Reading in the Twenty-first Century: The Literacy Our Children Need

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Past as Prologue

According to paleontologists, Homo sapiens first appeared about ninety thousand years ago. Because Homo sapiens were a rather late arrival, appearing long after Neanderthals, many important aspects of our human culture had already been developed by the time we came along, including oral language, stone tools, use of fire, and clothing. One critical aspect of human culture that did not yet exist was writing.

Archaeologists tell us literacy began with the creation and use of accounting tokens some ten thousand years ago (Schmandt-Besserat 1996), and this kind of reading and its offshoots developed and spread across surprisingly large expanses of the world relatively quickly, within perhaps as little as a century or two. That kind of accounting literacy did not have broad practical application, and its use was mainly limited to scribes. Literacy likely played a valuable part in the creation of governments, and perhaps in the expansion of certain aspects of agriculture and architecture, but most individuals were not touched by literacy in their daily lives.

The benefits of reading broadened a bit over time, but for the most part it was highly constrained socially and practically, with few people knowing how to read and write until a few thousand years ago, when the invention of the phonetic alphabet began to make literacy a more widely distributed skill. This important advance—in which the marks began to stand for language sounds rather than arbitrarily representing the meaning itself—allowed more people to learn to read and produce more elaborate texts. Technological changes—the use of ink, papyrus, and vellum rather than clay tablets and stylus—made things a bit easier, too, so literacy began to spread, and as it did, the implications for how people lived their lives were amplified. This new literacy most immediately becomes the basis of history, written law, and philosophy. But even with those changes, most Greeks and Romans never learned to read.

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The next great expansion of literacy came with the invention of the printing press and the growth of the middle class in Europe. Books became more available, and the benefits of literacy became more generalizable. Nearly 50 percent of European men became literate during this period, and with the founding of Protestantism in America and the expansion of common schools, literacy eventually became much more usual, even for women. By our century, nearly all men and women in the westernized parts of the world had become literate as a result of this democratization of literacy, and there are few aspects of social life in which literacy does not now play a role.

The Future

This thumbnail sketch of the development and growth of literacy suggests some important possibilities for the future growth of literacy—and what it is that we need to be concerned about in our current educational systems. Looking at this history, there was usually some kind of major historical or social event accompanied by technological change that altered the use of literacy in some important way. Usually this change led to the expanded use of literacy by more people.

During the social changes of the 1500s, with the Renaissance beginning to flower, wealth becoming concentrated, and world exploration becoming a real possibility, literacy played an important role. Some of the most popular books of that period included maps and charts—part of the impetus and certainly an enabler for projecting Europeans across the globe. Of course, the most fundamental belief of Protestantism, that each person must confront God personally and individually, only makes sense in the context of the individual being able to read the Bible without an intermediary.

So what are the big changes taking place now, the technological advances, and the context for change? The most obvious recent changes that might be relevant to literacy have been the internationalization of markets and the expansion of information technology. Both of these have had profound effects on how we live, and both are creating incredible pressures on our schools and other institutions.

For example, the internationalization of markets alters how we live and how we work. We live during a period when workers no longer compete with the workers in the factory down the street or even the workers in the factories in the next town. Competition is now international. If the Chinese or Irish or Malaysians can sell their goods in my local Wal-Mart, then what I produce must be as good or as cheap as theirs if I am to meet their challenge. This change (and it is a profound change in monetization, trade, transportation, and

most of the other economic engines) moves work across the globe, leading to incredible dislocations of people. We are currently living through the greatest emigration of peoples in history.

Fundamentally, however, it means that traditional economic sorting within a country—the sorting whereby some of us become white-collar workers and others, blue-collar workers—no longer works. The factory worker who finds that the automobile that he assembles is not as salable as the automobile assembled in Yokkaichi will find himself out of work. But he can't just go down the road and get a job at the next auto assembly plant because that assembly plant won't be there, either.

That factory worker has few options. He can travel to Yokkaichi in the hopes of finding work there—an unlikely prospect so far for most American workers. He can find another blue-collar job—but with blue-collar jobs shrinking to only about 15 percent of the economy in terms of numbers of jobs, and an even lower proportion in terms of economic benefit, this is not such an attractive option. Or he can move into the service sector and become a doctor, a lawyer, an engineer, a teacher, an accountant, a manager, an insurance salesman, a chemist, or some other white-collar position; however, these positions are limited to those who can read at fairly high levels, usually much higher than that accomplished by blue-collar workers, so there is a need for even higher levels of literacy.

