STOP STEALING DREAMS

(what is school for?)

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if you don't underestimate me, I won't underestimate you

Bob Dylan

Dedicated to every teacher who cares enough to change the system, and to every student brave enough to stand up and speak up.

Specifically, for Ross Abrams, Jon Guillaume, Beth Rudd, Steve Greenberg, Benji Kanters, Patti Jo Wilson, Florian Kønig, and that one teacher who changed everything for you.

1. Preface: Education transformed

As I was finishing this manifesto, a friend invited me to visit the Harlem Village Academies, a network of charter schools in Manhattan.

Harlem is a big place, bigger than most towns in the United States. It's difficult to generalize about a population this big, but household incomes are less than half of what they are just a mile away, unemployment is significantly higher and many (in and out of the community) have given up hope.

A million movies have trained us about what to expect from a school in East Harlem. The school is supposed to be an underfunded processing facility, barely functioning, with bad behavior, questionable security and most of all, very little learning.

Hardly the place you'd go to discover a future of our education system.

For generations, our society has said to communities like this one, "here are some teachers (but not enough) and here is some money (but not enough) and here are our expectations (very low) … go do your best." Few people are surprised when this plan doesn't work.

Over the last ten years, I've written more than a dozen books about how our society is being fundamentally changed by the impact of the internet and the connection economy. Mostly I've tried to point out to people that the very things we assumed to be baseline truths were in fact fairly recent inventions and unlikely to last much longer. I've argued that mass marketing, mass brands, mass communication, top-down media and the TV-industrial complex weren't the pillars of our future that many were trained to expect. It's often difficult to see that when you're in the middle of it.

In this manifesto, I'm going to argue that top-down industrialized schooling is just as threatened, and for very good reasons. Scarcity of access is destroyed by the connection economy, at the very same time the skills and attitudes we need from our graduates are changing.

While the internet has allowed many of these changes to happen, you won't see much of the web at the Harlem Village Academy school I visited, and not so much of it in this manifesto, either. The HVA is simply about people and the way they should be treated. It's about abandoning a top-down industrial approach to processing students and embracing a very human, very personal and very powerful series of tools to produce a new generation of leaders.

There are literally thousands of ways to accomplish the result that Deborah Kenny and her team at HVA have accomplished. The method doesn't matter to me, the outcome does. What I saw that day were students leaning forward in their seats, choosing to pay attention. I saw teachers engaged because they chose to as well, because they were thrilled at the privilege of teaching kids who wanted to be taught.

The two advantages most successful schools have are plenty of money and a pre-selected, motivated student body. It's worth highlighting that the HVA doesn't get to choose its

students, they are randomly assigned by lottery. And the HVA receives less funding per student than the typical public school in New York. HVA works because they have figured out how to create a workplace culture that attracts the most talented teachers, fosters a culture of ownership, freedom and accountability, and then relentlessly transfers this passion to their students.

Maestro Ben Zander talks about the transformation that happens when a kid actually learns to love music. For one year, two years, even three years, the kid trudges along. He hits every pulse, pounds every note and sweats the whole thing out.

Then he quits.

Except a few. The few with passion. The few who care.

Those kids lean forward and begin to *play*. They play as if they care, because they do. And as they lean forward, as they connect, they lift themselves off the piano seat, suddenly becoming, as Ben calls them, one-buttock players.

Playing as if it matters.

Colleges are fighting to recruit the kids who graduate from Deborah's school and I have no doubt that we'll soon be hearing of the leadership and contribution of the HVA alumni—one-buttock players who care about learning and giving. Because it matters.

2. A few notes about this manifesto

I've numbered the sections because it's entirely possible you'll be reading it with a different layout than others will. The numbers make it easy to argue about particular sections.

It's written as a series of essays or blog posts, partly because that's how I write now, and partly because I'm hoping that one or more of them will spur you to share or rewrite or criticize a point I'm making. One side effect is that there's some redundancy. I hope you can forgive me for that. I won't mind if you skip around.

This isn't a prescription. It's not a manual. It's a series of provocations, ones that might resonate and that I hope will provoke conversation.

None of this writing is worth the effort if the ideas aren't shared. Feel free to email or reprint this manifesto, but please don't change it or charge for it. If you'd like to tweet, the hashtag is #stopstealingdreams. You can find a page for comments at http://www.stopstealingdreams.com

Most of all, go do something. Write your own manifesto. Send this one to the teachers at your kid's school. Ask hard questions at a board meeting. Start your own school. Post a video lecture or two. But don't settle.

Thanks for reading and sharing.

3. Back to (the wrong) school

A hundred and fifty years ago, adults were incensed about child labor. Low-wage kids were taking jobs away from hard-working adults.

Sure, there was some moral outrage about seven-year-olds losing fingers and being abused at work, but the economic rationale was paramount. Factory owners insisted that losing child workers would be catastrophic to their industries and fought hard to keep the kids at work—they said they couldn't afford to hire adults. It wasn't until 1918 that nationwide compulsory education was in place.

Part of the rationale used to sell this major transformation to industrialists was the idea that educated kids would actually become more compliant and productive workers. Our current system of teaching kids to sit in straight rows and obey instructions isn't a coincidence—it was an investment in our economic future. The plan: trade short-term child-labor wages for longer-term productivity by giving kids a head start in doing what they're told.

Large-scale education was not developed to motivate kids or to create scholars. It was invented to churn out adults who worked well within the system. Scale was more important than quality, just as it was for most industrialists.

Of course, it worked. Several generations of productive, fully employed workers followed. But now?

Nobel prize–winning economist Michael Spence makes this really clear: there are tradable jobs (doing things that could be done somewhere else, like building cars, designing chairs, and answering the phone) and non-tradable jobs (like mowing the lawn or cooking burgers). Is there any question that the first kind of job is worth keeping in our economy?

Alas, Spence reports that from 1990 to 2008, the U.S. economy added only 600,000 tradable jobs.

If you do a job where someone tells you exactly what to do, he will find someone cheaper than you to do it. And yet our schools are churning out kids who are stuck looking for jobs where the boss tells them exactly what to do.

Do you see the disconnect here? Every year, we churn out millions of workers who are trained to do 1925-style labor.

The bargain (take kids out of work so we can teach them to become better factory workers as adults) has set us on a race to the bottom. Some people argue that we ought to become the cheaper, easier country for sourcing cheap, compliant workers who do what they're told. Even if we could win that race, we'd lose. The bottom is not a good place to be, even if you're capable of getting there.

As we get ready for the ninety-third year of universal public education, here's the question every

parent and taxpayer needs to wrestle with: Are we going to applaud, push, or even permit our schools (including most of the private ones) to continue the safe but ultimately doomed strategy of churning out predictable, testable, and mediocre factory workers?

As long as we embrace (or even accept) standardized testing, fear of science, little attempt at teaching leadership, and most of all, the bureaucratic imperative to turn education into a factory itself, we're in big trouble.

