



The “Right Stuff” Myth

By Gail Snyder

Some 34 years ago, President Reagan fired 11,000 air traffic controllers who refused to break their strike and return to work. Almost 10 years later, Walter Schneider, Ph.D., spoke about the large-scale termination to an audience in the U.S. Capitol Building. He revealed that the training program for replacing those vacancies incurred a 57 percent failure rate and that it was necessary to train 2.3 people to attain one acceptable controller. This added up—at the time—to a cost of \$158,000 per successfully trained controller, surely a much higher amount if translated to today’s dollars.

To successfully achieve fluency in any skill, students and trainers must know from the onset that they will have to expend effort in the course of learning, but that the desired results will be accomplished in a rather modest amount of time.

– Gail Snyder

Why are Schneider’s decades-old observations currently relevant? They are relevant because the common approaches to education, skills training, instruction, and coaching remain largely the same today. As Schneider pointed out, when training programs fail, the students rather than the instructors or the training program are the ones typically blamed. “There is a belief shared by both those being trained and those doing the training that some trainees have the ‘right stuff’ and others do not,” said Schneider. Even today, the FAA’s Website reflects much the same sentiment: “If you’re looking for an exciting, challenging and rewarding aviation career, become an FAA Air Traffic Controller. . . . Do you have *what it takes* to help us control the skies?”

The concept of having *what it takes* (or not) to perform any task remains prevalent, but Schneider knew then, and behavioral scientists know now that just about everyone has what it takes to learn and apply almost any information or skill. The conclusion that



someone is simply not good at math or not cut out for a certain career is often a result of poor teaching, coaching, and instruction. This mentality repeatedly results in students’ feeling a learned helplessness. Many eventually give up on the task (and even on themselves) and vacate those learning and training environments where a 57 percent dropout rate is seen as acceptable attrition. “The notion of the right stuff is largely

mythical,” explained Schneider. “Those who appear not to have what it takes have just not had sufficient exposure to the task to have reached the level of automaticity.”

This training to automaticity or *fluency*, when implemented correctly, consistently results, for example, in students—even those diagnosed with learning disabilities—who advance multiple academic years in a matter of months.

Morningside Academy, has successfully implemented automaticity/fluency methods for over 31 years with more than 40,000 students. An 11-year study of the Academy’s students’ mean standardized test gains in reading, language arts, and mathematics show an average of 2.5 years of growth per school year in reading; growth in language arts approached an average of four grade levels per school year, and mathematics scores rose to more than three grade levels of improvement per school year.

Schneider’s assertion that *experts are trained not born* has been validated in classrooms (in which instructors implement fluency training) across the United States and Canada; yet few educators or trainers are even aware of these methods. “I would underscore that 10 to 20 hours of concentrated training may be all that is needed to turn something that seemed impossible to do into something





that is easy,” Schneider asserted. Years of applying fluency teaching methods have proved him right! In fact, research and application has identified few people who cannot master a skill if given proper training and continued effort by the trainer.

RIDING THE BIKE

The saying goes that one never forgets how to ride a bike. Doing so consists of many components, such as holding and aiming the handlebars, pedaling, balancing, and so on, but one doesn’t think of these actions separately when riding a bike . . . one just does it. This automaticity is the level that educators and trainers want people to learn and fluency training brings people to that level quite rapidly. Whether cognitive or motor skills, when trained to this point of automaticity, the skills tend to remain very stable over time and are resistant to deterioration under stress.

Behavioral scientists discovered that people process all information in two ways: controlled processing and automatic processing. Controlled processing is a serial mode of learning, as in step one, step two, and so forth. It is slow, serial, effortful, and the amount of information that can be store is

limited. Automatic processing occurs when the acquired information is linked together in a way that makes retrieval easy or effortless as in the activity of an experienced typist. The two modes are not mutually exclusive, but with fluency training, the level of automaticity—the speed of processing—can be attained much more quickly.

Training or teaching to automaticity offers the following advantages:

- Automatic processing can be 100 times faster.
- Automatic processing allows us to perform well under high workload, whereas controlled processing is hurt by workload and additional stress.
- Automatic processing is resistant to other stressors.
- Automatic processing becomes part of long-term memory.



