PRECORRECTION:
An Instructional Approach for Managing Predictable Problem Behaviors

Demonstrates how an instructional strategy, precorrection, can be applied to changing chronic behavior problems

By Geoffrey Colvin, George Sugai, and Bill Patching

Increasingly, educators are required to address serious problem behaviors in public school settings. Educators must handle increasing numbers of incidents involving vandalism, assault, drugs, weapons possession, and suicide. Consequently, there is growing pressure on teachers, administrators, and support staff to expand their skills to address these problems effectively. A common response is to confront these problems directly by concentrating time, money, and resources on teaching new skills to educators. The assumption is that intense and intrusive procedures are needed to manage these problems. While such measures may be necessary under some conditions, we believe that it is important not to overlook *preventative behavior management* procedures. A preventative approach is based on the assumption that if effective preventative procedures are utilized, a number of desirable outcomes are possible: (a)Serious problem behavior may be prevented, (b) students who have been labeled as at risk may be directed toward more appropriate and normal levels of functioning, (c) the behavior of students without disabilities may be strengthened and occasions for appropriate modeling may be increased, and (d) improvement in student behavior may be maintained.

One preventative management approach might be to utilize the *instructional skills* already possessed by staff and apply them to managing problem behaviors. This instructional approach is based on three basic assumptions: (a) Problem behaviors are *learned* (Bachman, 1972; Carr, 1977; Colvin & Sugai, 1989), (b) appropriate behavior needs to be *taught* (Brophy & Good, 1986; Wong, Kauffman, & Lloyd, 1991), and (c) emphasis should be placed on using *instructional procedures* to teach social skills (Paine, Hops, Walker, Greenwood, Fleishman, & Guild, 1982; Van Hasselt, Griest, Kazdin, Esveldt-Dawson, & Unis, 1984; Zaragoza, Vaughn, & McIntosh, 1991).

The purpose of this article is two fold: (a) to highlight how instructional management differs from behavior management in terms of common practice and (b) to demonstrate how an effective instructional strategy used to address persistent academic errors called "precorrection" can be applied to change chronic problem behaviors. To address the application of precorrection strategies in the management of predictable behavior, we discuss classroom management from an instructional viewpoint, the distinction between correction and precorrection strategies, and seven basic correction and precorrection steps. Application examples also are provided to illustrate the seven-step sequence.

Viewing Classroom Management as Instruction

A basic assumption underpinning the use of precorrection procedures is that both appropriate and inappropriate behaviors are learned. As such, specified behaviors can be taught, utilizing the same instructional principles that are basic to the effective teaching of academic skills (Colvin & Sugai, 1988; Engelmann & Carnine, 1982; Wolery, Bailey, & Sugai, 1988). This perspective involves the systematic manipulation of teacher input (antecedents) and feedback (consequences), which, in turn, results in student learning or progress toward some desired objective. When students make academic errors, teachers adjust the level of intervention according to the magnitude of the error. Though more intrusive and intensive teaching procedures may be needed for students who make chronic fundamental errors,

small adjustments are used for minor or infrequent errors. For example, when students make an academic error, effective teachers implement a systematic error correction procedure such as "model, lead, and test" (Engelmann & Carnine, 1982). If students are likely to repeat the error on a frequent or predictable basis, teachers, may use precorrection procedures (e.g., pre-arranging their next instructional interaction) so students are less likely to repeat the error and more likely to give the correct response. For example, if students are making errors pronouncing the "e" sound in a certain passage, the teacher may make a short list of common words containing the "e" sound and instruct them to practice sounding out these words before the passage is read. These same academic procedures of correction and precorrection can be used to manage predictable social behavior problems.

The Distinction Between Correction and Precorrection

To understand the parallel between the management of academic errors and social behavior problems, distinctions must be made between correction and precorrection procedures. Consider the following examples, which involve procedures for managing academic errors and social behavior problems, respectively.

Academic Error Correction

Hilda is working a subtraction problem on the chalkboard. The teacher notices that she makes an error in borrowing in the hundreds column. The teacher asks Hilda to wait a second and then says, "Look, Hilda, the number nine is bigger than the number from which you are subtracting. So you need to borrow one from here." The teacher puts a similar problem on the board and says, "Now, let me see you do this one." Hilda completes the problem correctly and the teacher praises her.

