

# Effective Reinforcement Techniques in Elementary Physical Education: The Key to Behavior Management

John Downing, Tedd Keating and Carl Bennett

## Abstract

*The ability to shape appropriate behavior while extinguishing misbehavior is critical to teaching and learning in physical education. The scientific principles that affect student learning in the gymnasium also apply to the methods teachers use to influence social behaviors. Research indicates that reinforcement strategies are more effective than punishing strategies for increasing and shaping positive behaviors in any learning environment, and that such strategies tend to positively affect task performance and intrinsic motivation. Exemplary teachers utilize a variety of social, activity and tangible forms of reinforcement in conjunction with one or two basic management strategies to manipulate and control their teaching-learning environments (Campbell & Pierce, 1996; Jones, 1992; Lund, 1992; Patrick, Ward, & Crouch, 1998; Tankersly, 1995; Vogler & French, 1983). This article will present a behavior management plan designed to decrease misbehaviors in elementary physical education classes, while, conversely, increasing available instructional time. The strategies presented include (1) situational reinforcement, which entails integrating reinforcement into daily teacher-student interactions both inside and outside the gymnasium. This approach utilizes spontaneous interactions, shaping techniques, and the presentation of periodic rewards for good behavior and/or skill improvement in the form of preferred activities or special awards, and (2) the use of a structured reinforcement system, which systematically defines and determines (a) acceptable behaviors, (b) what types or forms of reinforcement to use to change behavior, (c) the amount of change in behavior a student must*

*demonstrate to earn the reinforcement, (d) how much reinforcement will follow a given change in student behavior, (e) whether to reinforce behavior continuously or intermittently, and (f) what modifications to integrate into the existing behavior management system when desired behaviors increase in occurrence.*

The ability to properly and appropriately reinforce behavior is perhaps the most critical element in managing an elementary physical education class, and, consequently, the efficiency of the teaching-learning process that transpires within it. Research has indicated that the implementation of exemplary behavior modification and management techniques in any educational environment generally contribute to effective teaching, proactive learning and enhanced pupil motivation (Beighle & Pangrazzi, 2002; Downing, 1996; Downing, 1997; Lavay, French & Henderson, 1997; Parker, 1995; Perron & Downey, 1997; Rink, 2002; Sariscany, Darst, & van der Mars, 1995; Vogler & Bishop, 1990). The success of these techniques is not accidental. Their underlying concepts are predicated on basic and applied research (e.g., Bandura, 1986; Pavlov, 1927/1960; Premack, 1959; Skinner, 1938; Skinner, 1956; Thorndike, 1931/1970) relative to learning theory (Kazdin, 2001; Ormrod, 2003). The same behavioral principles, viz., classical conditioning, operant conditioning, and social learning theory, which affect the learning of skills in the gymnasium, apply to the manipulation of social skills and behavior in that same environment. Teachers, who fail to integrate effective management protocols into their repertoire of instructional methodologies, often find themselves spending inordinate amounts of time in their classes addressing behavior

issues while losing valuable instructional time (Downing, 1996; Kelly, 1986). In addition, a significant percentage of these *same teachers* leave the profession due to “burnout” as a result of distress accumulated from failing to effectively manage the misbehaviors in their classes (Smith, 1997). The techniques discussed in this paper can have a powerful, positive influence on *both* teacher and student behavior and their respective motivations to teach and learn.

### **Reinforcement versus Punishment**

When attempting to change student behavior at the elementary level, teachers may choose from a variety of strategies (NASPE, 1995). Reinforcing procedures have several advantages over punishing procedures. Reinforcement can both shape the teaching of a new skill and encourage its use, while punishment is usually ineffective as a teaching tool. For example, reinforcing procedures can teach a student to make positive statements to peers, try harder in cooperative or competitive play or stay on-task when engaging in a least favorite activity (Downing, 1997; French & Vogler, 1983; Tankersly, 1995). Punishing procedures, on the other hand, will not teach these proactive behaviors. They will only teach students what behaviors to avoid (Lavay, French & Henderson, 1997), and, in some cases, actually serve as rewards because they bear attention-eliciting qualities (Kazdin, 2001).

