The successful teaching of a quality physical education lesson is critically dependent on the teacher’s behavior-management skills (Arbogast & Chandler, 2005; Cothran, Kulina, & Garrahy, 2003; Cruz, 2005). If teachers are spending an excessive amount of class time managing student behavior, then fewer minutes are available for instruction and learning activities (Kulina, Cothran, & Regualos, 2006). Effective teachers will use a variety of proactive strategies to reduce problem behavior.
behavior, such as consistently implementing class rules and routines (Lavay, French, & Henderson, 2006; Markos & Boyce, 1999), setting clear expectations (Cothran et al., 2003; Markos & Boyce, 1999), keeping one’s back to the wall and moving often (Arbogast & Chandler, 2005), reinforcing appropriate behaviors (Downing, Keating, & Bennett, 2003; Lavay et al., 2006), and keeping a close proximity to students who are misbehaving.

Despite the proactive measures introduced by effective physical educators, inappropriate behavior is still present (Perron & Downey, 1997) in the form of noncompliance (Ennis, 1995), being off-task, not participating in the lesson, showing aggression toward other students and teachers (Fernandez-Balboa, 1991), talking, not paying attention, interrupting, arguing (Kulinna et al., 2006), verbal abuse, unpunctuality, and abuse of equipment (McCormack, 1997), among others. Therefore, in addition to using proactive management techniques, it is usually necessary for teachers to also use reactive strategies in an attempt to reduce problem behaviors within physical education, which can decrease disruptions and increase time spent on learning (Perron & Downey, 1997). The purpose of this article is to introduce reactive behavior-management techniques that take into consideration the functions of behavior (i.e., the reasons why students engage in inappropriate behaviors). Following is an introduction to some of the basic principles of behavior analysis, the foundational theory on which this approach to behavior management is based; a discussion of the causes of student misbehavior; a description of how teachers can determine the actual cause of misbehavior; and strategies to reduce these inappropriate behaviors.

Behavior Analysis

In behavior analysis, the philosophy and science of human behavior, the belief is that an individual’s behavior is influenced by factors in the environment with which the individual interacts (Cooper, Heron, & Heward, 2007). Most often in academic settings, environmental factors that influence student behavior might include interactions with peers or teachers, the setup of the class, the pace of the lesson, location of the class (e.g., gym, weight room, outside field), and lesson content. Additionally, consequences (i.e., what happens immediately after the occurrence of a behavior) have an influence on a student’s conduct. More specifically, the consequences of a behavior will either increase or decrease the likelihood of that behavior occurring when the individual is in similar situations in the future. For example, if Alana, a physical education student, engages in an appropriate behavior, such as following the teacher’s directions, which is immediately followed by an appealing outcome, such as the teacher verbally praising her, Alana is more likely to repeat the appropriate behavior the next time she is in a similar situation. This process of implementing responses that result in an increase in behavior is known as reinforcement (Cooper et al., 2007). Conversely, the process of introducing consequences that decrease the likelihood of a behavior occurring again in the future is known as punishment (Lavay et al., 2006). For example, if a student, Jacob, is physically aggressive toward a peer, and this is followed immediately by an unpleasant consequence (e.g., time-out), the next time he is in a similar situation, the likelihood of aggressive behavior is decreased.

By definition, reinforcement occurs only if a behavior increases, while punishment occurs only if a behavior decreases. No matter a teacher’s intentions, if a behavior increases, it has been reinforced. If a teacher uses a consequence intending to punish a behavior, but the target behavior actually increases, the teacher has unintentionally reinforced the misbehavior (Downing et al., 2005), causing it to increase or at least maintain a consistent level. This concept is key to understanding effective behavior management from a behavior analysis perspective.

Causes of Misbehavior

Several studies have examined the potential causes of student misbehavior in physical education. Teachers have often cited students’ home lives (Cothran, Kulinna, & Garrahy, 2009), personal backgrounds, lack of motivation (Ennis, 1995), and/or the students’ personal characteristics (Goyette, Dore, & Dion, 2000) as the source of inappropriate behaviors in physical education. Students reported that the causes of their or their peers’ misbehavior include seeking attention from teachers or peers, lack of perceived meaningfulness in the lesson’s content (Cothran et al., 2009), or lack of enjoyment in the activity (Supaporn, 2000). Other factors theorized to have been the cause of inappropriate behaviors include an inappropriate difficulty level of practice tasks, ineffective teacher planning, the student’s choice to simply misbehave (Bechtel, Stevens, & Brett, 2012), or peer relationship problems (Markos & Boyce, 1999). Many of these reported causes of misbehavior cannot be addressed directly within the physical education environment. The field of behavior analysis, however, provides practical explanations for the causes, or functions, of behaviors that can be directly addressed within the environmental interactions found in physical education.

