



Lessons for Education Policy Makers

Professor Thomas Birmingham

Guest lecture by Professor E.D. Hirsch, Jr.,
Emeritus Professor, University of Virginia

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THOMAS BIRMINGHAM: I've known E.D. Hirsch for some years, having spoken on the same programs with him on a number of occasions. I have the greatest respect for Professor Hirsch's work and am happy to consider him a friend. Professor Hirsch is the author of several books including the seminal work *Cultural Literacy* and most recently, *The Making of Americans: Democracy and Our Schools*, where he makes the case that a paramount goal of American public education is to produce sentient human beings capable of participating as intelligent citizens in a democracy.

At a time when we often tend to emphasize education's positive economic impact to the exclusion of all else, it is worth noting that Professor Hirsch's focus on education as a means to encourage active citizenship places him in a tradition dating back to the very founding of the United States. I'd like to say a few words about that tradition. As we meet in Massachusetts and are joined by a guest from Virginia, I am reminded of the prominent roles our two Commonwealths have played in the development of the radical experiment called American public education.

Thomas Birmingham is Senior Counsel with Edwards Angell Palmer & Dodge. In 1991 Mr. Birmingham was elected to the Massachusetts State Senate, where he served as co-chair of the Joint Committee on Education. He was one of the architects of the landmark Education Reform Act. Mr. Birmingham later served as Chairman of the Senate Committee on Ways and Means and Senate President. Mr. Birmingham is a Rhodes Scholar.

E.D. Hirsch, Jr., emeritus professor of education and humanities at the University of Virginia, is the author of numerous books, including *The Knowledge Deficit*. Hirsch is founder and chairman of the nonprofit Core Knowledge Foundation, which has helped reshape the curriculum in hundreds of schools around the country. He has been elected to the American Academy of Arts and Sciences and the International Academy of Education, and is the recipient of numerous honorary degrees and awards, including the AFT's 1997 QuEST award.

In the 18th century, before the invention of free public schools in the United States, education was thought to be a luxury afforded only to an elite few. Two of our states' and our nation's historic leaders, Thomas Jefferson and John Adams were in the forefront of the effort to create public schools available to all. Incidentally, both were the first in their families to go to college. Perhaps that gives us a clue as to why education was so important to them. Both received an education steeped in the classics and the spirit of the Enlightenment. Theirs was a liberal arts education. Although political rivals, they agreed an educated populace with an appreciation for the rights and duties of citizenship was the absolute precondition for the maintenance of the Republic itself.

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Adams, of course, is the author of the Massachusetts Constitution, the oldest written constitution in the world. It contains that extraordinary provision announcing that "it shall be the duty of legislators and magistrates in all future periods of this Commonwealth to cherish," that is to say support, "the interests of literature and science especially in the public schools and grammar schools in the Towns." Adams mandated the support of public education because, in the words he used in our state's Constitution, "wisdom and knowledge diffused generally among the body of the people is necessary for the preservation of their rights and liberties."

After Jefferson's two terms as President, he devoted much of the rest of his life to matters educational. He designed not only the buildings at the University of Virginia, but its curriculum as well. It is a recognizably liberal arts curriculum designed to school its students in the prerogatives and responsibilities of citizenship.

The democratic educational ideals of Adams and Jefferson were taken to the next level by

Massachusetts' own Horace Mann, who also became the first in his family to go to college when he went to Brown University. It is with some personal pride that I note both Adams and Mann served as President of the Massachusetts Senate.

Horace Mann also recognized the centrality of schooling to citizenship, noting, "Never will wisdom preside in the halls of the legislature" without liberal education, free to all.

For all the noble ambitions of the early American champions of education, Professor Hirsch has convincingly demonstrated that American public education was beginning to lose its way by the middle of the 20th century. The idea of liberal arts education preparing young people for engaged citizenship gave way to a narrower conception that focused more on short-term economic needs and workforce development. Vocational style "how-to" skills began to supplant the liberal arts.

The Massachusetts Education Reform Act of 1993 was in part a response to the movement away from making a rich liberal arts curriculum available to all students.

