8 Tips for Building External Reinforcement
into your Computer-Based Training Programs

By Nic Weatherly, Ph.D.

Over the years, the science of behavior has provided us with research and practical solutions to meet the growing needs of the workforce. Applying the principles of behavior to our leadership methods has proven to be an efficient way to bring out the best in our organizations and the employees who make success possible. With the advancements in computer-based technologies, programming these principles into on-demand training systems can take the application of this science to the next level.

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– Nic Weatherly

Two essential components of any training program are that the program breaks down new skills into manageable components and it develops critical skills to habit strength. Traditional training methods can often overload an individual with antecedents (e.g., lectures, training manuals) with few opportunities for individuals to practice the skills taught and with little regard for all the *component* skills needed to master a new, complex skill. Without developing and evaluating these critical component skills you might be setting up a trainee for failure and doing so without a way to understand why the person failed.

The science of behavior tells us that, for a behavior to become a habit, you need a high level of *repetition* with plenty of *reinforcers*. Training systems should provide ample opportunities for a person to practice the skills being taught—with levels of feedback, follow-up, and positive reinforcement integrated into each training topic. The shaping process helps build new skills by reinforcing small improvements and systematically working toward complete skill mastery. Repetition without feedback and without positively reinforcing incremental improvements can result in unguided practice that is more time consuming than effective.

ACCELERATING LEARNING BY BLENDING SCIENCE AND TECHNOLOGY

Computers have provided the perfect platform for us to take the scientific principles responsible for accelerated learning and retention and deliver them to users at the click of a button. The growth of the video game industry has shown the power that well-designed computer platforms can have on people of all ages, teaching people an array of topics from reading defenses on a football game to building cities. The key takeaways from this industry aren't in the skills being taught or

the target video game demographic, but in the fact that the same science of behavior that is accelerating learning in a video game is responsible for accelerating learning in corporate industrial training.

Computer programs can deliver specific training content in a fast and visually-appealing manner, in a way that promotes high rates of responding and an abundance of reinforcement. Users can often personalize their experience with photos or avatars, and can engage in an online community with their peers offering extra opportunities for positive reinforcement. People can practice skills until an established mastery criterion is met and then work to expert-level fluent responding by adding a speed component to the training.

Computer-based training, such as Blitz Precision Learning®, can use advanced computer technologies to deliver an easy-to-use and scientifically-proven training methodology. Reinforcement systems built into Blitz training programs include vibrant and easily readable graphic displays designed to make navigating the training easy and enjoyable, immediate feedback delivered within seconds

of a user's response, and graphic feedback throughout each lesson and training module. Individual graphic displays of performance data show subgoals, the overall goals, and trends, and can function not only as a way to track individual progress but also as a positive reinforcer that appears immediately after a user completes a drill. The level of repetition and reinforcement provided internally through the computer-based training program is critical to accelerating learning. However, the use of *external* reinforcement systems can help these new skills generalize outside of the training platform and sustain in the workplace.

USING NATURAL REINFORCERS TO COMBAT EXTINCTION

Ideally, the reason time and resources are being devoted to training individuals on a new concept or skill is because the information learned will benefit the individual and, in turn, benefit the company. This means that the skills learned will optimally result in pow-

erful reinforcing consequences to the individual, such as making their work easier or reducing the time spent on a given task. These types of natural reinforcers are powerful and extremely valuable as they can be delivered consistently, often immediately, and with no reliance on another person to deliver the reinforcer. Research has shown that once a previously reinforced behavior *stops* being reinforced, then this behavior will reduce back to the pre-reinforcement levels. However, this process of extinction can be lessened or even avoided if you link external reinforcers such as peer reinforcement, manager praise, and tangible rewards with the ever-present natural reinforcers in the individual's work environment. Pairing external reinforcers that are meaningful to the individual with powerful natural reinforcers will mean that fading out the external reinforcers only stops *one type* of reinforcement. Extinction will be much less of a factor as long as the natural reinforcers are in place.

TIPS FOR BUILDING IN EXTERNAL REINFORCEMENT

In the book Performance Management, the seminal text on applying the science of behavior to business, Daniels and Bailey (2014) provide guidelines for finding and arranging for the effective delivery of reinforcers. These guidelines can serve as a foundation for any reinforcement system and can help build a culture of positive reinforcement and discretionary effort™.

When looking for ways to build more external reinforcement into your computer-based training system, consider the following tips:

1. **Find reinforcers that are specific to the individual**—All people don't necessarily want the same things. Some people may value a gift card to the ice creamshop,

but the lactose-intolerant new-hire might think otherwise. Observe individuals to see what their interests are, ask people for their preferred reinforcers, and don't be afraid to simply try out a few things and see what works.

