What Is Action Science?

Action science is an intervention approach, also aimed at the individual, team, and organizational levels of experience, for helping learners increase their effectiveness in social situations through heightened awareness of the assumptions behind their actions and interactions. Individuals' mental models—the images, assumptions, and stories of themselves and of others—are often untested and unexamined and, consequently, often erroneous. Action science brings these mental models into consciousness in such a way that new, more serviceable models can be formed.

Action science thus calls for the deliberate questioning of existing perspectives and interpretations, a process referred to as "double-loop" learning. When a mismatch occurs between our values and our actions, most of us attempt to narrow the gap by trial-and-error learning. We also prefer to maintain a sense of control over the situation, over ourselves, and over others. In double-loop learning, we subject even our governing values to critical reflection, creating free and informed choice, valid information, and high internal commitment to any new behavior attempted.

Action scientists refer to the set of understandings with which we group the world as an "action model." In many organizational situations involving interpersonal interaction, especially those involving threat or embarrassment, we may automatically invoke a so-called "Model I" program. This program allows us to save face, avoid upset, and maintain control. Since this kind of reaction often produces self-reinforcing patterns that seal off self-discovery, action science facilitators work with participants to engage in "Model II" responses. These responses allow for the exploration of interpersonal differences and mutual responsibility.

Donald Schon prefers the term "reflection-in-action" to characterize the rethinking process in which someone attempts to discover how what he or she did contributed to an unexpected or expected outcome. In order to engage in reflection-in-action, participants might start by describing a situation and then, upon reflection, provide a frame that characterizes not only their intentions but also explains the inferences they draw from others' responses. Then, they might inquire as to how others in the group see it. Group members might reflect on these frames, offer feedback, and subsequently begin to surface and test their own underlying assumptions and respective reasoning processes.

The aim is to narrow inconsistencies between one's espoused theories and one's theories-in-use. Espoused theories are those characterizing what we say we will do. Theories-in-use describe how we "actually" behave. The goal of action science is to uncover our theories-in-use and, in particular, to distinguish between those that inhibit and those which promote learning.