

Quality Learning: The Audacity of No Hope[®]

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When I began to study brain research - how the brain actually learns - I slowly realized how insightful observations by Deming, Feuerstein, Bloom, Piaget, Vygotsky and others had been even without the benefit of physiological brain research. However, it is Deming's work on systems thinking that I believe still has the most profound effect on learning and offers the most hope for teachers and administrators trying to improve learning. The traditional system of education sub-optimizes learning when hope or faith in the system is thwarted or removed. Deep psychological and physiological problems can result and cause long term difficulties in learning and socialization, but there is hope if we learn to change systemic causes and not just re-mediate effects. Professor Richard B. Silberstein, of the Brain Sciences Institute at Swinburne University of Technology, Melbourne, Australia states the problem like this.

“High levels of motivation are associated with high levels of neural modulators. Things as subtle as hope play a crucial role in the neurochemistry of the brain. A sense of hopelessness and helplessness dramatically reduce neural modulators, in turn reducing the intrinsic neural plastic capacity of the brain. It's always there, but it's modulated. ...One of the bad things that one can do to an individual is, as an authority figure say, “Look there's no hope, you can't do anything about it, whatever the situation happens to be.” The moment you take away all hope, you have in fact removed the very neural processors, the efficiency of the very neural processors, that could, in fact, have offered realistic hope.”

- Dr. Richard B. Silberstein
Recent Developments in Brain Research
2002 Quality Learning Reference Series DVD*
Quality Learning Australia

The central core or deeper reaches of the brain filter inputs from the five senses. These inputs or thoughts waft through the brain, then chemicals are released from this core, chemicals that promote hope, faith and enjoyment or fear, hopelessness and helplessness. Two different students can interpret the exact same task and explanation in vastly differing ways depending on past experiences. Past experience can cause chemicals to be released, which can either deepen a negative cycle or strengthen confidence to move forward with ever increasing learning challenges. For instance, the word math can invoke immediate feelings of excitement and challenge for some people, or fear and intimidation in others. There is nothing innately fearful about mathematics, science, writing, or any other subject, but we may have been conditioned through past experience that some learning experiences can be harmful psychologically and therefore hinder future attempts to learn.

Common systemic factors such as grading on a curve, the GPA (Grade Point Average) system and arbitrary deadlines take away hope for a large percentage of the student population. Students learn over time there is no hope, they cannot catch up, cannot achieve an A nor improve their GPA enough to get into the college or university of their choice. Students, in varying degrees, gradually quit learning, only attend school to be with their friends, or drop out at the earliest opportunity. Educators often observe these effects and classify them as lack of ability, motivation, and/or a poor attitude toward learning without sufficiently taking responsibility for the system they created. In psychology this is known as the fundamental attribution error.

In 1984, I started observing the systemic effects of grading systems, since it was one of the most fundamental elements of our education system. I recognized, as a teacher, I was the leader of the classroom system and only I could change it. Previously, I had never thought my job was to improve the system; I had only concentrated on managing the system. Furthermore, I had become adept at managing the system of teaching, but not the system of learning. By studying the systemic causes preventing learning, I came to the conclusion that traditional learning systems make learning flexible and time rigid. Basically, complete any amount of work as long as it is turned in by the deadline. The system defines the value of the quality of work based on arbitrary timelines.

Traditional Learning System: Learning is flexible, but time is rigid

I thought I was a tough teacher because I had deadlines, held students accountable to meet those deadlines, and made sure their grades suffered if they did not comply. If a student missed an assignment deadline, there was no recourse, no makeup and no extra credit unless there was an extreme circumstance such as a death in the family. I had grown up in this system, was taught to teach with this system and was supported by my administrators and colleagues in implement-

ing this system. Rarely did this practice generate more than 10% of students achieving high quality work or in my case an A. I was convinced, at that time, that because the system had always produced the same result, therefore it would continue to produce the same result. Results were predictable and acceptable to the system. I was right. I had evidence. I had research. Then in 1986, I met Dr. W. Edwards Deming.

Statistically, Deming was able to prove that 98% of the results of any system come from the system itself, not from the people in the system. If we apply that concept to traditional classrooms 98% of classroom performance comes from systemic causes, not the individual student's poor attitude or ability. This concept was hard to digest since teachers had traditionally blamed students for poor performance, but left the system alone. Deming railed about the evils of systemic factors such as grading systems and performance pay and their negative effects on the people in the system. I initially dismissed his admonishments as the ranting of an old man out of touch with current reality. Upon further study of Deming's work though, I began to understand that as long as I kept doing what I had been doing I would keep getting what I had been getting, and most importantly students would be limited in their learning because of the system I was imposing upon them.

