How to Avoid Wasting $60 Billion
in Philanthropy in K-12 Education

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A recent *Business Week* article titled "Bill Gates Gets Schooled" reports the struggles the Gates Foundation has faced in reforming American high school education. Both Bill and Melinda Gates have a profoundly serious commitment to this project:

> Melinda Gates says she and Bill are pacing themselves. "Sometimes you get other people who come in and do small pieces of this, and then their money's spent and they go away," she explains. "This is something that we're going to stay after for a long time. You come to talk to me in 20 years, and we'll still be tackling this problem."[1]

Combine this kind of commitment with the scale of resources held by the Gates Foundation, and the possibility of profound change in American education becomes a possibility for the first time ever – if and only if the Gates Foundation makes wise investments in educational change.

I've been schooled in education reform myself; I spent fifteen years in K-12 education, starting as a public school reformer, consulting for hundreds of schools across the country, and creating several new schools, including a charter school that was ranked as the 36th best public high school in America in its third year of operation – in rural New Mexico, known for having among the lowest academic standards and performance in the U.S.[2] I know just how hard it is to create a successful program, and what it will take to bring such programs to scale. It will take more than money.

I once knew the administrator for a $10 million grant that was, at the time, the largest philanthropic grant ever given to a single public high school in America. Moreover, the original grant conditions stipulated that the funds could not be used for bricks and mortar. The grant administrator was in the enviable position of having an extraordinary amount of money with which to "fix" an inner city public school: There was enough to hire numerous supplemental staff, reduce teacher – student ratios, re-train each teacher, while buying all new books, computers, library, and media as well. And yet after a few years of spending he was in despair. He left before he had spent all the money: He had the experience and integrity to realize that with that particular faculty and administration, no amount of funding could make a significant difference.

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[1] *Business Week*, June 26, 2006, "Bill Gates Gets Schooled,"
http://www.businessweek.com/magazine/content/06_26/b3990001.htm.
[2] See my "A Tale of Two Charter Schools" for a description of my New Mexico experience, http://flowproject.org/Downloads/Two-Charter-Schools.pdf. See Albquerque Journal, Nov. 16, 2006, "New Report Touts New Mexico School," for press on Moreno Valley High School's national ranking. The article does not mention that MVHS students pass AP tests at double the national rate.

It is well known that education majors have the lowest average SAT score of all college majors. It is less well known that educational administration degree candidates have the lowest average GRE score among graduate departments. At this school, as with many government schools, a machine was in place in which nice, decent, but unintelligent and unimaginative teachers and educrats followed rules, regulations, curriculum, and standards day after day, week after week. All the money, all the training, and all the technology in the world couldn't change the way the school functioned. The people weren't bad people: they were conscientious, hard-working, caring educators who were doing the jobs that they had been trained to do and that they were legally required to do.

Eight years after the millions in grant funds had started flowing to improve the school, the school made national headlines: for its teen pregnancy rate. No academic results were reported.

With spending achievements like this as a model, the Gateses could spend all of their and Buffett's fortunes "reforming" American public education and have precisely nothing to show for it. There are some problems for which money alone is not an adequate solution, no matter how much money one has.

There four means by which the Gateses may ensure that they are successful where others have failed:

1. Use Prediction Markets to Obtain Realistic Expectations of Philanthropic Investments

2. Replicate Successful Models that Use Professional Quality Control Systems

3. Support New Teacher Training Programs Based in Successful Educational Practice

4. Support Advanced School Experiments that Could Develop into Scalable New Models

These four steps will ensure that the greatest philanthropic opportunity in history will not be wasted.

1. Use Prediction Markets to Obtain Realistic Expectations of Philanthropic Investments

An increasing number of corporations, including Google and HP, are using internal prediction markets in order to encourage more accurate expectations of program outcomes.[3] A prediction market is a futures market in outcomes.[4] For instance, in the

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[3] See six articles on prediction markets in *Business Week*'s "CEO Guide to Technology," August 3, 2006, where they highlight prediction markets, along with VOIP and Web 2.0, as one of the most important new technologies for business, http://www.businessweek.com/technology/ceo_guide/.
[4] See Robin Hanson's seminal paper "Could Gambling Save Science: Encouraging an Honest Consenus," http://hanson.gmu.edu/gamble.html.

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corporate world, a company may want to know when a software product will actually be ready to ship. In the past, they have asked the software engineers: "When will it be done?" And, typically, the software engineers have missed deadline after deadline (We all know that Bill knows about this problem).

With a prediction market, individuals with local knowledge, in this case detailed knowledge of the software development process, make bets concerning the actual delivery date. While this sounds similar to "asking the engineers," it actually sets in motion a very different dynamic. In practice, when management "asks the engineers" they ask team leaders. For a large project, they may ask the leaders of large teams, who ask the leaders of smaller teams, who ask the leaders of yet smaller teams. At each stage, of course, subordinates are apt to give their managers more optimistic answers than are realistic. When one aggregates several levels of exaggerated optimism, the result is often a very inaccurate answer.

When information is aggregated in a prediction market, especially one with cash rewards for accurate predictions, the information is aggregated in a dramatically different manner. Each individual software engineer, each of whom has the best and most realistic knowledge concerning his or her own contribution, and each of whom often has a better sense of their peers' progress than does management, makes bets concerning the actual delivery date of the product. Because those who most accurately predict delivery date make money, their incentives for prediction are 100% aligned with accuracy of prediction. The "kill the messenger" problem, which distorts the accurate communication of negative information, is thereby solved.

Such a system is important in education reform because of the long history of misleading expectations of reform in American K-12 education. The typical cycle is that an "innovation" receives attention because of success in a small setting or trial experiment (though some don't even have this much evidence behind them). The reformer or professor who developed the innovation then creates a set of materials and/or a "school reform program" based on the innovation, and begins providing in-service training to districts. Millions of dollars are spent on new materials and training, and then, after a few years, enthusiasm for that particular program evaporates and enthusiasm for a new program launches another wave of spending. Whole language reading techniques and "New Math" are well-known controversial examples, but there have been dozens of less controversial but no more effective additional examples.