The post-industrial revolution is here. Do you care enough to teach your kids to take advantage of it?

4. What is school for?

It seems a question so obvious that it's hardly worth asking. And yet there are many possible answers. Here are a few (I'm talking about public or widespread private education here, grade K through college):

To create a society that's culturally coordinated.

To further science and knowledge and pursue information for its own sake.

To enhance civilization while giving people the tools to make informed decisions.

To train people to become productive workers.

Over the last three generations, the amount of school we've delivered to the public has gone way up—more people are spending more hours being schooled than ever before. And the cost of that schooling is going up even faster, with trillions of dollars being spent on delivering school on a massive scale.

Until recently, school did a fabulous job on just one of these four societal goals. First, the other three:

A culturally coordinated society: School isn't nearly as good at this as television is. There's a huge gulf between the cultural experience in an under-funded, overcrowded city school and the cultural experience in a well-funded school in the suburbs. There's a significant cultural distinction between a high school drop-out and a Yale graduate. There are significant chasms in something as simple as whether you think the scientific method is useful—where you went to school says a lot about what you were taught. If school's goal is to create a foundation for a common culture, it hasn't delivered at nearly the level it is capable of.

The pursuit of knowledge for its own sake: We spend a fortune teaching trigonometry to kids who don't understand it, won't use it, and will spend no more of their lives studying math. We invest thousands of hours exposing millions of students to fiction and literature, but end up training most of them to never again read for fun (one study found that 58 percent of all Americans never read for pleasure after they graduate from school). As soon as we associate reading a book

with taking a test, we've missed the point.

We continually raise the bar on what it means to be a college professor, but churn out Ph.D.s who don't actually teach and aren't particularly productive at research, either. We teach facts, but the amount of knowledge truly absorbed is miniscule.

The tools to make smart decisions: Even though just about everyone in the West has been through years of compulsory schooling, we see ever more belief in unfounded theories, bad financial decisions, and poor community and family planning. People's connection with science and the arts is tenuous at best, and the financial acumen of the typical consumer is pitiful. If the goal was to raise the standards for rational thought, skeptical investigation, and useful decision making, we've failed for most of our citizens.

No, I think it's clear that school was designed with a particular function in mind, and it's one that school has delivered on for a hundred years.

Our grandfathers and great-grandfathers built school to train people to have a lifetime of productive labor as part of the industrialized economy. And it worked.

All the rest is a byproduct, a side effect (sometimes a happy one) of the schooling system that we built to train the workforce we needed for the industrialized economy.

5. Column A and Column B

Aware
Caring
Committed
Creative
Goal-setting
Honest
Improvising
Incisive
Independent
Informed
Initiating
Innovating
Insightful
Leading
Strategic
Supportive ——————————————————— >

or

Obedient

Which column do you pick? Whom do you want to work for or work next to? Whom do you want to hire? Which doctor do you want to treat you? Whom do you want to live with?

Last question: If you were organizing a trillion-dollar, sixteen-year indoctrination program to turn out the next generation of our society, which column would you build it around?

This is more of a rant than a book. It's written for teenagers, their parents, and their teachers. It's written for bosses and for those who work for those bosses. And it's written for anyone who has paid taxes, gone to a school board meeting, applied to college, or voted.

6. Changing what we get, because we've changed what we need

If school's function is to create the workers we need to fuel our economy, we need to change school, because the workers we need have changed as well.

The mission used to be to create homogenized, obedient, satisfied workers and pliant, eager consumers.

No longer.

Changing school doesn't involve sharpening the pencil we've already got. School reform cannot succeed if it focuses on getting schools to do a better job of what we previously asked them to do. *We don't need more of what schools produce when they're working as designed*. The challenge, then, is to change the very output of the school before we start spending even more time and money improving the performance of the school.

The goal of this manifesto is to create a new set of questions and demands that parents, taxpayers, and kids can bring to the people they've chosen, the institution we've built and invested our time and money into. The goal is to change what we get when we send citizens to school.

7. Mass production desires to produce mass

That statement seems obvious, yet it surprises us that schools are oriented around the notion of uniformity. Even though the workplace and civil society demand variety, the industrialized school system works to stamp it out.

The industrialized mass nature of school goes back to the very beginning, to the common school and the normal school and the idea of universal schooling. All of which were invented at precisely the same time we were perfecting mass production and interchangeable parts and then mass marketing.

Some quick background:

The common school (now called a public school) was a brand new concept, created shortly after the Civil War. "Common" because it was for everyone, for the kids of the farmer, the kids of the potter, and the kids of the local shopkeeper. Horace Mann is generally regarded as the father of the institution, but he didn't have to fight nearly as hard as you would imagine—because industrialists were on his side. The two biggest challenges of a newly industrial economy were finding enough compliant workers and finding enough eager customers. The common school solved both problems.

The normal school (now called a teacher's college) was developed to indoctrinate teachers into the system of the common school, ensuring that there would be a coherent approach to the processing of students. If this sounds parallel to the notion of factories producing items in bulk, of interchangeable parts, of the notion of measurement and quality, it's not an accident.

The world has changed, of course. It has changed into a culture fueled by a market that knows how to mass-customize, to find the edges and the weird, and to cater to what the individual demands instead of insisting on conformity.

Mass customization of school isn't easy. Do we have any choice, though? If mass production and mass markets are falling apart, we really don't have the right to insist that the schools we designed for a different era will function well now.

Those who worry about the nature of schools face a few choices, but it's clear that one of them is *not* business as usual. One option is smaller units within schools, less industrial in outlook, with each unit creating its own varieties of leaders and citizens. The other is an organization that understands that size can be an asset, but only if the organization values customization instead of fighting it.

The current structure, which seeks low-cost uniformity that meets minimum standards, is killing our economy, our culture, and us.

8. Is school a civic enterprise?

At the heart of Horace Mann's push for public schooling for all was a simple notion: we build a better society when our peers are educated. Democracy was pretty new, and the notion of putting that much power into the hands of the uneducated masses was frightening enough to lead to the push for universal schooling.

Being surrounded by educated people makes democracy stronger, and it benefits our entire society. In the words of John Dewey, "Democracy cannot flourish where the chief influences in selecting subject matter of instruction are utilitarian ends narrowly conceived for the masses, and, for the higher education of the few, the traditions of a specialized cultivated class. The notion that the "essentials" of elementary education are the three R's mechanically treated, is based upon ignorance of the essentials needed for realization of democratic ideals."

It's easy to see how this concept manifests itself. There are more doctors, scientists, enlightened

businesses, and engaged teachers in a society that values education. Sure, education is expensive, but living in a world of ignorance is even more expensive.

For a long time, there was an overlap between the education that the professions rewarded and the education that we might imagine an educated person would benefit from. Tied up in both paths is the notion that memorizing large amounts of information was essential. In a world where access to data was always limited, the ability to remember what you were taught, without fresh access to all the data, was a critical success factor.