All students’ behavior, whether appropriate or inappropriate, occurs for a reason (Siedentop & Tannehill, 2000). These reasons, as reported within behavior analysis, are accounted for in the four functions of behavior: (1) attention — students engage in inappropriate behavior to receive attention from a peer or adult, (2) access — students misbehave in order to gain access to an object or activity, (3) escape — students engage in problem behavior in an attempt to get out of a situation, and (4) sensory stimulation — students act inappropriately because it enjoyably stimulates one
or more of the senses (Alberto & Troutman, 2006). It is crucially important for teachers’ behavior-management strategies to address the specific function of a student’s misbehavior; if the function is not understood, the likelihood of accidentally reinforcing the misbehavior increases (Alberto & Troutman, 2006). See Table 1 for definitions and examples of the four functions of behavior.

Matching Consequences to the Function(s) of Behavior

In order to effectively manage misbehavior, one must first examine the function of the problem behavior. Following are descriptions of how to effectively manage misbehavior based on its function.

Attention. Students will often desire teachers’ attention and will engage in behaviors, either appropriately or inappropriately, in order to get the wanted attention (Downing et al., 2005). The best procedure for addressing attention-seeking behaviors is to completely ignore occurrences of the behavior. By ignoring the behavior, the teacher is restricting access to the reinforcement (i.e., attention) that the student is seeking. If a student is engaging in frequent attention-seeking misbehaviors, it is very important for the teacher to give the student attention only when the student engages in appropriate behavior (Lavay et al., 2006), thus increasing appropriate behavior while decreasing the occurrence of misbehavior; however, this technique is not always feasible in class settings. If an attention-seeking misbehavior of one student disrupts other students or the flow of the lesson, then ignoring it may do academic or physical harm to the other students in the class. Teachers can ignore tolerable inappropriate behaviors as long as those behaviors do not disrupt others (Siedentop & Tannehill, 2000).

If ignoring a behavior is not practical, then additional procedures can be implemented to decrease the problematic behavior. But by introducing additional punishment techniques, teachers may be providing the student with attention, so these procedures should be implemented while giving as little attention to the student as possible. For example, if a student is misbehaving and the teacher determines that the function of the misbehavior is attention, a teacher can individually, using as few words and nonverbal forms of attention as possible, put the student on time-out; this punishment still involves providing some attention to the misbehaving student, but not as much as a verbal reprimand in front of the student’s peers would. In addition to ignoring inappropriate behavior, it is quite important to also give attention to appropriate behavior, thereby providing the student with the attention she or he needs while also strengthening appropriate behavior.

Access. Students will sometimes misbehave in order to gain access to a tangible item, event, or activity (Alberto & Troutman, 2006). In these situations, it is important to not allow the student access to the desired object or activity as a result of the inappropriate behavior. If access to the desired item is granted, then the misbehavior will increase in similar situations in the future. However, procedures can be implemented to decrease the problematic behavior.