2. **Deliver reinforcers immediately or with as little delay as possible**—The longer you wait to deliver a reinforcer the less effective it will be and the more likely you are to reinforce the wrong behavior.

3. **Reinforce specific behaviors, not vague labels or non-behaviors**—The goal of reinforcement is for the individual to repeat the behavior more in the future. For this to be the case the individual should be aware of the behavior being reinforced and the positive result of that behavior. This will help reinforce small improvements and ensure that the right behavior is being reinforced.

4. **Use a variety of reinforcers**—Reinforcers
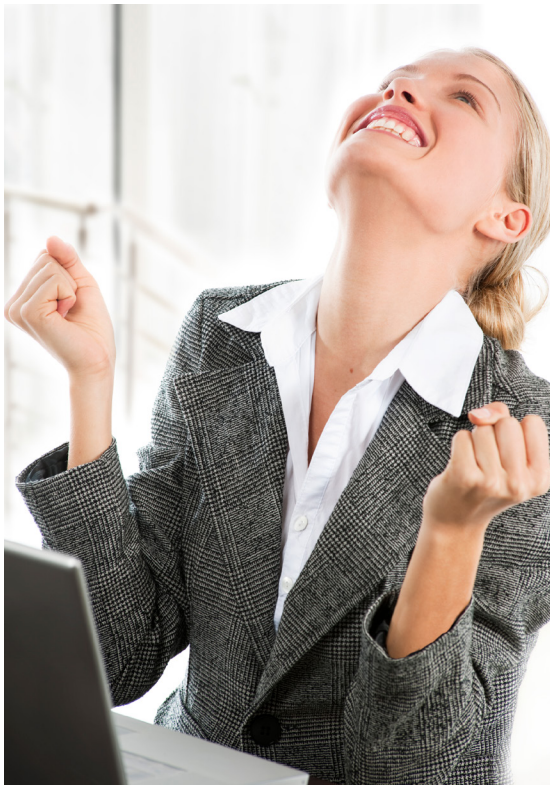
can lose their value if you overuse them. This will be evident in that the behavior being reinforced will start to decrease (or extinguish).

5. **Do not "sandwich" reinforcement and punishment**—There is a time and a place for correction, and punishment can be effective when necessary. However, delivering reinforcement and punishment at the same time will lessen the effects of reinforcement and can result in the person expecting a punisher each time a reinforcer is delivered.

6. **Reinforce frequently and with consistency**—It is especially important during the initial development of new skills to reinforce as often as possible. External reinforcers can be gradually faded out as success is linked with more natural reinforcers, but you want to ensure a high rate of reinforcement that is delivered often and consistently based on these guidelines.

7. **Link computerized feedback with external reinforcement**—Graphic feedback can immediately show a user their progress during a computerized training program. These graphs can also be printed or otherwise used outside of the training platform, creating opportunities for the peers, supervisors, and managers to provide positive reinforcement to the user about their progress. Doing this not only adds additional positive reinforcement to the user, but it will also increase the reinforcing value of the graphs by pairing these graphs with the strong positive reinforcement they receive from others.

8. **Link natural reinforcers with external reinforcers**—New skills require a high rate of responding that results in powerful reinforcers. Linking the behavior with natural reinforcers that are meaningful to the in-

dividual will help the skill maintain as the external reinforcers are faded out.

With the exponential advancements in science and technology, there is no better time to seek out new ways to maximize the impact of training. Computer-based training can offer the perfect blend of behavioral science and computer technology, teaching new skills in a timely and effective manner. By extending the reach of reinforcement from the training program to the workplace, these skills can add continued value to the company and employees, working together to build a culture of support and progress.

BLITZ PRECISION LEARNING

Blitz Precision Learning® is a web-based program that uses the science of behavior to build knowledge mastery and fluency so that new learning is recalled and applied accurately and without hesitation long after the training ends. Short and convenient, Blitz training drills enable you to target the specific information your employees need to know, while real-time performance graphs and reports allow learners and managers to monitor progress toward mastery and fluency.

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[About the Author]

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As a consultant, Nic provides sustainable performance-improvement solutions across a wide range of industries. His writing and research have centered on topics related to organizational assessment, consequence management, programmed instruction, and performance fluency. Nic is currently the President-elect of the Association of Professional Behavior Analysts. In his spare time, Nic enjoys playing guitar, fishing, and spending time with his wife and daughter.

[About ADI]

Regardless of your industry or expertise, one thing remains constant: People power your business. Since 1978 Aubrey Daniels International (ADI) has been dedicated to accelerating the business and safety performance of companies worldwide by using positive, practical approaches grounded in the science of behavior and engineered to ensure long-term sustainability. ADI provides clients with the tools and methodologies to help move people toward positive, results-driven accomplishments. Our clients accelerate strategy execution while fostering employee engagement and positive accountability at all levels of their organization.

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