The question I'd ask every administrator and school board is, "Does the curriculum you teach now make our society stronger?"

9. Three legacies of Horace Mann

As superintendent of schools in Massachusetts, Mann basically invented the public school. Except he called it a common school, because a key goal was to involve the common man and raise the standards of the culture. Right from the start:

> Building a person's character was just as important as reading, writing and arithmetic. By instilling values such as obedience to authority, promptness in attendance, and organizing the time according to bell ringing helped students prepare for future employment.

After a self-financed trip to Prussia, he instituted the paramilitary system of education he found there, a system he wrote up and proselytized to other schools, first in the Northeast U.S. and eventually around the country.

His second legacy was the invention of the "normal school."

Normal schools were institutes that taught high school students (usually women) the community norms and gave them instruction and power to go work for common schools as teachers, enforcing these norms across the system.

His third legacy, one with which I find no fault, was banning corporal punishment from schools. As further proof that his heart was ultimately in the right place, the man who industrialized the public schools he created left us with this admonition,

> …be ashamed to die until you have won some victory for humanity.

Unfortunately, that part of his curriculum is almost never taught in school.

10. Frederick J. Kelly and your nightmares

In 1914, a professor in Kansas invented the multiple-choice test. Yes, it's less than a hundred years old.

There was an emergency on. World War I was ramping up, hundreds of thousands of new immigrants needed to be processed and educated, and factories were hungry for workers. The government had just made two years of high school mandatory, and we needed a temporary, high-efficiency way to sort students and quickly assign them to appropriate slots.

In the words of Professor Kelly, "This is a test of lower order thinking for the lower orders."

A few years later, as President of the University of Idaho, Kelly disowned the idea, pointing out that it was an appropriate method to test only a tiny portion of what is actually taught and should be abandoned. The industrialists and the mass educators revolted and he was fired.

The SAT, the single most important filtering device used to measure the effect of school on each individual, is based (almost without change) on Kelly's lower-order thinking test. Still.

The reason is simple. Not because it works. No, we do it because it's the easy and efficient way to keep the mass production of students moving forward.

11. To efficiently run a school, amplify fear (and destroy passion)

School's industrial, scaled-up, measurable structure means that fear must be used to keep the masses in line. There's no other way to get hundreds or thousands of kids to comply, to process that many bodies, en masse, without simultaneous coordination.

And the flip side of this fear and conformity must be that passion will be destroyed. There's no room for someone who wants to go faster, or someone who wants to do something else, or someone who cares about a particular issue. Move on. Write it in your notes; there will be a test later. A multiple-choice test.

Do we need more fear?

Less passion?

12. Is it possible to teach attitudes?

The notion that an organization could teach anything at all is a relatively new one.

Traditionally, society assumed that artists, singers, artisans, writers, scientists, and alchemists would find their calling, then find a mentor, and *then* learn their craft. It was absurd to think that you'd take people off the street and teach them to do science or to sing, and persist at that teaching long enough for them to get excited about it.

Now that we've built an industrial solution to teaching in bulk, we've seduced ourselves into believing that the only thing that can be taught is the way to get high SAT scores.

We shouldn't be buying this.

We can teach people to make commitments, to overcome fear, to deal transparently, to initiate, and to plan a course.

We can teach people to desire lifelong learning, to express themselves, and to innovate.

And just as important, it's vital we acknowledge that we can *unteach* bravery and creativity and initiative. And that we have been doing just that.

School has become an industrialized system, working on a huge scale, that has significant byproducts, including the destruction of many of the attitudes and emotions we'd like to build our culture around.

In order to efficiently jam as much testable data into a generation of kids, we push to make those children compliant, competitive zombies.

13. Which came first, the car or the gas station?

The book publisher or the bookstore?

Culture changes to match the economy, not the other way around. The economy needed an institution that would churn out compliant workers, so we built it. Factories didn't happen because there were schools; schools happened because there were factories.

The reason so many people grow up to look for a job is that the economy has needed people who would grow up to look for a job.

Jobs were invented before workers were invented.

In the post-job universe, workers aren't really what we need more of, but schools remain focused on yesterday's needs.

14. The wishing and dreaming problem

If you had a wish, what would it be? If a genie arrived and granted you a wish, would it be a worthwhile one?

I think our wishes change based on how we grow up, what we're taught, whom we hang out with, and what our parents do.

Our culture has a dreaming problem. It was largely created by the current regime in schooling, and it's getting worse.

Dreamers in school are dangerous. Dreamers can be impatient, unwilling to become well-rounded, and most of all, hard to fit into existing systems.

One more question to ask at the school board meeting: "What are you doing to fuel my kid's dreams?"

15. "When I grow up, I want to be an astronaut assistant"

Jake Halpern did a rigorous study of high school students. The most disturbing result was this:

"When you grow up, which of the following jobs would you most like to have?"

The chief of a major company like General Motors

A Navy SEAL

A United States Senator

The president of a great university like Harvard or Yale

The personal assistant to a very famous singer or movie star

The results:

Among girls, the results were as follows: 9.5 percent chose "the chief of a major company like General Motors"; 9.8 percent chose "a Navy SEAL"; 13.6 percent chose "a United States Senator"; 23.7 percent chose "the president of a great university like Harvard or Yale"; and 43.4 percent chose "the personal assistant to a very famous singer or movie star."

Notice that these kids were okay with not actually being famous—they were happy to be the *assistant* of someone who lived that fairy tale lifestyle.

Is this the best we can do? Have we created a trillion-dollar, multimillion-student, sixteen-year schooling cycle to take our best and our brightest and snuff out their dreams—sometimes when they're so nascent that they haven't even been articulated? Is the product of our massive schooling industry an endless legion of assistants?

The century of dream-snuffing has to end. We're facing a significant emergency, one that's not just economic but cultural as well. The time to act is right now, and the person to do it is you.

16. School is expensive

It's also not very good at doing what we need it to do. We're not going to be able to make it much cheaper, so let's figure out how to make it a lot better.

Not better at what it already does. Better at educating people to do what needs to be done.

Do you need a competent call-center employee? School is good at creating them, but it's awfully expensive. Do we really need more compliant phone operators, and at such a high cost?

Given the time and money being invested, what I want to know, what every parent and every taxpayer and every student should want to know, is: Is this the right plan? Is this the best way to produce the culture and economy we say we want?

What is school for?

If you're not asking that, you're wasting time and money.

Here's a hint: *learning is not done to you.* Learning is something you choose to do.

17. Reinventing school

If the new goal of school is to create something different from what we have now, and if new technologies and new connections are changing the way school can deliver its lessons, it's time for a change.