Diane Ravitch's *Left Back: A Hundred Years of Failed School Reform* and Tyack and Cuban's *Tinkering Towards Utopia: A Century of School Reform* each describe wave after wave of education reform, each of which brought with it extravagant claims of success, and each of which resulted in little or no positive outcome. Most experienced teachers are profoundly cynical regarding education reform; they have seen fad after fad pass through with little lasting effect. Seymour Papert, described as "the greatest living mathematics educator," launched his Logo Mindstorms as a project to transform education. Fifteen years after launching Mindstorms, Papert wrote an article titled "Why

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School Reform is Impossible." He notes that "The reform sets out to change School but in the end School changes the reform."[5] This fact is why Brookings Institution Democrats Chubb and Moe broke ranks with their liberal brethren and recommended school vouchers in *Politics, Markets, and American Schools*.

Instead of arguing for vouchers or other market-based reforms, I would merely encourage the Gateses to set up well-designed prediction markets in order to obtain realistic expectations regarding the outcomes of their various investments. If teachers, parents, and students had had a financial incentive to predict the actual outcomes of any of the waves of reform of the last hundred years, they would have predicted the flat (or negative) outcomes of each wave of educational reform far more accurately than the irrationally hopeful academic experts who had proposed the reforms.

James Surowiecki presented a deeper rationale for this phenomenon in *The Wisdom of Crowds*. Somewhat counter-intuitively, it turns out that large numbers of people with independent assessments collectively predict outcomes more accurately than do experts. Prediction markets in orange futures outperform weather forecasters in predicting Florida weather, prediction markets in elections outperform polls. And these comparisons are for circumstances lacking the perverse "kill the messenger" incentives described above as well as the pervasive self-deception of educational reformers that lead them over and over again to claim more than they can deliver. The Gateses have already spent over a billion dollars in school reform in the U.S. It is time they developed a system for obtaining accurate information concerning the probability of success of such reforms. Well-designed prediction markets will provide more accurate information about program outcomes than the Gateses will receive from any set of experts they ever hire.

The outcomes do not need to be limited to test scores. Insofar as the Gateses rightly care about graduation rates, then programs that claim to raise graduation rates could be subject to prediction markets in which students, teachers, and parents participate. If the Gateses chose to care about psychological measures of happiness or autonomy, prediction markets could be developed around those outcomes as well. The crucial point is that instead of relying on the notoriously unreliable judgments of education experts and reform advocates, they can now have advanced access to information concerning exactly how much progress is really taking place in the trenches. The information may be used diagnostically as well as evaluatively. If a predicted outcome suddenly declines for a particular program, this fact may serve as a red flag that something has just gone wrong with the program; in some cases Gates' experts may be able to assist the program at a key point and turn disaster into success by means of such early warning signs.

I expect that prediction markets will, on balance, show that the Gates' investments in charter school programs are sounder long-term investments than are their investments in programs at conventional public schools. I would not claim that only private or charter

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[5] Seymour Papert, "Why School Reform Is Impossible," *The Journal of the Learning Sciences*, 6(4), pp. 417-427, http://www.papert.org/articles/school_reform.html.

schools will succeed. In some cases there will be particular public schools or even districts in which an investment of Gates money results in a positive return. Prediction markets will allow the Gateses to see which districts have what it takes to earn a positive social return on their philanthropic investments – and which ones do not.

When Microsoft considers acquiring another company, they make very careful judgments regarding which companies are worthwhile investments. They invest in particular organizations with particular characteristics. In order to avoid wasting $60 billion, this viewpoint must be applied to investments in educational philanthropy. The Gates Foundation will want to invest in particular organizations with particular characteristics: they cannot invest in "public education" per se. The problem with public education per se is that there are no quality control mechanisms other than legislation – and it should be clear by now that legislation alone cannot ensure educational quality. Thus the Gateses need to focus consistently on organizations that have some independent capacity to develop, maintain, and monitor quality.

Although some of these organizations might be particular school districts or particular public schools run by particular individuals, the question at present is how scalable and sustainable are such organizations? I expect that as the Gateses obtain increasingly accurate and realistic information concerning long-term outcomes, they will realize that they need to invest in private organizations, for profit or non-profit, that can maintain quality (or districts that manage to re-organize themselves as the equivalent of a private corporation). Only by means of investing in particular organizations, each with a principled, visionary organizational DNA that is protected from harmful corruptions due to electoral politics and bureaucratic whim, can the Gateses invest their money effectively and thereby improve the lives of millions of young people.

For a hundred years school reformers have achieved isolated successes. The real Holy Grail is to bring lasting high quality reform to scale. How do we take a successful educational model and bring it to many thousands, or even millions, of young people?

2. Replicating successful models that use professional quality control systems.

Ted Sizer, former dean of the Harvard Graduate School of Education and then headmaster of Philips Academy, was the Founding Director of the Annenberg Institute for School Reform. The author of several classic books on American education, with the best possible credentials as both an academic and as a practitioner, he seemed like the ideal educational leader to direct the $500 million Annenberg gift. He is an intelligent man of great integrity, who has written insightful books on the failings of existing high school education and who offers an inspiring vision of what our high schools ought to be. And yet he essentially wasted half a billion dollars.

There were, indeed, specific schools that were successful investments. Sizer's Coalition for Essential Schools (CES) supported Deborah Meier's Central Park East Secondary School, (CPESS), arguably the most celebrated public school success story in the past

twenty years. Meier won a MacArthur Genius Award for her work there and wrote a NYT best-seller based on her experiences. She then moved on to create a charter school in Boston, leaving CPESS in the hands of a hand-picked successor. As Henry Levin reports: "But, after Ms. Meier left, the school began to look more and more like other high schools educating a similar population with far poorer academic results. In an interview in 2005 Ms. Meier explained what happened after she left. She cited increased enrollment, the departure of experienced teachers and the watering down of special programs in reaction to a greater emphasis on standardized testing. 'I stopped visiting. It was too painful.'"[6]

Innovative programs tend to regress back towards the mean after the charismatic educational leader has left. Innovative excellence in public education does occur, but its survival is always dependent on particular educational leaders, particular administrators, teachers, superintendents, and school board members. Sizer's CES has a number of particular school success stories, each of which is dependent on particular individuals in particular circumstances. Once key individuals leave, public schools begin shifting back to their behaviors as dumb machines staffed by nice, conscientious people doing what they are professionally trained and legally required to do. As long as we keep putting the same people in the same roles following the same rules, all of Gates' and Buffetts' money together can't change public schools. The homeostasis of government-managed education is particularly confusing and painful precisely because great educators and great experiments do exist within the system, giving hope after hope after hope to those who cling to a relentless belief that we must remain loyal to our public schools.