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When we talk about the Education Reform Act, we often talk about money. That's fair enough. Without a massive infusion of state dollars we could never have closed spending gaps between school districts caused by over-reliance on the property tax. An equitable financing system was plainly necessary to afford anything remotely approaching equal education opportunity. But if money was one wheel of the Education Reform bicycle, the second was high standards. We couldn't move our schools forward without both wheels. It may come as a surprise to some of you that before reform there were only two state-imposed requirements to getting a high school

diploma: one year of American History and four years of gym.

In drafting the Education Reform Act we were concerned with economic development but even more so with developing citizens in a democracy. That is why, for example, we wrote into the law:

The [State's] standards shall provide for instruction in at least the major principles of the Declaration of Independence, The United States Constitution and *The Federalist Papers*.

Although we have miles to go – especially in eradicating the class-based achievement gap – standards-based education reform has produced some great results in Massachusetts. We all know of the Commonwealth's hard-won academic successes – running the table on NAEP in reading and math in 2005, 2007, and 2009, and being near tops in the nation on the NAEP writing assessment. The 2007 Trends in International Math and Science Survey scores illustrated that our focus on academic content has allowed our students to compete successfully with their highest performing counterparts throughout the world. These results reveal a success for which we can be very proud.

That's why I am discomfited by some of the trendy ideas that once again seem to be gaining traction in public education. One is the so-called 21st-century skills movement, which may threaten to subvert the uniform structure of our success and drive us back in the direction of vague expectations and fuzzy, sometimes subjective, standards. Another is the re-emerging and, to me, shortsighted focus on education as primarily workforce development.

We recently witnessed a high-tech point-counterpoint on this issue provided by Bill Gates and Steve Jobs. In February in a speech to the National Governors Association, Gates suggested that higher education spending should be directed to disciplines that are demonstrably job producing. In Gates' opinion, we should drop funding for the liberal arts because of a putative lack of economic impact. One may wonder what this portends for the national Common

Core English and math standards so prominently championed by Gates.

In sharp contrast, Steve Jobs, during the introduction of a new product, emphasized the fundamental centrality of the liberal arts. "It is in Apple's DNA," he said, "that technology alone is not enough. It's technology married with liberal arts, married with the humanities, that yields us the result that makes our heart sing, and nowhere is that more true than in these post PC devices."

For what it's worth, I'm with Jobs on this one.

Here in Massachusetts perhaps the best evidence to support the case for universal liberal arts-based academic standards and uniform assessments comes from what might seem like an unlikely source – our vocational-technical schools, which provide yet another education reform success story and one that should be better known.

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For years, the voc-techs taught "how-to" skills to the virtual exclusion of the broad academic content covered by our state curriculum frameworks and MCAS tests. As a result, the voc-techs were among Massachusetts' lowest performing schools.

Eventually, however, they reversed course, bought into MCAS and embraced academic standards and uniform assessments. Now, voc-tech students study Shakespeare, among other topics, which had previously been thought too hard for them.

Voc-tech MCAS scores have shot up by 40 percent and the achievement gap between vocational and comprehensive high schools has closed. Today, even though they have a disproportionately high special education population, voc-tech schools' graduation rate is 10 points higher than the statewide average and their dropout rate is half the state average.

This is a story about standards and about expectations. I believe that we must continue to insist that all of our kids are educable and capable of mastering science and the humanities. The last thing we should do in the face of a stubborn achievement gap is to consign a class of our students – and we all know who they would be – to workforce training in lieu of a rich, traditional education, enabling full participation in all aspects of our social, cultural, and civic lives.

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To be sure, education is important for who we are as an economy. But it is even more important to who we are as a society and a democracy.

Now it's time to hear the remarks and insights of E.D. Hirsch. Professor Hirsch's approach is not anecdotal, but scientific and data driven. His conclusions flow so logically from the empirical material he presents that I regard his findings as all but indisputable. He will tell us what he believes we must defend in education reform and will suggest ways to improve on it. Professor Hirsch, I welcome you to Boston. I think I speak for the entire class when I say we look forward to your presentation with great anticipation.

