HUFFPOST EDUCATION

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Assessment Drives Learning: How to Drive to a New Place

Today many of our schools are victims of a "content fetish." Students learn to parrot facts and formulas for tests. However, we know from decades of research that memorizing facts and formulas does not correlate with being able to use them to solve problems. The world is chock full of facts with more discovered every minute. Facts only become important when one knows what to do with them, when they become tools for problem solving, argumentation, and interventions in the world. And then they are retained for the long term, a free benefit of thinking and acting with facts and formulas and not just memorizing them for tests. Of course, our nation will, in the end, suffer when we run short of problem solvers and become a nation of Trivial Pursuit players or, worse, people who just make up their facts for their own ideological ends.

There are many ways to teach for deep problem solving, especially using digital tools. For example, consider video games. Gamers cannot finish a game unless they have mastered it. Indeed, they cannot succeed if they have not mastered a prior level in a way that prepares them well for the next harder one. A game like *Civilization* contains a myriad of facts about history, but you cannot succeed in the game unless you can use them strategically to solve the sorts of problems civilization builders and historians have had to solve. Games teach by well designed and well mentored problem-solving experiences and they are often associated with interest-driven Internet fan sites devoted to active discussion of the game's design, how to win the game, and how to improve it. Of course, we don't need games to teach this way. We just need good designs, good teachers, good problems, good tools, and good collaborative interactions.

We will never get a new paradigm of learning in our schools unless we change our assessment system. Assessment, especially when coupled with accountability, drives how we teach and learn. Today, digital media allow us to track progress on multiple variables to gauge growth across time and to discover different trajectories towards mastery and innovation compared and contrasted across thousands of learners. Many games today use just such a system. A player can get beautifully designed representations of how he or she is doing across time on a great many connected variables and in comparison to many other players. Game companies can use the same information to improve both their games and their gamers. A single score on a standardized test taken on one day -- a "drop out of the sky test" -- will come to look not just thin, but unethical. Once assessment becomes data mining and powerful representations for learners and

stakeholders, learning and assessment will be well integrated and the drop out of the sky test industry will be gone, a cost savings in these hard times. Indeed, I believe such learning/assessment systems will be the new bio-tech, fueling an economy selling 24/7 customized learning of all sorts and in all domains. It is just not clear that our urban schools will become part of this market.

Games and Learning: Teaching as Designing

There is something of a rage these days for game-based learning in and out of schools. However, what I have always found interesting about video games is how they "teach." The method they use can be implemented with or without games.

How do they teach?

- First, they focus on well-ordered problems, not facts and information.
- Second, they give players good tools with which to solve the problems (including other players in multiplayer gaming and facts and information as tools) .
- Third they have clear goals, but, nonetheless, encourage players to rethink their goals from time to time.
- Fourth, they lower the cost of failure so that players will explore, take risks, seek alternative solutions, and try new styles of play and learning.
- Fifth, they put performance before competence and they put experiences and actions before words and texts. This means players learn by doing and that they have images and experiences to give deep meaning to the words and texts they read later in order to resource their play and learning.
- Sixth, games give copious feedback and they assess all along the way to ensure that the player is always well prepared for what comes next.
- Seventh, they connect playing and learning to social interaction and mentoring through collaborative and competitive play, as well as through interest-driven fan sites where players can extend and articulate their knowledge and even produce new knowledge and designs.
- Eighth, they ensure that at each new level, players face new problems that challenge the routine mastery they have developed through lots of practice on the last level (this has been called "the cycle of expertise").
- Ninth, they use narrative in two ways to create engagement. They often have stories that make clear why the players are doing what they are doing and what it means. And they allow players to create their own stories through the consequential choices they have made in the course of game play.
- Tenth, they hold everyone to the same high standard (everyone, for example, fights the same "bosses"), but allow players to reach these standards in different ways and in

different amounts of time (so it does not really matter where or when one started, only where one finishes).
- Eleventh, they deal with transfer as "preparation for future learning." You can see how well players have learned by seeing how well they do in similar later and harder games or problems in life.
- Twelfth, gamers have to think like designers even to play, since they have to figure out how the "rule system" in the game works and how it can be used to accomplish their goals. They can go further and "mod" the game (make new levels or versions) by using the design software by which the game was made.

We do not have a name for such teaching, teaching that is designing, though it is increasingly pervasive out of school. So let's just call it Teaching as Designing (TAD). TAD is on offer out of school, and is and will be the fuel for many a new startup. But it will not come to schools any time soon, unless we change our testing and accountability regime. In the interim, it is becoming the basis of a new out-of-school "school system", often centered on 21st century skills.

A Test: Why Was the Black-White Gap Closing When It was Closing?

This is a test.

