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## Breadth vs. Depth: The Deeper Learning Dilemma

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Few people overtly object to the idea that students should understand what they are learning at a deep level so that they might retain and use the knowledge and skills they are taught. To do so, however, almost always requires students to spend more time on a topic or concept. Spending more time in one area almost always means exposing students to less of the curriculum as a whole. This fundamental tug-of-war must be addressed for students to achieve the dual goals of acceptable performance on tests that cover the breadth of the curriculum and on assessments that plumb the depths of student understanding.

Standardized tests are built around the concept of *domain sampling*. A test is constructed by creating items that are drawn from the overall knowledge domain of the subject or course. Ideally, the items taken as a whole are a representative cross-section of the knowledge and skills in the domain. The test does not gauge all that could conceivably be learned about the domain, but by sampling in an unpredictable but systematic fashion from the domain, the test purports to determine the degree to which the test taker has mastered the domain as a whole.

Performance assessments take a different approach. They select a key subset of the knowledge in the domain and explore student understanding and facility within that subset. Such assessments are often multidimensional. In other words, they end up gauging both content knowledge and other skills essential to the subject area. While the results from one performance assessment cannot be used to judge the test taker's mastery of the entire domain, it is not unreasonable to assume that performance on a challenging performance assessment focused on key content and skills says a lot about overall student mastery of the domain without testing each and every part of it.

The greatest challenge for teachers who wish to incorporate deeper learning is to balance the amount of content they cover with the depth to which students explore what they are learning. It's not practical for students to go to deeper levels on all the content they learn, and it may not be necessary for them to do so. The key is for teachers to determine which concepts or skills are the *keystones* that unify or connect the subject area. If students can go deep in those areas, they can gain insight into disciplinary thinking, the way experts in that subject go about applying their content knowledge.

Each subject has its own keystones, and teachers are generally aware of them. Grant Wiggins has called them key concepts and enduring understandings. For example, how many students think of mathematics as an abstract symbol system for understanding the natural world? Or science as an observational and empirical method for gaining insight into natural phenomena? Or social sciences as analytic methods for understanding human behavior in social systems? Or English as a means to understand the human condition and to use language to create meaning?

Below each of these higher-level conceptual keystones are a series of enduring understandings that are discipline-specific: in science, for example, that the structure of materials determine their properties, or that the motion of planets occurs in observable, predictable ways; in English, that the way a text is comprehended is influenced by the reader's experiences, or that conventions of language are essential for common understandings of what is meant; in mathematics, for example, that functions represent change over time, or that probabilities are a way of predicting future events.

A classroom well balanced between breadth and depth might introduce new concepts on a regular basis and practice them to ensure basic understanding while at the same time have students always working on one project or task that goes deeper in a keystone area. While the majority of class might still be used to introduce, explain, and practice new content, a significant portion of class time might be devoted to projects and tasks focused on keystone concepts, which students would spend considerable out-of-class time on as well.

What would be reduced would be out-of-class homework of the type that has been shown to be highly ineffective anyway. This is the key area where time can be reclaimed and reallocated, by replacing decontextualized drill-and-practice assignments or poorly conceived individual study activities with well-designed performance tasks and projects that require more out-of-classroom time. Doing so would get students in the habit of thinking and not just reacting, of owning their learning to a greater degree rather than just complying with teacher instructions.

Such a strategy requires teachers to be much clearer and intentional about what is truly important in their class. They must be ready to determine which topics don't warrant the time being devoted to them, rather than treating all topics as equally important. They must be able to identify keystone content and concepts that unify the discipline and enable students to gain greater insight into the subject area. They must use a judicious number of tasks or assignments that require more time and thought (and, in many cases, collaboration) outside as well as within the classroom. They must help students learn to be capable of moving quickly through foundational content in order for them to spend

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Within the classroom, they must help students learn to be capable of moving quickly through foundational content in order for them to spend more time going deeper in a few key areas. And, they must be willing to let go of at least some content that may not be relevant to standardized testing or performance tasks.

Students retain remarkably little of what they are taught if they do not have time to integrate it and understand it more deeply. On the other hand, they end up with gaping holes in their knowledge base if they spend all their time working on a few projects that touch on only a limited subset of knowledge, particularly if the projects do not incorporate keystone concepts. The exact mix between coverage and depth is elusive, and it will be worthwhile to conduct much more research in this space. However, even with what is known now, it is possible for teachers to create classrooms that reach a balance between introducing all the content in a domain and or focusing too much on too few topics. Reclaiming time from ineffective homework practices and less important content topics is the key first step to achieving this balance.

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