Much of the Gateses' educational philanthropy has already been focused on the creation of new schools rather than on "reforming" existing ones. Although they have thereby been criticized as helping the few rather than the many by creating a few small "boutique" schools, the obvious vision for change in the future is the high quality replication of successful models. With a system in place that allows replication of success, by starting from a small number of schools and then developing the means to replicate those successful models, eventually all students in America can be served by such improved school models.

If I am indeed correct that replicated new schools are a better investment than "reformed" old schools, and I'll let the prediction markets settle that one, then a system of parental choice that allows the improved models to expand rapidly to serve more students is a sine qua non of this vision. Charter schools, in those states that do not cap the number of charter schools, may provide enough choice, though we will revisit this issue in the final section on encouraging experimentation.

By focusing on creating new schools, The Gates Foundation is very much on the right track relative to the Annenberg failure. The next challenge that Gates needs to face

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[6] Henry Levin, "Why Is Educational Entrepreneurship So Difficult?" National Center for the Study of Privitization in Education, Columbia University, January 2006, http://www.ncspe.org/readrel.php?set=pub&cat=132.

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squarely is the issue of replicating successful schools. The good news is that they have already begun their learning curve on this issue: For instance, after investing millions in Larry Rosenstock's High Tech High in San Diego, which has by all accounts been a success, they have been attempting to replicate it nationally, with mixed results:

> Rosenstock himself has encountered frustration in trying to spread High Tech's innovations to other schools. He agreed in 2000 to work with a loose network of schools in 12 other cities from Chicago to Tucson. But that project hasn't always gone smoothly. One point of contention has been Rosenstock's belief that dividing students into honors and non-honors classes lowers expectations for ordinary students and undercuts the benefits he sees when teens learn as a team. Two Pennsylvania schools were excluded because they either wanted to track students by ability or admit them selectively. The remaining members of the network are still in touch with High Tech, but Rob Riordan, one of Rosenstock's top deputies, says: "We have less control in those situations." That's why he and Rosenstock are turning their attention to creating schools in neighboring Escondido and Chula Vista, where they have the ability to transplant trusted staff members from High Tech. "I want to be remembered for the quality of my schools, not the quantity," Rosenstock says.

It is all fine and good that Rosenstock feels this way, but an alternative approach more in keeping with the goals of the Gates Foundation of having a significant impact would be to develop organizational structures that allow for high-quality, high quantity replication.

Before looking specifically at bringing quality to scale in education, it is worth considering how the business world solves the problem of bringing quality to scale. No one in the world of business is under the illusion that it is easy to replicate success. No one expects a 3M, a Toyota, a Whole Foods, a Southwest Airlines, or a Google simply to be replicated by other people somewhere reading their employee manuals. Every business is a distinctive enterprise, built by distinctive individuals who create distinctive organizations in which distinctive corporate cultures are nourished. A corporation is a system for bringing distinctive quality to scale.

In the business world, most success is "replicated" by means of company growth. McDonalds, Wal-Mart, Barnes & Noble, and Starbucks were all once small. Now they serve millions. There were hamburger stands, discount stores, bookstores, and coffee shops before these chains came into existence. And yet each revolutionized their industry by means of corporate growth. The notion that these revolutions could have occurred in a highly regulated segment of the economy by means of mere imitation is ridiculous. Even if the product involved is merely a hamburger, McDonald's created quality control systems that resulted in consistency of product and service that were unimagined prior to the corporate creation of such systems.

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James Collins and Jerry Porras' *Built to Last: Successful Habits of Visionary Companies* describes the "habits" of those companies that have been successful over long periods of time: 50, 60, 70 years or more. While there are a number of elements that they describe, key among them is the creation of a distinctive corporate culture that transmits the "genetic code" of the company long after the charismatic leader has left. They point out that no one knows who founded 3M, and yet it has been one of the most consistently successful companies and best places to work for nearly a hundred years. And they describe various distinctive features of the corporate culture that are supported and re-inforced by hiring and promotion practices, training manuals, company rules, company rituals and celebrations, marketing materials, and more.

Joining 3M, or any of their "Visionary Companies," means joining a distinctive culture. Becoming an employee of the best companies on earth means, to some extent, becoming a different person, with different habits, attitudes, aspirations, norms, and ideals, at least with respect to one's professional life. Young people pursuing a career in business aspire to work for one of the best companies because they know that such experience will be crucial for future success: they will have internalized some of the DNA for future success.

How does this apply to the world of education?   Because the notion of corporate culture and structure is largely anathema to educators, High Tech High, with millions in seed capital for one small school, has already more or less given up on their network. They now focus on "replication" efforts largely in close geographical proximity because that is the socially acceptable way for nice educators to control replication.

Imagine, instead, if both Central Park East and High Tech High had been the kind of Visionary Companies described by Collins and Porras? Instead of a depressed Deborah Meier and a retrenched Larry Rosenstock, we might now have dozens of very high quality schools being replicated across the country. Conversely, imagine if Steve Wozniak and Steve Jobs had decided to "replicate" their ideas by visiting other computer clubs across the country once or twice per year and explaining to other amateur geeks what they were doing. The geeks in these computer clubs might have been able to get a few grants to pay Wozniak and Jobs consulting fees to come and tell them how to build these personal computers. We might now have twenty or thirty local computer clubs at which a few successful "personal computers" might have been built. And Wozniak and Jobs might be sitting in their garage, dispirited and poor, depressed at the lack of quality in the home-made computers being put together in the Kansas City computer club.

Deborah Meier and Larry Rosenstock have both spent millions developing their model schools (Meier was also the recipient of significant grant funding over the years). But they are not focused on developing a formal structure for large-scale replication (Rosenstock may yet do this). I hate to pick on Meier and Rosenstock, both of whom are superb educators. But educators do not think like entrepreneurs, and that is a problem.

The motivation and focus to be a great educator or to create a great school is not the same motivation or focus needed to create a great, expanding, entrepreneurial organization. Plato argued that if the wise man did not enter politics, then he was destined to be ruled by the foolish. Similarly, if the great educators don't become imperialistic entrepreneurs, most students will be destined to be educated by poor educators. Meier and Rosenstock, and the thousands like them, have an obligation to either partner with or cultivate some of the aggressive entrepreneurial energies of, say, a Bill Gates or a Steve Ballmer. Indeed, a case may be made that Apple is a marginal player in the world of personal computing because Jobs and Wozniak were too much like Meier and Rosenstock: fanatically focused on perfecting their own little worlds.

