

My theory of deeper learning

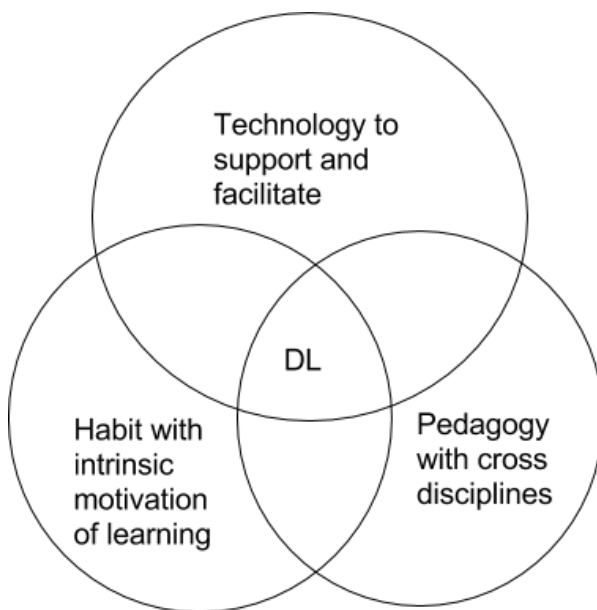
When I started this course, I resonated with the argument of Perrone that “Large numbers of students are not receiving an education of power and consequence—one that allows them to be critical thinkers, problem posers, and problem solvers who are able to work through complexity, beyond the routine, and live productively in this rapidly changing world” (Perrone, 1998, p.14). This statement of Perrone caused me to think about deeper learning as a learning habit that needs to be fostered in students. Deeper learning must be a long-term habit, just as Sosniak (1985, p. 57) described pianists’ “habit had clearly taken over with respect to lessons and practice” and “A tremendous amount of time was devoted to learning to be a musician. In general, this was at least equivalent to a half- time job”. Hence, habits are critical for establishing deeper learning. Not just any habit, but habits of investing significant amounts of time in the learning tasks. While not every student will become a master or expert, every student can apply the concepts of deeper learning in the class at hand and later in life.

Our class discussion and after-class sessions focused on the topics of establishing deeper learning environments, setting and modifying assessment, preparing teachers, developing apprenticeship, and creating various formats of deeper learning. We seldom discussed the importance of technology in supporting and facilitating deeper learning, such as collecting personal learning data, providing personalized feedback, and fostering real peer interaction within the online community of learners.

Traditional schools are providing a lot of value to students, but traditional schools could make better use of technology to enable deeper learning. The traditional schooling system is “playing a critical role in helping students to build the capacities that will allow

them to thrive as adults” (Mahta & Sarah, 2015, p. 1). However, traditional schools are facing the issue that the “majority of classrooms [remain] teacher-centric, and with teachers focusing more on surface-level knowledge rather than deep understandings.” (Kane & Staiger 2012) Traditional schools need to be improved by both traditional teaching pedagogy and technology. Traditional schools pedagogy needs to change by shifting from teacher-centered learning to student-directed learning, shifting from lecture based learning to project-based learning, problem-based learning, and authentic scenario learning. Technology changes are needed also. Even though, “digital technologies have made self-directed learning opportunities so accessible that some already are predicting the death of the brick-and-mortar school” (Elmore & City 2011), the deeper learning that can be facilitated by the traditional schools still have significant value. Technology needs to change from teacher-focused to student-focused.

Deeper learning requires that students keep thinking actively and develop the capabilities of problem solving, critical thinking, and self-correction across disciplines.



Graph 1. My theory of deeper learning

My theory of deeper learning is that deeper learning is achieved through long-term learning habits with intrinsic motivation of learning supported by the technology of personal learning data storage and analysis, as well as pedagogy of student-centered, relevant learning across disciplines. (See graph 1).

Why it has been difficult to consistently achieve deeper learning

There are many elements and factors of deeper learning to be defined and illustrated as well as many obstacles and difficulties to achieve deeper learning for both students and educators. Through the weeks of brainstorming and peer learning experiences of this course, I found many fresh ideas and various definitions of deeper learning. From my perception and theory that I mentioned above, the deeper learning has five elements (see table 1) and terms I think are critical to achieve the deeper learning goal. Lacking anyone of these elements could make deeper learning difficult to achieve consistently. Unfortunately, most of the schools and classrooms failed to maintain all of these elements and principles.