Table 1. Definitions and Examples of the Four Functions of Behavior

<table>
<thead>
<tr>
<th>Function</th>
<th>Definition</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attention</td>
<td>Students misbehave in order to gain social attention from peers or adults (Alberto &amp; Troutman, 2006). By giving students attention for this misbehavior, teachers accidentally reinforce the behavior, which will cause it to increase in the future.</td>
<td>Ruth has been physically aggressive toward her peer. Every time she does this, her teacher gives her a verbal reprimand. If the function of this behavior is attention, then a verbal reprimand will unintentionally reinforce the misbehavior and Ruth will continue to aggress toward her peer.</td>
</tr>
<tr>
<td>Access</td>
<td>Students misbehave in an attempt to get access to a tangible object, activity, or event (Alberto &amp; Troutman, 2006). Allowing the student access to the desired object, activity, or event will reinforce the misbehavior.</td>
<td>Tommy sees Katie using the jump rope he wants, so he complains to the teacher, saying Katie always gets that rope. The teacher then makes Katie share the jump rope with Tommy. The teacher may have inadvertently reinforced Tommy’s complaining behavior.</td>
</tr>
<tr>
<td>Escape</td>
<td>Students engage in inappropriate behavior in order to try to get out of performing an unwanted activity, to avoid an undesirable setting, to prevent social attention from an adult or a peer, or to escape from pain or discomfort (Alberto &amp; Troutman, 2006). By granting students the ability to escape these situations, teachers may be unintentionally reinforcing the inappropriate behavior.</td>
<td>Jimmy cries and complains about having an upset stomach nearly every time the class does aerobic fitness activities. It is possible that the cause, or function, of this crying and complaining behavior may be to try to avoid doing the undesired activity of aerobic fitness.</td>
</tr>
<tr>
<td>Sensory stimulation</td>
<td>Students engage in behaviors that stimulate visual, auditory, kinesthetic, or other senses (Alberto &amp; Troutman, 2006). Students are often automatically reinforced by engaging in behaviors that serve a sensory function.</td>
<td>Jeff is a student with special needs who frequently stares at the lights in the gym instead of engaging in the appropriate physical activity. Staring at the lights may be providing Jeff with sensory reinforcement.</td>
</tr>
</tbody>
</table>
since this object is apparently desirable to the student, it can be
given as a reward when the student engages in appropriate behav-
ior. For example, if a student throws a tantrum in order to gain ac-

tess to a green ball, the teacher knows that this ball is desirable to
that student; then, when the student later behaves appropriately, he
or she can be rewarded with access to the green ball. Teachers can
also instruct the students on how to appropriately ask for an object
or activity and allow the student access only when it is requested
in a suitable manner. By restricting access to the desired activity or
object, the misbehavior will decrease, and by allowing access only
after appropriate requests, the student will be more likely to ap-
propriately ask for the object in the future.

Escape. Students will sometimes attempt to avoid undesirable
activities or situations by engaging in inappropriate behaviors.
Time-out procedures are widely used in schools as a consequence
for inappropriate behaviors (Siedentop & Tannehill, 2000) and
may be an effective consequence as long as the function of the mis-
behavior is not escape. If the misbehaving student, Mark, is engag-
ing in an inappropriate behavior in order to get out of the task and
the teacher puts him on time-out, then the misbehavior has served
the escape function effectively. Since the teacher has allowed Mark
to escape the undesired activity, the misbehavior was reinforced
even though the teacher intended to punish it (Lavay et al., 2006).
So the next time Mark is tasked with an activity he does not like,
he is more likely to misbehave in order to be placed on time-out
again, thereby allowing him to escape the undesired activity. If the
function of a behavior is escape, then it is imperative to not allow

Most often, the individuals who engage in these behaviors will be students with special needs in an adapted class or who are
included in a general physical education class. To address this
type of behavior, teachers may utilize a couple of strategies: (1)
restrict access to the behavior or (2) teach a replacement behavior
that serves the same function. For example, a child diagnosed
with autism may engage in stereotypical behaviors, such as hand
flapping, which serves the sensory function; the student does it
because it feels good or reduces anxiety. Teachers may restrict ac-

tess to the hand flapping by having the student put their hands in
their pockets. In order to teach replacement behaviors, teachers
will have to determine appropriate alternatives that will serve the
same function as the inappropriate sensory behaviors. A replace-
ment for the hand flapping behavior may be to have the student
practice dribbling a basketball; hand flapping and dribbling a
basketball require similar movements of the hand and arm. This
replacement behavior is an appropriate task that is commonly
found within the physical education environment and can alter-
natively serve the same function as the inappropriate behavior.

Other Concepts to Consider

When teachers focus their reactive behavior-management strate-
gies on the functions of behavior and on developing appropriate
consequences based on function, they must also consider additional
factors that will influence the success of the management strategy.
Following are descriptions of some of these additional concepts.
The initial question a teacher must ask is, “Are the consequences that I am currently implementing reducing the incidence of inappropriate behavior?” If the answer to that question is “yes,” then the consequences are serving as punishment (i.e., the occurrence of the behavior is decreasing over time) and most likely addressing the function(s) of the target behavior.

Multi-functional Behaviors. Some inappropriate behaviors serve more than one function simultaneously. For example, a student may speak disrespectfully to the teacher in an attempt to avoid the day’s activity (i.e., escape), as well as to elicit a response from the teacher (i.e., attention). Unfortunately for teachers, these situations are more difficult to manage than ones that involve single-functional behaviors. However, if the teacher understands the principles of reinforcement and punishment and how they influence an individual’s behavior and the functions that the behaviors serve, he or she will be able to implement consequence strategies to effectively manage the target behavior while addressing the multiple functions that are present.