While there are no educational institutions that yet have the entrepreneurial drive of Gates-Ballmer, there are a few such organizations that are focused on expansion. KIPP academies have already developed a nation-wide reputation for successfully replicating high-quality inner city schools; they are running 52 schools serving 11,000 students across the nation. They have a very structured replication model and significant quality control mechanisms in place, including a year-long apprentice training program at an existing KIPP academy for principals who aspire to lead a new KIPP academy. Clearly they take the problem of training leadership very seriously. By all accounts, they are successfully replicating an academically serious school culture at new sites across the nation.

KIPP is a non-profit organization. Edison Schools, a for-profit company that has experienced tremendous losses, operates a chain of schools with 330,000 students. Although they are controversial because they are for-profit, people I trust tell me that their charter schools in D.C. are, along with KIPP, the best run and most successful charter schools in D.C. I suspect that they have the size and experience to put together a good program, and are replicating successfully whenever they have the opportunity to create a school from scratch.[7]

The KIPP and Edison approaches to quality control are parallel to the competing business models of franchising vs. corporate ownership. In order to be a KIPP school, leadership receives training and the school must follow various centrally-defined school characteristics, much as is the case in the world of franchises (which vary in the level of training and type of quality control procedures). Edison, by contrast, owns its schools outright and thus exercises direct control over the schools in its network; again, many corporations own all of their own outlets in order to exercise greater quality control.

At this point we don't need to determine whether the franchise model or the corporate ownership model is a superior means of quality control and replication. It may well be that for some types of educational models one is best-suited whereas for other types the other is best-suited.

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[7] They have made a nearly fatal flaw, however, in getting into the business of taking over existing schools from failed districts. Failing schools should be dismantled. Smart entrepreneurs take over failing companies only when they have the option to dismantle them.

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But the more serious point is that we, and the Gateses, need to realize that supporting great individual educators is not enough. It is wonderful that Rosenstock and Meiers received support for their schools. Toyota has put millions into a school in Colorado that is supposed to be a model school based around a successful educator. But until and unless these models develop the capacity and desire to replicate high-quality versions of themselves by means of organizational structures that can control quality competently, these models are not an effective investment in American education.

It is remarkable evidence of the extent to which our minds are stuck in traditional models of education that the business world doesn't understand the need for corporate-style quality control in education. *Business Week* is precisely wrong in its description of the difficulties with replicating Hi Tech High:

> Nationally, new versions of High Tech High can't be rolled out like so many Starbucks franchises. Apart from an infusion of ideas and startup money, successful school reform usually requires a virtuoso principal, and such leaders are hard to come by. Rosenstock by all accounts is a tireless and charismatic figure who sparks enthusiasm among teachers and students alike. In the absence of someone like him, the smartest plans and best intentions can come up short.

Successful school reform only requires a virtuoso principal if one is starting from scratch every time, at every new school.

Whole Foods offers fantastic produce sections at store after store all over the country not because of one virtuoso produce manager, but rather because of a corporate culture that replicates key store features at site after site, reliably time and time again. The fact that educating students is a far more sophisticated process than is managing a produce section only reinforces the need for educational management organizations to develop in-house training of teachers and administrators in order to bring quality to scale. KIPP's one year required in-house training program for prospective administrators of KIPP schools shows that they have already learned this lesson.

Corporate success in service and retail industries is largely defined by the corporation's ability to replicate a specific experience of a specific quality standard over and over and over again. This has been achieved thousands of times outside of education; it is not an accident that the most successful school replicators are using either a franchise or corporate ownership model as they expand. This is how quality control is achieved. Looked at from this perspective, one examines previous public school reform initiatives in vain for any sort of quality control mechanism.[8] Millions of dollars have been spent

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[8] See the "Self-Audit Tool" based on "Best Practice Framework" of the National Center for Educational Accountability for a cutting-edge example of what passes for quality control in contemporary school reform, http://www.nc4ea.org. Their "Best Practice Framework" is included as an appendix to this

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on thousands of initiatives with no mechanism in place whatsoever to ensure that the reform was replicated to any given quality standard. And how can one control quality if the reform is to be implemented in thousands of diverse districts, with politically-rotating boards, politically-appointed superintendents, and no ultimate ownership of anything? While it may sound pious to claim that "the public" owns the public schools, all that means in practice is that no one knows who will be on the school board in five years or what their agenda might be.

Again, I'm happy to let the prediction markets prove it, but large-scale, high-quality replication of well-managed franchises or school chains is the only effective means of leveraging investments in particular educators, methods, or programs. This should not be a surprise; franchises and chains are the way that businesses replicate successful organizational characteristics. If academia and politics had not controlled education for the past hundred years, this strategy for the replication of educational success would have become obvious by now. The best 19th century private schools would have developed into effective national chains that brought superb education to millions of young people but the rise of government-managed, increasingly regulated and centralized "public education" prevented this.

There are at present many thousands of great educators in the U.S. right now, most of them working at public schools. We urgently need to develop institutions that will allow them to transfer their skills to other educators and to create high quality replications of their programs. We do not have such institutions at present.

3. Support New Teacher Training Programs Based in Successful Educational Practice

Legislators have relied on university-based education departments to define competence in teaching and educational administration. This approach is similar to the old line about "No one ever got fired for buying IBM." Because universities have a certain mainstream credibility, it is safe for legislators to, in effect, delegate the definition of teaching competence to education "experts." Moreover, the teachers' unions have a vested interest in ensuring that their guild's interests remain protected; they always lobby to prevent "unlicensed" educators from competing with them. The result has been catastrophic for American education in general, but even worse for innovative initiatives in education.

Because university professors advance in their careers by means of publishing academic research, the more important business of actually developing the artistry of upcoming teachers is not rewarded. Moreover, because academic faculty have achieved their positions by means of success in publishing in academic journals, there is no reason to believe that they have any expertise whatsoever in the actual artistry of teaching. Worse yet, the true educational artists, those amazing teachers and administrators who are

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document so that the reader may judge whether or not such a tool, used in a self-audit, is likely to be an effective approach to quality control or educational accountability.

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especially effective at educating young people, have precisely no authority over university-based teacher training programs. By requiring young people to get a university-based teaching credential in order to teach in our schools we are forcing them to waste four years of their life, at a cost to society of about $100,000 each, for a degree which has little value in schools.