Reinforcement may also precipitate appropriate student behavior when the teacher is not present. This occurs because the new behavior eventually takes on its own innate reinforcing qualities, eliminating the need for external reinforcement. For example, a student may find that assisting and encouraging his or her peers engenders greater trust, empathy and friendship, which are potentially self-reinforcing. Punishment, however, is only effective if the teacher is present to reinforce the consequences. In addition, punishment will not effect long-lasting changes in student behavior, while effective reinforcement will (Kazdin, 2001; Lavay, French & Henderson, 1997). Finally, reinforcing procedures foster positive feelings while punishing procedures promote negative feelings. If reinforcing procedures are used to change behaviors, a child is therefore more likely

to develop a healthy self-image, along with a positive attitude toward teachers and school. Punishing procedures will never contribute to positive feelings (Ormrod, 2003). Reinforcement, therefore, is *any stimulus that follows a behavior and causes that behavior to occur more often* (Vollmer & Hackenberg, 2001). When students learn that pleasant consequences occur after particular actions, they are more likely to repeat those actions. This concept implies that teachers should provide their students with feedback that will motivate them to engage in behaviors considered desirable. In elementary physical education, for example, one of the most powerful forms of reinforcement is typically the teacher’s attention (Siedentop & Tannehill, 2001; Thompson & Iwata, 2001). Elementary level students want and need the teacher’s attention and will often solicit it any way they can, positively or negatively. Each student determines his or her method of soliciting one-to-one attention from the teacher. Unfortunately, some children, especially those who lack psychomotor skills, discover that their most conducive approach to attracting the teacher’s attention is to misbehave (Thompson & Iwata, 2001; Lavay, French & Henderson, 1997). These inappropriate behaviors, if sustained, create both behavior management and instructional delivery problems for teachers. A teacher can improve classroom management by first identifying whether or not students are misbehaving to get attention. To make this determination, the teacher should contemplate the following questions:

- *Do you spend a lot of time punishing students?*
- *Do you have to constantly remind students what to do?*
- *Do you feel that your interactions with students are negative?*
- *Do you have a number of students who are consistently misbehaving?*
- *Do you ever catch yourself feeling, thinking, or saying, “how many times have I told you. . . .?”*

If the answer to any of the above questions is yes, a more efficient plan for managing the learning environment is indicated.

### Reinforcement Strategies

There are two basic approaches to reinforcement that a physical educator might employ to change the behavior of elementary physical education students. The first is to *use reinforcement in daily interactions with students in and out of the gymnasium, providing them with feedback about their skill improvement and behaviors*. This reinforcement is generally situational. The second is to *set up a preplanned, structured reinforcement system*. Structured systems are designed to affect behaviors that you have deemed untenable: those that have not responded to the use of reinforcement in daily interactions.

#### Situational Reinforcement

Situational reinforcement is best implemented in the following manner: (1) *via spontaneous interactions*—The teacher reinforces students who are performing their skills correctly: when a student is misbehaving, communicate what you want the student to be doing by praising a student who is on-task and behaving appropriately. For example, if a student is in line but not participating in a drill, the natural tendency is to tell him/her to return to her/his place in line and participate in the drill. However, this may provide the student with a history of this type of non-compliant behavior with what s/he is seeking, the teacher's attention. Instead of giving attention to the student engaging in off-task behavior, praise a student who is vigorously participating in the drill, especially if the student is in proximity to the misbehaving student. Other guidelines within this category include (a) systematically ignoring any inappropriate behaviors that do not interfere with class learning and safety, (b) praising different students who are behaving each time an inappropriate behavior occurs, and, (c) remaining calm while ignoring the student(s) who is/are off-task—*never* show anger; praise behaving students continuously, not just in response to another student's misbehavior; (2) *when a misbehaving student begins to behave, reinforce him/her*—Adhering to the above procedures will most likely decrease inappropriate behavior. Guidelines for effectively reinforcing the good behavior of a student with a history of misbehaving are: (a) when praising the student for initiating appro-

prate behavior, never use the word *now*. The word *now* implies that you are upset with the way the student *was* behaving. Avoid any reference to behaviors that *preceded* the current behavior, (b) confer praise immediately after the student has initiated appropriate behavior, and also at several other times. If the student is praised only after ceasing to misbehave, the student may learn that to get a teacher's attention s/he merely needs to adhere to the following sequence: *first*: misbehaving, then *second*: behaving appropriately, leading to, *third*: eliciting the teacher's praise. In this case continued reinforcement allows the teacher to avoid this problem by demonstrating to the student that the above sequence of behaviors is not necessary, (c) catch the student doing something right at least three times and express approval; the student will quickly learn that the quickest, most effective way to elicit the teacher's attention is by behaving appropriately; (3) *provide fun activities for the entire class*—when the class as a whole has done a particularly fine job, provide everyone with a special activity. This type of reinforcement is very powerful because it is unexpected. However, activities of this sort should occur sparingly—no more than once or twice a week. It is incumbent on the teacher to explain to the class what they did to warrant this special activity under this circumstance; (4) *plan to offer a preferred activity for a student (or students) who has improved in behavior or in motor skill/fitness performance*—when a student has improved in behavior or skill/fitness performance, allow him or her to have an extra enjoyable activity or an extra privilege. This will motivate other class members to try harder. However, ensure that none of the children in the class are slighted in regards to this type of reinforcement. If feasible, each student in the class should periodically receive this type of reinforcement. No student should go without some type of special recognition.