Here are a dozen ways school can be rethought:

Homework during the day, lectures at night

Open book, open note, all the time

Access to any course, anywhere in the world

Precise, focused instruction instead of mass, generalized instruction

The end of multiple-choice exams

Experience instead of test scores as a measure of achievement

The end of compliance as an outcome

Cooperation instead of isolation

Amplification of outlying students, teachers, and ideas

Transformation of the role of the teacher

Lifelong learning, earlier work

Death of the nearly famous college

It's easier than ever to open a school, to bring new technology into school, and to change how we teach. But if all we do with these tools is teach compliance and consumption, that's all we're going to get. School can and must do more than train the factory workers of tomorrow.

18. Fast, flexible, and focused

It's clear that the economy has changed. What we want and expect from our best citizens has changed. Not only in what we do when we go to our jobs, but also in the doors that have been opened for people who want to make an impact on our culture.

At the very same time, the acquisition of knowledge has been forever transformed by the Internet. Often overlooked in the rush to waste time at Facebook and YouTube is the fact that the Internet is the most efficient and powerful information delivery system ever developed.

The change in the economy and the delivery of information online combine to amplify the speed of change. These rapid cycles are overwhelming the ability of the industrialized system of education to keep up.

As a result, the education-industrial system, the one that worked very well in creating a century's worth of factory workers, lawyers, nurses, and soldiers, is now obsolete.

We can prop it up or we can fix it.

I don't think it's practical to say, "We want what we've been getting, but cheaper and better." That's not going to happen, and I'm not sure we want it to, anyway.

We need school to produce something different, and the only way for that to happen is for us to ask new questions and make new demands on every element of the educational system we've built. Whenever teachers, administrators, or board members respond with an answer that refers to a world before the rules changed, they must stop and start their answer again.

No, we do not need you to create compliance.

No, we do not need you to cause memorization.

And no, we do not need you to teach students to embrace the status quo.

Anything a school does to advance those three agenda items is not just a waste of money, but actually works against what we do need. The real shortage we face is dreams, and the wherewithal and the will to make them come true.

No tweaks. A revolution.

19. Dreams are difficult to build and easy to destroy

By their nature, dreams are evanescent. They flicker long before they shine brightly. And when they're flickering, it's not particularly difficult for a parent or a teacher or a gang of peers to snuff them out.

Creating dreams is more difficult. They're often related to where we grow up, who our parents

are, and whether or not the right person enters our life.

Settling for the not-particularly uplifting dream of a boring, steady job isn't helpful. Dreaming of being picked—picked to be on TV or picked to play on a team or picked to be lucky—isn't helpful either. We waste our time and the time of our students when we set them up with pipe dreams that don't empower them to adapt (or better yet, lead) when the world doesn't work out as they hope.

The dreams we need are self-reliant dreams. We need dreams based not on what is but on what might be. We need students who can learn how to learn, who can discover how to push themselves and are generous enough and honest enough to engage with the outside world to make those dreams happen.

I think we're doing a great job of destroying dreams at the very same time the dreams we do hold onto aren't nearly bold enough.

20. Life in the post-institutional future

In *Civilization*, his breakthrough book about the ascent (and fall) of Western civilization, Niall Ferguson makes the case that four hundred years of Western dominance was primarily due to six institutions that were built over time—not great men, or accidents of weather or geography, but long-lasting, highly leveraged institutional advantages that permitted us to grow and prosper.

Competition, the scientific method, property rights, medicine, consumption, and jobs were all brand new ideas, put into place and then polished over time. The result of this infrastructure was the alignment of institutions and outputs that enabled us to live in the world we take for granted today.

The industrial age is the most obvious example. Once the template was set for productivity-enhancing, profit-creating factories, the work of millions could be coordinated and wealth would be created.

The next century offers fewer new long-lasting institutions (we're seeing both organized religion and the base of industry fading away), to be replaced instead with micro-organizations, with individual leadership, with the leveraged work of a small innovative team changing things far more than it ever would have in the past. The six foundational elements are taken for granted as we build a new economy and a new world on top of them.

Amplified by the Web and the connection revolution, human beings are no longer rewarded most for work as compliant cogs. Instead, our chaotic world is open to the work of passionate individuals, intent on carving their own paths.

That's the new job of school. Not to hand a map to those willing to follow it, but to inculcate leadership and restlessness into a new generation.

21. Two bumper stickers

The first one is sad, selfish, and infuriating. I often see it on late-model, expensive cars near my town. It says, "Cut School Taxes."

These drivers/voters/taxpayers have given up on the schools, or they have kids who have graduated, and/or they're being selfish. None of these points of view fill me with optimism about our future.

The other bumper sticker is the one I never see. It says, "Make School Different."

I think if we followed the advice of the second, non-existent bumper sticker, we might be onto something.

School belongs to parents and their kids, the ones who are paying for it, the ones it was designed for. It belongs to the community, too, the adults who are going to be living and working beside the graduates the school churns out.

Too often, all these constituents are told to treat school like an autonomous organism, a pre-programmed automaton, too big to change and too important to mess with.

Well, the world changed first. Now it's time for school to follow along.

22. The connection revolution is upon us

It sells the moment short to call this the Internet revolution. In fact, the era that marks the end of the industrial age and the beginning of something new is ultimately about connection.

The industrial revolution wasn't about inventing manufacturing, it was about amplifying it to the point where it changed everything. And the connection revolution doesn't invent connection, of course, but it amplifies it to become the dominant force in our economy.

Connecting people to one another.

Connecting seekers to data.

Connecting businesses to each other.

Connecting tribes of similarly minded individuals into larger, more effective organizations.

Connecting machines to each other and creating value as a result.

In the connection revolution, value is not created by increasing the productivity of those manufacturing a good or a service. Value is created by connecting buyers to sellers, producers to consumers, and the passionate to each other.

This meta-level of value creation is hard to embrace if you're used to measuring sales per square foot or units produced per hour. In fact, though, connection leads to an extraordinary boost in productivity, efficiency, and impact.

In the connected world, reputation is worth more than test scores. Access to data means that data isn't the valuable part; the processing is what matters. Most of all, the connected world rewards those with an uncontrollable itch to make and lead and matter.

In the pre-connected world, information was scarce, and hoarding it was smart. Information needed to be processed in isolation, by individuals. After school, you were on your own.

In the connected world, all of that scarcity is replaced by abundance—an abundance of information, networks, and interactions.

23. And yet we isolate students instead of connecting them

Virtually every academic activity in school is done solo. Homework. Exams. Writing. The lectures might take place in a crowded room, but they too are primarily one-way.

How is this focus on the isolated individual going to match up with what actually happens in every field of endeavor? No competent doctor says, "I don't know what to do, I'll figure it out myself." No academic researcher or steelworker or pilot works in complete isolation.

Group projects are the exception in school, but they should be the norm. Figuring out how to leverage the power of the group—whether it is students in the same room or a quick connection to a graphic designer across the sea in Wales—is at the heart of how we are productive today.

24. If education is the question, then teachers are the answer

Walking through the Harlem Village Academy, the first thing most people notice is the noise. There isn't any.