Not surprisingly, our brightest students are not attracted to these programs. This is obviously not due to the fact that teacher salaries are low relative to, say, electrical engineering salaries. Ph.D. humanities and social science programs are filled with very bright people spending years of their life and sometimes much of their own money for a degree that is unlikely to lead to a relevant job. For those who do get a job in academia after earning a Ph.D., even in the sciences, most of them will end up working as adjunct faculty or at community colleges where salaries and benefits are lower than public school teacher salaries. Our society has massive numbers of very bright people who are not motivated by money and yet who are not attracted to the field of education in its present form. And yet there are very bright people who enter education when the right options present themselves (I have often hired highly successful former lawyers, business people, and refugees from graduate school as unlicensed teachers to work in schools at which they were treated respectfully and given creative autonomy).

Systems drive behaviors. Until and unless we change the systems that train teachers, we will continue to experience the same outcome. We must develop new institutions that attract and develop new teaching talent. These new institutions may be launched within our existing universities, but we must not limit ourselves to the existing university system. Until and unless the talent filters at universities change in fundamental ways, we can expect university-based teacher training to be dictated by individuals with expertise in and enthusiasm for academic research techniques, not by individuals with expertise in and enthusiasm for actually educating young people. We must create new institutions in which those individuals with expertise in and enthusiasm for educating young people are rewarded for transmitting their expertise successfully. The most likely base for such institutions will be those school chains with the proven ability to develop and monitor quality throughout their organizations.

Althouth Hi Tech High is not yet structured as a school chain, this is an area in which Hi Tech High is the national leader: It is the first charter school that has been authorized to credential its own teachers.

It is difficult for people who have not tried to develop a new educational model to understand just how significant an advance this is. At present, charter schools are required by law to hire credentialed teachers. No Child Left Behind (NCLB) makes this mandatory nation-wide by requiring that schools be staffed by "highly-qualified," i.e. credentialed, teachers. And yet, as mentioned previously, limiting our pool of available teachers to those who have obtained education majors thereby limits our pool of teachers to the least intelligent college graduates. There are various alternative licensure programs that allow adult professionals to obtain a teaching credential while taking a minimum of

onerous and irrelevant coursework. But minimizing irrelevant barriers to teaching in our schools is not enough.

Great teaching is a sophisticated art that must be learned. Most experienced educators will agree that teachers do need to be trained, and yet that most education courses provide little to no value in preparing people to be good teachers. Although details vary, most experienced educators agree that some type of structured mentorship or apprenticeship of new educators would be more effective than academic coursework combined with a brief stint as a "student teacher."

The student teacher portion of the program is by far the most valuable aspect of contemporary teacher training, but it is often a neglected orphan at university programs. To be fair, there have been numerous initiatives in education departments across America to add more mentorships to pre-service teacher training. And there are, indeed, some excellent programs. There are conscientious education professors who are committed to creating better teacher training programs. But we can't wait decade after decade for a few more conscientious professors to struggle with existing academic bureaucracy and funding formulas in order to create a few more improved programs.

Moreover, for those of us who have developed new educational models, the problem is even more acute:

1. Education majors have no useful skills and, in fact, tend to be self-selected for less intelligence.
2. Inexperienced people require a steep learning curve.
3. Most experienced teachers have the wrong kind of experience.

If one is trying to develop a program in which teachers interact with students in a different manner from the norm, then experienced teachers are often problematic because although they may be excellent teachers in a conventional context, they bring that conventional context with them. New teachers mentored in conventional contexts introduce the same problem.

For schools such as KIPP, that are fairly conventional in their pedagogy, this is not a big problem. But for schools such as Hi Tech High, which are fundamentally developing a new mode of interaction between teacher and student, it is highly desirable that they have an internal training program that allows them to train teachers in a manner that is suitable for their particular pedagogy. This is why the fact that Hi Tech High has been allowed to credential its own teachers is such an extraordinary breakthrough. Hi Tech High is creating the kind of end run around university based teacher training programs that is crucial, and it is doing so while developing cohorts of teachers with expertise in their distinctive pedagogy.

Now if only prospective teachers who want to earn a credential at Hi Tech High could use government student loan funds to support them while they were getting a credential,

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we could begin to use the $100,000 per education major that is currently wasted and devote it to a form of teacher training that is actually valuable.

Without knowing anything more about Hi Tech High than this, I predict that the people entering their teacher training programs are significantly more intelligent than the average education major. And, in the long run, this fact is crucial.

A further prediction: University education departments will accurately regard my comments here to be a threat to their monopoly on licensure. They will bring forth research showing that credentialed teachers outperform uncredentialed teachers. When most uncredentialed teachers are simply emergency hires plugged into standard public school classrooms with no training then of course the credentialed teachers will appear to outperform the uncredentialed. And yet if successful school chains such as KIPP, Edison, Hi Tech High, and others were allowed to develop their own licensure programs, those programs will produce not only brighter and more capable teachers, but the chains will prefer to hire teachers from their own programs. Those chains that develop their own in-house teacher and administrator training will become more effective at replicating higher-quality satellite schools, and ultimately this paradigm will largely marginalize the role of university education departments in teacher training.

To be blunt, once we have developed a good system for training teachers, our existing system for teacher training will go the way of the Soviet automobile industry. Pious respect for existing systems, and the entrenched interests that staff those systems, is the greatest obstacle to necessary change.

4. Support Advanced School Experiments that Could Develop into Scalable New Models

Is a world of KIPP, Edison, and even Hi Tech High schools enough? Based on the sketch above, with Gates money and evidence from prediction markets concerning which organizations are capable of running successful schools, we will see a world evolve in which various organizations develop superior schools to what we have today. The best existing school districts, non-profit organizations, and for-profit chains will expand and the mediocre and incompetent organizations will steadily lose market share. Is this the end of history?

Once we end the monopoly of existing public schools and academic education departments, we will have then just begun to allow for successful innovation in education. Instead of "One Hundred Years of Failed School Reform" we will have created the seedbed for "A Silicon Valley of Education."[9] Indeed, the possibility of far deeper innovation provides the most substantial rationale for the path sketched out above.

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[9] Michael Strong, "Why Don't We Have a Silicon Valley of Education," *Edspresso*, May 8, 2006, http://www.edspresso.com/2006/05/why_we_dont_have_a_silicon_val.htm.

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Hitherto I've, by using the example of KIPP, Edison, and Hi Tech High, I've implied that charter schools are an adequate means of creating large-scale quality programs. And perhaps they are, especially if charter schools can credential prospective teachers through their own custom-designed programs. But it is worth considering whether there may be superior education programs that cannot be implemented within the constraints provided by charter school law.

