

The Knowledge Notebook

How Organizations Learn Anything

BY LAURENCE PRUSAK



During the late 1930s, several researchers working on the West Coast noticed something interesting occurring during the manufacturing of aircraft bodies. Whenever a new design or model was manufactured, building the second one always took considerably less time than the first one had. The third iteration took less time than the second. (Before long, of course, those time savings leveled out.) The learning needed to build the aircraft more efficiently was learned by the workers and the organization itself in the process of building them. Now, this sort of insight will not come as a big surprise to many readers. In fact, Adam Smith in *The Wealth of Nations* remarked on the same phenomenon after watching nails being made in eighteenth-century workshops; his observations became the foundation of his theory of the division of labor. Planes are much more complex than nails, however, and the cost of building them is much greater, so the efficiencies observed in the aircraft factory and the idea they suggested began to attract serious research attention after World War II.

That was when operation-research analysts working at the Rand Corporation began writing papers and developing equations for understanding in a more quantifiable way exactly what goes on during this type of learning process. This work was codified and given more analytic heft by Ken Arrow, a highly influential Nobel Laureate economist now at Stanford. Arrow's paper, "Learning by Doing," was published in 1962. It aroused great interest among economists, but it wasn't exactly a great success among the "training" bureaucracies in organizations—all the many managers responsible for promoting organizational learning. They were still wedded to

the rather limited and less valuable type of learning that takes place predominantly in classrooms or (later) facing one's computer monitor.

This was a great pity and has caused much waste of money and time. Arrow gave academic rigor to the idea that people and the organizations they work in learn mostly by doing, that active participation is the best teacher. The learning-curve theory, made popular (and profitable) by some management consultants in the seventies, was the direct result of this work. It holds that the time required to complete a task decreases as the task is repeated, that the amount of improvement decreases over time, and that the rate of improvement can be predicted with reasonable and useful accuracy.

These lessons were very slow to catch on for several reasons. One is that Arrow used some psychological studies as well as economics and they hinted at the fact, now more emphasized in practice, that one needs reflection to really understand and learn from one's experiences. Though some learning perhaps comes from repetition alone, most of it doesn't happen in that purely automatic way. Giving employees the time and tools (including "soft" tools like storytelling and discussion) to reflect on what they have learned from the process of doing work is still a rare phenomenon in the workplace. Our management methods and styles work against institutionalizing any form of activity that cannot be readily quantified. Many managers are more comfortable with a quiz showing whether people have grasped the lessons of a training session than the less tangible understanding gained by telling or listening to a story about work.

The other main reason for this gulf between what is now known about how people learn and

how we use such knowledge is a commercial one. Many vendors and consultants sell various and sundry offerings dedicated to making organizational learning more efficient and (they claim) more effective. While some of these products and services are potentially useful, many are based on the idea that there are easy technical fixes to what is a very human and somewhat complex activity that can only be very partially mediated by technologies.

Now that economists are perhaps starting to more readily accept the findings of learning theorists and psychologists and this knowledge is filtering down into more popular business thinking, we may start to see a more nuanced and realistic understanding of organizational learning emerge. If leaders really come to accept and support the understanding that the most valuable learning comes from action and reflection, we could see a great increase not only in project productivity but in innovation and the spread of useful and valuable knowledge throughout organizations as well. ●

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