Social Behavior Error Correction

Dominic enters the classroom after recess, talking very loudly and pushing other students. The teacher re-

minds him to enter the classroom quietly and to keep his hands to himself. He is then asked to go back to the door and come in quietly. Dominic complies and comes in quietly. The teacher thanks him for following directions.

"Dominic's teacher . . . could employ precorrection procedures to address his frequent and noisy entries into the classroom. For example, the teacher could remind him of the rule just before he goes out to recess, or the teacher could meet him at the door and signal 'Shhh' before he takes a step into the classroom."

In both examples, the teachers used a *correction* procedure involving four steps. They provided

1. Feedback that an error or unacceptable behavior had occurred.
2. Information on how to obtain a correct response or exhibit acceptable behavior.
3. An opportunity for students to repeat the task.
4. Reinforcement for cooperation.

Correction procedures can be used to remedy academic errors and social behavior problems. However, if these errors persist, we are likely to see different management procedures for academic errors and social behavior problems. Consider the following examples:

Repeated Academic Error

Hilda continues to work on subtraction problems, and the teacher notices that she is still making the same error. The teacher concludes that Hilda needs more direct teaching and practice on borrowing, begin-

ning with easier examples, to enable her to learn the rule. The teacher explains the rule to Hilda, works through two examples with her, and then has her work through one example by herself as the teacher watches. Hilda obtains a correct response. The teacher asks her to complete the remainder of the examples. Hilda obtains correct responses on the remaining examples. The teacher introduces the original harder examples, which Hilda completes successfully.

Repeated Social Behavior Problems

The next day Dominic enters the classroom after recess just as noisily as the day before. The teacher gives him a mild reprimand, "Dominic, I asked you yesterday to come in quietly and to keep your hands to yourself. Stand at the door and wait for me." Dominic mutters a name under his breath. The teacher says that his comment was disrespectful and that he will miss some recess. Dominic says he doesn't care. The teacher begins the lesson leaving him at the door until he quiets down. He starts to make faces at the students and the teacher makes out an office referral for his disruptive behavior.

Although similarities in the correction procedures used to address a single error and a social behavior problem exist, there are clear differences in the way repeated academic errors were managed compared to repeated social behavior problems. Essentially, the teacher used *precorrection* procedures to manage the errors Hilda made in the subtraction problems. That is, the teacher reviewed the rule for borrowing by reteaching and providing practice, adjusted the difficulty level of the problems, instructed Hilda to practice borrowing with the easier examples, and reintroduced the original examples. In effect, the teacher manipulated the context and examples to enable Hilda to learn the skill of borrowing and to prevent her from making continued errors.

In the case of Dominic's repeated social behavior errors, the teacher continued to use *correction* procedures. Each time Dominic exhibited a be-

havior problem, the teacher delivered a consequence. The continued use of correction procedures did not lead to the occurrence of appropriate behavior. The opposite occurred. Dominic's behaviors escalated, and an office referral resulted.

After repeated instances of the math error, Hilda's teacher changed from using a *reactive* correction procedure to a *proactive* precorrection strategy. That is, the teacher responded by providing an instructional sequence *before* Hilda attempted the original problem. In contrast, Dominic's teacher continued to use *reactive* procedures. The teacher's response occurred *after* the student behavior. As a result of these different approaches, student outcomes were different. Hilda learned the skills needed to borrow accurately and was able to complete the target problems. Dominic did not learn to exhibit the behavior necessary for appropriate entry into the classroom and displayed more serious behavior. In summary, Hilda's teacher used a combination of correction and precorrection procedures. Dominic's teacher, on the other hand, used correction procedures alone by increasing the number and level of consequences for Dominic's series of unacceptable behaviors.

Dominic's teacher, however, could employ precorrection procedures to address his frequent and noisy entries into the classroom. For example, the teacher could remind him of the rule just before he goes out to recess, or the teacher could meet him at the door and signal "Shhh" before he takes a step into the classroom. Also, the teacher could have an entry task on the chalkboard, such as a math puzzle to settle students quickly. In each of these strategies the teacher is responding *before* Dominic has had the opportunity to exhibit noisy entry behavior.