E.D. HIRSCH: The plan here is for me to make some remarks for about 30 minutes, and then invite questions, comments, and a general discussion.

I understand that many of you in this class are interested in public service and public policy, and want to help the country, not just in order to restore prosperity, but also foster social justice, and equal educational opportunity for all students.

It occurred to me that if those are your goals my best contribution for your long range purposes might be for me to pretend that you are already are in positions of power and authority – say, in the legislature – as Professor Birmingham was with such distinction. And suppose I had 30 minutes to discuss what every intelligent policy maker needs to know to help

improve education. In that case I might choose to discuss some of the facts and principles that many policy makers do NOT know, but could make a huge difference if they did.

The first principle would be the supreme importance of grades pre-K through 3. Bill Gates has been spending billions on high school with essentially no national effect.

Why is pre-K-3 so important? First let me mention the data. Recently, James Heckman and his colleagues published a definitive analysis of the economic importance of early education. Heckman is a Nobel Prize winner in economics who has been heading a distinguished international team. Their team's findings are simply irrefutable. Learning in pre-K through 3 makes a key difference between poverty and wealth. A stunning summary of their findings is to be in the latest *American Educator*, and I've distributed to you the web address of the PDF of his just-published article, which can be downloaded by anyone.

I think it would also be important for a policy maker to know just why the knowledge and vocabulary that is gained in these early years tend to be decisive for the rest of a person's life.

Let's take a shortcut to a complex issue and just say provisionally that a person's chances in life will depend greatly on the size of her vocabulary. The great psychologist John Carroll once called the verbal SAT an advanced vocabulary test. (And we all know that the scores on the verbal SAT tend to make a practical difference.) We also know now that the size of a person's mature vocabulary will depend greatly on vocabulary size at age 5. Of course it's *knowledge* and not just vocabulary that is the real key. From ages 2-5, the *things* you learn and therefore the words that go with them will tend to determine how many things and words you will know when you are twenty. And the size of your vocabulary at twenty will tend to determine how much job success you will have. A lot of work by both the military and by research sociologists has put that thesis beyond doubt, disagreeable though such early-life determinism is.

But why should this early period be so remarkably decisive? Psychologists talk about a principle called “the Matthew Effect,” alluding to the book of *Matthew*, Chapter 29, verse 25 which goes like this: “For unto every one that hath shall be given, and he shall have abundance: but from him that hath not shall be taken away even that which he hath.”

The Matthew Effect as applied to learning tells us that those who already have enough knowledge and vocabulary to understand what is being said will gain still more knowledge and vocabulary, while those who lack these pre-requisites of comprehension will fall ever further behind.

We tend to be struck mainly by the cruel, negative part of the Matthew Effect – those who have not will be further deprived of even what they have. But the positive, first part is equally important: “To those who have shall be given.” Hence the Matthew Effect has a hopeful side. If we make sure, starting in preschool and kindergarten and first grade that all the students in a classroom have the pre-requisite knowledge and language to understand what is being said – then to them also shall be given, and they shall have abundance. But if we withhold those favorable initial conditions, then we will arrive at the situation that now prevails in America – that initial disadvantage will tend to mean permanent disadvantage.

The positive as well as the tragic aspects of the Matthew Effect are explained by the reciprocity between knowledge and language. Language is our chief means for gaining knowledge, and knowledge is our chief means for gaining language, and the two acquisitions continue to reinforce each other over time. Those who already have relevant knowledge can gain more language, and those who have relevant language can gain more knowledge. For the past half century psychologists have stressed the critical importance of prior relevant knowledge in comprehending language.

Take for example the simple problem of overcoming the ambiguity of everyday words. The noun “shot” is going to have a different meaning on a basketball court than it has in a bar. To disambiguate the word in

any given use one needs enough relevant knowledge to imagine the relevant situations. To comprehend language we need to conceive what psychologists call a “situation model.” If we don’t construct a situation model based on prior knowledge, we will not disambiguate old words, or guess the meanings of new ones. On the other hand, if we know the situation type, but not the word, we can pick up the meaning of the new word. That’s the chief way we learn new word meanings. We acquire only an insignificant number of word meanings through definitions. We learn more than 99 percent of the word meanings we know by un-self-consciously guessing what they mean in actual or imagined situations, based on our prior knowledge of such situations. The more *kinds* of situations we know about, which is to say the more knowledge we have gained, the more readily we learn new words.