#### The Structured Reinforcement System

If your spontaneous reinforcement system is ineffective, you probably need to establish a structured reinforcement system (Downing, 1996; Lavay, French & Henderson, 1997; Tankersly, 1995; Vogler & French, 1983). The following

steps constitute guidelines for establishing such a system:

**Step 1. Design a method of measuring the number, types and extent of misbehaviors that occur in class.** This will provide an overall picture of the status of appropriate versus inappropriate behaviors in your class. There are a number of methods one may use to collect behavior data. Lavay, French & Henderson (1997) suggested the use of event, interval, duration or group time sampling recording methods. For example, collect baseline data using a group time sampling recording technique in the following manner: once every five minutes observe the number of students in a class of 25 who are off-task during a dribbling drill over a 30 minute lesson. Then determine the percentage of students in the class who are off-task, *e.g.*, 5 out of 25 students are off-task,  $5 \div 25 = .20$  (20%) of the students. Repeat the procedure every five minutes for a total of six times during the 30-minute class, and average the percentages you find for each interval to find the performance percentage for entire class. Utilize multiple observers, *e.g.*, para-professionals, when measuring these behaviors to ensure reliability of measurement. The initial measurement will provide you with the overall behavior status of your class. Subsequent behavior measurements collected at weekly or bi-weekly intervals will provide you with information regarding the success of your behavior interventions.

**Step 2. Define the borderline between acceptable and unacceptable behaviors.** This step is necessary so that you have predetermined what behaviors you will reinforce and what behaviors you will not. It is also an important method of communicating expectations to the student.

**Step 3. Choose a reinforcer.** *The value of the reinforcer should be related to the magnitude of the behavioral change.* If the desired change in a behavior is substantial, *i.e.*, it will require considerable time and/or effort on the part of the student, a powerful reinforcer is indicated. If the desired behavioral change is not substantial, or, will involve less time and/or effort, a less significant reinforcer is acceptable. The best guideline for choosing a reinforcer is to relate it to student motivation or base it on the teacher's own experi-

ence with student preferences. There are three categories of reinforcement: *social*, *activity* and *tangible* (Campbell & Pierce, 1996; Cameron & Pierce, 1994; Kazdin, 2003; Lavay, French & Henderson, 1997). Social reinforcement occurs in any interaction between two or more people. The attention a student gets from a teacher is considered social reinforcement. Activity reinforcement includes activities that children are permitted to engage in as a reward for good behavior. Activity reinforcement is considered a very effective method of modifying behavior. Favorite physical education activities can serve as activity reinforcement. Taking role or serving as team/group leaders are other examples. Tangible reinforcement includes any physical objects presented to a student or students as a reward for good behavior. These may cost money and may send mixed messages to some students, as they may create an *expectation* contingent on certain behaviors. Teachers should use tangible reinforcement judiciously, and reserve its use for students who are not motivated by social and/or activity reinforcement. In addition, teachers should always pair tangible reinforcement with praise (social reinforcement), and extinguish tangibles when praise becomes the favored form of reinforcement (Campbell & Pierce, 1996). Table 1 contains the three categories of reinforcement and examples of each.

**Step 4. Decide "how much" of a new behavior a student must demonstrate to earn reinforcement.** If you are expecting a major change in a student's behavior, only require a small amount of the new behavior before you reinforce her/him. If you are expecting a minor behavior change, require a greater quantity of the behavior change before you reinforce. The more substantial the change the more difficult it is for the student to learn the new behavior. If you require too much of the new or difficult behavior, the student may become frustrated and give up. The student must realize that with a little bit of effort, positive reinforcement is achievable.