We are well aware that our national No Child Left Behind policy was meant, in part, to address the long-running gap in early reading between black and white children. NCLB ushered in much of our accountability and testing regime. Policy makers on both the left and right admit that, while there has been progress on state tests (which are often taught to and cheated on), there has been little real progress in closing the black-white gap. National tests like NAEP (the "nation's report card"), tests that are rigorous and that are given only to a sample of students, show just that.

The probability that a poor first-grade reader will be a poor reader in the fourth grade is 0.88, and children who are behind in reading in the first grade have only a one-in-eight chance of ever catching up (see Connie Juel, Learning to Read and Write, *Journal of Educational Psychology*, 80.4, 1988, 437-447). Yet we have a national policy based on every child reading by third grade. The policy should be, of course, every child reading by first grade. Why isn't it? That's a good question, but it's not on this test.

The black-white gap is not closing. Perhaps this is because we have not yet discovered how to close it. Maybe it is too hard -- maybe it is impossible -- to close it. But, no, it turns out, we once

had great success in closing it. We did not get to the end of the road and put the gap to bed forever, but we were getting there.

From the late 1960s to the early 1980s, the black-white gap (and that between several other minority groups and whites), in reading tests, IQ test scores, and other sorts of test scores, was fast closing. This progress (especially in regard to reading and achievement tests) ceased, stopped dead, in the 1980s. The gap was closing fast and had such progress continued it may well have been gone now, gone forever.

Now you would think that you would have heard a lot about this from both the left wing and the right wing? You would think that our Schools of Education, full as they are of people deeply concerned with gaps and multiculturalism, would be all over this. But they are not. You would think the right wing would be all over it as well, dedicated as they are to "evidence-based" educational policies. But they, too, are not. In fact, most people do not know the gap was closing. Why they don't know this is an interesting question. But this question is not on this test either.

You would think that if we are failing to close the black-white gap today with an expensive federal policy, we would pay close attention to why the gap was closing when it was closing. But there are not many studies of the matter, though there are some good ones (e.g., see: Jencks & Phillips, Eds., *The Black-White Test Score Gap*, Washington, DC: Brookings Institution Press, 1998). We have developed national amnesia. We did once discover how to close the black-white gap. So here are the test questions: Why was the gap closing when it was? Why did such significant progress cease in the 1980s?

I will give my answer to this question in my next post. But, since we live in the Age of Testing, I thought I would give us all a test.

Why the Black-White Gap Was Closing When It Was

In my last post I gave a test. I pointed out that from the late 1960s to the early 1980s, the black-white gap in reading tests, IQ test scores and other sorts of test scores was fast closing. This progress ceased in the 1980s. The questions were: Why was the gap closing when it was? Why did such significant progress cease in the 1980s?

These questions have really not been researched and debated enough to have definitive answers. Nonetheless, I believe we know pretty well, in a "big picture" way, what the answers are. But before I give my answers, consider two salient (but not all that well-known) facts.

First, we all know that being poor puts a child "at risk" for reading failure. But the correlation between being poor and failing at early reading is not all that large. What is really large is the correlation between pooling poor kids in school and early reading failure and a subsequent lack of school success (see: *Preventing Reading Difficulties in Young Children*. Washington, D.C., National Academy Press, 1998). If you are one of a few poor kids in a classroom, chances are that you will be all right. If you are one of many, you're in big trouble. Ceasing to pool poor children in poor schools would do as much or more for reading scores than any specific instructional intervention. In fact, high levels of poverty in a school are a better predictor of children who will have reading problems than is a lack of early phonemic awareness, a variable that has been the focus of much early reading research and policy.

The second fact is related to the first: Family, community and school factors beyond instructional methods contribute more to school failure or success than do specific methods (however efficacious some of them may otherwise be), a fact which has been known for nearly three decades (see Pearson, P. David. "The first-grade studies: A personal reflection," *Reading Research Quarterly* 32.4: 428-432, 1997). School instructional methods do, most certainly, influence school success, but they are less influential than home and community factors. Paying attention to the first while ignoring the second is a recipe for failure. One very important home factor is how much adults talk to children, not just how much they read to them (see: Hart, T., & Risely, B. *Meaningful Differences in the Early Experience of Young American Children*. Baltimore: Brookes, 1995).

The black-white gap was closing because, thanks in part to Johnson's War on Poverty, segregation was decreasing in the United States. The progress stopped because neo-liberal approaches to policy focused on school and market variables and not any longer on social and civil variables. Segregation increased. Today, many policy makers and educators do not see pooling or unpooling poverty as "reading variables" like phonemic awareness or comprehension strategies. But the truth of the matter -- and it is an expensive truth to ignore -- is that school is not separate from society, and that ceasing to pool poverty is the key variable to undoing the black-white gap, as well as the gap between rich and poor children more generally.