I began to look at changing the system of grading. I was convinced that grading was a core component of the stability of a poor quality system and if I wanted a different result I would have to change the grading process. Slowly, I began to change my classroom system and with the help of students we set high quality standards for the work (Operational Definitions - Tool Time for Education Handbook pp. 90-91*). We also made time more flexible. This systemic change created a much more brain compatible environment. If students did not complete the work, made mistakes, or the work did not meet the standard by the target date, they still had to keep working on it until they achieved the standard. When the work finally met the standard, the student received full credit. Students quickly learned there was no longer an advantage to doing poor quality work. Amazingly, I moved from a system where only 10% of the students achieved high quality work to 90% of the students completing high quality work. I did not get smarter students. I created a better system, a system based upon quality learning - learning is rigid and time is flexible.

I did not realize the profound significance of what I had done until I studied brain research. I was giving hope to students who had never had it before. Many students remarked it was the first time in their lives they had ever gotten an A in any class. One student said to me, "I am no longer afraid to make mistakes, because I can now learn from my mistakes." One of the byproducts of this change was that most of my students were now getting A's and other teachers and administrators did not appreciate this result. They assumed I was an easy grader or had "watered down" the learning. Instead, I had created an example that contradicted the norm. As Deming said, "It only takes one unexplained example to invalidate a theory." (How

to work with teachers and administrators who do not value success for all students will be the subject of another newsletter.)

Quality Learning System: Learning is rigid and time is flexible

When I say the word "math", what do you think of? Does it generate feelings of boredom, excitement, challenge, or frustration? Let me share a personal example from our family. When my oldest son was in 6th grade, he began to struggle in math. He would come home with math papers marked with very low scores. Either my wife or I would sit with him and try to go over the problems he had missed and try to help him understand his mistakes. He would start to work on a problem and then get frustrated and want to quit. If we persisted, he became upset, sometimes withdrew and slowly lost motivation to learn in this subject. It would have been easy to interpret his response as a poor attitude and arrange a consequence for his lack of motivation to learn. I decided instead to use the tool the 5Why's (Tool Time for Education Handbook p. 48-49*), which helped us understand the deeper problem. Our son kept saying it wasn't worth it to rework the papers. I assumed he meant he didn't want to, but he finally blurted out that it wasn't worth it because even if he redid the papers, the teacher would not give him full credit. If he didn't get it correct the first time, there was no hope of recovering from his earlier mistakes. While we were trying to help him focus on learning, the system was overriding that experience by reinforcing the concept that it was not worth the effort to improve learning. Even if he did relearn the material, the grading system sabotaged his efforts.

We, as parents, tried unsuccessfully to work with his teacher and eventually had to place him with another math teacher. We were not going to let the system destroy our son's motivation for learning math. I do not blame the teacher - I blame the system that was created. My wife and I arranged a math tutor for him and after one session with the tutor he stated enthusiastically, "Math is fun when you understand it!" He eventually succeeded in learning math concepts and processes and when he entered high school he was confident in math courses. He is now at the university level, taking math classes required for his degree and very confident in his ability to learn and apply skills in this subject area. As his parents, we were able

to overcome the system's negative effect. Other students in the class experienced the same learning process, some failed, some excelled, some just got by, but all could have achieved in learning to a much greater degree if the system had not created artificial barriers.

Brain research confirms that students are positively motivated by work that is challenging, meaningful and has a sense of purpose. They become de-motivated when the work seems too easy and/or pointless. If every time a student attempts a difficult task, they are met with a poor grade or mark - with no opportunity or hope of learning from the mistake - they soon learn not to try at all. They feel helpless. This could be one systemic reason why the national high school dropout rate in the United States hovers around 30% (Alliance for Excellent Education, National_wc.pdf) no matter what new programs are implemented to lower it. Remember, 98% of the results come from the system itself. The United States system of education was designed to produce the predictable 30% high school dropout rate. If we want to see the dropout rate decrease, we must address systemic factors that produce the result and stop blaming the students. There is probably no factor more systemic than the traditional grading system. The grading system factor, more than any other, contributes to a sense of hopelessness and helplessness with a majority of our students.

Have the audacity to change the system and a different result in behavior emerges. Change the system to reduce fear, hopelessness and helplessness and watch how hope, faith and enjoyment take their place.

Best regards,



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