**Step 5. Decide how much reinforcement must follow the behavior.** If a substantial change in a student's behavior is expected, a powerful reinforcer must follow the behavior, and should do so *immediately*. If a small change in the behavior is

**Table 1 Three Forms of Reinforcement and Examples of Each**

<i>Social Reinforcers</i>	<i>Activity Reinforcers</i>	<i>Tangible Reinforcers</i>
high fives	free activity time	fruit juice
praising a student	choosing a class game	a granola bar
smiling at a student	being a group leader	raisins
clapping for a student who is demonstrating a positive attitude	taking the school pet home for the weekend	milk
whistling an affirmation	reading announcements	apples
calling parents with positive feedback	taking a note to the office	stickers
a pat on the back	taking attendance	pencils as rewards

expected, a less powerful reinforcer will suffice, and the reinforcement may be delayed. In either case, the student must learn that *positive behavior* leads to reinforcement.

**Step 6. Decide whether to reinforce behavior continuously or intermittently.** If major change is expected, reinforce the student every time the behavior occurs. The student must see that each time s/he makes an effort to change, the teacher will provide reinforcement. The use of *continuous reinforcement* is the best way to encourage the improvement of a new behavior. If the student displays the desired behavior frequently, *intermittent reinforcement* will suffice to ensure that the behavior continues. Intermittent reinforcement is random reinforcement provided only periodically when the behavior occurs (Lavay, French & Henderson, 1997; Vollmer & Hackenberg, 2001). The implementation of intermittent reinforcement techniques is described in detail earlier in the section on methods of situational reinforcement.

#### *Modifying a Behavior Reinforcement System When a Behavior Improves*

When a desired behavior begins to occur more frequently, the expectation of change should diminish (Downing, 1996; Kazdin, 2001; Lavay,

French & Henderson, 1997). As student behavior(s) improve, the existing behavior management program will require some modifications, which are presented as follows, and illustrated in a separate, hypothetical scenario at the end of the section:

#### **Modification 1. Require more of the desired behavior for the same amount of reinforcement.**

When a student has consistently earned reinforcement for a week or more, change the system so that more of the expected behavior is required to earn the same amount of reinforcement. Continue increasing the amount of behavior expected until the behavior meets your criterion for success.

**Modification 2. When the behavior has reached the level of success deemed appropriate, reinforce less, and do so immediately.** This delay in reinforcement will teach the student that s/he does not need immediate recognition from the teacher. This delayed reinforcement technique extinguishes the student's need for immediate reinforcement by teaching her/him that *outside reinforcement is less important than the self-satisfaction derived from the successful completion of the task or the successful learning of a new skill or social behavior.*

**Modification 3.** *When the delayed reinforcement effectively serves to maintain the desired behavior, begin to modify the magnitude of the reinforcement.* The teacher should now shift from a powerful reinforcer to a less powerful reinforcer. In most cases the teacher's praise will serve as the less powerful reinforcer. In shifting the reinforcer, the teacher should emphasize to the student that the shift is a result of his/her success and maturity. The diminished need for structured reinforcement should (1) serve to increase the student's intrinsic motivation to learn, (2) begin cultivating in the student a personal sense of responsibility, and (3) facilitate the extinction of misbehaviors that originally thwarted the learning process.

**Modification 4.** *When the behavior is successfully maintained by the less powerful reinforcer, switch from the continuous reinforcer to an intermittent reinforcer.* This modification is most difficult and requires great care in its implementation. It is important that the student understand what is happening during this stage of modification and why. Emphasize that the change is taking place because the student has evinced a higher level of maturity by successfully improving his/her behavior.

Implement each of the above modifications gradually and with care only after the student successfully exhibits the desired behavior for *at least five consecutive days*. At each stage of modification, maintain a high level of verbal praise. The student should feel that each modification is effective because he or she is mature enough to handle the change. It is possible to phase out a structured reinforcement system by following a sequence requiring more of the required behavior, delaying the reinforcement, switching to a less powerful reinforcer, and switching to intermittent reinforcers. Continuously monitor the effects of your reinforcement program.

***A planned, structured approach to reinforcement with program modifications—a hypothetical example***

In a hypothetical class behavior modification scenario, a teacher has implemented a structured reinforcement system for two third graders with a history of a specific misbehavior, *i.e.*, "talking

out" while the teacher is instructing the class. She has decided to utilize a combination of a *response cost contingency*, *i.e.*, owing time, and *positive reinforcement* in the form of verbal praise plus, in the initial stages of the program, the conference of tangible reinforcers in the form of power ranger stickers. Over time she tailored the approach to include the above-mentioned modifications presented in the previous section.