In this example, the *proactive* nature of precorrection is illustrated, that is, the teacher's response occurs *before* the student behavior (Gettinger, 1988; Sugai, in press). Essentially, the antecedents of the behavior are manipulated and appropriate behaviors are prompted to increase the likelihood that appropriate behavior will occur and decrease the likelihood that inappropriate behavior will occur (Brophy, 1983; Swick, 1985).

In essence, correction procedures are consequent manipulations designed to signal and stop inappropriate behavior

after it occurs, while precorrection procedures are antecedent manipulations designed to *prevent* the occurrence of predictable inappropriate behavior and facilitate the occurrence of more appropriate replacement behavior (Colvin & Sugai, 1989). Correction and precorrection procedures are compared in Figure 1.

Precorrection Strategies for Managing Persistent Academic Errors

When we look closely at the way in which Hilda's teacher addressed the recurring problems in subtraction, we can identify a number of instructional steps. Essentially, the teacher pinpointed where the problems were occurring, adjusted the difficulty level of the examples, modeled the correct strategy, closely monitored Hilda's performance so she could provide correct additional prompts as necessary, presented harder examples until Hilda was performing correctly on the original problems, and was very encouraging and positive to Hilda for cooperating and mastering the skill. In effect, the teacher used a *precorrection* strategy in which she identified the context and predictable error pattern and then systematically adjusted or modified a number of antecedents to prevent this error and to simultaneously ensure that Hilda would make correct responses. This precorrection strategy can be broken down into seven steps:

1. Identifying the context and the predictable behavior.

2. Specifying expected behaviors.
3. Systematically modifying the context.
4. Conducting behavior rehearsals.
5. Providing strong reinforcement for expected behaviors.
6. Prompting expected behaviors.
7. Monitoring the plan.

Precorrection Strategies for Managing Predictable Social Behavior Problems

The seven-step precorrection plan for minimizing academic errors can be applied to established problem behaviors. In the following sections, the procedural features of each step are described, and applications of precorrection strategies to predictable behavior problems are illustrated.

Step 1: Identifying the Context and the Predictable Behavior

To identify the context for the predictable behavior, we delineate those immediate environmental variables that are functionally related to the student's behavior. The task is to identify contextual variables that set the occasion for particular behaviors. In other words, we attempt to hypothesize a functional relationship between the target context and the problem behavior. The context can be any event, task condition, circumstance, or other setting or antecedent stimulus which occasions the behavior on some reliable basis.

There are both formal and informal methods for identifying these contexts.

Correction	Precorrection
1. Reactive	Proactive
2. Consequences are manipulated	Antecedents are manipulated
3. May lead to negative teacher–student interactions	May lead to positive teacher–student interactions
4. Focuses on inappropriate behavior	Focuses on appropriate behavior
5. May lead to escalating behavior	May lead to appropriate behavior
6. Focuses on immediate events	Focuses on future events

Figure 1. Comparison between correction and precorrection procedures.

Informal methods include simple observation and recall. For example, a teacher notices that students are very noisy when they come in from recess and that it takes some time to settle them. The target context is designated as the transition from recess to class. The target behavior is the noisy entry behavior of the students and the initial off-task behavior. A functional relationship between the transition from recess and the noisy off-task behavior is hypothesized. For example, noisy off-task student behavior is predicted immediately following recess. In another example, a teacher observes that when sitting next to Harry, Sally provokes and distracts him. The target context here is Harry and Sally sitting next to each other, and the target behavior is the provocations and distractions exhibited by Sally. The hypothesis is that Sally provokes and distracts Harry when they are sitting together. Information about possible functional relationships also can be collected through other informal methods, such as (a) discussions with teachers, parents, and support personnel, (b) self or peer reports, and (c) survey of archival records.