As someone who has run both charter and private schools devoted to innovative pedagogies, I think that there are very important educational options that cannot be implemented well in charter schools as they are now designed. In particular, insofar as a pedagogical innovation requires the creation of a consistent school culture that may be significantly different from existing school cultures as well as peer and family cultures, charter schools do not allow the requisite freedom.

The notion that a school's task is to create a new culture is an unfamiliar concept. Most people believe that a school's task is to teach children skills and knowledge. Within this frame, it is generally believed that good teachers, good curriculum, and good methods are the means through which skills and knowledge are effectively transmitted.

And yet, at the same time, many observers recognize that in the corporate world, the creation of a distinctive culture is often closely associated with the success of a particular corporation. In one sense, companies such as 3M, Southwest, Google, and Whole Foods are merely profit-making entities that produce goods and services. But in another sense they are unique, visionary organizations that have created a distinctive culture in which employees work together in a very distinctive manner. Often when a corporate merger fails, analysts note that the two companies were not successful in merging conflicting cultures together.

I began my career in education believing that schooling was principally about teachers, curriculum, and methods. I began leading Socratic Seminars, open-ended discussions of poems, stories, and essays, in Chicago public schools as a teacher trainer for Mortimer Adler's Paideia Program. The ideal of Paideia was to provide a great liberal arts education to all children; in the language of Robert M. Hutchins, "The best education for the best students is the best education for all." Paideia was conceptualized as a "school reform" project that advocated changes in curriculum (classical liberal arts as opposed to vocational) and methods (a balance of didactic teaching, the coaching of skills, and Socratic discussion).

Although on some occasions we were successful in having dynamic, thoughtful conversations in public school classrooms, on other occasions the conversations were dreadful. Although I firmly believed in the ideals of Paideia reform, much of what I saw in practice was a hideous waste of grant monies. Teachers who had neither interest nor ability to lead intellectual dialogue would barely put up with this reform initiative that had been thrust upon them, and consequently massive amounts of funding were being

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spent on a charade. They pretended to implement Paideia, we pretended that they were implementing it.

I then took a position with a far more effective Paideia program in Alaska. There were two key differences: First, the teacher trainers only worked with teachers who had invited the trainers into their classrooms – it was a bottom up rather than top down approach. More importantly, rather than a once per week Socratic Seminar with students who were frankly unprepared for intellectual dialogue, we worked with students four or five days per week, an hour or two per day, coaching them on how to read critically, how to work together as a group, and how to take ideas seriously (believe it or not, this is a rare skill among most public school students and many teachers). Through this approach, we tasted success!

By means of focusing on these prerequisites to intellectual dialogue – critical reading, group process, and taking ideas seriously – we were able to create far more effective programs than were the case in Chicago. But especially with those groups of students that were most alienated from learning and most unfamiliar with the social norms and intellectual habits underlying the practice of intellectual dialogue, we found that it took a four-day per week commitment of at least an hour per day in order to develop students' skills adequately. Often we would work through one very difficult academic paragraph each day in an inner city school. Such intense close reading was profoundly beneficial for the students – but from another perspective we weren't covering any curriculum.

Instead of covering curriculum, in the usual sense, we were 100% focused on changing students' social and intellectual habits. By changing their social norms, from norms hostile to learning to norms that supported learning, we were changing their culture. And by changing their mental habits from those of passivity to those of activity we were also changing their culture. We were creating independent thinkers among populations of students who had been written off as incapable of thinking. But sometimes it took months to see results, while we were covering almost no curriculum at all.

When our funding was threatened I measured the results using the Watson-Glaser Critical Thinking Appraisal (WGCTA), and found in one four month trial with approximately 100 students that the males posted slightly greater than average gains while females gained more than twice the annual national average in that four month period. More importantly, minority females in particular posted higher gains in critical thinking skills in four months than does the average American student in four years of high schools. (Male minority gains were modestly higher than average; my interpretation is that we were just beginning to win them over after four months). While often conservatives ridicule programs that claim to develop "critical thinking," the WGCTA is not a trivial test: it is highly correlated with both SAT and IQ scores.

While I am interested in very diverse educational experiments, and believe that it is important to support diverse experiments, here I will focus on one very important goal that will require the deep cultural approach to education that I've sketched above:

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Raising African-American SAT verbal scores.[10] At present, African-American SAT scores are about 100 points, or one Standard Deviation, lower than White SAT scores. SAT scores correlate well with IQ scores; indeed, they are often used as proxies for IQ scores.

Richard Herrnstein and Charles Murray's infamous book *The Bell Curve* received publicity largely because of its suggestion that racial differences in IQ were genetic. A host of work has been published to refute this particular notion. What was not disputed in the book was its primary thesis: Virtually all social dysfunction in the U.S. is highly correlated with IQ.

For instance, they cite a large-scale longitudinal study of young adults in which only 2% of women in the top 5% of the IQ distribution had had a child out of wedlock, whereas 32% of the women in the bottom 5% of the IQ distribution had had a child out of wedlock. In looking strictly at poverty among whites, only 2% of those in the top 5% of the IQ distribution were poor, whereas 30% of those in the bottom 5% of the IQ distribution were poor. IQ is that it is a more powerful predictor of social dysfunction than is poverty, education, or socioeconomic status. Insofar as this is true, providing America's underclass with more education and more money will not solve many of the most fundamental problems of the underclass.

Herrnstein and Murray are skeptical of efforts to raise IQ, and cite numerous failed attempts to do so, ranging from childhood nutrition, though Head Start, and on to the usual litany of failed school reform initiatives. Their conclusions are grim: they anticipate a society permanently stratified by IQ, in which the cognitive elite may pay for the needs of the cognitively deprived, but by means of a "custodial state" as it becomes increasingly apparent that there are large numbers of people who are incompetent to take care of themselves or their children. They believe that most government interventions can only ameliorate the problems faced by these people; that on their own, these people are destined to commit crimes, go on welfare, and neglect their children at much higher rates than the rest of society.

Herrnstein and Murray are among the many advocates of school choice who don't believe that school choice will significantly improve the academic performance of those students who are not already capable students. Often experienced teachers likewise don't believe that dumb kids can be made bright; decades of classroom experience has convinced them that there is a strict hierarchy of intelligence, and there are some who are adept at school and some who are not.