This example of the blue-collar worker being squeezed by international markets is accurate but perhaps misleading, as we are experiencing similar dislocations at all levels of economic functioning—what Tom Friedman explains as a "flattening" process. What starts out as a competition among low-skilled workers rapidly moves up the food chain, eventually affecting more and more workers, including the highly skilled ones; now our engineers are having trouble competing with the engineers from Delhi or Beijing.

This internationalization process, or flattening, is aided and abetted by the technological changes we have experienced over the past several decades—from computers to laptops to the Internet. Work is increasingly done on the computer. In the past, when farmers wanted to irrigate a field, they did so by skill-based guessing, rules of thumb, and the physical labor needed to get the irrigators into position. Now they use GPS and their laptop to downlink satellite photos of their fields to determine what needs irrigating and how much irrigation is needed, and the irrigation equipment can position itself based on the coordinates the farmer types into the machine. Sort of like the turret-lathe operator, truck driver, or auto mechanic who needs GPS equipment, computer-code-driven robotics, and electronic diagnostics to do

their jobs. It isn't just that blue-collar work is shrinking in this country, but that the skills to participate in it are rapidly rising.

The internationalization of economic markets and the growth of computer technology have together revolutionized how we work. Some of the changes are straightforward, like in my irrigation example, and some are a bit more complicated. For example, trucking companies trying to reduce costs so they can compete (or so they can keep their costs low so that their customers who sell things overseas will be better able to compete) have found that they can live without terminal managers (a big cost savings) if they use technology to push those managers' work tasks down to the truckers (which is why those 18-wheelers must now be equipped with computers).

What all that means is that we can do work better and more efficiently through the use of all of that technology, and we need to do work better and more efficiently in a world where the economic edge that some countries bring to the table is especially low costs of living. The downside, however, is that doing work through this kind of technology puts a huge premium on higher educational attainment.

America's reading levels during the early 1970s were as high as they had ever been in our entire history. More adults could read at higher levels than had ever been true before. Our workforce was much smaller than it is now (many women didn't work outside the home, so most families were single-earner families), and appreciable numbers of those in the workforce were unemployed (at levels rarely matched since). Welfare programs allowed adults to stay out of the workforce, and there was little immigration at the time (immigration doors had been closed since the mid-1920s and had just reopened). In other words, our educational system was producing about as much literacy as was needed to support our economic system; some individuals needed more literacy perhaps to meet their individual dreams, but overall, we had about as much literacy—in terms of who was literate and how literate they were—as we were likely to need.

Here we are thirty-five years later, and despite the fact that our workforce is larger now than it was then in terms of both numbers of jobs and the proportion of adults who work outside the home, unemployment levels (even with our recent dislocations) are still lower than they were in the "rich" 1960s. And again, despite a slowing due to the current economic crisis, the amount of immigration we are experiencing is still greater now than it was then. In the face of all of that, the most startling figure of all: literacy levels in the United States are about the same as they were a generation ago. That is, the literacy levels that we accomplished in the early 1970s have been maintained,

but they have not been exceeded. If in 1970 one in four adults could not read well enough to take a service sector job, that number today is still one in four (of course, in 1970 service sector jobs made up only about 50 percent of the economy, and now they represent about 85 percent of our economy).

In other words, we are as literate as we were in 1970, but our work and voting and social participation all require appreciably more literacy than they did then. Literacy levels have failed to keep up with economic and social demands, leading to almost continuous efforts at school reform that have failed to help us get back to a situation in which we were producing all the highly skilled citizens that we needed.

The Future of Literacy

I started out by talking about how historical changes and technological advancements have affected literacy—in terms of not just who became literate but what that literacy enabled. Given the huge physical, social, and economic dislocations taking place now, and the huge advancements in technologies such as the Internet (on which there are more than one billion readers at this time), what literacy changes are now needed?

First, there is a much greater need for everyone to be literate. We can no longer afford the two-track education system, in which the better students go into the white-collar, college-track jobs, and the lower students (those with less aptitude or home support) go into the vocational track. Recent analyses by Achieve suggest that the skills now needed to succeed in the first two years of college are the same skills needed to succeed in the workplace. That is, there are no longer two tracks with regard to what students need to know when they leave high school.

This means that we have to do some things differently from how we did them in the recent past. For example, reading has for too long been the province of only the elementary school, without commensurate attention in the middle and high schools. Whether we are talking about teacher preparation standards, student learning standards, instructional materials, intervention programs, or assessment monitoring, we have had the tendency to focus on reading within the elementary grades, sometimes all the way up to eighth grade, but we have generally ended reading instruction at some point. That is no longer tenable, and it will become even less acceptable as time goes on. More time needs to be spent on the teaching of reading from grades 4 through 12; without that change, our economic system will struggle even harder to find enough skilled workers within our native population.

