

Why does Interact put such a high priority on practice?

"Hear one, see one, do one."

An old saying that describes how surgeons are trained

"Hear one, see one, say one."

Bad management training as described in *The Knowing-Doing Gap*¹

Interact puts practice at the heart of its programs. About half of each session is spent practicing the skills. A typical program has 75 to 80 different practice situations that participants learn to solve. Why is all this practice so important?

Suppose we had three courses to develop: Calculus, Competitive Swimming, and Surgery. Each would require a different instructional design, and practice would play a different part in each.

The amount of practice required in a program is determined by the Conceptual and Behavioral demands of the topic it addresses. The chart below shows how topics might differ:

		Behavioral Demands	
		Low	High
Conceptual Demands	High	<ul style="list-style-type: none">• Calculus	<ul style="list-style-type: none">• Surgery
	Low	<ul style="list-style-type: none">• Twiddling your thumbs	<ul style="list-style-type: none">• Swimming

¹ *The Knowing-Doing Gap*, Jeffrey Pfeffer & Robert I. Sutton, Harvard Business School Press, 2000.

Calculus has high conceptual demands, but few behaviors. Swimming has high behavioral demands, but few concepts. Surgery has high conceptual and behavioral demands. If we added a course on "Twiddling your thumbs", we'd find it has few conceptual or behavioral demands.

Concepts and behaviors are learned in different ways. Concepts can be taught vicariously—they can be learned through books, lectures, debates, video, demonstrations, computer-based training, or over the Internet. You don't have to act out a concept in order to understand it.²

It is much tougher to learn behaviors vicariously. The obvious parts of a behavior can be shown—through a description in a book, a verbal account, a diagram, a photo, or a modeled demonstration—but observing a behavior is not at all the same as learning to perform it. Learning a behavior requires practice.

Researchers who study behavioral skills, (gymnastics, swimming, acting, interpersonal skills), view practice as a series of feedback loops. Each practice/feedback loop includes the steps: act, observe, compare, and act again. Basically, the learner tries the skill, sees how he/she did against a standard, and then tries again.

Practice is most effective when:

- it focuses on a small chunk of the skill,
- the cycle time of each practice/feedback loop is brief,
- feedback is clear,
- repetition is high, and
- skills build on one another to form a routine or package.

Practice also has to be fun and engaging, or participants won't put up with it.

How much practice is enough?

The number of repetitions required to master a behavior depends on three variables: 1.) how controllable the behavior is, 2.) the number of failure modes involved, and 3.) the clarity of sensory feedback.

² Early learning theorists--Thorndike, Watson, Hull, and Skinner--believed that learning required behavior. In the 1950's and 1960's Bandura and Tolman showed that concepts could be learned through observation—without any actual behavior.

Controllable: The more difficult a behavior is to control, the more practice it requires to learn. This explains why complex dives require more practice than simple dives—complex dives require the diver to move his/her body through space in ways that are difficult to control.

Interpersonal skills, like the ones developed in Interact--often hinge on tone of voice, facial expression, and body language—behaviors that are difficult to control. Think of the practice time that professional actors spend learning to manipulate these subtle expressions. While Interact's skills don't require the degree of control that an actor has, they still challenge participants and require extensive practice.

Number of failure modes: The more failure modes a behavior has, the more practice it requires to learn. This is why it is easier to learn to ride a bicycle than a unicycle. On a bicycle you can fall in two directions—left or right; on a unicycle you can fall in any and every direction. Practice is required to become adept at avoiding or recovering from each possibility of failure.

Think of all the missteps that separate an effective leader from an ineffective one. Leadership has many failure modes. Interact uses practice and feedback to help participants become savvy to every interpersonal pitfall and landmine they face.

Clarity of sensory feedback: Some skills, swimming for example, provide little sensory feedback. It is hard for swimmers to observe themselves in the water, and tactual feedback is often vague. In these cases researchers find that videotaped feedback, coupled with extra practice, can boost performance.

It is also difficult for people to monitor their leadership actions—to see whether they are looking concerned, threatening, or thoughtful. Interact's practice gives participants the kind of clear, non-threatening feedback that they need in order to refine and improve their skills.

Summary

How much practice is required to learn the kinds of leadership and problem-solving skills that Interact builds? Our research shows that participants who complete five of our practice situations (15 situations in a team of three) are three times more likely to use the skills a year later than if they had completed only one practice situation (3 situations in a team of three). This is powerful data that shows the importance that practice plays in leadership skills.

Cognitive Practice—Is it a viable substitute?

Cognitive practice is mental rehearsal. People practice a skill in their heads instead of acting it out in reality. Research shows cognitive practice is important, but not as a substitute for behavioral practice. For example, tumblers can use cognitive practice to link gymnastic moves together into a routine, but only if they have already mastered the individual moves using traditional, behavioral practice.

Computer-based training programs often use cognitive practice in the form of simulations. Participants watch a scene on their computer monitor, then select a response from options on the screen. The computer uses a branching program to respond to their choice, showing an appropriate scene.

These simulations can be fun and effective, but build cognitive not behavioral skills. The participants' behavior is limited to selecting options with a mouse or keystroke. These kinds of simulations can make participants skilled "critics"—they will be able to recognize a skill when they see it and will perform well on multiple-choice tests—but it won't make them skilled "actors"—they won't be able to employ the skills at work.