

February 2018

The Psychology of Learning

Dear Drew,

In recent years, I am pleased to see a rising interest in the 'human side' of Lean and Continuous Improvement. True more and more organizations are seeing people as their most valuable assets, and are beginning to treat them as such. But more interestingly, I am seeing more articles, workshops, presentations and the like addressing the personal aspect of change. As a person with a background in Organizational and Behavioral Science, this truly pleases me. People are better understanding 'what makes people tick', so to speak.

For years I watched as organizations tried to 'will' people to change, then wonder afterward why the changes that were made were unsustainable. In other cases, they inadequately invested time and resources in the development of their human assets, whether for the specific skills required in their job, or in problem solving and process improvement skills. Leaders often would ask me "why don't people 'get it'". I often thought to myself, we just don't understand people, what motivates them, how they truly learn, etc. This was a personal reflection of mine in the late 1980s. It is for this reason that I continued my studies in the organizational and behavioral sciences in the early 1990s.

During those studies I came upon the teachings of Edward

Thorndike (1874 - 1949), and his *Psychology of Learning*. Thorndike was an American psychologist who spent nearly his entire career at Teachers College, Columbia University. His work on the learning process helped to lay the foundation for modern 'educational psychology'. His theories such as his 'Law of Effect' are as relevant today as always. In his work, one can find many very practical ideas that can help overcome some of the challenges that I am certain we have all encountered as 'change agents' in organizations.

Specifically, I will refer to his *Educational Psychology, Vol. 2: Psychology of Learning*, which he published in 1913. Volume 1 was titled *The Original Nature of Man*, a worthy read as well, with some important points worth noting. For example, there is a connection between the strength and directness of situations provided by the physical environment (including the behavior of others), and the response of which a human is capable. The important word is 'capable'. Humans can develop capability, and therefore the responses are modifiable. In other words, humans are capable of learning. In Volume 2, Thorndike offered three laws around the subject of learning: Readiness, Exercise and Effect. It is these that we will explore more in depth herein.

Law of Readiness

People must be ready to learn. Thorndike observed that only when people find the experience a 'satisfying state of affairs', will they want to maintain and renew it. If the person is not ready, they will find the experience 'annoying'. When annoyed, people will do nothing to preserve the experience, often doing things to put an end to it. I am sure that we have all encountered individuals who seemed annoyed by

Continuous Improvement. We tend to quickly dismiss them as naysayers who don't 'get it' and never will (or worse).

What does it mean to be 'ready', and how can an organization help ready its people? I am not just talking about carving out time, but rather to truly prepare people mentally and emotionally? Regarding the aforementioned naysayers, are these individuals truly ready for the learning process, which Plan-Do-Check-Act (PDCA) represents? One-on-one conversations with many such people over the years reveal a multitude of possibilities. "Listen, I get it, but my boss is really on my back about my 'real job'." Sometimes, it has nothing to do with work. The person is dealing with some personal matter at home. The talk of possible change in the workplace simply adds to his or her anxiety. In many cases the individual is just not prepared for what they are being asked to do - to be involved in some form of change activity. How often do we have such personal conversations to understand a person's readiness for learning?

Has the organization provided an adequate purpose for proposed change, and have people accepted it? People don't readily change. It gets people out of their 'comfort zone', taking time, effort, energy, and emotion - things that people generally try to conserve. They must be given a reason. Providing purpose and insuring that people accept it must be part of the organization's readiness efforts. How often has your organization tried to change a process, only to see that people are unable or unwilling to learn the new process, choosing to stick with the status quo? Were the problems with the existing process clearly defined? Were they recognized and accepted by the people involved? There have been some efforts to apply techniques used in the treatment of addiction to the world of

Continuous Improvement - more specifically to help with the emotional challenges that people experience. Most all addiction treatments begin with the individual recognizing the existence of a problem. All require the individual to be willing - to be ready - to be treated. It is always the necessary first step. Consider past improvement efforts in your organization. What did your organization do to 'ready' the people affected?

Law of Exercise

Thorndike's Law of Exercise is comprised of the laws of Use and Disuse. The Law of Use involves the connection that is made between a situation and a response. This later became known as Stimulus-Response (S-R) Theory (also called Connectivism), which states that for learning to occur, the response must occur in the presence of or very soon after a stimulus is presented. Otherwise, an association will not occur. The strength of the connection will increase with increased 'vigor' and duration of the experience, as well as the number of times that it is repeated. The more often an association is used the stronger it becomes. The stronger the connection: the greater the probability for recurrence. These factors have deep implications in understanding what is truly needed to learn.

