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What Should We Teach? Pages 22-25

Seeking Breadth *and* Depth in the Curriculum

Learning to learn and gaining deep understanding depend on broad knowledge. But not just any knowledge will suffice.

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In the education field, we encounter a lot of what I call "premature polarities." This is a phrase that I have adapted from I. A. Richards, the Cambridge theorist of an earlier generation, who spoke of *premature ultimates*—those conversation stoppers that "bring investigation to a dead end too suddenly" (Richards, 1925, p. 87). I define pre-mature polarities in education as the habitual, almost automatic taking of sides on educational issues on the basis of whether one considers oneself to be politically liberal or conservative.

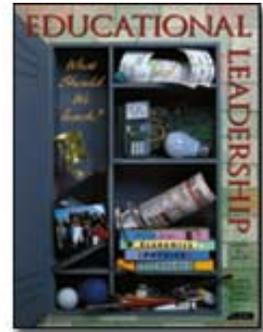
Unfortunately, taking such ideological stands not only brings investigation to an end but also tends to replace thought. In the reading wars, for example, premature ideological polarization has caused some educators and the public to view phonics as an agency of right-wing suppression that deprives reading of naturalness and impairs love of literature. Whole language, on the other hand, is attacked as a left-wing abandonment of adult responsibility. Similarly, in the math debates, some people view memorizing the multiplication table as conservative, whereas others see the use of calculators as a pernicious liberal policy.

It is mysterious how these education theories came to be associated so mindlessly with politics. Ideological polarities are valuable spirit-raisers in a real war. Everyone understands that in war, the first casualty is truth. But in the phony wars of education, slogans and polarizations are barriers to progress. And no barrier is greater than the sloganized polarity between deep understanding (or learning to learn) and the rote learning of mere facts.

Four Principles

Some relevant and reliable research about how people learn has yielded a solid scientific consensus in the field of cognitive psychology. Yet, I do not find many references to that research consensus in education journals. We can summarize the research that is relevant to the premature polarization of "learning to learn" versus the "piling up of mere facts" in four principles (see Willingham, 2001).

- *The ability to learn something new is not primarily a general, formal skill.* It is chiefly a



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domain-specific skill. For instance, the ability to learn something new about math, music, or history depends on the knowledge that one already possesses about those subjects. This means that learning to learn always entails acquiring relevant knowledge about specific domains.

- *General ability to learn is highly correlated with general knowledge.* A stunning statistic illustrates this point. The positive correlation of learning ability with socioeconomic status is 0.422, whereas the correlation of learning ability with general knowledge is nearly twice as high—0.811 (Lubinski & Humphreys, 1997). We are so used to emphasizing the importance of socioeconomic status that this statistic comes as a surprise. Yet, the fact is just what we might have inferred from our knowledge that learning ability depends chiefly on having relevant prior knowledge.
- *The best way to learn a subject is to learn its general principles and to study an ample number of diverse examples that illustrate those principles.* In math, for example, students need to know what multiplication is in principle, but to gain real insight into multiplication, they also need to do different types of multiplication problems. This finding bears directly on the depth versus breadth issue in education. A broad range of examples should be studied, but studying too many is a waste of time.
- *Broad general knowledge is the best entree to deep knowledge.* I draw this conclusion from the field of psychology called discourse analysis. The most effective way to introduce the meaning of a discourse is to start with a summary such as an abstract found in learned journals. After students gain a broad context by developing a sense of the whole domain, they can mentally fit the various parts that follow into that whole, and make sense of them. For example, teachers could show 1st graders a globe that shows oceans and continents before teaching them about specific places.

What do these four principles imply for the question of what we should teach? They force us to abandon the sloganized polarity between deep understanding and the rote learning of mere facts. We cannot gain deep understanding without having broad factual knowledge. On the other hand, piling up more and more facts that don't really add much to our understanding or ability to learn wastes our time.

If we wish to educate students to become well-rounded citizens and lifelong learners, these four principles give us a preliminary handle on an answer to the question of what we should teach. We should teach a diversity of subjects that will lead to broad general knowledge, and we should also teach in some depth a moderate number of specific examples. Neither the deep understanding pole nor the lots-of-facts pole is an optimal approach to teaching and learning. Because competence and ability to learn are correlated with broad knowledge, we can infer that we should teach a broad range of subjects—not just the formal skills of reading, writing, and arithmetic, but also science, history, ethics, literature, and the arts.

Choosing Content

But within those fields, what shall we teach? Our four principles have already established that teaching either a single topic in depth or a great many topics superficially is not optimal. Yet

we still have the problem of choosing a moderate number of topics in the different domains. How do we choose what that moderate number should be? Will any set of topics do?