Extinction Burst. When a student has a history of being reinforced for engaging in a specific behavior, whether appropriate or inappropriate, and that source of reinforcement is suddenly removed, the behavior may drastically increase before it decreases (Cooper et al., 2007; Lavay et al., 2006). This increase is referred to as an “extinction burst,” in that the source of reinforcement is removed (extinction) and the behavior shows a distinct and rapid increase (burst). This is the case when a student’s inappropriate behavior, which had served the attention function, for example, no longer results in receiving reinforcement in the form of attention. When this occurs, it is very likely that the inappropriate behavior will temporarily increase. This may actually be a good sign; it means that the consequences the teacher is implementing are likely addressing the function of the inappropriate behavior. If the teacher stays consistent and does not intermittently reinforce the inappropriate behavior, then the misbehavior will ultimately decrease to levels that are more socially and academically acceptable.

Intermittent Reinforcement Maintains Behavior. Once a student’s behavior has been reinforced, either purposefully or accidentally, the levels of response will remain relatively constant even if the behavior does not result in a reinforcing consequence every time; reinforcing the behavior intermittently is enough to maintain levels of the behavior (Cooper et al., 2007). For example, if Carolyn engages in inappropriate attention-seeking behaviors, such as speaking out of turn, which has previously been reinforced, the behavior will continue even if Carolyn only receives attention every four or five times she speaks out of turn; she will continue to engage in the inappropriate behavior because she is being intermittently reinforced. This is an important concept to consider when attempting to reduce a problem behavior by restricting access to the reinforcement that was previously maintaining it. If the teacher in the above example is attempting to extinguish the behavior by ignoring the student when she talks out of turn (which may be the appropriate strategy for managing behaviors that serve the attention function) but gives the student attention on some occurrences, the student’s behavior is not likely to decrease. When attempting to extinguish an inappropriate behavior, it is important for teachers to be consistent in targeting the function of the behavior and avoid accidental reinforcement.

Individuality of Behavior. One of the tenets of behavior analysis is that behavior is an individual phenomenon (Skinner, 1953). More specifically, the factors that influence two individuals’ behaviors may be completely different; what is reinforcing or punishing for one student may not necessarily be reinforcing or punishing for another. Additionally, two students may engage in identical inappropriate behaviors, but the function of these two students’ behaviors may be different. So implementing the same consequence for both students may punish one but reinforce the other. Because of this, it is vitally important to determine the function of each individual’s behavior and implement consequences accordingly.

Strategies to Determine the Function(s) of Behavior

The initial question a teacher must ask is, “Are the consequences that I am currently implementing reducing the incidence of inappropriate behavior?” If the answer to that question is “yes,” then the consequences are serving as punishment (i.e., the occurrence of the behavior is decreasing over time) and most likely addressing the function(s) of the target behavior. However, if the incidence of the behavior is maintaining its current levels or increasing, then the consequences currently being implemented are not properly addressing the cause(s) and further inquiry into the function(s) of the behavior are needed. There are several methods for determining function(s) that run the spectrum from simple to quite scientifically complex. Below is a description of one relatively simple technique for determining the function of an individual’s inappropriate behavior; a functional behavior assessment (FBA), that can be implemented in a physical education setting by a teacher or instructional aide.

Functional Behavior Assessment. The first step in conducting an FBA is to define the inappropriate behavior to be targeted for
improvement so that anyone who observes the student will be able to determine whether or not she or he has engaged in the target behavior. Next, teachers should consider the circumstances that surrounded the student’s inappropriate behavior and ask themselves questions such as (1) Does the behavior normally occur at a certain time of day? (2) Does the behavior typically happen during certain activities? (3) In what setting does the behavior usually occur? (4) Who is typically present when the behavior occurs? (5) What normally happens immediately before the behavior occurs? (6) What usually happens immediately after the behavior occurs?

**Figure 1. Sample Antecedent–Behavior–Consequence (ABC) worksheet**

**Instructions:** Define the behavior you would like to target for improvement. Each time the student engages in the target behavior, complete the following on the worksheet below:

- **Date and Time** – when did the behavior occur?
- **Location** – where did the behavior occur?
- **Activity** – what activity was the class engaged in?
- **Antecedent** – what happened immediately before the occurrence of the behavior?
- **Consequence** – what happened immediately after the occurrence of the behavior?