Formal methods are designed to obtain more precise information through direct and systematic observations. One common method is to conduct a functional analysis (Sugai & Colvin, 1989; Wolery, Bailey, & Sugai, 1988). The observer notes each student behavior and records the corresponding

antecedent and consequent events. For example, a teacher reports that Tommy is disruptive in class and describes the following typical scenario:

The teacher was using a class discussion procedure to answer the first three questions from the history book. The teacher then said, "I want you to finish the remainder of the questions by yourself. So everyone do numbers 4 through 20 in your workbook, please." After a few seconds, Tommy looked around and made a face at Mary. Mary grinned. Tommy then called out, "Boy, this is boring. Why can't we do something that is fun?" Some of the students laughed and the teacher said, "Tommy, you need to finish the assignment. Start work now." Tommy rolls his eyes and Mary rolls her eyes.

This classroom episode can be recorded in the form of a functional analysis, which will make it easier to identify the antecedents that may occasion the disruptive behavior and consequences that may reinforce this behavior. In Figure 2, a three-column layout is used for this analysis.

When we analyze these events, we look for possible functional relationships between the target context and the problem behaviors. In this case, it is noted that Tommy began to exhibit off-task behavior in the history class when independent work was intro-

duced following discussion in the history class. We hypothesize that some aspect of the independent work context set the occasion for Tommy to exhibit off-task behavior; that is, there is a functional relationship between Tommy's off-task behavior and the conditions associated with independent work. We recommend that additional observations be conducted to identify the specific aspects of independent work (e.g., directions, difficulty of subject content, proximity of certain peers, lack of teacher assistance) that are functionally related to Tommy's off-task behavior, and confirm whether or not similar off-task behavior occurs predictably in the context of all independent work requirements.

In summary, the target context and corresponding target behavior can be identified through both formal and informal observations. Functional analysis procedures provide more precise information about possible functional relationships.

Step 2: Specifying Expected Behaviors

While the student may exhibit inappropriate behavior in a particular context, expected replacement behaviors for that context also need to be clearly specified (Brophy, 1983; Sprick, 1985; White & Haring, 1980). For example, if Tommy talks out during independent work to get help, the expected behavior could be to raise his hand if he needs help. If a student interrupts other students during class discussion, the expected behavior might be to wait before speaking or wait until someone is finished talking before speaking. There are a number of recommended guidelines in selecting expected behaviors:

1. Describe the expected behavior in *observable* terms, for example, raise your hand if you wish to speak.
2. Select behaviors that are *incompatible* with the problem behavior (Engelmann & Colvin, 1983; Evans & Meyer, 1985; Horner & Billingsley, 1988), for example, "Wait your turn instead of interrupting."
3. Select expected behaviors that are *functional replacements* for the problem behavior (Carr & Durand, 1985); for example, the student gets teacher attention by staying on task—replacement behavior—versus talking out.

Antecedents	Behaviors (target student)	Consequences
Teacher: "Finish the questions."	Tommy: Looks around, makes face at Mary.	Mary: Grins
C	Tommy: "This is boring."	Students: Laugh
		Teacher: "You need to finish your work now."
C	Tommy: Rolls his eyes.	Mary: Rolls her eyes.

Figure 2. Functional analysis of Tommy's classroom disruptions. *Note.* The letter "C" denotes previous consequence function as the next antecedent. For example, the first consequence is recorded as "Mary grins." The antecedent for Tommy's next behavior is listed as "C," representing "Mary grins."

Step 3: Modifying the Context

The purpose of modifying the context is to increase the likelihood that the expected behaviors will occur and decrease the likelihood that the problem behaviors will be displayed. Numerous aspects of the context can be modified, for example, instructions, explanations, tasks, activities, scheduling, seating arrangements, reminders, and curriculum. However, modification of the context should be based on findings from the functional analysis and be as normal and unobtrusive as possible. For example, given that students are likely to be noisy and hard to settle down after recess, the teacher may meet the students at the door or have an entry task, such as completion of a small math puzzle projected on the overhead. Given that Sally disrupts Harry, the context could be modified by changing the seating arrangements, or by giving Sally (or Harry) a specific task (e.g., collect homework, take attendance) to do upon entering the classroom.

If substantial context changes must be made, a systematic plan should be developed to move from the restricted or modified context toward the original or normal context. For example, if Billy disrupts large group instruction, it may be necessary to have Billy participate in small group work on a very restricted basis (e.g., either with one or two other students and for shorter periods of time). The level of restriction should be reduced as Billy begins to exhibit the expected behaviors for group work. The numbers in the group and the length of group instruction could be increased gradually.