Please understand: it's not quiet like a morgue or a library. There are the sounds of engaged students and of motivated teachers, but there's no chaos. The chaos we've been trained to associate with an inner-city school is totally missing.

If the casual visitor walks away thinking that Dr. Kenny's secret is that she has figured out how to get eleven-year old kids to become obedient, he will have missed 95% of what makes this school work.

On the first day, she tells the student body, "we are strict because we love you." And she means it. Most schools are strict because that's their job, or strict because it makes their lives easier. The revolutionary element of HVA isn't the strictness. It's the love.

Beginning with the foundation of a respectful (and respected) student body, Deborah Kenny has added something exciting: she lets the teachers teach.

This isn't a factory designed to churn out education at the highest speed for the lowest cost. No, this is handmade education. Teachers don't teach to the test. Teachers don't even teach to the pre-approved standardized curriculum. At HVA, *teachers who care teach students who care*.

Simple.

Is it any surprise that this is revolutionary?

25. What if we told students the truth?

Transparency in the traditional school might destroy it. If we told the truth about the irrelevance of various courses, about the relative quality of some teachers, about the power of choice and free speech—could the school as we know it survive?

What happens when the connection revolution collides with the school?

Unlike just about every other institution and product line in our economy, transparency is missing from education. Students are lied to and so are parents. At some point, teenagers realize that most of school is a game, but the system neer acknowledges it. In search of power, control and independence, administrators hide information from teachers, and vice versa.

Because school was invented to control students and give power to the state, it's not surprising that the relationships are fraught with mistrust.

The very texture of the traditional school matches the organization and culture of the industrial economy. The bottom of the pyramid stores the students, with teachers (middle managers) following instructions from their bosses.

As in the traditional industrial organization, the folks at the bottom of the school are ignored, mistreated, and lied to. They are kept in the dark about anything outside of what they need to know to do their job (being a student), and put to work to satisfy the needs of the people in charge. Us and them.

The connection economy destroys the illusion of control. Students have the ability to find out which colleges are a good value, which courses make no sense, and how people in the real world are actually making a living. They have the ability to easily do outside research, even in fifth grade, and to discover that the teacher (or her textbook) is just plain wrong.

When students can take entire courses outside of the traditional school, how does the school prevent that? When passionate students can start their own political movements, profitable companies, or worthwhile community projects without the aegis of a school, how are obedience and fealty enforced?

It's impossible to lie and manipulate when you have no power.

26. School as a contract of adhesion

Friedrich Kessler, writing in 1943 in the *Columbia Law Review*, articulated a new kind of contract, one for the industrial age. Rather than being individually negotiated with each party, a contract of adhesion is a take-it-or-leave-it mass deal.

The industrialist says, use this car or this software or this telephone, and merely by using it, you are agreeing to our terms and conditions. With a hat tip to Doc Searls (tk link), here's what Kessler wrote:

> The development of large scale enterprise with its mass production and mass distribution made a new type of contract inevitable—the standardized mass contract. A standardized contract, once its contents have been formulated by a business firm, is used in every bargain dealing with the same product or service. The individuality of the parties which so frequently gave color to the old type of contract has disappeared. The stereotyped contract of today reflects the impersonality of the market.... Once the usefulness of these contracts was discovered and perfected in the transportation, insurance, and banking business, their use spread into all other fields of large scale enterprise, into international as well as national trade, and into labor relations.

School offers the same contract. Every student walking through the doors of the public school is by default entering into a contract of adhesion (and so are her guardians or parents). In Texas, the contract even includes tickets and fines for students as young as ten years old (and if they aren't paid by the time the student is eighteen, he goes to jail).

Beyond the draconian, barbaric frontier schooling techniques in Texas, though, we see a consistent thread running through most of what goes on in school. The subtext is clear: "Hey, there are a lot of kids in this building. Too many kids, too many things on the agenda. My way or the highway, son."

Precisely what a foreman would say to a troublesome employee on the assembly line. Not what a patron would say to a talented artist, though.

27. The decision

We don't ask students to decide to participate. We assume the contract of adhesion, and relentlessly put information in front of them, with homework to do and tests to take.

Entirely skipped: commitment. Do you want to learn this? Will you decide to become good at this?

The universal truth is beyond question—the only people who excel are those who have decided to do so. Great doctors or speakers or skiers or writers or musicians are great because somewhere along the way, they made the choice.

Why have we completely denied the importance of this choice?

28. Exploiting the instinct to hide

Human beings have, like all animals, a great ability to hide from the things they fear.

In the name of comportment and compliance and the processing of millions, school uses that instinct to its advantage. At the heart of the industrial system is power—the power of bosses over workers, the power of buyers over suppliers, and the power of marketers over consumers.

Given the assignment of indoctrinating a thousand kids at a time, the embattled school administrator reaches for the most effective tool available. Given that the assigned output of school is compliant citizens, the shortcut for achieving this output was fear.

The amygdala, sometimes called the lizard brain, is the fear center of the brain. It is on high alert during moments of stress. It is afraid of snakes. It causes our heart to race during a scary movie and our eyes to avoid direct contact with someone in authority.

The shortcut to compliance, then, isn't to reason with someone, to outline the options, and to sell a solution. No, the shortcut is to induce fear, to activate the amygdala. Do this or we'll laugh at you, expel you, tell your parents, make you sit in the corner. Do this or you will get a bad grade, be suspended, never amount to anything. Do this or you are in trouble.

Once the fear transaction is made clear, it can get ever more subtle. A fearsome teacher might need no more than a glance to quiet down his classroom.

But that's not enough for the industrial school. It goes further than merely ensuring classroom comportment. Fear is used to ensure that no one stretches too far, questions the status quo, or makes a ruckus. Fear is reinforced in career planning, in academics, and even in interpersonal interactions. Fear lives in the guidance office, too.

The message is simple: better fit in or you won't get into a good school. If you get into a good school and do what they say, you'll get a good job, and you'll be fine. But if you don't—it'll go on your permanent record.

Years ago, five friends and a I were put in charge of a 150 rowdy fifth-graders for a long weekend up in Canada. It was almost impossible to be heard over the din—until I stumbled onto the solution. All we had to say was, "points will be deducted," and compliance appeared. There weren't any points and there wasn't any prize, but merely the threat of lost points was sufficient.

Instead of creating a social marketplace where people engage and grow, school is a maelstrom, a

whirlpool that pushes for sameness and dumbs down the individual while it attempts to raise the average.

29. The other side of fear is passion

There really are only two tools available to the educator. The easy one is fear. Fear is easy to awake, easy to maintain, but ultimately toxic.

The other tool is passion. A kid in love with dinosaurs or baseball or earth science is going to learn it on her own. She's going to push hard for ever more information, and better still, master the thinking behind it.

Passion can overcome fear—the fear of losing, of failing, of being ridiculed.