Deeper learning supporting elements	Habit with intrinsic motivation	Technology to support and facilitate	Pedagogy with cross disciplines
Long-term vision	X		
Self-recognition	X	X	
Collaboration		X	X
Autonomy		X	X
Real world & Cross disciplines		X	X

Table 1. Elements of my theory of deeper learning.

Long-term vision: Deeper learning should create a long-term vision and learning goals to make the deeper learning process consistently occur in and outside of the

classroom. The learning goal, especially the long-term vision and goal setting for students, “is nurturing young people's trust in both themselves and the world around them. Rodgeron notes that ‘What kids need to see is that when you have faith, the world opens up to you. It's really a metaphor for trusting life’ (Woodman, 2003, p. 12)” (Halpern, 2009. p. 100). Masters and experts set up their long-term vision at the early stage of their expertise journey. The long-term goals may be set up by parents or teachers, passively accepted by students. But eventually the non-self motivated goal will transfer to intrinsic motivation.

Self-recognition: Student self-recognition and personalized guidance of teachers or coaches should be embedded into the learning process to foster deeper learning and intrinsic motivation of learning. Self-recognition can be viewed from two perspectives: 1) students get to know their strengths and weaknesses, through learning data analysis and personalized guidance, 2) students’ rewards build intrinsic motivation for learning over time. In the interview of Daniel Pink, self-recognition as an element of deeper learning is described: “Now here's the thread that connects all these questions. As parents, as teachers, as entire organizations, our instinct is toward greater control. We think control is going to make something better. But people have only two reactions to control: They comply, or they defy. We don't want defiant kids, but we also don't want compliant kids. We want kids who are engaged. If you truly want to engage kids, you have to pull back on control and create the conditions in which they can tap their own inner motivations”.

Collaboration: Collaboration is the key element that delivers deeper learning consistency. “The social environment is critical to the development of our individual understanding as well as to the development of the body of propositions we call

knowledge. At the individual level, other individuals are a primary mechanism for testing our understanding. Collaborative groups are important because we can test our own understanding and examine the understanding of others as a mechanism for enriching, interweaving, and expanding our understanding of particular issues or phenomena. As vonGlaserfeld (1989) has noted, other people are the greatest source of alternative views to challenge our current views and hence to serve as the source of puzzlement that stimulates new learning.” (Savery & Duffy, 2001)

Autonomy: Autonomy of learning and student-centered teaching is a well-known term but difficult to achieve in most classrooms. “More recent work by Cuban (2008) has emphasized that teachers now often alternate between more teacher-centered practices, which efficiently move students to meet district pacing guides, and student-centered activities, which are more engaging and facilitate student cooperation with the goals of school” (Mahta & Sarah, 2015, p. 20). The examples of the student-centered activities are countless. We can see the optimistic outcomes of the student-centered learning approach. However, we should not neglect the guidance of teachers as coaches or mentors for students to guide the correct path of deeper learning.

Real world & Cross disciplines: Learning for the real world across disciplines is the ultimate outcome of deeper learning. Social connections, interpersonal relationships, and relevance of learning always influence a student’s learning outcomes. We discussed in class examples of problem based learning, apprenticeship, and project based learning with Dan Wise. Each of these examples that we discussed relate learning contexts to real world life and cross disciplines.

Identify a leverage point

There are many opportunities to improve deeper learning both in school and outside of the school, such as changing assessment processes to be more comprehensive, relating learning more closely to community and the social environment, and improving teacher preparation programs. Even though these leverage points are essential, the instructional technology can be the optimization tool to increase the pace for improving deeper learning. Technology can serve deeper learning as a supplemental tool throughout the whole process. For instance, a teacher can set up the learning goal for an individual student at the beginning of the class or semester via the class flow system to monitor individual student's progress and make appropriate personalized feedback for each student. Moreover, students may use the online community for collaboration, student-centered learning platform, and authentic problem or expert experiences sharing to make more connection with the real world and relationships to establish more motivation of learning. Parents, teachers and schools also could utilize the technology to build up a tight network to help schools develop a deeper learning atmosphere.

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