The New Sciences and the Learning Organization Part 5B: It's About Time!

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"… one fact is clear: as our lives and our world become faster-paced and more complex, our need for ingenuity rises. Both as individuals and as societies, we must deal with more issues simultaneously and make decisions faster. We must deliver an ever greater range of problem-solving ideas at an ever higher rate, and to accomplish this task we must rely on increasingly sophisticated time- and decision-management tools."
— Thomas Homer-Dixon, **The Ingenuity Gap: How Can We Solve the Problems of the Future?** (2000)

As Homer-Dixon states in the opening quote, our lives are becoming "faster-paced and more complex". The result is an increasing feeling of chaos and being out of control. This shows up in our lives as:

- Not having enough time in the day to get things done
- Feelings of fragmentation and isolation
- Items and tasks falling through the cracks
- Broken promises and agreements with people
- Feelings of frustration, leading to a general feeling of being overwhelmed

However, before we can deal with this situation, we must understand what we have done to create this situation, and what we are continuing to do to make our lives even more faster-paced and complex. To do this, we need to understand certain terms: *systems*, *complexity*, *chaos*, *edge of chaos*, and *complex adaptive systems*.

Everything on this planet is part of a *system*. You are a system; you live and work in a system. A system is comprised of three elements:

- The parts of the system
- The interrelationships among the parts
- The entire system that is produced when the system is operating

The systems described in these newsletters involve people. For example, when solving a technical problem, we are dealing with:

- The people and the technical problem, which comprise the parts of the system
- The way the people interact and influence each other and other aspects of the system (e.g., the technical problem), which comprise the interrelationships among the parts
- The system that is created as a result of the first two elements

The system can be understood *only* when all the parts are present and interconnected, and the system is operating. This is where *complexity* comes into play. According to Mitchell Waldrop, author of **Complexity: The Emerging Science at the Edge of Order and Chaos** (1992), all "complex systems have somehow acquired the ability to bring order and chaos into a special kind of balance. This balance point — often called *the edge of chaos* — is where the components of a system never quite lock into place, and yet never quite dissolve into turbulence, either." For example, you can identify the parts of your life in which you feel stable, orderly, and in control, and the parts of your life in which you feel chaotic and out of control. The way in which you balance yourself between the order and chaos in your life is what is called *the edge of chaos* or

complexity. The fact that you are *able* to balance these two forces makes you a ***complex adaptive system***.

When people have too much stability and order in their lives, they become complacent. Often, this complacency causes people to seek out new challenges to overcome, which, in turn, creates more chaos in their lives until they are able to master the challenge. When people have too much chaos in their lives, they become stressed and burnt out. Often, this stress causes people to seek stability in their lives, which in turn creates order and control. Like a pendulum, it is this back-and-forth movement between order and chaos that creates complexity. And, the fact that people are able to navigate between order and chaos, and adapt to changes, explains why humans are called *complex adaptive systems*.

As individuals, people are complex — a mixture of genetic personality traits that have been influenced by an environment full of experiences (see **InfoMine**, Vol. 6 No. 6). Put several people together in a group, and complexity increases dramatically. Put several groups together into a community, such as an organization, and complexity increases even more dramatically. In fact, every time you add another human to a group, another group to a community, and so on, complexity increases substantially!

Add to this equation ferocious competition, globalization,

technology, and speed, and suddenly you have complexity beyond anything that people can comprehend. We call it complexity because we *cannot* know everything about a complex situation. We can only guess at what is happening. As we embark on the 21st Century, complexity is increasing exponentially, and taking with it our sense of control. This leaves us feeling overwhelmed and hopeless, grasping at anything that might help to ease the situation. To deal with this increase in complexity, we run even faster, compressing time, until we have no time at all!

Until recently, people have been quite good at being complex adaptive systems. We seem to have been able to solve most of the problems that we have faced in our journey to the 21st Century. According to Homer-Dixon, we use *ingenuity* to do this balancing act. Unfortunately, we may be running out of the ingenuity we need to deal with the increasing complexity that threatens to overwhelm us. Homer-Dixon explains that, to deal with complex situations, we need to have a *set of instructions*. The more complex the situation is, the longer the set of instructions — or plan or procedure — needs to be. According to Homer-Dixon, human ingenuity is the key ingredient for developing the right set of instructions. However, to gain access to this ingenuity, people need time to reflect with others in a face-to-face situation. In other words, we have to sit in a room together and think together to gain access to our ingenuity.

Of course, it is more complex than

this. Who has the time to slow down to think about a complex situation, so that we can gather data, analyze the data, and understand what the data tells us? Who has the time to meet with people face-to-face? Isn't this why we have email? Who has the time to think of a plan or set of instructions to deal with the complex situation?

And yet, we do have enough time to make mistakes, to be overwhelmed, to complain, to be frustrated, and to feel out of control. We have enough time to put up with mediocre performance, and to not get the results we desire. Einstein stated that time was relative. It's obvious that we are under an illusion of having not enough time, when, in fact, we have plenty of time. It's how we choose to use that time.

"Einstein once remarked that if he were to be killed and had only one hour to figure out how to save his life, he would devote the first 55 minutes of that hour to searching for the right question. Once he had that question … finding the answer would take only five minutes."
— Win Wenger and Richard Poe, **The Einstein Factor: A Proven New Method for Increasing Your Intelligence** (1996)