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Activity</th>
<th>Antecedent</th>
<th>Consequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>10/2</td>
<td>9:05</td>
<td>Gym</td>
<td>Reviewing overhand throw</td>
<td>Teacher talking</td>
<td>Verbal reprimand</td>
</tr>
<tr>
<td>10/2</td>
<td>9:30</td>
<td>Gym</td>
<td>Introducing new throwing task</td>
<td>Teacher talking</td>
<td>Verbal reprimand and warning</td>
</tr>
<tr>
<td>10/2</td>
<td>9:50</td>
<td>Gym</td>
<td>Closure – reviewing the day’s lesson</td>
<td>Teacher talking</td>
<td>Time-out</td>
</tr>
<tr>
<td>10/5</td>
<td>9:00</td>
<td>Tennis court</td>
<td>Introduction to the lesson</td>
<td>Teacher talking</td>
<td>Verbal reprimand</td>
</tr>
<tr>
<td>10/5</td>
<td>9:20</td>
<td>Tennis court</td>
<td>Paused class, reviewed cues</td>
<td>Teacher talking</td>
<td>Pulled student aside, reprimand</td>
</tr>
<tr>
<td>10/6</td>
<td>9:07</td>
<td>Outside field</td>
<td>Introducing new practice task</td>
<td>Teacher talking</td>
<td>Non-verbal reprimand</td>
</tr>
</tbody>
</table>
Answers to these questions may begin to reveal trends that can give some insight into the function(s) of the behavior, as well as other circumstances surrounding its occurrence (Alberto & Troutman, 2006). For example, a teacher may begin to realize that the target behavior usually occurs only when the class is engaging in fitness activities; this may indicate that the student is attempting to escape these activities. Or perhaps the behavior typically occurs when the student is working in a group with certain peers; this may reveal that she or he is seeking peer attention or to escape working with particular individuals.

Another component of the FBA process is to conduct an observation of the student and record information related to the circumstances surrounding the occurrences of the behavior. This observation can be done discretely by the teacher while instructing, the class, or by an aide or other observer. Figure 1 provides an example of an Antecedent-Behavior-Consequence (ABC) worksheet; ABC charts are used to track each occurrence of the behavior and the environmental circumstances surrounding each instance. After defining the target behavior, the teacher will, each time the behavior is observed, record the date and time, location where the behavior occurred, activity in which the student or class was engaged, the antecedent to the behavior (i.e., what happened immediately prior to the behavior occurring), and the consequence to the behavior (i.e., what happened immediately after the behavior occurred). After several occurrences of the behavior, one may begin to observe trends that may indicate the function.

In the example presented in Figure 1, time, date, and activity columns revealed no consistent trends. However, there are trends in the antecedent and the consequence columns; it appears that the behavior occurs only when the teacher is speaking to the group and each time the teacher gives the student attention (i.e., through verbal or nonverbal reprimand or by putting the student on timeout). In this case, the function of the inappropriate behavior is most likely attention. In other cases, observers may see that behaviors occur only during certain activities or in certain locations, or that the student’s consequence is typically to put the student on time-out; these trends may indicate that the student may be attempting to escape those activities or situations. Another worksheet may show that the student will ask for an object and that request is denied (i.e., an antecedent), then after the behavior occurs, the teacher ultimately gives the object to the student; this may reveal that the function is access. By recording each occurrence of the behavior and its surrounding circumstances, teachers will begin to see factors within the physical education environment that indicate the function of the inappropriate behavior. Then teachers will be able to more accurately manage the behavior by addressing the function that it serves.

Conclusion

It is important to implement proactive management strategies in physical education to attempt to prevent misbehavior from occurring; this will greatly and positively impact the success of the teaching environment. However, even teachers who apply the most consistent and effective proactive strategies will still encounter some behavioral problems; these situations will also require the use of reactive behavior-management approaches. When interacting with a variety of students within a physical education class, teachers must enact these proactive and reactive strategies individually. What is reinforcing or punishing to one student may not necessarily be reinforcing or punishing to another student. Likewise, what is reinforcing or punishing for a student in one context may not necessarily have the same reinforcing or punishing properties for that same student in another situation. Further, two students may exhibit the exact same inappropriate behavior, but each instance of the behavior serves a unique function — either to receive attention from another person, gain access to a desired object or activity, escape an undesired activity or situation, or to receive sensory stimulation. It is important to treat each situation, each student uniquely and to implement consequences according to the function of the behavior. The success of a teacher’s behavior-management strategy may depend on this individuality.

References