Step 4: Conducting Behavior Rehearsals

Once the student enters the target context, it is highly likely that inappropriate behavior will occur. Behavior rehearsals are conducted to offset the likelihood of this occurrence. Essentially, behavior rehearsals involve presenting the students with some kind of training on the expected behaviors *just before the student enters the target context* (Engelmann & Colvin, 1983). The training may take several forms, such as having the student recall, read, or demonstrate the expected behaviors to the teacher. In some cases it may be necessary to have the student learn and practice the expect-

ed behaviors beforehand (Becker, Engelmann, & Thomas, 1975). For example, given that Tommy interrupts other students in group instruction, his teacher catches Tommy just before the group begins and says, "Now, remember, Tommy, please wait until someone is finished before you speak. Please tell me what you will do if you wish to speak." The student is required to repeat the expectation for speaking in the group. The assumption is that the student is more likely to remember the expected behaviors if given training just before entering the target context.

Step 5: Providing Strong Reinforcement for Expected Behaviors

To enable the student to display expected behaviors in the target context, we must teach expected behaviors in a specific context. However, students frequently have a longstanding history of exhibiting inappropriate behavior in these contexts. Consequently, it may be difficult to replace an established behavior pattern with a new pattern. In other words, the new behavior will be in competition with the old inappropriate behavior, which has been

Precorrection Checklist and Plan	Teacher: _____ Student: _____ Date: _____ / _____ / _____
☐ 1. Context	
Predictable behavior	
☐ 2. Expected behavior	
☐ 3. Context modification	
☐ 4. Behavior rehearsal	
☐ 5. Strong reinforcement	
☐ 6. Prompts	
☐ 7. Monitoring plan	

Figure 3. Precorrection checklist and plan.

Precorrection Checklist and Plan	Teacher: Sarah Endow
	Student: Dominic Smith
	Date: 11 / 15 / 91

☐ 1. Context	Students entering classroom immediately after recess.
Predictable behavior	Students shouting, laughing, and pushing before complying with teacher directions.
☐ 2. Expected behavior	Enter the room quietly, go to desks, begin task, keep hands to self.
☐ 3. Context modification	Teacher meets students at door, has them wait and then go to desk to begin entry tasks.
☐ 4. Behavior rehearsal	Teacher reminds students just before recess of expected behaviors. Asks Dominic to tell what are expected behaviors.
☐ 5. Strong reinforcement	Students are told that if they cooperate with teacher requests, they will have additional breaks and 5 extra minutes for recess.
☐ 6. Prompts	Teacher gives signals at the door to be quiet and points to activity on chalkboard. Teacher says "hush" to noisy students and praises students who are beginning work.
☐ 7. Monitoring plan	Teacher uses a watch to measure how long it takes for all students to get on task and counts how many students begin their tasks immediately (within 10 seconds).

Figure 4. Example of a completed precorrection checklist and plan for Dominic.

reinforced intermittently over time (Horner & Billingsley, 1988). Therefore, to replace this behavior, strong reinforcement must be provided for the expected or replacement behaviors. While the kind of reinforcer used will vary from situation to situation, strong reinforcers must be used frequently in the beginning to offset the reinforcement history that is associated with the maintenance of the inappropriate behavior.

Step 6: Prompting Expected Behaviors

Although a behavior may have been rehearsed and reinforced, the student(s) still may exhibit the problem behaviors in the target context. The reason is that training was conducted outside the context. Consequently, once the student enters the target context, the conditioned inappropriate behaviors are likely to occur. Teachers need to be sensitive to students who find it difficult to exhibit expected behaviors, especially in new contexts or where competing responses have been successful in the past. Thus, students will need more assistance to exhibit the expected behaviors. The following procedures are designed to provide additional assistance:

1. Acknowledge students *immediately* when they exhibit the expected behaviors. For example, the teacher may say, "I appreciate the way you are putting up your hands."
2. Provide a reminder of expected behaviors as part of a direction in a lesson. For example, in a geography class on capitol cities the teacher might say, "Could someone raise his or her hand and tell me the capitol city of Australia?" Students who comply should be given immediate and strong acknowledgment.
3. Should the predictable inappropriate behaviors occur, use the following correction procedures:
   a. *First occurrence*—Ignore the first occurrence of the target behavior. If Billy talks out, the teacher should continue with instruction and attend to other students who are on task or exhibiting expected behaviors.
   b. *Second occurrence*—Provide a two-part signal for the second occurrence of the target behavior. For example, if Billy talks out again (which is likely!), the teacher (a) puts a finger to his or her lips to signal him not to talk out and (b) raises his or her hand to model the expected behavior. The teacher gives strong and immediate reinforcement when the student puts up his hand.
   c. *Third occurrence*—Present a warning for the third occurrence of the target behavior. The warning is presented as a decision or choice to the student. For example, the teacher says, "Billy you need to put up your hand to speak or you will need to leave the group (or some penalty)." It is imperative to provide choices that are familiar to the student and to follow through on the choice the student makes.

Step 7: Monitoring the Plan

To ensure opportunities for the ongoing supervision and evaluation of an in-

structional program, a monitoring plan needs to be developed. A complete monitoring plan consists of at least two parts. The first is a checklist that contains a description of what the teacher will do at each of the seven steps of the precorrection procedure. When first learning or implementing the seven-step procedure, teachers may find it useful to use the checklist as a prompt or script. Later an assistant or second teacher can use the checklist to see that the plan is being implemented accurately, consistently, and completely.

The second part of the monitoring plan is a record of the student's performance (i.e., expected and problem behavior). Data should be collected on a regular basis to determine if the procedure is effective. Is the problem behavior decreasing and the expected behavior increasing? The complete seven-step procedure can be developed into a checklist that can be used to direct staffing meetings for problem behaviors and that can be used as an outline for a behavior intervention plan (see Figure 3).

Applications of the Precorrection Procedures

A complete seven-step precorrection checklist and plan is illustrated in Figure 4. This example involves Dominic, the case mentioned earlier. The problem is coming into the classroom noisily immediately after recess and on repeated occasions. The checklist and plan were constructed after a complete functional analysis.

A second application of the precorrection checklist and plan is illustrated in Figure 5. In this example, students are working in groups of three or four at various activity centers in the classroom, and shift to a different center every 15 minutes. Every day for the last 2 weeks, the teacher notices that when it is time to move to new centers, Alfonse runs to the next center, grabs all the center materials for himself, and refuses to share with the other students. His teacher has been separating Alfonse whenever he has conflicts with his friends, but repeated applications of this reactive strategy have not improved the situation. After conducting a thorough functional analysis, the teacher wrote a precorrection checklist and plan.

Conclusion

Increasingly, teachers are faced with having to manage a greater variety and frequency of problem behaviors in the classroom. Reactive management procedures, such as simple corrections, only address problem behavior after it has occurred and may exacerbate the problem. Reactive techniques focus on the manipulation of consequent events. However, in the case of effective instruction in academic areas, teachers manipulate both antecedents and consequences, with an emphasis on manipulating antecedents. Based on the assumption that appropriate academic and social behaviors are learned and need to be taught, strategies for managing social behavior should involve manipulation of both antecedents and consequences, with a similar emphasis on manipulating antece-

Precorrection Checklist and Plan	Teacher: _____ Luis McGregor _____ Student: _____ Alfonse Montague _____ Date: __12_ / __2_ / __91_
☐ 1. Context	*Students working at activity centers for 15 minutes. Activities involve manipulatives.*
Predictable behavior	*Alfonse runs to next center, grabs activity materials, and refuses to share with other students.*
☐ 2. Expected behavior	*Play cooperatively for 15 minutes, share materials with three or four other students, walk to next center when prompted by teacher.*
☐ 3. Context modification	*Teacher stands next to Alfonse just before announcing shift to next activity center and waits there until he begins to move to the next center.*
☐ 4. Behavior rehearsal	*Just before announcing shift to next activity center, teacher asks Alfonse to tell him what he is going to do when he has to shift to the next center.*
☐ 5. Strong reinforcement	*Teacher tells Alfonse that he can announce the next activity shift if he can play cooperatively for 15 minutes. He also provides specific verbal praise when Alfonse walks to the next center.*
☐ 6. Prompts	*Teacher gets Alfonse's attention, points to the next activity center, and walks part of the way with Alfonse.*
☐ 7. Monitoring plan	*The teacher counts the number of times Alfonse walks to the next activity center, and once every 3 minutes, the teacher checks to see if Alfonse is playing cooperatively.*