Her data collection procedure has allowed her to determine that over the course of one week, both students "A" and "B" demonstrated 10 instances of "talking out" while she was presenting information to her second grade physical education class. These "talk outs" accounted for a loss of 35% of her instructional time. Moreover, the class only met for three 30-minute sessions per week, and this behavior significantly distracted the other members of the class, causing her to have to repeat information and re-demonstrate skills. She implemented a structured reinforcement program for students "A" and "B" in which they were allowed seven "talk outs" for the first week of the program after which they owed three minutes per "talk out" from a 10 minute "favorite choice activity time"—in this case, scooter board races—which she scheduled as the last activity of every Friday's class. In addition, for every teaching episode in which student "A" and/or "B" listened to the teacher without talking out, they and the other class members received verbal praise from the teacher plus two power ranger stickers each to post on a wall chart at the conclusion of the lesson. In the first week of the program student "A" talked out ten times and owed nine minutes from the 10 minute free time activity, while student "B" talked out 9 times and owed six minutes. During the second week, both students "A" and "B" talked out eight times and only owed three minutes from the 10-minute free time activity. In week three, student "A" only talked out six times, while student "B" talked out 5 times. Both were rewarded with full participation in the group's free time activity plus verbal praise and four stickers. By the fifth week of the program, the teacher implemented *modification 1* and decreased the criterion number of acceptable talk outs to five. Students "A" and "B" only talked out five times, and were again rewarded

with full participation in the scooter board races. By the fifth week, the teacher implemented *modification 2*, and decreased the number days that she dispersed power ranger stickers from three to one, specifically Fridays. Verbal praise was continued when appropriate. As the weeks progressed the teacher continued to decrease the criterion number of the unacceptable behaviors until she reached the level of one allowable “talk out.” As both students’ talk out behaviors continued to decrease, she modified the schedule of awarding stickers from each week to every other week. In the course of two to three more weeks as appropriate behaviors remained consistent, the teacher implemented *modification 3* and suspended the dissemination of stickers. After another week of consistent, appropriate behavior, the teacher implemented *modification 4* by decreasing both the amount and consistency of the verbal praise she disseminated. Whereas early in the program positive reinforcement was delivered with every appropriate behavior response, it was now presented intermittently as the appropriate behaviors—listening and attending to practicing skills *and not talking out*—became the conditioned responses. During this process the teacher emphasized in each intermittent episode of verbal praise the increased level of pride she took in the mature behaviors presented by all the students in the class. Some results of implementing this program of reinforcement were: (1) overall student time on-task was increased while the misbehaviors of students “A” and “B” decreased, (2) students “A” and “B” were afforded the opportunity to increase their motivation to learn through the use of primary reinforcers which via gradual extinction were replaced by secondary reinforcers, which helped them internalize the process, and (3) the teacher was able to devote more time to the academic teaching-learning process, while avoiding the potential stress and frustration that is often associated with unsuccessfully attempting to eliminate children’s misbehaviors.

### Final Considerations

Any use of reinforcement procedures must be highly contingent on the demonstration of appropriate behaviors. There is nothing that can damage the potential value of reinforcement faster

than reinforcing students who have not put forth genuine effort. Be sincere when doling out reinforcement. The students will only value your praise or any other type of positive reinforcement if the reinforcement follows behavior that requires some effort on their part. Reinforcing mediocre or minimal behaviors will never affect a child’s ability to develop either chronic, long-lasting behavior changes, or any meaningful level of intrinsic motivation. Reinforce both improvement and success. Another consideration to ponder is that each individual in the class should receive reinforcement from and positive interactions with the teacher (Oatman & Williams, 1996). Students with minimal skills as well as those who demonstrate the highest incidence of inappropriate behaviors should receive as much reinforcement and feedback as other class members. If there is a student who is not receiving reinforcement and positive feedback, something is wrong. Modify the management program so that this student receives reinforcement for improving his or her performance. Finally, the more misbehavior there is, the greater the need for effective reinforcement. If there is a preponderance of misbehavior in any teaching environment, the students are indicating that they need the teacher’s attention. Give them your attention for proactive, productive accomplishments in their activity settings.

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Dr. Downing teaches within the health, physical education and recreation department at Southwest Missouri State University.

Drs. Keating and Bennett teach within the physical education and human performance department at Manhattan College, Riverdale, NY.