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Reading Review #2

The chapter discusses transfer as a fundamental component of learning, especially within the context of school. Various methods of teaching and learning can be assessed by the extent to which learners are subsequently able to transfer knowledge to other domains and/or types of problems. Metacognition is introduced as the ability to ascertain, adjust and reflect upon one’s own level of learning and is described as a key factor in effective learning on all levels.

The paper is strong in its use of concrete examples to elucidate the various elements of learning and transfer discussed. For instance, the "parallelogram problem" describes how certain levels of learning might allow students to learn in the simple context and then use the developed skills to solve a more complex problem, as opposed to memorization of facts, which would only serve the learner within the context of initial scenario.

There are several ideas present in this chapter which relate to my work in Academic Support for the students at Georgia Tech. The notion of transfer is at the core of most engineering curricula and the problem-solving strategies required to succeed involve an ability to adapt skills and abilities to novel areas of the same general domain. While many of the traditional problems might employ a "cookie cutter" methodology to reach solution-whereby memorized formulas and/or step-by-step processes go along with certain "types" of problems- through labs, interactive classrooms, and other educational innovations, Georgia Tech is encouraging its students (and its faculty) to approach the material from the broader perspective. This makes for a deeper and more robust level of teaching and learning.

Another element of the paper which is on display within the engineering classes at Tech has to do with lecture style. As indicated in the paper, reading of text, attendance at lecture, and then actively working on problem sets all contribute to learning, but empirical data suggest that the most effective strategy involved a combination of lecture attendance and actively working on/thinking about the material. At Georgia Tech, many efforts are made to have the students thoroughly engage with the material: group work is heavily promoted and many fundamental courses have a laboratory component so as to solidify those lessons discussed in lecture.

A final aspect of the paper of particular interest because of the way it manifests on campus at Georgia Tech is the use of technology (or "tools"). Instructors at Tech vary in their thoughts on calculators since, on the one hand, the students will be able to use this technology in the "real world" of any engineering discipline and their use allows much more complex test questions to be asked. On the other hand, some believe that for the fundamental lessons to be fully appreciated, the students need to not use the tool as a crutch. In the paper, this is shown as a contrast between learning in the school paradigm versus the everyday setting. The paper goes on to indicate that knowledge of tools and their use allows for a greater level of transfer across domains.

Overall, the paper focused on the fact that all new learning involves transfer and that this point can best be taken advantage of by focusing on teaching with metacognition in mind, so that the students themselves can learn how they best learn. These ideas are presented clearly throughout the paper via examples, many of which model work in teaching and learning currently being done today at the Georgia Institute of Technology.