Figure 5. Example of a completed precorrection checklist and plan for Alfonse.

dents. Precorrection procedures involve the manipulation of antecedents so that established inappropriate behavior can be replaced by new, more appropriate behavior. Using a systematic combination of precorrection and correction strategies, teachers can be more proactive and effective in managing problem behaviors in the classroom. ▬

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References

Bachman, J.A. (1972). Self-injurious behavior: A behavioral analysis. *Journal of Applied Behavior Analysis, 80,* 211–224.

Becker, W.C., Engelmann, S., & Thomas, D.R. (1975). *Teaching 1: Classroom management.* Chicago: Science Research Associates.

Brophy, J.E. (1983). Classroom organization and management. *Elementary School Journal, 83,* 265–285.

Brophy, J., & Good, T.L. (1986). Teacher behavior and student achievement. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 328–375). New York: Macmillan.

Carr, E.G. (1977). The motivation of self-injurious behavior: A review of some hypotheses. *Psychological Bulletin, 84,* 800–816.

Carr, E.G., & Durand, V.M. (1985). Reducing behavior problems through functional communication training. *Journal of Applied Behavior Analysis, 18,* 111–126.

Colvin, G.T., & Sugai, G.M. (1988). Proactive strategies for managing social behavior problems: An instructional approach. *Education and Treatment of Children, 11,* 341–348.

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

Engelmann, S., & Carnine, D. (1982). *Theory of instruction: Principles and applications.* New York: Irvington.

Engelmann, S., & Colvin, G. (1983). *Generalized compliance training.* Austin, TX: PRO-ED.

Evans, I.M., Meyer, L.H. (1985). *An educative approach to behavior problems: A practical decision model for interventions with severely handicapped learners.* Baltimore: Brookes.

Gettinger, M. (1988). Methods of proactive classroom management. *School Psychology Review, 17,* 227–242.

Horner, R.H., & Billingsley, F.F. (1988). The effect of competing behavior on the generalization and maintenance of adaptive behavior in applied settings. In R.H. Horner, G. Dunlap, & R.L. Koegel (Eds.), *Generalization and maintenance: Lifestyle changes in applied settings* (pp. 197–220). Baltimore: Brookes.

Paine, S.C., Hops, H., Walker, H.M., Greenwood, C.R., Fleishman, D.H., & Guild, J.J. (1982). Repeated treatment effects: A study of maintaining be-

havior change in socially withdrawn children. *Behavior Modification, 6 ,* 171–199.

Sprick, R. (1985). *Discipline in the classroom: A problem by problem survival guide.* West Nyack, NY: The Center for Applied Research in Education.

Sugai, G. (in press). The design of instruction and the proactive management of social behavior. *Learning Disabilities Forum.*

Sugai, G., & Colvin, G. (1989). *Environmental explanations of behavior: Conducting a functional analysis.* Eugene, OR: Behavior Associates.

Swick, K.L. (1985). *A proactive approach to discipline.* Washington, DC: National Education Association.

Van Hasselt, V.B., Griest, D.L., Kazdin, A.E., Esveldt-Dawson, K., & Unis, A.S. (1984). Poor peer interactions and social isolation: A case report of successful in vivo social skills training on a child psychiatric inpatient unit. *Journal of Behavior Therapy and Experimental Psychiatry, 15,* 271–276.

White, O.R., & Haring, N.G. (1980). *Exceptional teaching* (2nd ed.). Columbus, OH: Merrill.

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

Wong, K., Kauffman, J.M., & Lloyd. J. (1991). Choices of integration: Selecting teachers for mainstreamed students with emotional or behavioral disorders. *Intervention in School and Clinic, 27,* 108–115.

Zaragoza, N., Vaughn, S., & McIntosh, R. (1991). Social skills interventions and children with behavior problems: a review. *Behavioral Disorders, 16,* 260–275.