psychology in the Schools, 44*(1), 65–75.

Kern, L., Delaney, B., Clarke, S., Dunlap, G., & Childs, K. (2001). Improving the classroom behavior of students with emotional and behavioral disorders using individualized curricular modifications. *Journal of Emotional and Behavioral Disorders, 9*(4), 239–47.

Kern, L., Maher, C., Choutka, C., & Sokol, N. (2002). Antecedent-based antecedent interventions used in natural settings to reduce challenging behavior: An analysis of the literature. *Education and Treatment of Children, 25*, 113–30.

Kern, L., Mantegna, M.E., Vorndran, C., Bailin, D., & Hilt, A. (2001). Choice of task sequence to reduce problem behaviors. *Journal of Positive Behavior Interventions, 3*, 3–10.

Kerr, M., & Nelson, C. (1989). *Strategies for managing behavior problems in the classroom* (Second Edition). New York: Macmillan.

Knight, J. (2004). Instructional coaches make progress through partnership. *Journal of Staff Development, 25*(2), 32–37.

Kohler, F., McCullough, C., Shearer, D., & Good, G. (1997). Effects of peer coaching on teacher and student outcomes. *Journal of Educational Research, 90*(2), 240–50.

Kohn, A. (1993). *Punished by rewards: The trouble with gold stars, incentive plans, A's, praise and other bribes*. Boston: Houghton Mifflin.

Kounin, J. (1970). *Discipline and group management in classrooms*. New York: Holt, Rinehard, and Winston, Inc.

Kutash, K., Duchnowski, A., & Lynn, N. (2006). *School-based mental health: An empirical guide for decision-makers*. Tampa, FL: University of South Florida, The Louis de la Parte Florida Mental Health Institute, Department of Child and Family Studies, Research and Training Center for Children's Mental Health.

Lane, K., Rogers, L., Parks, R., Weisenbach, J., Mau, A., Merwin, M., & Bergman, W. (2007). Function-based interventions for students who are nonresponsive to primary and secondary prevention efforts: Illustrations at the elementary and middle school levels. *Journal of Emotional and Behavioral Disorders, 15*(3), 169–83.

Lane, K., Weisenbach, J., Little, M., Phillips, A., & Wehby, J. (2007). Designing, implementing, and evaluating function-based interventions using a systematic, feasible approach. *Behavioral Disorders, 32*(2), 122–39.

Lannie, A., & McCurdy, B. (2007). Preventing disruptive behavior in the urban classroom: Effects of the Good Behavior Game on student and teacher behavior. *Education and Treatment of Children, 30*(1), 85–98.

Learning First Alliance. (2001). *Every child learning: Safe and supportive schools*. Washington, DC: Author. Retrieved January 7, 2008, from: http://www.learningfirst.org/publications/safeschools/.

Lee, Y., Sugai, G., & Horner, R. (1999). Using an instructional intervention to reduce problem and off-task behaviors. *Journal of Positive Behavior Interventions, 1*(4), 195–204.

Levine, A. (2006). *Educating school teachers*. Washington, DC: The Education Schools Project.

Lewis, T., Hudson, S., Richter, M., & Johnson, N. (2004). Scientifically supported practices in emotional and behavioral disorders: a proposed approach and brief review of current practices. *Behavioral Disorders, 29*(3), 247–59.

Lohrmann, S., & Talerico, J. (2004). Anchor the Boat: A classwide intervention to reduce problem behavior. *Journal of Positive Behavior Interventions, 6*, 113–20.

Maag, J. (1999) *Behavior management: From theoretical implications to practical applications*. San Diego: Singular Press.

Mace, F., Belfiore, P., & Hutchinson, J. (2001). Operant theory and research on self-regulation. In B. Zimmerman & D. Schunk (Eds.), *Self-regulated learning and academic achievement: Theoretical perspectives* (2nd ed.) (pp. 39–65). Mahwah, NJ: Erlbaum.

Martens, B., & DiGennaro, F. (2007). Behavioral consultation. In W. Erchul & S. Sheridan (Eds.), *Handbook of Research in School Consultation* (pp. 147–70). Mahwah, NJ: Erlbaum.

McGinnis, E., & Goldstein, A. (1997). *Skillstreaming the elementary school child: New strategies and perspectives for teaching prosocial skills*. Champaign, IL: Research Press.

McKevitt, B., & Braaksma, A. (2004). Best practices in developing a Positive Behavior Support system at the school level. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology V* (pp. 735–48). Bethesda, MD: National Association of School Psychologists.

Merrell, K., Merz, J., Johnson, E., & Ring, E. (1992). Social competence of students with mild handicaps and low achievement: A comparative study. *School Psychology Review, 21*, 125–37.