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So the policy implication is clear. We should systematically increase every child’s knowledge and language from preschool through grade three, and if possible, do it in such a way that the disadvantaged child begins to catch up. We already know how to do this. If a classroom will spend a good length of time on a knowledge domain – say towns and cities, or plants – then, as the situation models for that domain become more and more familiar to all the children, so will the meanings of the words. Since the advantaged child already knew some of the words, and the disadvantaged child is gradually picking up both those words as well as the new ones, the disadvantaged child will gradually catch up within that domain. We have been following this plan in the Core Knowledge Language Arts Program, and the results have been simply remarkable. (Though little remarked upon!!)

Over time, with a systematic approach from one knowledge domain to the next – from plants to Cinderella, to kinds of houses, and so on, the necessary foundations will be built for all children in early grades. There has been decisive longitudinal research outside the US that shows that this works. In sum, the earliest grades are the key, and we can do a much better job there than any widely used program has done.

We should systematically increase every child's knowledge and language from preschool through grade three, and if possible, do it in such a way that the disadvantaged child begins to catch up.

This brings me to my second of three key principles for prospective policy makers. If we know that a policy of coherent, knowledge-based early education will work, and will not only improve social justice, but will raise the prosperity of the whole nation, why do we have such a hard time getting people to put such a policy into effect? Why didn't we do it, almost 30 years ago when a *Nation at Risk* was published with much alarm and gnashing of teeth? Why have we still made so little progress, despite immense expenditures, and good intentions?

I have an answer that can be encapsulated in the word "ideology." Policy makers like you need to be inoculated against the dominance of ideology in education, and as a counter to ideology you need to have some familiarity with the solid scientific knowledge that has been gained in the past 50 years about the nature of cognition, and skill, and expertise.

I was once asked what I meant by the word "ideology," and I have to admit that I was stumped for a clear definition. I hedged this way and that, but was never quite satisfied with my attempt. I now think I have a good operational definition.

An ideology is when you know what you think before you know what you are talking about.

Ideology is prevalent in human affairs because none of us has the time or patience or flexibility to think ad hoc through the complexities of life every time a new situation arises. We need rules of thumb, general values, and habitual attitudes. So an ideology is not always a bad thing. It's even a necessary thing for getting on with one's life.

Disaster occurs when a particular ideology begins to have a monopoly in a field, and persists even in the face of failure, and the results of science, which is as close as we get to the reality principle. In the war between ideology and the reality principle, reality is going to win out every time.

As you know from reading Diane Ravitch, one single ideology has dominated in American education for more than six decades, though it has gone under different names. You can identify it from an operational point of view by one principal trait. It is invariably opposed to a definite, knowledge-based grade-by-grade curriculum. Especially in the important early grades, there has been a powerful resistance to an academic curriculum. The anti-curriculum attitude has been held especially fiercely and tenaciously for preschool, kindergarten and first grade – just the time when the development of knowledge and vocabulary is of greatest importance.

In sum, the earliest grades are the key, and we can do a much better job there than any widely used program has done.

The anti-curriculum movement has always been an anti-verbal as well as an anti-fact movement. The historian Richard Hofstadter wrote a great book that you may know about called *Anti-Intellectualism in American Life*. He showed that the recent rejection of traditional school practices, replacing book learning by field trips and hands-on activities, had deep roots in American anti-intellectual traditions. Early on, we Americans announced that we were better than the decadent cultured Europeans whom we escaped from. We said, "We may not be learned except in the

Good Book, but our ignorance is itself a sure sign that we are morally superior. We may not have much book learning or speak with a lot of fancy words, but almost because of that we are good at heart and excel at practical affairs.”

An ideology is when you know what you think before you know what you are talking about.

