

Revisiting a Classic: How to Use Positive and Negative Reinforcement to Demonstrate the Relationship Between Performance and Reward

Abstract

Although most management students are quick to grasp the concepts of positive reinforcement and punishment, they often have difficulty understanding negative reinforcement and how it affects employee behavior. The purpose of this session is to demonstrate how an updated version of a classic exercise, featuring high-levels of participation, can be used within traditional management classrooms to create a fun atmosphere in which students see first-hand the consequences of each type of reinforcement. Relevant materials will also be provided.

Keywords

Organizational Behavior, In-class Exercise, Positive and Negative Reinforcement

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Introduction

Like many other Organizational Behavior (OB) professors, I originally started teaching OB using a Robbins and Judge (2009) textbook. I have been developing and honing my teaching skills ever since by swapping out books for articles and by incorporating more in-class exercises that enable students to apply what they have learned. However, despite the many changes and updates, there is one exercise from that book that continues to endure because it is a fun, engaging, and effective tool for teaching students about negative reinforcement and the relationship between performance and reward. Based on my experiences, students readily comprehend positive reinforcement, but negative reinforcement is a trickier concept for them to grasp. Therefore, I intend to share the updates I have made to the classic exercise known as “Positive Reinforcement Versus Punishment,” which was originally developed by Larry Michaelson and adapted by Robbins and Judge (2009). As described below, I have adapted (i.e., repurposed) this exercise by modifying the learning objectives, incorporating helpful PowerPoint (PPT) slides, and renaming it “Positive Versus Negative Reinforcement.” As such, this session will provide a first-hand demonstration of its use in the management classroom.

I believe that this session aligns well with the theme of the conference – sharing best teaching practices – because I have successfully used this exercise across a range of undergraduate classes, from OB to Introduction to Business, and from Management Theory to Employee Training & Development. Because of the interactive nature of this exercise, it is intended for a traditional classroom. Furthermore, due to its focus on demonstrating positive and negative reinforcement, as well as the link between employee performance and reward, this exercise works best for undergraduate students who are still in the initial stages of learning about reinforcement and the power of rewards.

Theoretical Foundation & Teaching Implications

Based on the works of behavioral scientists such as Pavlov and Skinner, reinforcement theory is considered to be one of the foundational topics upon which OB and many other management courses were built (Skinner, 2014; Windholz, 1997). Any course that focuses on the relationship between manager and employee is likely to discuss how humans can be conditioned (i.e., programmed) to modify their behavior based on the consequences. In other words, managers can use both positive and negative reinforcement to promote or elicit desirable behaviors from their employees (Freight, 1973; Stajkovic & Luthans, 2003).

Since my students are typically familiar with positive reinforcement, to help them understand negative reinforcement, I often use the example of an alarm clock that annoyingly goes “beep beep beep” in the morning, and explain that the alarm clock is conditioning them to get out of bed on-time in order to stop that awful sound. But even this highly-relatable example does not provide students with the opportunity to apply what they have learned. In addition, my students often initially fail to comprehend the effect that each type of reinforcement has on employee behavior. To overcome this, I adapted Larry Michaelson’s exercise (Robbins & Judge, 2009) so that instead of focusing on punishment, it provides students with a visual (and for some emotional) demonstration of how positive and negative reinforcement conditions behavioral responses. To that end, I developed PPT slides to help students understand the exercise and its instructions, and I also created an additional debriefing question (See Appendix A). Overall, I find this updated exercise to be an effective teaching tool because it provides a fun, illustrative example that helps students appreciate the differential effects that each type of reinforcement has on an individual’s behavior.

Learning Objectives

As previously mentioned, this exercise is intended for any traditional, undergraduate class in which the teacher intends for the students to learn about reinforcement and the relationship between performance and reward. As such, this exercise has three learning objectives. First, this exercise enables students to more easily recognize negative reinforcement. Second, it demonstrates the differential effects positive and negative reinforcement have on individual behavior and motivation. Specifically, as will be described below, positive reinforcement tends to be more effective (i.e., more likely to promote desired behaviors) than negative reinforcement. Finally, this exercise enables students to understand the importance of managers tying consequences (i.e., rewards) directly and unequivocally to desired employee behaviors.

Exercise Overview

Logistics

After students learn about conditioning and reinforcement, I use this exercise to help them apply what they have learned. On average, it typically takes about 20-25 minutes. The only materials necessary for this activity are two students' phones, a random small object (e.g., pencil), a projector for PowerPoint slides, a dry-erase board or chalkboard, and something to write with (e.g., marker or chalk). This activity can be used for any size class, although I personally have used it for class sizes of 10-35 students.

Flow

After describing positive and negative reinforcement, I introduce the exercise developed by Larry Michaelson and adapted by Robbins and Judge (2009; p. 67). First, I ask for four “brave” volunteers to leave the room. I escort them down the hallway so that they are still visible but close to being out of earshot. Once I return to the classroom, I explain to the remaining students that we will be conducting an experiment, starting with the positive reinforcement condition. I state that the volunteers will be playing a version of hide-and-seek and that the class’ job is to help them find an object within the room. For this condition, the class will cheer and applaud only when the volunteer moves closer to the object. Otherwise, the class is not allowed to talk or help in any way.

I then pick a small object, such as a pencil or crumpled sheet of paper, and place it somewhere near the back of the room so that its location is not completely obvious to the volunteers once they return. I then ask for two more students to use their phones and serve as timekeepers. I inform them that they need to start timing once the volunteer claps, stop the clock once the volunteer finds the object, and record each person’s time.