MetLife, Inc. (2006). *The MetLife Survey of the American Teacher 2006. Expectations and experiences*. New York: Author.

Montague, M., Enders, C., & Castro, M. (2005). Academic and behavioral outcomes of students at risk for emotional and behavioral disorders. *Behavioral Disorders, 31*(1), 83–92.

Moore, D., Anderson, A., & Kumar, K. (2005). Instructional adaptation in the management of escape-maintained behavior in a classroom. *Journal of Positive Behavior Interventions, 7(*4), 216–23.

Morgan, M. (1984). Reward-induced decrements and increments in intrinsic motivation. *Review of Educational Research, 54*, 5–30.

Mueller, M., Edwards, R., & Trahant, D. (2003). Translating multiple assessment techniques into an intervention selection model for classrooms. *Journal of Applied Behavior Analysis, 36*(4), 563–73.

Nelson, J. (1996a). Designing schools to meet the needs of students who exhibit disruptive behavior. *Journal of Emotional and Behavioral Disorders, 4,* 147–61.

Nelson, J. (1996b). *Think Time Strategy for schools*. Longmont, CO: Sopris West.

Nelson, J., Benner, G., Lane, K., & Smith, B. (2004). Academic achievement of K–12 students with emotional and behavioral disorders. *Exceptional Children, 71*(1), 59–73.

Nelson, J., Johnson, A. & Marchand-Martella, N. (1996). Effects of direct instruction, cooperative learning, and independent learning practices on the classroom behavior of students with behavioral disorders: A comparative analysis. *Journal of Emotional and Behavioral Disorders, 4*(1), 53–62.

Newcomer, L., & Lewis, T. (2004). Functional behavioral assessment: An investigation of assessment reliability and effectiveness of function-based interventions. *Journal of Emotional and Behavioral Disorders, 12*(3), 168–81.

Newman, L., Davies-Mercier, E., & Marder, C. (2003). School engagement of youth with disabilities. In M. Wagner, C. Marder, J. Blackorby, R. Cameto, L. Newman, P. Levine, & E. Davies-Mercier (Eds.), *The achievements of youth with disabilities during secondary school*. Menlo Park, CA: SRI International.

Novick, R. (1999). *Actual schools, possible practices: New directions in professional development.* Portland, OR: Northwest Regional Educational Laboratory.

Neufeld, B., & Roper, D. (2003). *Coaching: A strategy for developing instructional capacity.* Washington, DC: Aspen Institute Program on Education, and Providence, RI: Annenberg Institute for School Reform. Retrieved February 29, 2008, from http://www.annenberginstitute.org/pdf/Coaching.pdf.

O'Neill, R., Horner, R., Albin, R., Sprague, J., Storey, K., & Newton, J. S. (1997). *Functional assessment and program development for problem behavior: A practical handbook* (Second Edition). Pacific Grove, CA: Brooks/Cole Publishing.

Office of Special Education Programs: Technical Assistance Center on Positive Behavioral Interventions and Supports. (2008). *Schoolwide PBS*. Retrieved February 15, 2008, from http://www.pbis.org/schoolwide.htm#SystemsApproach.

Payne, L., Scott, T., & Conroy, M. (2007). A school-based examination of the

efficacy of function-based intervention. *Behavioral Disorders, 32*(3), 158–74.

Peterson, L., Young, K., Salzberg, D., West, R., & Hill, M. (2006). Using self-management procedures to improve classroom social skills in multiple general education settings. *Education and Treatment of Children, 29,* 1–21.

Pianta, R., La Paro, K., Payne, C., Cox, M., & Bradley, R. (2002). The relation of kindergarten classroom environment to teacher, family, and school characteristics and child outcomes. *Elementary School Journal, 102*, 225–38.

Reid, R., Gonzalez, J., Nordness, P., Trout, A., & Epstein, M. (2004). A meta-analysis of the academic status of students with emotional/behavioral disturbance. *Journal of Special Education, 34*(3), 130–43.

Reiss, S. (2005). Extrinsic and intrinsic motivation at 30: Unresolved scientific issues. *The Behavior Analyst, 28*, 1–14.

Rivera, M., Al-Otaiba, S., & Koorland, M. (2006). Reading instruction for students with emotional and behavioral disorders and at risk of antisocial behaviors in primary grades: Review of literature. *Behavioral Disorders, 31*(3), 323–37.

Rosenshine, B. (1980). How time is spent in elementary classrooms. In C. Denham & A. Lieberman (Eds.), *Time to learn* (pp. 107–26). Washington, DC: U.S. Department of Education, National Institute of Education.