I don't know how much my programs can increase intelligence. When Herrnstein and Murray note that some long-term programs with some features similar to mine have been shown to increase SAT scores, they claim that such programs are amount to coaching the

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[10] Cf. Roland Fryer's work on how the issue of academic performance being perceived as "Acting White" depressing African-American academic performance, in *Education Next*, Winter 2006, http://www.educationnext.org/20061/52.html.

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skills measured on the SAT. Well, yes, and what is wrong with that? If a program increases children's ability to reason and think for themselves, it would seem as if it is a good program, especially given the litany of issues associated with low IQ (or low SAT) scores listed above. (Again, although the SAT is controversial, the SAT verbal is a great test of the ability to read and understand sophisticated prose; most students who score below 300 SAT verbal would not be capable of understanding this essay. Many with scores below 400 SAT verbal would struggle with this prose).

Here is it important to differentiate between two types of SAT coaching: The first category consists of those short courses (less than a semester) that focus on brushing up skills, teaching test-taking strategies, and various tricks. Despite the advertisements of SAT prep companies, these approaches tend to have modest benefits. The second category consists of long-term skill development in fundamental mathematical and verbal skills; what should have been the result of a solid liberal arts education. This type of education, which is still offered at private schools such as Philips Andover Academy, is rare in public schools today. Both Mortimer Adler and Ted Sizer were attempting to bring this classic liberal arts educational experience into the American public school classroom. What neither realized is that it is impossible to implement this change with our existing set of teachers and institutions.

The traditional prep school liberal arts curriculum was designed for children from families in which the cultural pre-requisites for learning were already in place. Adjustments must be made, such as my approach of working paragraph by paragraph while also teaching group process skills, for populations from students who lack the appropriate cultural pre-requisites. A student who prepares in advance and then attends a lecture and is thinking and questioning throughout the lecture receives a fundamentally different education from a student who attends the same lecture but who did not read the material, can't understand many of the words in the lecture, has no experience thinking or discussing ideas, and sees no point in the entire educational process. The first student, with the appropriate cultural pre-requisites, may indeed obtain intellectual stimulation by means of traditional textbooks and lectures. The second student, put in exactly the same situation, will get nothing out of the experience except boredom and frustration. The first will be perceived as smart, the second as stupid. And after years of these differing experiences in the same classroom, one active and thinking, the other bored and frustrated, the mind of the first will indeed develop and the mind of the second may well stultify.

With respect to the development of the body, everyone knows that exercise builds strong muscles. Many parents of high-performing students, especially immigrant parents with high hopes for their children, share a similar belief, and urge their children to read books and then discuss those books with their children at length. James Mill famously discussed books with his son for hours each day, thereby creating one of the greatest minds of the 19th century. Jewish culture, in particular, is deeply committed to the rational discussion of ideas; a rabbi is a teacher who has been trained in the ancient Jewish tradition of discussing various interpretations of the holy texts. Whatever the

genetic component of intelligence, it seems certain to me that a mind that is actively thinking year, after year, after year will be more fit and developed than has been a mind that has been frustrated and bored year, after year, after year. Just as a great coach can take a flabby body and get it in shape, I believe that I can take a classroom of stultified minds, of whatever culture or race, and create active, lively thinkers out of them.

Most educated adults represent a subset of the population who unknowingly had the cultural pre-requisites for academic success. Often these cultural pre-requisites are clearly identifiable: *Albion's Seed* tells the story of how colonial immigration patterns from Britain resulted in cultural patterns that persist into the present day. Among those immigration patterns is the particular commitment to education characteristic of the Protestant religious groups that settled in the Northeast – and to this day the Northeast is the top performing academic region in the U.S. Of course the cultural legacy of the Puritans and related groups has been increased by the massive Jewish presence in the Northeast, for reasons described above (there are suggestions that superior Jewish performance is genetic; whatever genetic advantages they have, there are indisputably cultural advantages with respect to the Jewish culture of learning). Those nations in Asia that are heir to the Confucian cultural legacy are also heir to a deep cultural commitment to learning. Within India, there are particular groups with a similar commitment.

In Joel Kotkin's *Tribes*, he says "to succeed in the modern world, be Jewish, be Indian, but most of all, be Chinese." Because of the stark differences in academic performance among people from different cultural tribes, an increasing number of people believe that there may be genetic differences in intellectual ability. Based on my experience developing intellectuality among populations in which it appears to be entirely absent, I believe we have dramatically underestimated the extent to which we can develop students' minds.

School as it is now structured is relatively well-designed for those students who happen to have the cultural pre-requisites to perform well in school. It is profoundly ineffective for those students who happen to lack those cultural pre-requisites. If we limit ourselves to charter school innovations, we may thereby re-enforce the cultural biases of existing schooling.

The multiculturalist approach to this issue has been to include black and Hispanic authors and role models in the curriculum. As long as this is done honestly, this is a good thing. But it doesn't teach kids who have been taught to be passive, in homes without intellectual dialogue, how to read, think, and discuss ideas. Young people who lack such training in the home need to be taught it at school.

The common reaction to such an argument is "Well, let's do this in public schools then." At present I cannot implement a program for which I would predict success in most public schools because:

1. I need freedom from the pressure to cover state-mandated curriculum.

2. I need a 15:1 ratio at least part of the day.
3. I need bright, self-selected teachers who have been highly trained in my approach.

In practice, of course, each of these challenges can be occasionally met in a public school, and have in fact been partially met in several public school programs.

But there are three reasons why even if a district or a state gave me carte blanche on these three issues I would not be enthusiastic about the program's long-term success:

1. No organizational quality control.
2. There might be other innovations, requiring other freedoms, needed to make it successful on a large scale.
3. There are certainly other pedagogical innovations, completely different from mine, that would benefit students as much or more than mine.