The problem is that individual passion is hard to scale—hard to fit into the industrial model. It's not reliably ignited. It's certainly harder to create for large masses of people. Sure, it's easy to get a convention center filled with delegates to chant for a candidate, and easier still to engage the masses at Wembley Stadium, but the passion that fuels dreams and creates change must come from the individual, not from a demigod.

30. The industrial age pervaded all of our culture

There has been no bigger change in ten thousand years of recorded human history than the overwhelming transformation of society and commerce and health and civilization that was enabled (or caused) by industrialization.

We're so surrounded by it that it seems normal and permanent and preordained, but we need to lay it out in stark relief to see how it has created the world we live in.

In just a few generations, society went from agrarian and distributed to corporatized and centralized. In order to overhaul the planet, a bunch of things had to work in concert:

Infrastructure changes, including paving the earth, laying pipe, building cities, wiring countries for communication, etc.

Government changes, which meant permitting corporations to engage with the king, to lobby, and to receive the benefits of infrastructure and policy investments. "Corporations are people, friend."

Education changes, including universal literacy, an expectation of widespread commerce, and most of all, the practice of instilling the instinct to obey civil (as opposed to government) authority.

None of this could have happened if there had been widespread objections from individuals. It turns out, though, that it was relatively easy to enforce and then teach corporate and education-

al obedience. It turns out that industrializing the schooling of billions of people was a natural fit, a process that quickly turned into a virtuous cycle: obedient students were turned into obedient teachers, who were then able to create even more obedient students. We're wired for this stuff.

The system churned out productivity and money from the start. This result encouraged all the parties involved to amplify what they were doing—more lobbying, more infrastructure, more obedience. It took only a hundred and fifty years, but the industrial age remade the entire population of the planet, from Detroit to Kibera.

The cornerstone of the entire process was how well the notion of obedience fit into the need for education. We needed educated workers, and teaching them to be obedient helped us educate them. And we needed obedient workers, and the work of educating them reinforced the desired behavior.

As the industrial age peters out, as the growth fades away, the challenge is this: training creative, independent, and innovative artists is new to us. We can't use the old tools, because resorting to obedience to teach passion just isn't going to work. Our instinct, the easy go-to tool of activating the amygdala, isn't going to work this time.

31. Doubt and certainty

The industrial structure of school demands that we teach things for certain. Testable things. Things beyond question. After all, if topics are open to challenge, who will challenge them? Our students. But students aren't there to challenge—they are there to be indoctrinated, to accept and obey.

Our new civic and scientific and professional life, though, is all about doubt. About questioning the status quo, questioning marketing or political claims, and most of all, questioning what's next.

The obligation of the new school is to teach reasonable doubt. Not the unreasonable doubt of the wild-eyed heckler, but the evidence-based doubt of the questioning scientist and the reason-based doubt of the skilled debater.

Industrial settings don't leave a lot of room for doubt. The worker on the assembly line isn't supposed to question the design of the car. The clerk at the insurance agency isn't supposed to suggest improvements in the accounts being pitched.

In the post-industrial age, though, the good jobs and the real progress belong only to those with the confidence and the background to use the scientific method to question authority and to re-imagine a better reality.

32. Does push-pin equal poetry?

Philosopher Jeremy Bentham argued that if two kids playing hopscotch or push-pin* are gaining as much joy and pleasure as someone reading poetry, they have enjoyed as much utility.

John Stuart Mill took a different approach. He argued, "it is better to be a human being dissatisfied than a pig satisfied; better to be Socrates dissatisfied than a fool satisfied. And if the fool, or the pig, are of a different opinion, it is because they only know their own side of the question."

I'm with Mill on this one. One of the things that school is for is to teach our children to understand and relish the idea of intellectualism, to develop into something more than a purpose-driven tool for the industrial state.

Fortunately for my side of the argument, the economy is now reinforcing this notion. Simple skills and cheap pleasures (bread and circuses) worked for a long time, but they no longer scale to quiet the masses. The basic skills aren't enough to support the circuses that we've been sold.

The fork in this road is ever more pronounced because there's now so much more to choose from. A citizen can spend his spare time getting smarter, more motivated, and more involved, or he can tune out, drop out, and entertain himself into a stupor. The same devices deliver either or both from the online ether—and the choice that people make is one that's going to develop early, based on the expectations of our teachers and the standards of our peers.

We can teach kids to engage in poetry, to write poetry, and to demand poetry—or we can take a shortcut and settle for push-pin, YouTube, and LOLcats.

*Push-pin was a truly inane game in which kids would stick pins in a cloth or a hat brim and wrestle to knock one over. A little like Angry Birds, but without batteries.

33. Who will teach bravery?

The essence of the connection revolution is that it rewards those who connect, stand out, and take what feels like a chance.

Can risk-taking be taught? Of course it can. It gets taught by mentors, by parents, by great music teachers, and by life.

Why isn't it being taught every day at that place we send our kids to?

Bravery in school is punished, not rewarded. The entire institution is organized around avoiding individual brave acts, and again and again we hear from those who have made a difference, telling us that they became brave *despite* school, not because of it.

Harvard Business School turns out management consultants in far greater numbers than it develops successful bootstrapping entrepreneurs. Ralph Lauren, David Geffen and Ted Turner all dropped out of college because they felt the real challenges lay elsewhere.

34. Responsibility

The Sudbury Valley School was founded during the hippie generation, and has survived and thrived as an independent school for forty years. From their introductory handbook:

> The way we saw it, responsibility means that each person has to carry the ball for himself. You, and you alone, must make your decisions, and you must live with them. No one should be thinking for you, and no one should be protecting you from the consequences of your actions. This, we felt, is essential if you want to be independent, self-directed, and the master of your own destiny.

While this is easy to dismiss as hype or pabulum, what if it's true? What if you actually built a school from the ground up with this as its core idea, not just window dressing? This is precisely what they did.

Students ask for teachers when they wish. They play soccer if they choose. They take responsibility for everything they do and learn, from the age of six. And it works.

If a school is seen as a place for encouragement and truth-telling, a place where students go to find their passion and then achieve their goals, it is not a school we would generally recognize, because our schools do none of this.

35. Off the hook: Denying opportunities for greatness

Greatness is frightening. With it comes responsibility.

If you can deny your talents, if you can conceal them from others or, even better, persuade yourself that they weren't even given to you, you're off the hook.

And being off the hook is a key element of the industrialized school's promise. It lets parents off the hook, certainly, since the institution takes over the teaching. It lets teachers off the hook, since the curriculum is preordained and the results are tested. And it lets students off the hook, because the road is clearly marked and the map is handed to everyone.

If you stay on the path, do your college applications through the guidance office and your job hunting at the placement office, *the future is not your fault*.

That's the refrain we hear often from frustrated job seekers, frustrated workers with stuck careers, and frustrated students in too much debt. "I did what they told me to do and now I'm stuck and it's not my fault."