Rosenshine, B., & Stevens, R. (1986). Teaching functions. In M. Wittrock (Ed.), *AERA handbook of research on teaching, 3rd Edition* (pp. 376–91). New York: Macmillan.

Ryan, J., Reid, R., & Epstein, M. (2004). A review of peer mediated intervention studies on academic achievement for students with emotional and behavior disorders. *Remedial and Special Education, 25*, 330–41.

Sasso, G., Conroy, M., Stichter, J., & Fox, J. (2001). Slowing down the bandwagon: The misapplication of functional assessment for students with emotional or behavioral disorders. *Behavioral Disorders, 26*(4), 282–96.

Sasso, G., Reimers, T., Cooper, L., Wacker, D., Berg, W., Steege, M., Kelly, L., & Allaire, A. (1992). Use of descriptive and experimental analyses to identify the functional properties of aberrant behavior in school settings. *Journal of Applied Behavior Analysis, 25*(4), 809–21.

Schunk, D. (1983). Reward contingencies and the development of children's skills and self-efficacy. *Journal of Educational Psychology, 75*, 511–18.

Schwarz, D., Flamant, R., & Lellouch, J. (1980). *Clinical trials*. London: Academic Press.

Scott, T., & Barrett, S. (2004). Using staff and student time engaged in disciplinary procedures to evaluate the impact of schoolwide PBS. *Journal of Positive Behavior Interventions, 6*, 21–27.

Scott, T., & Kamps, D. (2007). The future of functional behavioral assessment in school settings. *Behavioral Disorders, 32*(3), 146–57.

Scott, T., McIntyre, J., Liaupsin, C., Nelson, C. M., Conroy, M., & Payne, L. (2005). An examination of the relation between functional behavior assessment and selected intervention strategies with school-based teams. *Journal of Positive Behavior Interventions, 7*(4), 205–15.

Shade, B., Kelly, C., & Oberg, M. (1997). *Creating culturally responsive classrooms*. Washington, DC: American Psychological Association.

Sheridan, S., Eagle, J., Cowan, R., & Mickelson, W. (2001). The effects of conjoint behavioral consultation: Results of a 4-year investigation. *Journal of School Psychology, 39*(5), 361–85.

Skinner, B. (1953). *Science and human behavior*. New York: Macmillan.

Slavin, R. (1994). Quality, appropriateness, incentive, and time: A model of instructional effectiveness. *International Journal of Educational Research, 21*, 141–57.

Solomon, D., Watson, M., Battistich, V., Schaps, E., & Delucchi, K. (1992). Creating

a caring community: Educational practices that promote children's prosocial development. In F. K. Oser, A. Dick, & J. Patry (Eds.), *Effective and responsible teaching: The new synthesis.* San Francisco: Jossey-Bass.

Special Education Elementary Longitudinal Study, Wave 1 Teacher Survey. (2001). *Table 157, Hours of continuing professional development in past 12 months. Table 156: Participated in continuing professional development for 8 or more hours within the past 3 years*. Retrieved April 8, 2008, from http://www.seels.net/search/tables/5/st1f10frm.html and http://www.seels.net/search/tables/5/st1f9frm.html, respectively.

Spencer, V. G. (2006). Peer tutoring and students with emotional or behavioral disorders: A review of the literature. *Behavioral Disorders, 31*(2), 204–22.

Stahr, B., Cushing, D., Lane, K., & Fox, J. (2006). Efficacy of a function-based intervention in decreasing off-task behavior exhibited by a student with ADHD. *Journal of Positive Behavior Interventions, 8*(4), 201–11.

Stevens, R., & Slavin, R. (1995). The cooperative elementary school: Effects on students' achievement, attitudes, and social relations. *American Educational Research Journal, 32*(2), 321–51.

Stright, A., Neitzel, C., Sears, K., & Hoke-Sinex, L. (2001). Instruction begins in the home: Relations between parental instruction and children's self-regulation in the classroom. *Journal of Educational Psychology, 93*, 456–66.

Substance Abuse and Mental Health Services Administration, Center for Mental Health Services. (2007). *Promotion and prevention in mental health: Strengthening parenting and enhancing child resilience*. DHHS Publication No. CMHS-SVP-0175. Rockville, MD: Author.

Sugai, G., & Horner, R. (2002). The evolution of discipline practices: Schoolwide positive behavior supports. *Child & Family Behavior Therapy, 24*, 23–50.

Sugai, G., Horner, R., Dunlap, G., Hieneman, M., Lewis, T., Nelson, C., Scott, T., Liauspin, C., Sailor, W., Turnbull, A., Turnbull, H., Wickham, D., Wilcox, B., & Ruef, M. (2000). Applying positive behavior support and functional behavioral assessment in schools. *Journal of Positive Behavior Interventions, 2*, 131–43.