There are many possible changes related to this idea of more kids becoming more literate by expanding educational opportunity. One need is to push reading instruction into the higher grades, but another is to improve the quality and quantity of the instruction throughout students' schooling. During the past decade or so, there has been a huge push to increase the amount of primary grade teaching and to improve the quality of that teaching by following research findings even more carefully. As a result, schools are often devoting more minutes per day in the primary grades to learning to read, and they are trying to follow the research more closely. Many schools have increased their attention to teaching phonemic awareness in kindergarten and grade 1, phonics in kindergarten through grade 2, oral reading fluency, vocabulary, and reading comprehension, and to do so in ways that have been found to enhance learning most effectively. By purchasing instructional programs, investing in professional development, and providing more targeted supervisory support, schools have actually been able to make small improvements in achievement outcomes through grade 4. Because economic and social pressures are not likely to abate, I suspect there will be increased pressure for following the research even more closely and certainly at more grade levels, making the *Report of the National Reading Panel* (2000) and similar reports even more important resources in our educational future. In other words, anyone who thinks the enthusiasm about educational research is going to be lower in an Obama presidency than it was in the Bush presidency will be disappointed.

However, as in the past, the changes cannot only be about who becomes literate; what it means to be literate has to change, too. According to the National Assessment, only about 6 or 7 percent of our students reach advanced levels of literacy by the time they leave high school. While we are all worried about the futures of the 25 percent at the bottom who struggle with the relatively easy reading of school, we likewise need to worry about the approximately 70 percent of students who read well enough to do their school work but not well enough to compete with the best kids around the world.

What I'm talking about is teaching higher levels of literacy than we have taught in the past, and that means not just changes for our poorest-performing schools or targeted efforts for our lowest-achieving kids, but changes throughout the system for our own children and grandchildren. While most state and district standards (and most assessments) focus heavily on whether students can locate or remember explicit information provided to them in text, or whether they can draw conclusions and make other inferences and interpretations of a text, there has been little attention placed on the abilities to evaluate information critically or to synthesize information across multiple texts or sources of information.

Technology has made evaluation and synthesis more widely important than ever before. A wealthy high school class at one time might have had as many as sixty thousand books or documents available to it in a well-stocked library collection—an outstanding amount of information when you think about it. However, even the poorest high school today, if it has Internet access (and more than 99 percent of schools do), has access to more than 185 million Web sites, with some Web sites, like Google Books, having more books than three exceptional high education libraries combined (and, of course, those other 184,999,999 Web sites have some information, too).

Web site information is often detached from time and place in ways that book- or magazine-based information is not. It can be difficult to know when something that appears on the Internet was written, who has produced it, or why (which has led to some pretty spectacular public embarrassments, like ABC News putting false information from the Internet out as breaking news). Studies show that students do not discern very well among credible sources and those that are seriously biased or flawed. There is a great need for having students read history, literature, science, mathematics, technology, and other subjects, and learn how to read those materials in disciplinary-appropriate ways.

What I am talking about is not just increasing reading coverage across the grades but making that coverage much more analytical, much more critical or evaluative, much more synthetic, and much more rigorous. As an example, let's compare the current reading-education learning standards in Illinois and those developed by Achieve for the American Diploma Benchmarks. (Note: These appear in full at the end of this chapter.) It is important to note that I could pick almost any district or state standards and find the same thing (in other words, I'm not picking on Illinois here—the problem I'm illustrating is common throughout the nation). Recently the American College Testing service reviewed all fifty states' learning standards and found that no states had specific learning standards in reading by grade level and discipline through grade 12 (ACT 2006).

Most learning standards in Illinois and elsewhere tend to emerge from reviews of existing curriculum and the like. The Achieve standards were developed based on looking at what young adults had to do when they left high school if they went into higher education, vocational training, or the workplace.

When you look at these standards, the most obvious thing is that the Achieve standards are more extensive and explicit. Illinois, for example, asks if students can critically evaluate information from multiple sources, while Achieve asks that students analyze the ways in which a text's organizational structure

supports or confounds its meaning or purpose; recognize the use or abuse of ambiguity, contradiction, paradox, irony, incongruities, overstatement, and understatement in text, and explain their effect on the reader; evaluate informational and technical texts for their clarity, simplicity, and coherence, and for the appropriateness of their graphics and visual appeal; and so on. In other words, these standards are more explicit and thorough, but they also obviously represent a higher level of functioning than has been common in our reading efforts up to now.