What they've exchanged for that deniability is their dreams, their chance for greatness. To go off the path is to claim responsibility for what happens next.

Because the industrial education system makes it so clear when someone has stepped from the

well-lit path, it highlights those who leave it, making it pretty easy to find those willing to speak up and connect and lead. They're noticeable at first primarily for the fact that they refuse to be sheep.

Rebecca Chapman, literary editor of a new online journal called *The New Inquiry*, was quoted in the *New York Times*. "My whole life, I had been doing everything everybody told me. I went to the right school. I got really good grades. I got all the internships. Then, I couldn't do anything."

The only surprising thing about this statement is that some consider it surprising.

Rebecca trained to be competent, excelling at completing the tasks set in front of her. She spent more than sixteen years at the top of the system, at the best schools, with the best resources, doing what she was told to do.

Unfortunately, no one is willing to pay her to do tasks. Without a defined agenda, it's difficult for her to find the gig she was trained for.

Too many competent workers, not enough tasks.

Peter Thiel made headlines when he offered to pay students *not* to attend college—to start something instead. The reason this program works, though, has nothing to do with avoiding college and everything to do with attracting those bold enough to put themselves on the hook. Education isn't a problem until it serves as a buffer from the world and a refuge from the risk of failure.

36. Instead of amplifying dreams, school destroys them

Every day, beginning the first day and continuing until the last day, our teachers and our administrators and yes, most parents, seeking to do the right thing, end up doing the wrong one.

We mean well.

We let our kids down easy.

We tell ourselves that we are realistic.

We demand that students have a trade to fall back on, an assembly-line job available just in case the silly dreams don't come true. And then, fearing heartbreak, we push them to bury the dream and focus on just the job.

The job with a boss and an office and air conditioning and a map of what to do next. A job with security and co-workers and instructions and deniability.

And when the job doesn't come?

When all the dues are paid and for nothing?

Ouch.

37. The curse of the hourly wage

Fredrick Taylor is responsible for much of what you see when you look around. As the father of Scientific Management, he put the fine points on Henry Ford's model of mass production and was the articulate voice behind the staffing of the assembly line and the growth of the industrial age.

Armed with a stopwatch, Taylor measured everything. He came to two conclusions:

Interchangeable workers were essential to efficient manufacturing. You can't shut down the line just because one person doesn't show up for work. The bigger the pool of qualified labor, the easier it is to find cheap, compliant workers who will follow your instructions.

People working alone (in parallel) are far more efficient than teams. Break every industrial process down into the smallest number of parts and give an individual the same thing to do again and again, alone, and measure his output.

One outgrowth of this analysis is that hourly workers are fundamentally different from salaried ones. If you are paid by the hour, the organization is saying to you, "I can buy your time an hour at a time, and replace you at any time." Hourly workers were segregated, covered by different labor laws, and rarely if ever moved over to management.

School, no surprise, is focused on creating hourly workers, because that's what the creators of school needed, in large numbers.

Think about the fact that school relentlessly downplays group work. It breaks tasks into the smallest possible measurable units. It does nothing to coordinate teaching across subjects. It often isolates teachers into departments. And most of all, it measures, relentlessly, at the individual level, and re-processes those who don't meet the minimum performance standards.

Every one of those behaviors is a mirror of what happens in the factory of 1937.

Of course, business in the U.S. evolved over time to be less draconian than it was seventy years ago. Companies adopted a social contract (usually unstated). Union movements and public outcry led to the notion that if you were obedient and hardworking, your hourly gig would continue, probably until you retired, and then your pension would keep you comfortable.

In the last twenty years, though, under pressure from competition and shareholders, the hourly social contract has evaporated, and manufacturers and others that engage in factory work have gone back to a more pure form of Taylorism. No, Walmart and Target and Best Buy don't bring "good jobs" to Brooklyn when they build a megamall. They bring hourly jobs with no advancement. How could there be? The pyramid is incredibly wide and not very tall, with

thousands of hourly workers for every manager with significant decision-making ability.

Walmart has more than 2 million employees around the world, and perhaps a thousand people who set policy and do significant creative work. Most of the others are hourly employees, easily replaced with little notice.

The bottom of our economy has gone back into the past, back into alignment with what school has perfected: taking advantage of people doing piecemeal labor.

This is not the future of our economy; it is merely the last well-lit path available to students who survive the traditional indoctrination process. If we churn out more workers like this, we will merely be fighting for more of the bottom of the pyramid, more of the world market's share of bad jobs, cheaply executed.

38. Scientific management —> Scientific schooling

There didn't used to be one right way, one perfected method, one step-by-step approach to production.

But in the industrial age, scientific management is obvious when you think about it: record how long it takes to make something, change the way you do it, see if you can do it faster or better. Repeat.

Frederick Taylor was right—we could dramatically increase industrial productivity by measuring and systemizing the assembly line. His method become the standard for any assembly line that wanted to become more productive (and thus competitive).

Use your left hand, not your right, to pick this up. Turn up the lights. Lower the height of the counter. Process exactly six units per minute.

Scientific management changed the world as we knew it. And there's no doubt it boosted productivity.

The rise of scientific management furthered the need for obedient and competent factory workers, individuals with enough skill and self-control to do precisely what they were told.

So it's not a surprise that schools were enlisted to train future employees in just that—skill and self-control. Of course, it's not self-control, really; it's external control. The willingness (or tolerance) to accept external instruction and become compliant.

From there, from this position of wanting to manufacture compliant workers, it's only a tiny step to scientific schooling.

Scientific schooling uses precisely the same techniques as scientific management. Measure (test) everyone. Often. Figure out which inputs are likely to create testable outputs. If an output isn't easily testable, ignore it.

It would be a mistake to say that scientific education doesn't work. It does work. It creates what we test.

Unfortunately, the things we desperately need (and the things that make us happy) aren't the same things that are easy to test.

39. Where did the good jobs go?

Hint: The old ones, the ones we imagine when we think about the placement office and the pension—the ones that school prepared us for—they're gone.

In 1960, the top ten employers in the U.S. were: GM, AT&T, Ford, GE, U.S. Steel, Sears, A&P, Esso, Bethlehem Steel, and IT&T. Eight of these (not so much Sears and A&P) offered substantial pay and a long-term career to hard-working people who actually made something. It was easy to see how the promises of advancement and a social contract could be kept, particularly for the "good student" who had demonstrated an ability and willingness to be part of the system.

Today, the top ten employers are: Walmart, Kelly Services, IBM, UPS, McDonald's, Yum (Taco Bell, KFC, et al), Target, Kroger, HP, and The Home Depot. Of these, only two (*two!*) offer a path similar to the one that the vast majority of major companies offered fifty years ago.

Burger flippers of the world, unite.

Here's the alternative: what happens when there are fifty companies like Apple? What happens when there is an explosion in the number of new power technologies, new connection mechanisms, new medical approaches? The good jobs of the future aren't going to involve working for giant companies on an assembly line. They all require individuals willing to chart their own path, whether or not they work for someone else.