With respect to organizational quality control we have already sketched the reasons why this is an important element of any school reform going forward. Here I will simply re-iterate that unless I know that a particular organization has a long-term commitment and capacity to monitor the quality of such discussions, they are likely to turn into garbage over time. There are very, very specific characteristics of such discussions that must take place in order for them to develop intelligence, and lacking some of those characteristics, classroom discussions easily degenerate into bull sessions.[11]

When I think of scaling up my programs, I acknowledge that quality control is my deepest challenge; I've already concluded that even the franchise model is not adequate. To scale up, I need to be working in an organization that owns all the schools in its network, and that has very clear internal criteria on hiring, firing, evaluating, and promoting the Socratic teachers in its schools. Other teachers, practicing other sophisticated pedagogies, would need their own distinctive training programs along with specific criteria for hiring, firing, evaluating, and promoting; I know of a math program that has produced national math champions which would require this level of unique training and supervision of specialized math teachers.[12]

Because in fifteen years I have only had a few decent measured trials of the program, I don't yet know exactly what additional freedoms I may need to ensure ever greater quality as I scale up. Having run a charter school, I am acutely aware of exactly how constraining a bureaucracy can be. Most of the people running charter schools are public school educators who find them to be remarkably free from constraints. But for anyone with a more expansive vision of education, for anyone who demands very high level

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[11] See Michael Strong, *The Habit of Thought: From Socratic Seminars to Socratic Practice*, (New View Publications: Chapel Hill, 1997) for a more detailed description of my pedagogy. Even with a book-length treatment, I have discovered that in order to guarantee success I need to train teachers for at least a year.

[12] There is a complicated history associated with *The Institute for Mathematics and Computer Science* in Florida. They started out as a public school program, were eventually dumped by public schools, and have since become a successful, high-priced after school math enrichment franchise.

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consistency in a pedagogy that focuses on changing the moment-to-moment habits and attitudes of specific student populations, the constraints may limit ongoing quality improvements. People with a passionate creative vision do not want their visions of excellence limited by arbitrary rules.

And finally, no matter what I do I realize that there are thousands and thousands of other experiments that deserve the chance to develop. I am a great believer in Montessori education as a means of allowing students to develop initiative and cover material at their own pace. I've seen students in Montessori elementary and middle schools became far more mature and capable than comparable students in conventional schools. And, although there are charter Montessori schools, they are required to cover state standards, hire conventionally licensed teachers, and follow a multitude of other rules that limit the extent to which they can follow the child.

I once gave the CEO of a major internet company a tour of the Montessori middle school I was running in Palo Alto. He looked at the students quality going about their work and asked me "How do you do it? This is exactly what I want my employees to be doing." The answer, of course, is that it had taken years of habituation in Montessori classrooms committed to developing internal motivation and focus. As with my Socratic work, great Montessori educators are creating a distinctive culture, quite different from the culture based on external motivation and control that is characteristic of conventional schools. And yet, as the CEO noted, focused, internally-driven individuals who can think creatively and critically will be the valuable employees in the 21st century job market. Again, insofar as some students are culturally advantaged with respect to the development of such skills, why should we commit ourselves for the long term to conventional educational models that perpetuate existing patterns of cultural advantage?

Obviously I am making a much longer and deeper argument here.[13] Most people find the notion of creating a new culture as the goal of education to be more or less impossible to imagine. But I predict that if my first three suggestions are followed, prediction markets, scalable organizations with professional quality control, and associated teacher training programs, that my comments about the goal of school being the creation of a distinctive cultural will become more and more obvious. Indeed, I predict that the head of Hi Tech High would find such a description compelling.

I have talked to dozens of educational innovators over the years, and although very few of them had spontaneously understood their work as creating a distinctive culture, once I spell out to them what is working about their program and why, many acknowledge that that is exactly what they are doing. Most of the great educators who want to disseminate their programs more widely realize that training teachers in their methods is crucial, and the more successful are their methods the more that success relies on developing consistent habits and norms of interaction among the teachers.

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[13] See my essay "The Creation of Conscious Culture Through Educational Innovation" for greater development of this theme, http://flowproject.org/Downloads/Conscious-Culture.pdf.

We spend approximately $100,000 per student in K-12 education, and another $100,000 training each teacher. Most of this investment is wasted, especially for African-American, Hispanic, and Native American students, because many of them lack the cultural pre-requisites to succeed within our existing educational institutions. Rather than spend $60 billion on government-managed schools staffed by government-certified teachers, and having nothing to show for it but yet higher teen pregnancy rates, the Gateses should continue their brilliant start at creating alternative sets of institutions that are far more effective at serving all students. They may thereby create a renaissance not only for minority students, but for our entire culture.

The U.S. led the 20th century because it led science and technology; the country that leads in human development will lead in the 21st century. There is every reason to believe that Chinese students have the pre-requisites to succeed as scientists, engineers, and entrepreneurs in the existing educational paradigm. There is therefore every reason to believe that, as China succeeds in completely transitioning to a full-blown market economy, that their 1.3 billion extraordinarily hard-working, educationally committed, entrepreneurially-inclined citizens will determine the fate of the world in the 21st century. If the U.S. and other multi-cultural nations want to remain competitive, and provide broad-based economic success for their peoples, they must let go of a paradigm that only works for some cultural groups. The Gates Foundation is uniquely positioned to create a more successful set of educational institutions for the multi-cultural world of the 21st century. May they do so, and not waste $60 billion in K-12 educational philanthropy.

Appendix: The Best Practices Framework from the National Center for Educational Accountability, http://www.just4kids.org/bestpractice. The "quality control" strategy here is for districts to use this 3 x 5 matrix for self-audits that thereby ensure that best practices are used. Prediction markets will estimate the actual efficacy of this approach to school improvement across thousands of different districts with constantly shifting school boards, superintendents, and administrators.

ORGANIZING THEMES	DISTRICT PRACTICES	SCHOOL PRACTICES	CLASSROOM PRACTICES
CURRICULUM & ACADEMIC GOALS	Define clear and specific academic objectives by grade and subject	Center school plan on explicit improvement of specific academic objectives	Ensure teaching content is based on specified academic objectives
STAFF SELECTION, LEADERSHIP, & CAPACITY BUILDING	Provide strong instructional leaders, highly qualified teachers, and aligned professional development	Select, develop, and allocate staff based on student learning	Collaborate in grade/subject level teams focused on student work
INSTRUCTIONAL PROGRAMS, PRACTICES, & ARRANGEMENTS	Provide evidence-based instructional programs	Ensure the use of evidence-based programs, practices, and arrangements in every classroom	Use evidence-based programs, practices, and arrangements
MONITORING: COMPILATION, ANALYSIS, & USE OF DATA	Develop student assessment and data monitoring systems to monitor school performance	Monitor teacher performance and student learning	Monitor student learning
RECOGNITION, INTERVENTION, & ADJUSTMENTS	Recognize, intervene, or adjust based on school performance	Recognize, intervene, or adjust based on teacher and student performance	Recognize, intervene, or adjust based on student performance