We do not act rightly because we have virtue or excellence, but we rather have those because we have acted rightly. We are what we repeatedly do. Excellence, then, is not an act but a habit.

— Aristotle

Many of these factors carry significant importance, in the area of workplace safety, for example, and/or productivity. Nevertheless, most organizations train only to the level of controlled processing and hope that the employee learns automaticity on the job. One clear implication of research is that halting training before the student reaches the level of automatic processing can have serious consequences for performance. It will be much slower than it ought to be, unreliable under conditions of high workload (even more so when workload is combined with other stressors), and maintenance of skill is not assured over time. “When inexperienced personnel are asked to use complex systems under conditions of high workload combined with high stress, the result can be deadly,” said Schneider.

As Schneider pointed out, training is really a type of education or learning, so both teachers and trainers—and even more importantly, their students—can benefit from fluency



techniques. This process includes identifying the critical components of a skill, sufficient practice wherein the student carries out the operation, receives feedback on accuracy, and then does it again. (Feedback is based on collected performance data.) That process is repeated until the desired accuracy level is achieved. Then that component is combined with other critical components for more training trials. According to Schneider, one way to make training programs more effective and cost efficient is to make them more precise. No student should spend more time on a component than is needed or less time for that matter. Ultimately, when the components are learned, then combined, the students should be able to perform the whole task at the level of automaticity.

IT'S NEVER TOO LATE, BUT . . .

Schneider attributed the efficacy of Japanese systems to an early focus on component skills. However, fluency implementation shows that even when people with higher prior knowledge of component skills are initially better at learning information or tasks, that difference disappears as the fluency training





progresses. *“I think that a characteristic of a good training program is that it eliminates initial differences attributable to prior knowledge,”* he said. He then added, “What is taught at the elementary and secondary school levels provides the base for later learning. What is learned in the early years, if it is taught well and learned well—as is the case in a number of other countries—is an asset in later skills building. There is a role for elementary and secondary education as well as for skills training. The former should not be discounted, just because the latter can be done well.”

Schneider’s recommendations are just as cogent today as they were years ago. With a U.S. education and training system that appears to barely budge from traditional methods, much room for advancement exists. Experience has shown that most of the variations in learning outcomes are accounted for mainly by the nature of the training procedure and the effort of the student—not by some native aptitude for the task. This largely debunks the myth that some have an innate ability and others do not to acquire certain skills.

Importantly, to successfully achieve fluency in any skill, students and trainers must know from the onset that they will have to expend effort in the course of learning, but that the desired results will be accomplished in a rather modest amount of time. **“Intelligence is by no means the strongest predictor of performance,”** Schneider said. “The quality of the training program and the persistence of the trainee are extremely important as well.”

USE THE TOOLS!

Another piece of Schneider’s advice that remains true is that it is not possible to make an informed choice about what system of teaching or training to adopt without performance data—and those who have implemented fluency training have an abundance of data to share. Actually, the fluency approach relies on data to track, supply accurate feedback, and reinforce performance. Schneider also suggested that organizations retain an advisory board of people with expertise in identifying the components of skills and experience in applying fluency methods.

As he observed then and as is currently accurate, many training/teaching programs



in the United States do not truly accomplish training or teaching. “In many instances our

training programs are doing no more than identifying people who can learn from bad instruction! If you could identify the best possible training program, it would be the one that trains the most skills at the least cost in the least time and does it so well that the student functions well not only with respect to the tasks trained but also in areas directly related that were not directly trained,” he said.

Such teaching and training methods do exist, waiting in the wings to be applied! As Schneider concluded regarding the fallacy of the “right stuff” belief: “Do not wonder about the deficiencies of those who do not make it; worry instead about your training procedures.”



[About the Author]

GAIL SNYDER

Gail Snyder is a staff writer for Aubrey Daniels International. For the past 27 years, she has worked with clients to share their stories of the impact the science of behavior has had on their people and their business. In addition, Gail was the editor of Performance Management Magazine from 1987 to 2004.

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The Aubrey Daniels Institute is dedicated to increasing the understanding of and advancing the use of the science of behavior. It is a depository of information, research, examples, and resources gathered together to support the powerful application of applied behavior analysis and is intended to be a place for exploring topics that are critical to Dr. Aubrey C. Daniels’ vision of changing the way the world works.

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