In the nineteenth century, the invention of the camera disrupted people's conception of art. If anyone could simply point a lens and push a button to get a realistic portrait, then such portraiture could clearly no longer be the province of the artist. Similarly, in the novel *Do Androids Dream of Electronic Sheep?* Philip K. Dick, the science-fiction writer, pondered what it means to be human in a world where robots can accomplish the forms and most of the abilities of human beings. In these examples, new developments created a need to rethink the fundamental conception of art and humanity. In the first case, artists began to strive to see the world not as a camera would but in new ways that could expand our human repertoire for looking—thus, the experiments with impressionism, cubism, abstract expressionism, and the like. In the latter, Philip K. Dick concludes that it isn't our ability to think that makes us superior beings—since in his futuristic society, the machines were out-thinking the humans—but our gift for empathy and compassion.

In the twenty-first century, as we try to rethink literacy and its role in our society—much as the Greeks once did and as the Europeans did in the Renaissance—we need to focus on those aspects of literacy that are most consistent with our new circumstance. We live in a time when mundane work can best be done by computers, when the accuracy and precision and patience of machines are now superior to the skills of human beings. Given that, we need to strive for a literacy that truly represents value added. This means we need to teach higher levels of literacy to more students than ever before—a literacy that is focused on the deep and probing analysis of ideas, on the evaluation of the quality and sources of information, on the translation of information across different forms (from prose to formula, from formula to table or chart, and from table or chart to illustration), and on the synthesis of information across multiple sources. It is a literacy that does not focus entirely or even mainly on the reading of simple texts but on the specialized skills needed to understand highly specialized texts.

The future of literacy in our schools is a future in which all teachers will strive to teach literacy, but not the content-area reading notions of the past. These teachers will not be engaged in trying to teach general study strategies that might be generalized somehow to all classes but will be engrossed in the specialized skills of making sense within a particular specialization of human thought. That means that the history teacher will be striving to teach a very different kind of literacy than that offered by the English teacher or the chemistry teacher, and each of those, in turn, will be teaching students how to handle the special thinking demands represented by their subject as well as the texts that their subject relies on. It is a future in which literacy teaching and assessment will no longer be the province of particular teachers or particular grade levels, and one in which the best characterization of literacy will not be a photograph of a young child working on his or her ABCs, but that of a group of older students striving together to solve an engineering problem—some with their noses in books, and others cruising the World Wide Web.

ILLINOIS LEARNING STANDARDS

By late high school, students will be able to comprehend a broad range of reading materials:

- Use questions and predictions to guide reading across complex materials
- Analyze and defend an interpretation of text
- Critically evaluate information from multiple sources
- Summarize and make generalizations from content, and relate them to the purpose of the material
- Evaluate how authors and illustrators use text and art across materials to express their ideas (e.g., complex dialogue, persuasive)

ACHIEVE AMERICAN DIPLOMA BENCHMARKS

By high school graduation, students will be able to:

- Follow instructions in informational or technical texts to perform specific tasks, answer questions, or solve problems
- Identify the main ideas of informational text and determine the essential elements that elaborate them
- Summarize informational and technical texts and explain the visual components that support them
- Distinguish between a summary and a critique

- Interpret and use information in maps, charts, graphs, time lines, tables, and diagrams
- Identify interrelationships between and among ideas and concepts within a text, such as cause-and-effect relationships
- Synthesize information from multiple informational and technical sources
- Draw conclusions based on evidence from informational and technical texts
- Analyze the ways in which a text's organizational structure supports or confounds its meaning or purpose
- Recognize the use or abuse of ambiguity, contradiction, paradox, irony, incongruities, overstatement, and understatement in text and explain their effect on the reader
- Evaluate informational and technical texts for their clarity, simplicity, and coherence and for the appropriateness of their graphics and visual appeal
- Demonstrate knowledge of eighteenth- and nineteenth-century foundational works of American literature
- Analyze foundational U.S. documents for their historical and literary significance (for example, the Declaration of Independence, the preamble to the U.S. Constitution, Abraham Lincoln's Gettysburg Address, Martin Luther King Jr.'s "Letter from Birmingham Jail")
- Interpret significant works from various forms of literature: poetry, novel, biography, short story, essay, and dramatic literature; use understanding of genre characteristics to make deeper and subtler interpretations of the meaning of the text
- Analyze the setting, plot, theme, characterization, and narration of classic and contemporary short stories and novels
- Demonstrate knowledge of metrics, rhyme scheme, rhythm, alliteration, and other conventions of verse in poetry
- Identify how elements of dramatic literature (for example, dramatic irony, soliloquy, stage direction, and dialogue) articulate a playwright's vision
- Analyze works of literature for what they suggest about the historical period in which they were written
- Analyze the moral dilemmas in works of literature, as revealed by characters' motivation and behavior

- Identify and explain the themes found in a single literary work; analyze the ways in which similar themes and ideas are developed in more than one literary work

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