

Two Essentials for Durable Learning

Over the years, I've been fascinated by how savvy students are about what goes on in classrooms. I have had young adolescents say to me with diagnostic precision, "Her class is lots of fun. We don't learn a whole lot, but it's a fun class." They understand the opposite situation, too: "We're learning math, I suppose, but it always seems like an awfully long class period."

These students voice an implicit awareness that two elements are required for a great class: engagement and understanding. Engagement happens when a lesson captures students' imaginations, snares their curiosity, ignites their opinions, or taps into their souls. Engagement is the magnet that attracts learners' meandering attention and holds it so that enduring learning can occur. Understanding is not just simply recalling facts or information. When learners understand, they have "wrapped around" an important idea, incorporating it accurately into their inventory of how things work. They own that idea.

Brain scientists often use two slightly different terms for the two elements required for enduring learning—meaning and sense. Meaning refers to connections between the content and one's own experience and life. Sense refers to the learner's grasp of how something works and why. Meaning is a close match for *engagement*, and sense is a close match for *understanding* (Sousa & Tomlinson, 2011). In either case, the message is the same. Students don't really learn if they don't connect with or don't understand the content they study.

A student who understands something can do the following:

- Use it.
- Explain it clearly, giving examples.
- Compare and contrast it with other concepts.
- Relate it to other instances in the subject studied, other subjects, and personal life experiences.
- Transfer it to unfamiliar settings.
- Discover the concept embedded within a novel problem.
- Combine it appropriately with other understandings.
- Pose new problems that exemplify or embody the concept.
- Create analogies, models, metaphors, or pictures of the concept.
- Pose and answer "what if" questions that alter variables in a problematic situation.

- Generate questions and hypotheses that lead to new knowledge and further inquiries.
- Generalize from specifics to form a concept.
- Use the knowledge to appropriately assess his or her own performance or that of someone else (Barell, 1995).

Lessons that are not engaging let students' minds wander. They fail to make the case for relevance because students don't connect the content to what's important in their lives; students have little long-term use for what they might "learn" in such lessons. Lessons that fall short of developing students' understanding of the big ideas or principles that govern the discipline leave students without the capacity to use what they learn in meaningful contexts. Thus, lessons that fall short of engagement and understanding have little staying power and diminish both students' enthusiasm for learning and students' power as learners.