I was once invited to address a large group of teachers, and I chose to describe how much pleasure I had gained from writing the Core Knowledge series of grade-by-grade books. One friendly teacher got up to ask me what subject I had found most interesting. I said, well, maybe it was figuring out the precise relations of the sun and earth during a solar year. Then another teacher got up to ask rhetorically, “Do you think that factoid had made me a better person?”

Even our most honored intellectuals have participated in this self-righteous anti-intellectual tradition. Emerson once wrote scornfully:

Education! ... We are shut up in schools and college recitation rooms for ten or fifteen years & come out at last with a bellyful of words & do not know a thing. ... The farm, the farm is the right school. The reason for my deep respect for the farmer is that he is a realist and not a dictionary.

Yet Emerson was deeply wrong about language, as are the thousands of his and Dewey’s successors who teach in our schools of education. The persistent achievement gap between haves and have-nots in our society is, as I mentioned, correlated with a verbal gap. There is no greater practical attainment in the modern world than acquiring a bellyful of words. A large vocabulary is the single most reliable predictor of practical, real-world competence, as we know from our military’s correlation of job performance with scores on the Armed Forces Qualification Test.

For decades, researchers have studied these correlations and have consistently shown that verbal competence predicts job competence, including

even an ability to work collaboratively. Another set of studies based on this same Armed-Forces test is called the National Longitudinal Survey of Youth. The survey has been following the life paths of several cohorts over the years, and invariably finds that vocabulary size predicts income. On average, one standard-deviation improvement on the AFQT test will yield a person an 18 percent rise in salary in all areas of work.

(By the way, any person can go on line and take a version of the Armed Forces Qualification Test for free. I did it to see what the questions were like. Not surprisingly, they are similar to the questions on the SAT Math and Verbal tests. If you do try this, be warned that the next day I got a call from a Navy recruiter. I was very gratified still to be wanted, but I let the young man know that I was in my 80s and had already served in the Navy over half a century ago.)

The anti-curriculum attitude has been held especially fiercely and tenaciously for preschool, kindergarten and first grade – just the time when the development of knowledge and vocabulary is of greatest importance.

Why is there a high correlation between vocabulary size and life-competence? It’s a consequence of the more basic fact that more *knowledge* makes a person more functional. The size of one’s vocabulary is an index to one’s range of knowledge. That’s why the anti-fact tradition has been an anti-verbal tradition. Our teachers and administrators have been persuaded by brilliant slogans like “rote learning,” and “regurgitation of mere facts” that make factual knowledge sound objectionable. They have been told that a deeper, better approach is the “how-to” scheme of education: “Don’t give students a fish; teach them how to fish.” “Don’t tell them what to think, teach them critical thinking skills.” “Don’t teach them factoids, teach them comprehension strategies.” Teachers are told that it scarcely matters what subject matter they select in order to teach higher-order thinking skills; let a thousand topics bloom.

So my second duty to influence policy makers would be to try to inoculate them against the seductive, slogan-rich anti-curriculum ideology that has been adopted by the left.

But I would also earnestly warn them against a too-facile ideology of the right. The charter-school movement, for example, is in many ways a welcome reform that has helped thousands of students who would not otherwise have been educated well. But charter schools on average perform no better than do regular schools on average. There are exceptional charter schools, and there are exceptional regular schools, but in the aggregate, there's little difference, despite the straining of both sides for favorable data. The charter movement, also, has been the victim of a premature ideology.

The "charter school" idea is not, after all, an *educational* idea, but rather an application of a general theory or ideology regarding human behavior. The theory says that if parents and students are given free choices, and are enabled to take charge of their own destinies, then competition will cause schooling to improve. It's a plausible principle. Yet why have charter schools not performed on average better than regular ones? Basically it's because the free choices that have been made by parents and administrators have been infected with that same content-indifferent, how-to theories of schooling that have misguided the regular public schools. Both groups have been guided by large-scale slogans – ideologies – more than by the nitty gritty of empowering a kindergartner.

I have heard some charter proponents say "A child is not a bucket to be filled, but a fire to be lit," quoting Yeats, who was the product of very strict traditional schooling. As a consequence, many charters have offered lots of matches, but little kindling. The anti-fact ideology is often coupled with the choice and competition ideology. An ideology about human behavior will not teach young children any better than an ideology about the benevolence of natural development.

