The Student Should Help the Teacher: a View From 30 Years as an ABA Trainer

Brian K. Martens¹

Published online: 20 February 2018
© Association for Behavior Analysis International 2018

Abstract

I characterize my efforts to train graduate students in applied behavior analysis as a shaping process that involves closely monitoring their performance, providing numerous opportunities to respond in a variety of contexts, gradually shifting the reinforcement criterion, differentially reinforcing improvement, and providing instruction and error correction when necessary. In line with the old adage that “the student should help the teacher”, I also discuss how students are responsible in part for their own learning. To illustrate the importance of the student helping the teacher, I present a simple mathematical model that shows how two equally talented students can master skills at dramatically different rates by how frequently they respond to learning opportunities and apply what they learn.

Keywords Graduate Training · Shaping · Opportunities to Respond · Skill Mastery

In the summer of 1986 and with the help of my friend Russ, we moved my books, boxes, files, computer print outs, and punch cards into my office in the psychology department at Syracuse University. That fall I taught my first graduate course, *Behavioral Assessment: Theory and Research*, in the first (and only) academic position I would ever have to a class of 15 students, several of whom were older than me. I was nervous but prepared.

With the completion of spring semester 2017, I have been training graduate students in school psychology and applied behavior analysis (ABA) at Syracuse University for 30 years. In that time, I have chaired 23 students’ dissertations (two from that first class in 1986), and am proud to say that 12 of my 23 students (52%) have taken positions as trainers themselves. I am equally proud to say that several of my students and I have remained friends over the years.

I’m sure that some of my students would describe me as too demanding and some might say I wasn’t demanding enough. Did I provide enough support? Was I a good mentor? These are difficult questions to answer, as my experience with each student has been unique and uniquely rewarding to me. What I

have gained over the years however (among other things) is experience, and it is based on this experience that I offer the following observations on training doctoral level behavior analysts.

Training Graduate Students Is Shaping Behavior

In discussing the applied relevance of percentile schedules, Galbicka (1994) observed that, “In developmental disabilities, self-care, social, and vocational skills often need to be trained; in sports psychology, more skilled performance is a frequent goal; and *education itself is nothing but the modification of behavioral repertoires*” [italics added] (p. 739). One way that behavior analysts modify behavioral repertoires is through *shaping*, or the differential reinforcement of successive approximations to some terminal response (Galbicka, 1994; Skinner, 1953). Shaping requires the joint application of extinction to increase variability in responding and reinforcement to select and strengthen those forms of responding that are increasingly closer to the desired goal. As described by Galbicka, the “golden rules” of shaping are to (a) start by reinforcing behavior that is already in the person’s repertoire, (b) have a clear idea of the behavior you ultimately want the person to exhibit, (c) gradually change the reinforcement

✉ Brian K. Martens
bkmarten@syr.edu

¹ Department of Psychology, Syracuse University, 430 Huntington Hall, Syracuse, NY 13244-2340, USA

criterion, and (d) reinforce improvement rather than goal attainment.

My role as a trainer has been to shape my students' behavioral repertoires as best as I could during their limited time in graduate school. Starting by reinforcing existing behavior is easy. Our program faculty admits applicants who have prior relevant research and/or applied experience, and then we involve them from day one in faculty-led research groups. Identifying expected terminal behavior is also easy. Like most ABA trainers, I expect my students to be curious, hardworking, and independent, precise in their use of ABA principles, strategies, and tactics, rigorous scientists, skilled scientist-practitioners, and expert presenters and writers. Oh, I would also like them to maintain a sense of humor and lead balanced lifestyles.

The shaping process in between is a bit trickier. Generally speaking, I've tried to closely monitor student performance (APA requires us to do this formally), provide numerous opportunities to respond in a variety of contexts, shift the reinforcement criterion by gradually increasing expectations, differentially reinforce improvement, provide instruction in component skills, and correct errors when necessary. I believe strongly in opportunities to respond as a training tool. This encourages me to stay active as a researcher and writer so that my students have opportunities to develop their skills. This also means that I ask my students *a lot* of questions and carefully respond to their answers. As my students can attest (and bemoan), I ask questions during committee meetings and slice back (Wolery, Bailey, & Sugai, 1988) when they give incomplete answers. I ask questions in my classes and in lab meetings and give enthusiastic praise when students apply what they have learned. We're fortunate in ABA that our research and clinical activities involve the same principles, strategies, and tactics. As such, shaping students' responses in one context often promotes skill development in other contexts.

For me, the most difficult part of mentoring students has been knowing when and by how much to change the reinforcement criterion. Like any graduate trainer, I expect more of my students *in all domains* the longer they're in the program. For students who expect the same of themselves, my pace of shifting reinforcement contingencies has been a good match. With some students, I've probably shifted too fast. This has led to critically low levels of reinforcement and at times near extinction of responding (e.g., as when students occasionally avoid me altogether, a game the faculty calls "keep away"; L. J. Lewandowski, personal communication, January 12, 2017).

The Student Should Help the Teacher

There is a saying that "the student should help the teacher", which means that students are partly responsible for their

own learning. In shaping terms, learners are expected to respond frequently, change their response distributions with changes in the reinforcement criterion, and apply what they learn across similar contexts. For graduate students in ABA, this means volunteering for research and writing tasks whenever possible, participating in class and in lab meetings, offering explanations for their data, being responsive to corrective feedback, and not making the same mistakes over and over. Students who "help the teacher" in these ways optimize their learning rates. Consider Fig. 1 which shows increases in skill mastery as a function of opportunities to respond for two hypothetical students. The students are equally talented (i.e., have the same $Y = 2^X$ learning function) and are given the same number of opportunities to respond by their professor. The students differ only in the rates at which they respond to these opportunities and apply what they learn across contexts (i.e., respond/apply). The students show similar levels of excitement and commitment initially, but this gives way to less frequent responding for Student 2. Even though Student 2 responds/applies to every other opportunity, their level of skill mastery quickly falls below that of Student 1. Equally important but not depicted in Fig. 1 is that the benefits of instruction have more dimensions at higher skill levels (Dong, 2012). Thus, not only does Student 2 acquire fewer skills in the same amount of time, but their skill repertoire is less finely discriminated and of lower quality and flexibility than Student 1 who did a better job of "helping the teacher".

Final Thoughts

As a professor and trainer, I truly enjoy working with students—it's fun and it forces me to keep learning. I still try hard to be a good student myself, to see things more clearly, and to hone my craft. I've been fortunate in that the vast majority of my students followed the trajectory of Student 1

Fig. 1 Increases in skill mastery for the same learning curve ($Y = 2^X$) at different rates of student respond/apply

in the figure and have successful careers. Contributing to their success has been extremely gratifying, and I consider it my greatest professional accomplishment.

Compliance with Ethical Standards

Conflict of Interest The author declares that he/she has no conflict of interest.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

References

- Dong, A. D. D. (2012). *Taijiquan explained; workshop notes*. New York: Alex Dong International Taijiquan Association.
- Galbicka, G. (1994). Shaping in the 21st century: moving percentile schedules into applied settings. *Journal of Applied Behavior Analysis*, 27, 739–760.
- Skinner, B. F. (1953). *Science and human behavior*. New York: MacMillan.
- Wolery, M., Bailey, D. B., & Sugai, G. M. (1988). *Effective teaching: principles and procedures of applied behavior analysis with exceptional students*. Boston: Allyn and Bacon.