Sugai, G., Horner, R., & Gresham, F. (2001). Behaviorally effective school environments. In M. Shinn, G. Slover, & H. Walker, (Eds.), *Interventions for academic and behavior problems.* Silver Spring, MD: National Association of School Psychologists.

Sugai, G., Sprague, J., Horner, R., & Walker, H. (2000). Preventing school violence: The use of office discipline referrals to assess and monitor schoolwide discipline interventions. *Journal of Emotional and Behavioral Disorders, 8*, 94–101.

Sutherland, K., Adler, N., & Gunter, P. (2003). The effects of varying rates of opportunities to respond to academic requests on the classroom behavior of students with EBD. *Journal of Emotional and Behavioral Disorders, 11*, 239–48.

Sutherland, K., & Wehby, J. (2001). Exploring the relationship between increased opportunities to respond to academic requests and the academic and behavioral outcomes of students with EBD: A review. *Remedial and Special Education, 22*(2), 113–21.

Todd, A., Horner, R., Sugai, G. (1999). Self-monitoring and self-recruited praise: Effects on problem behavior, academic engagement, and work completion in a typical classroom. *Journal of Positive Behavior Interventions, 1*(2), 66–76, 122.

Umbreit, J. (1995). Functional assessment and intervention in a regular classroom setting for the disruptive behavior of a student with ADHD. *Behavioral Disorders, 20*, 267–78.

Umbreit, J., Lane, K., & Dejud, C. (2004). Improving classroom behavior by modifying task difficulty: Effects of increasing

the difficulty of too-easy tasks. *Journal of Positive Behavior Interventions, 6*(1), 13–20.

U.S. Department of Education. (2004). *Schools and Staffing Survey, Public Teacher Questionnaire, 2003–04.* Washington, DC: National Center for Education Statistics. Retrieved April 15, 2008, from http://nces.ed.gov/programs/digest/d07/tables/dt07_064.asp.

Vincent, C., Horner, R. & Sugai, G. (2002). *Developing Social Competence for All Students.* Arlington, VA: The Council for Exceptional Children (ED 468 560). Retrieved May 19, 2008 from, http://www.eric.ed.gov/ERICDocs/data/ericdocs2sql/content_storage_01/0000019b/80/1a/63/b4.pdf.

Wagner, M., Marder, C., & Chorost, M. (2004). Instructional settings. In J. Blackorby, M. Wagner, R. Cameto, C. Marder, P. Levine, M. Chorost, & A. Guzman, *Inside the classroom: The language arts classroom experiences of elementary and middle school students with disabilities*. Menlo Park, CA: SRI International. Retrieved April 8, 2008, from http://www.seels.net/designdocs/SEELS_W1C4_Ch3_Setting_042104final.pdf.

Walker, H. (1995). *The acting-out child: Coping with classroom disruption* (2nd Edition). Longmont, CO: Sopris West.

Walker, H., Colvin, G., & Ramsey, E. (1995). *Antisocial behavior in public school: Strategies and best practices*. Pacific Grove, CA: Brooks/Cole.

Walker, H., Golly, A., McLane, J., & Kimmich, M. (2005). The Oregon First Step to Success replication initiative: Statewide results of an evaluation of the program's impact. *Journal of Emotional and Behavioral Disorders, 13,* 163–72.

Walker, H., Kavanagh, K., Stiller, B., Golly, A., Severson, H., & Feil, E. (1998). First Step to Success: An early intervention approach for preventing school antisocial behavior. *Journal of Emotional and Behavioral Disorders, 6*(2), 66–80.

Walker, H., Ramsey, E., & Gresham, F. (2004). How disruptive students escalate hostility and disorder—and how teachers can avoid it. *American Education* (2003-2004).

Webster-Stratton, C., Reid, J., & Hammond, M. (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology, 33*(1), 105–24.

Wentzel, K. (2003). Motivating students to behave in socially competent ways. *Theory Into Practice*, *42*(4), 319–26.

Wolery, M., Bailey, D., & Sugai, G. (1988). *Effective teaching: Principles and procedures of applied behavior analysis with exceptional children*. Boston: Allyn & Bacon.

Zins, J., Bloodworth, M., Weissberg, R., & Wahlberg, H. (2004). The scientific base linking social and emotional learning to school success. In J. Zins, R. Weissberg, M. Wang, & H. Wahlberg (Eds.), *Building academic success on social and emotional learning: What does the research say?* (pp. 3–22). New York: Teachers College Press.