One school of thought essentially says, yes—any set of topics will do. According to this view, studying any topic provides access to an entire domain. This view is not well based in theory or in fact (Hirsch, 1996). The theory that studying any topic provides access to an entire domain has left us with low achievement as a nation and has perpetuated the test score gap between socioeconomic groups. My colleagues and I at the Core Knowledge Foundation sponsor an alternative view. We maintain that schools need to develop a specific sequence of topics at each grade level that will prepare students to learn what the next grade has to offer.

This curriculum structure is implied by the first principle, which states that new learning depends on relevant prior knowledge. Nations other than the United States that follow this principle by adopting a common core curriculum in the early grades—France and Japan are excellent examples—have significantly higher achievement and greater equity in achievement among students than nations that do not. Students in core-curriculum nations enter each new grade ready to learn the new lessons (Woessmann, 2001).

But that still leaves unanswered the question that we started with. Even if we argue in favor of a common core curriculum that covers several domains and provides a moderate number of specific topics, we still have not determined what those specific topics should be.

At the Core Knowledge Foundation, we have argued in favor of teaching topics that have the greatest potential for developing general competence and narrowing the test-score gap among student populations. We inventoried the knowledge that is characteristically shared by those at the top of the socio-economic ladder in the United States. This knowledge is taken for granted as a common knowledge that people in the United States share and is part of the dialogue in college classrooms, in casual conversations, and in books and newspapers. For instance, 1st graders in Core Knowledge schools learn the meaning of "sour grapes" and "wolf in sheep's clothing." Because that knowledge is taken for granted and not explained, ignorance of that assumed knowledge seriously handicaps those who lack it. We argue, therefore, that every citizen in a democracy should possess this "elite" knowledge. The desire to change and improve the character of that assumed knowledge is admirable, but until we succeed in doing so, we should not withhold it and thereby handicap those who lack it through no fault of their own.

People who have called this approach a collection of mere facts or labeled it Eurocentric and elitist have not bothered to find out just what is in the Core Knowledge sequence, or to notice how carefully selected the topics are that it sets forth. The Core Knowledge sequence is the result of a long process of research and consensus building. The first draft (1990) was a distillation of guidelines from professional organizations and states and from principles in the core curriculums of such high-performing countries as France, Japan, and Sweden. We also included input from an advisory board on multiculturalism. We sent this initial draft to three groups of teachers in three parts of the United States who met to hammer out a practical sequence for 50 percent of the content in grades 1–6. As more schools have used the sequence, we have periodically updated and revised it. To get a sense of how carefully selected

the topics are, let's look at two sections from the Core Knowledge sequence in the primary grades (Core Knowledge Foundation, 1999).

During 1st grade, students following our sequence focus on early civilizations. When teachers introduce the topic, they keep in mind the question, What is civilization? The teachers help students identify such recurring features of civilizations as settling down, practicing agriculture, building towns and cities, and learning how to write. For example, as they study Mesopotamia—the "cradle of civilization"—the students explore the importance of the Tigris and Euphrates rivers; the origins of writing and why writing is important to the development of civilization; and the Code of Hammurabi (an early code of laws) and why rules and laws are important to the development of civilization. When studying Ancient Egypt, the class learns about the geography of Africa, including the Sahara desert; explores the importance of Nile River, with special focus on floods and farming; learns about the Pharaohs by studying Tutankhamen (the boy king) and Hatshepsut (a female pharaoh); and studies pyramids, mummies, animal gods, and the Sphinx. The students focus on writing when they learn about hieroglyphics.

When they reach 2nd grade, students build on and expand their knowledge of early civilizations by studying Asia. They look at the geography of Asia, learn that it is the largest continent and that it has the most populous countries in the world, and locate China, India, and Japan on maps and globes. Then students focus on India, learning about the Indus and Ganges rivers and studying Buddhism and Hinduism. While learning about Hinduism, students will learn about the gods and goddess—Brahma, Vishnu, and Shiva—and about several holy books, including the Rig-Veda.

Next, students turn their attention to China. They study the Yellow (Huang He) and Yangtze (Chang Jiang) rivers, the teachings of Confucius, the Great Wall of China, the Chinese New Year, the invention of paper, and the importance of silk. The Core Knowledge sequence reminds the 2nd grade teachers that students will study China again in the 4th grade and encourages the teachers to examine the 4th grade guidelines to see how these topics build into the later grade.

Our experiences in classrooms suggest that these guidelines strike a reasonable balance between deep, large-scale generalizations and specific factual knowledge. We know from independent evaluations that teaching the Core Knowledge topics in a coherent and cumulative way enhances student achievement and narrows the test score gap between socioeconomic groups.

For schools that don't relish the idea of using a core sequence made by others, how can the four principles regarding the need for specific content be put into effect? The most important step that a school's faculty can take is to agree on the specific core topics that students will learn about in a particular grade. This will avoid big gaps in the students' knowledge and boring repetitions, such as studying rain forests three years in a row. Not only will you notice a rise in the interest and competence of your students, but you will also notice an increase in the collegiality and morale of the faculty as you work together to fulfill a fundamental professional responsibility.

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