Bend It Like Becker

What types of models are best to observe when learning a skill?

Yeah, I know—you think this is a typo. After all, David Beckham was one of the best soccer players in the world for a while, or at least one of the most recognizable. And his name was popularized in the title of the movie *Bend It Like Beckham*. My argument here, however, is that you might just learn more if you tried to bend it like Becker (our fictional, unskilled soccer player) rather than Beckham. This story concerns the issue of observational learning and what we gain by watching a model.

Athletes who practice to develop sport skills would love to have the skills of professional athletes. Therefore, it is not surprising that most instructors and coaches of sport skills believe that professional athletes serve as the best models for demonstrating sport skills. For example, conventional wisdom would suggest that to hit a better tennis backhand, we should watch people like Serena Williams or Roger Federer. To learn to throw a nasty slider, we need to study Roy Halladay or John Smoltz. So, to learn to hook a penalty kick around a line of defenders, isn't the best idea simply to watch Beckham bend it?

Well, maybe yes and maybe no. There are a few assumptions to be made about the process of learning by watching the actions of a model. Some of these assumptions, but not all of them, would appear to favor the use of a professional athlete as a model. In their favor, the most highly skilled athletes usually possess the best skills to perform their particular sports. So it would seem natural that to become a better performer, one would need to watch someone who performs those skills at their highest level. So, one question would be this: How well can we perceive skills just by watching? Or perhaps a more fundamental question is What do we perceive when we see people move?

A clever research method introduced some years ago by Gunnar Johansson revealed that people were able to observe quite fine details simply by watching other people move. In his original study, Johansson filmed actors dressed in black body suits against a black background. Johansson attached reflective markers to strategic body parts (mostly joints) so that after editing, someone watching the film could not see the outlines of the people themselves. Instead, all they could see was the motions of the reflective markers as the person wearing the body suit moved about in the environment. Johansson (and others who have used similar methods) found that their research participants could readily identify a number of

features from the motions of the people on the video. For example, they could distinguish males from females, recognize friends, and even identify different types of animals from their gaits.

More recently, researchers have shown that various actions are identifiable, too, just from watching the motions of these white dots. Actions such as kicking a soccer ball, throwing a ball, and jumping were all readily perceived just from the movement of white dots on a video screen. These experiments demonstrate quite conclusively that humans have the capability to perceive fine details of temporal and spatial activities, even when provided quite restricted visual information.

Clearly, we must be good at picking up much more information from watching full videos rather than just watching moving dots. So, the answer to my earlier question is yes, we can perceive motor skills just by watching. However, does watching a professional athlete perform skills provide the optimal opportunity to learn? This is a difficult question to answer, because it presupposes that the average observer knows what to look *at* and what to look *for*. But that is not necessarily so. The research on this question suggests that skilled athletes serve as the best models for those who already possess some skill in the activity. Learning is facilitated even more if an instructor can help the observer attend to specific features displayed by the model.

But, another research area suggests that watching completely unskilled models can be a useful learning tool as well. This is especially true if, for example, the model is a member of a beginner-level skills class and the instructor has asked that person to demonstrate some activity to the rest of the class. In this situation, the instructor can point out specific faults to both the model and those who are observing the model. The unskilled model demonstrates something that might be wrong, and the observers get to see what the model has performed. Most important, the observers also receive the augmented feedback provided by the instructor about the error that was made, and then are engaged in watching the model attempt to correct the error. This is a powerful observational learning situation because it engages the observer in the problem-solving process that captures the trial-and-error activities of the learner.

So, should we watch Beckham or Becker bend it? The conventional wisdom would suggest Beckham. From a motor learning perspective, however, there may be as much or more benefit from watching the unskilled Becker as there is from watching the very skilled Beckham, especially if the observers are novice learners.

SELF-DIRECTED LEARNING ACTIVITIES

1. Define the term *observational learning* in your own words.
2. Identify a skill that would be difficult to model effectively, and one that would be easy to model. What is it about these skills that makes them easy or difficult to model?

From T.D. Lee, 2011, *Motor control in everyday actions* (Champaign, IL: Human Kinetics).

3. The story considers model skill as an important characteristic in the observational learning process. Identify four other model characteristics that could have an impact on observational learning.
4. Identify a research methodology you could use to assess the impact of one of the model characteristics that you identified in question 3.

Notes

- The following websites have examples of point-light displays of biological motion:

  www.tinyurl.com/pointlight1

  www.tinyurl.com/pointlight2

  www.tinyurl.com/pointlight3

- Some very interesting observational learning research was conducted using point-light display techniques to model soccer skills, including this one:

  Horn, R.R., Scott, M.A., Williams, A.M., & Hodges, N.J. (2005). Visual search and coordination changes in response to video and point-light demonstrations without KR. *Journal of Motor Behavior, 37,* 265-274.

Suggested Readings

Hodges, N.J., & Franks, I.M. (2002). Modelling coaching practice: The role of instruction and demonstration. *Journal of Sports Sciences, 20,* 793-811.

Janelle, C.M., Champenoy, J.D., Coombes, S.A., & Mousseau, M.B. (2003). Mechanisms of attentional cueing during observational learning to facilitate skill acquisition. *Journal of Sports Sciences, 21,* 825-838.

Johansson, G. (1973). Visual perception of biological motion and a model for its analysis. *Perception & Psychophysics*, *14,* 201-211.

McCullagh, P., & Weiss, M.R. (2001). Modeling: Considerations for motor skill performance and psychological responses. In R.N. Singer, H.A. Hausenblas, & C.M. Janelle (Eds.), *Handbook of sport psychology* (2nd ed., pp. 205-238). New York: Wiley.

Schmidt, R.A., & Lee, T.D. (2011). Conditions of practice. In *Motor control and learning: A behavioral emphasis* (5th ed., pp. 347-392). Champaign, IL: Human Kinetics.