After this, I call for the first volunteer to return to the classroom, at which time I point to the message on the board, which states, “Your task is to locate and touch a particular object in the room, and the class has agreed to help you. You cannot use words or ask questions. Please clap when you are ready to begin.” After the student claps, the experiment begins and the timekeepers start timing. The rest of class starts to clap as the volunteer moves closer to the object, and this is where it starts to get interesting and extremely lively (i.e., noisy!)

Some students quickly understand what the clapping represents and start a trial-and-error process as they hone in on the object’s location. Other students very slowly move through the

room, hardly paying attention to the applause, touching various objects, looking back at me to see if they are correct before moving on to the next object. A few students are sometimes startled by the applause, confused about what it represents, and so they freeze up, re-read the directions on the board, and appear reluctant to move about the room. In either case, if the volunteer has not found the object after three minutes, I tell them that it is okay if they want to quit. Once the volunteer has either found the object or quit, the timekeepers record the time and I explain the experiment to the volunteer before asking the student to join in the fun with the rest of the class.

After repeating the process for the second volunteer, I tell the class that from now on, this is the negative reinforcement condition in which we only boo or say “NO” if the volunteer moves away from the object. As the third volunteer enters the room, I ask them to read the aforementioned message on the board. Typically, students in this condition are more likely to become frustrated and quit if they are unable to find the object right away. (To be clear, I have asked volunteers after class about their experiences with this exercise, and 100% recommend that I continue using it).

Debriefing Guidelines

Upon completion of the exercise, I acknowledge that it can be uncomfortable being the center of attention, especially when one is confused or uncertain about what to do. Therefore, I thank everyone for participating and ask for a hearty round of applause for the volunteers. I then ask three related questions (See Appendix A). First, I ask the two timekeepers if there was a significant difference between the positive and negative reinforcement conditions in time spent searching for the object. I create two columns on the board, one for each condition, and prompt

my independent timekeepers to report their respective times. I then compute the average for each individual and write it in the appropriate column. Usually, those in the positive reinforcement condition tend to find the object faster than those in the negative reinforcement condition. At this point, most students start to nod their heads to demonstrate their understanding of how the benefits of positive reinforcement typically outweigh those of negative reinforcement.

However, sometimes there is not a noticeable difference between the two conditions, or those in the negative reinforcement condition are the fastest to locate the object. In that case, the second question is designed to once again frame positive reinforcement as the more effective type of reinforcement. Specifically, I ask, “What was the difference in behavior of the volunteers?” I find the most effective approach to answering this question is to ask the four volunteers directly. Students in the negative reinforcement condition typically report how uncomfortable they felt being the center of such negative attention, and how it triggered feelings of frustration and tempted them to quit. As for those in the positive reinforcement condition, they usually focus on their confusion as to what triggered the applause. Although this may lead to some momentary frustration, these students typically feel more motivated to “solve the mystery” and find the object.

Finally, I ask my students, “What are the implications of this exercise to shaping behavior in organizations?” I emphasize that the key takeaway here is that managers shape employee behavior through effective use of positive and negative reinforcement. In other words, rewards need to be clearly linked to desirable employee behavior. Otherwise, like a pigeon in a Skinner Box, employees may not understand why they are receiving the reward, and as a result, their desire to perform that desirable behavior may be extinguished.

Session Description

Overview

After initial introductions and distributing the handout (see Appendix A), I will briefly describe the exercise (“Positive Versus Negative Reinforcement”), explain its utility, including the theoretical foundation and learning objectives, and then demonstrate its use in a management classroom. Due to the exercise’s highly interactive nature, the majority of the session will be devoted to this demonstration, during which four audience members will volunteer to participate as the “seekers” who attempt to find an object within the classroom, while the remainder of the audience acts as the students who are expected to applaud and boo vigorously during the respective positive and negative reinforcement conditions. At the end, I will reserve time for Q&A so that everyone can share their suggestions and I can address any questions or concerns.

Timeline

Exercise	Duration for 60-minute program
Welcome, introductions, and distribute PPT handout	5
Explanation of exercise (theoretical foundation and learning objectives)	10
Interactive, step-by-step demonstration of exercise involving four volunteers and the entire audience’s participation	35
Q&A and sharing of tips and best practices to ensure the exercise is a success	10
TOTAL	60

References

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Appendix A

In-Class Exercise

- ❖ 4 volunteers to leave the room
- ❖ **Positive reinforcement** = cheer, applaud, “there you go,” “yes,” supportive comments when subject is moving **CLOSER** to the object
- ❖ Otherwise, no talking!
- ❖ Pick an object (small, not hidden, visible)
- ❖ Need two timekeepers
- ❖ Start timing when the person claps

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In-Class Exercise

Your task is to locate and touch a particular object in the room, and the class has agreed to help you. You cannot use words or ask questions. Please **clap** when you are ready to begin.

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In-Class Exercise

- ❖ **Negative Reinforcement** = hiss, boo, “no,” “wrong,” when subject is moving **FURTHER** away from the object
- ❖ Please refrain from making any personal comments → NOTHING NASTY

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In-Class Exercise

Your task is to locate and touch a particular object in the room, and the class has agreed to help you. You cannot use words or ask questions. Please **clap** when you are ready to begin.

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In-Class Exercise

- ❖ Was there a significant difference in time spent searching for the object?
- ❖ What was the difference in behavior of the volunteers?
- ❖ What are the implications of this exercise to shaping behavior in organizations?