So much then for the first two themes to policy makers: the supreme importance of early education,

and the supreme danger of allowing ideology to replace reliable knowledge.

If, finally, I were addressing policy makers here in Massachusetts I would want to discuss a third topic of educational reform, and that is the heated debates going on over the choice of standards – whether they should be the core standards recently adopted by a majority of states, or whether Massachusetts should stick to their own standards, achieved with much political courage, and which have helped raise Massachusetts to the top of all the states over the past decade.

I would need also to discuss another ongoing debate in Massachusetts concerning the importance of incorporating 21st-century skills into the Massachusetts standards.

The consensus of modern cognitive science is that most human skills are based on deep knowledge of a specific domain.

I would not spend a lot of time talking about the fierce debate over standards. While it's true that the Massachusetts standards exercise an important influence on the MCAS tests that have proved to be so important, it's these tests more than the standards themselves that have driven actual school practice – true in all the states. A reporter from the *Boston Globe* recently asked me to comment on the current debate over the two sets of standards. I directed her to the following statement in the common-core standards: "these [standards]" it said, "do not enumerate ... the content that students should learn. The standards must therefore be complemented by a well-developed, content-rich curriculum." The same is true of the Massachusetts standards. And I then pointed out to the reporter that the selfsame curriculum could easily fulfill both standards simultaneously. Massachusetts Core Knowledge schools are doing so right now.

It makes little practical difference, nor should it, *which* set of standards a school followed. The documents that we now call standards have made

reformers and the general public *think* that they are the key documents which determine curriculum, or even, more misleadingly, that they *are* the curriculum. To some extent the whole debate about these evasive standards is misleading and wasteful of energy. We ought to be arguing about the *knowledge* that children, especially young children gain in school. Unless we define that knowledge with specificity at least at the district level, education cannot be cumulative and coherent for the child. And no set of standards in the nation does that. Let standards define a specific sequence of actual knowledge, and then we will get somewhere. Until that happens we will continue to be in thrall to the false how-to concept of education, and will not make progress.

Speaking of the false how-to theory, I would finally have to say a word about the 21st-century skills. For the better part of a century in America book learning and factual knowledge have been disparaged in favor of 20th-century skills, now 21st-century skills.

This how-to idea has no sound basis in cognitive science. Most cognitive skills are based on specific domain knowledge, rather than on some presumably transferrable, formal expertise. No reputable cognitive scientist supports the 21st-century skills movement. If one of them did, he or she would cease to be reputable. The consensus of modern cognitive science is that most human skills are based on deep knowledge of a specific domain. Skill in chess won't help you much in crossword puzzles. Moreover it takes domain-specific knowledge to gain new relevant knowledge.

Eleven years ago I published a piece called "You Can Always Look It Up – Or Can You." It cited the work of the Nobelist Herbert A. Simon, and the equally distinguished psychologist George A. Miller, as well as some path-breaking work by Thomas Landauer. All three scientists were kind enough to vet my article, so there is small doubt that it represents the current scientific consensus. In essence, it said that you already had to have relevant knowledge – that is a situation model – before you could understand what you were looking up. The idea of abstract 21st-century skills as being a substitute for wide knowledge and a

big vocabulary is a falsehood that further exacerbates social injustice.

And I guess I would end by referring my powerful audience to the web addresses of two short articles in *American Educator*, one by Heckman representing the consensus of sociologists and economists, and the other representing the consensus of cognitive scientists – the one regarding the importance of early education and the other of domain-specific knowledge – rather than vague how-to skills which do not exist.

Article by James Heckman (2011) "The Economics of Inequality: The Value of Early Childhood Education"

<http://www.aft.org/pdfs/americaneducator/spring2011/Heckman.pdf>

Article by E. D. Hirsch (2000) "You Can Always Look it Up – Or Can You?"

<http://www.aft.org/pdfs/americaneducator/spring2000/LookItUpSpring2000.pdf>

OK. Now let's have a discussion.

About Pioneer

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