First, consider the statement regarding 'the response must occur in the presence of or very soon after the experience'. Timing is everything. How often have organizations delivered training to individuals, but did not provide adequate opportunity to practice what was learned afterward? What was the value of such training? What real learning occurred? What really 'stuck' over time? Thorndike's Law of Disuse refers to the weakening of the connection over time. The longer an association is

unused, the weaker it becomes. He later also referred to 'Fading Theory'. It is estimated that people will lose approximately 70% of what they learn after just 2 weeks, without subsequent practice. This figure can vary due to various conditions such as what else the person is doing in the time between repetitions, the complexity of the learning, and other factors. Nonetheless, the truth of the expression 'if you don't use it you lose it' holds.

Now consider the statement about 'duration and number of repetitions'. Practice makes perfect, or at least competency. Experience has shown that 4 - 7 repetitions are required to begin to put any learning to short term memory. And remember the importance of timely practice, as was just discussed. Those familiar with Training Within Industries (TWI) Job Instruction (JI) will recognize the Law of Use embedded in its methodology. The origins of TWI-JI date back to several years after the publication of the Psychology of Learning. Has your organization provided sufficient opportunities for people to practice problem solving and process improvement? How about for other types of skills it hopes to develop?

Finally, the term 'vigor' should be more deeply explored. Classroom-only type of learning is insufficient. All that can really be expected of such approaches is to generate awareness of concepts. Leaders cannot expect effective skill development to be the result. Real learning comes when multiple senses are engaged during the process. Consider the approach your organization has taken to training of any type of skill. Experiential learning has proven to be the most effective, particularly when coupled with real-life application.

Law of Effect

The Law of Effect is simply that a connection's strength will increase when accompanied by a satisfying or positive experience. Of course the opposite holds true as well. When people have a positive learning experience, they will be more open to repeating that experience. Conversely, people will avoid unpleasant or dissatisfying experiences. This may seem like common sense, but consider your own personal experiences with continuous improvement, and change in general. Have they always been positive? I am sure that many readers have encountered strong negative reactions on the part of people to various lean concepts. "We tried 5S and it doesn't work here." "Pull/Kanban was a failure - people kept losing the kanban cards." And so on. Upon further discussion, it is often the case that people had a very negative experience.

Approach is everything. Many organizations have taken very inappropriate approaches to the application of Lean concepts. Examples include: imposing particular concepts on people, without properly involving them; force fitting approaches from other organizations without adapting them to meet a different set of circumstances, leaders expecting immediate results when often more time is required to properly assess, leaders abandoning concepts altogether at the first sign of difficulty, just to name a few. All result in dissatisfying experiences, and can 'spoil the water' with regard to particular concepts, or even Lean in general. Reflect on your organizations approach. Does it result in a generally positive experience for the people involved? Does your organization and particular leaders tend to focus on the negative? I have had managers describe as a failure, in front of everyone, particular improvement efforts that achieved 25% measurable improvement, because they fell short of a targeted 30% goal. What is the likelihood of people in that organization wanting to continue with its CI efforts if such achievement is viewed as a failure?

This is not to say that all satisfying experiences must be successful in the traditional sense. For example, leaders must recognize the effort people put forth, and not just positive results. Leaders must set the expectation that not all steps taken will have positive impact. Things may very well get worse before they get better. Further, they must emphasize that it is about the learning from taking a step that is most important, and how that learning will be used going forward. Such techniques can maintain a positive experience as individuals and the organization conduct various PDCA cycles in their problem solving and process improvement efforts. Again, reflect on your organization's past practice. Do leaders contribute to a positive experience for those involved in continuous improvement? Are their words and actions resulting in the contrary? How do leaders respond to adversity? Inappropriate responses can quickly put people off to continuous improvement and Lean in general.

Law of Habit

Thorndike posited that habit forming is a consequence of the laws of readiness, exercise, and effect. Without any one of the three laws, learning will cease to occur. The ultimate goal of learning is to create the desired habits, whether for skills required in a particular job, or for problem solving and process improvement. Then deep learning and proficiency have been achieved and retention assured. Studies have shown that it can take 1 to 9 months to begin to create a habit, and on average 2 months. Many factors will determine the exact number including the rate, frequency and duration of practice, the complexity of the task, existing habits and how 'deep rooted' they may be, and other factors. Nonetheless the fact remains it takes time.

Summary

Thorndike's work spanned many other topics beyond the ones covered here. For example, through his experiments and trials, he concluded that reward is a much more effective motivator than punishment. Learning through trial and error (multiple response) and the fact that learning is incremental were other conclusions from his various studies. As he stated, "Learning is connecting. Teaching is the arrangement of situations, which will lead to desirable bonds and make them satisfying."

So, is your organization arranging the proper situations for learning? It may not be, which can discourage learning and create frustration for all parties. Consider the meaning and intent of the laws of readiness, exercise, and effect. Are they in place in some form when attempts at learning are being made? The fact of the matter is we have known for over 100 years what it takes. Unfortunately, many organizations are unaware of these principles, and/or do not put them into practice. Aristotle supposedly said, "to be learning something new is the chief pleasure of mankind". This will only be true if the proper conditions for learning are in place.

Best Regards

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Associates**