10 Truths About Books and What They Have to Do With Video Games

Lots of people these days -- some old, some young; some in suits, some not -- are advocating that we use video games for learning, education, health, social change, and other "non-entertainment" purposes. However, lots of people who understand games, don't understand books and lots of people who understand books, don't understand games. There are 10 key truths we know about books. They happen to be equally true of other "meaning making technologies" like television

and video games. Thus, in these 10 ways, books and video games are the same. They are both tools suited for certain jobs and best used in certain ways. So here are the 10 truths (for citations to the literature, see my book Situated Language and Learning, Routledge, 2004):

1. Books are a powerful technology. They can lead to aggression and violence (witness the Bible, the Koran, and the Turner Diaries in the wrong hands). Nazi Germany was a highly literate society. Games, so far, do not have this much power, but some day they may.

2. Books can lead to peace, tolerance, and charity if (and only if) they are read in a society and in families devoted to peace, tolerance, and charity.

3. For good learning, books require talk and social interaction with others around interpretation and implications.

4. Books can make you stupid by not questioning what they say.

5. Books can make you smart by supplying vicarious experience, new ideas, and something to debate and think about.

6. Books are often best used as tools for problem solving, not just in and for themselves.

7. To get the most out of them, books require the reader to read like a "writer" (a type of designer).

8. Just giving people books does not make them smarter; it all depends on what they do with them and who they do it with. For young people, it depends, too, on how much and how well they get mentored. Mentoring is, in fact, crucial.

9. Connecting books to the real world and to other media is good for learning, not doing so is bad for learning.

10. Books tend to make the "rich" richer and the poor "poorer" (those who read more in the right way get to be better and better readers and get more and more out of reading; those who don't, get to be poorer and poorer readers and get less and less out of reading. The former get more successful, the latter, less). This is called "the Matthew Principle."

However, games do have some special properties that set them aside from books (and books have special properties that set them aside from games). Some of these are:

1. Games are based not on content, but on problems to solve. The content of a game (what it is "about") exists to serve problem solving.

2. Games can lead to more than thinking like a designer; they can lead to designing, since players can "mod" many games, i.e., use software that comes with the game to modify it or redesign it.

3. Gamers co-author the games they play by the choices they make and how they choose to solve problems, since what they do can affect the course and sometimes the outcome of the game.

4. Games are most often played socially and involve collaboration and competition.

Both books and games are tools that can be used powerfully in the service of learning. But we need to focus first on the learning and then on the tools as servants of that learning.

Digital Natives, Digital Brains?

There is a lot of talk today about "digital natives" and "digital brains." Some people use the phrase "digital literacy" for skills with digital tools. The word may be more appropriate than many people know.

Traditional literacy (reading and writing) has and still does come in two grades. One grade leads to working class jobs, once a good thing when there were unions and benefits, but now not such a good thing when it means low pay and no benefits, usually in service work. The other grade leads to more meaningful work and more financial success. What distinguishes these grades of literacy? The premium grade involves mastery of so-called "academic language," the forms of language used in research, empirical reasoning and logical argumentation. Now, I am well aware that nearly everyone hates "academic language" (things like "Hornworms exhibit a significant amount of variation," rather than "Hornworms sure vary a lot in how well they grow"), but when they are in good jobs, they are there because they got through their high school chemistry book and argued and debated their way out of a good college.

Does digital literacy come in two grades, as well? Are there ways with digital media (as there are ways with words) that lead to quite different results, despite the fact that everyone is participating and using digital media? I believe there are. Further, I believe that the premium grade involves mastery of "specialist/technical language," the forms of language used in specialist communities devoted to technological skills and reasoning. Such language is linguistically fully akin to "academic language"; indeed, it's a variety of it. Two kids may participate in playing World of Warcraft, but the one who can read and write such things as the following has the premium grade digital literacy: "Mitigation from armor class is the only non-linearly scaling stat (that is, each percent of mitigation granted by Armor Class requires more than the point before it)," which is a sentence from a "theory crafting" site, where World of Warcraft players analyze the underlying statistics and rules of the game.

Premium digital literacy is being able to use specialist/technical language connected to digital tools. Premium traditional literacy is being able to use academic language connected to institutional and public sphere knowledge-building and argumentation. At the premium level, the digital brain and digital natives are not a "new new thing," but an even higher octane version of an old thing, the literate brain. But now that brain has, for some young people, though not all, left

the gardens of academe and the professions and is flourishing among young "pro-ams" (amateurs with professional skills), some of whom "don't need no stinkin' grades," but do need a highly literate brain.

Question: Are the same classes of people who got and didn't get premium traditional literacy the ones now getting premium digital literacy? Are we facing a social revolution or a deeper entrenchment?