The jobs of the future are in two categories: the downtrodden assemblers of cheap mass goods and the respected creators of the unexpected.

The increasing gap between those racing to the bottom and those working toward the top is going to make the 99 percent divide seem like nostalgia.

Virtually every company that isn't forced to be local is shifting gears so it doesn't have to be local. Which means that the call center and the packing center and the data center and the assembly line are quickly moving to places where there are cheaper workers. And more compliant workers.

Is that going to be you or your kids or the students in your town?

The other route—the road to the top—is for the few who figure out how to be linchpins and artists. People who are hired because they're totally worth it, because they offer insight and creativity and innovation that just can't be found easily. *Scarce skills combined with even scarcer*

attitudes almost always lead to low unemployment and high wages.

An *artist* is someone who brings new thinking and generosity to his work, who does human work that changes another for the better. An artist invents a new kind of insurance policy, diagnoses a disease that someone else might have missed, or envisions a future that's not here yet.

And a *linchpin* is the worker we can't live without, the one we'd miss if she was gone. The linchpin brings enough gravity, energy, and forward motion to work that she makes things happen.

Sadly, most artists and most linchpins learn their skills and attitudes *despite* school, not because of it.

The future of our economy lies with the impatient. The linchpins and the artists and the scientists who will refuse to wait to be hired and will take things into their own hands, building their own value, producing outputs others will gladly pay for. Either they'll do that on their own or someone will hire them and give them a platform to do it.

The only way out is going to be mapped by those able to dream.

40. What they teach at FIRST

The largest robotics competition in the world organizes hundreds of thousands of kids into a nationwide competition to build fighting robots and other technical fun.

Last year, more than 300,000 students participated, surrounded by their peers and the 50,000 mentors and coaches who make the program possible. A recent university study of past participants found that FIRST participants in college were:

More than three times as likely to major specifically in engineering.

Roughly ten times as likely to have had an apprenticeship, internship, or co-op job in their freshman year.

Significantly more likely to achieve a post-graduate degree.

More than twice as likely to pursue a career in science and technology.

Nearly four times as likely to pursue a career specifically in engineering.

More than twice as likely to volunteer in their communities.

When you dream about building the best robot in the competition, you'll find a way to get a lot done, and you'll do it in a team. When you dream of making an impact, obstacles are a lot easier to overcome.

The magic of FIRST has nothing to do with teaching what a capacitor does, and everything to do with teamwork, dreams, and most of all, expectations. FIRST is a movement for communicating and encouraging passion.

41. Judgment, skill, and attitude

Those are the new replacements for obedience.

We sometimes (rarely) teach skill, but when it comes to judgment and attitude, we say to kids and their parents: you're on your own.

Here's what I want to explore: Can we teach people to care?

I know that we can teach them *not* to care; that's pretty easy. But given the massive technological and economic changes we're living through, do we have the opportunity to teach productive and effective caring? Can we teach kids to care enough about their dreams that they'll care enough to develop the judgment, skill, and attitude to make them come true?

42. Can you teach Indian food?

It's not easy to find young Anglo kids in Cleveland or Topeka who crave Tandoori chicken or Shrimp Vindaloo. And yet kids with almost the same DNA in Mumbai eat the stuff every day. It's clearly not about genetics.

Perhaps households there approach the issue of food the way school teaches a new topic. First, kids are taught the history of Indian food, then they are instructed to memorize a number of recipes, and then there are tests. At some point, the pedagogy leads to a love of the food.

Of course not.

People around the world eat what they eat because of community standards and the way culture is inculcated into what they do. Expectations matter a great deal. When you have no real choice but to grow up doing something or eating something or singing something, then you do it.

If culture is sufficient to establish what we eat and how we speak and ten thousand other societal norms, why isn't it able to teach us goal setting and passion and curiosity and the ability to persuade?

It can.

43. How not to teach someone to be a baseball fan

Teach the history of baseball, beginning with Abner Doubleday and the impact of cricket and imperialism. Have a test.

Starting with the Negro leagues and the early barnstorming teams, assign students to memorize facts and figures about each player. Have a test.

Rank the class on who did well on the first two tests, and allow these students to memorize even more statistics about baseball players. Make sure to give equal time to players in Japan and the Dominican Republic. Send the students who didn't do as well to spend time with a lesser teacher, but assign them similar work, just over a longer time frame. Have a test.

Sometime in the future, do a field trip and go to a baseball game. Make sure no one has a good time.

If there's time, let kids throw a baseball around during recess.

Obviously, there are plenty of kids (and adults) who know far more about baseball than anyone could imagine knowing. And none of them learned it this way.

The industrialized, scalable, testable solution is almost never the best way to generate exceptional learning.

44. Defining the role of a teacher

It used to be simple: the teacher was the cop, the lecturer, the source of answers, and the gatekeeper to resources. All rolled into one.

A teacher might be the person who is capable of delivering information. A teacher can be your best source of finding out how to do something or why something works.

A teacher can also serve to create a social contract or environment where people will change their posture, do their best work, and stretch in new directions. We've all been in environments where competition, social status, or the direct connection with another human being has changed us.

The Internet is making the role of content gatekeeper unimportant. Redundant. Even wasteful.

If there's information that can be written down, widespread digital access now means that just about anyone can look it up. We don't need a human being standing next to us to lecture us on how to find the square root of a number or sharpen an axe.

(Worth stopping for a second and reconsidering the revolutionary nature of that last sentence.)

What we *do* need is someone to persuade us that we *want* to learn those things, and someone to push us or encourage us or create a space where we want to learn to do them better.

If all the teacher is going to do is read her pre-written notes from a PowerPoint slide to a lecture hall of thirty or three hundred, perhaps she should stay home. Not only is this a horrible disrespect to the student, it's a complete waste of the heart and soul of the talented teacher.

Teaching is no longer about delivering facts that are unavailable in any other format.

45. Shouldn't parents do the motivating?

Of course they should. They should have the freedom to not have to work two jobs, they should be aware enough of the changes in society to be focused on a new form of education, and they should have the skills and the confidence and the time to teach each child what he needs to know to succeed in a new age.

But they're not and they don't. And as a citizen, I'm not sure I want to trust a hundred million amateur teachers to do a world-class job of designing our future. Some parents (like mine) were just stunningly great at this task, serious and focused and generous while they relentlessly taught my sisters and me about what we could accomplish and how to go about it.

I can't think of anything more cynical and selfish, though, than telling kids who didn't win the parent lottery that they've lost the entire game. Society has the resources and the skill (and thus the obligation) to reset cultural norms and to amplify them through schooling. I don't think we maximize our benefit when we turn every child's education into a first-time home-based project.

We can amplify each kid's natural inclination to dream, we can inculcate passion in a new generation, and we can give kids the tools to learn more, and faster, in a way that's never been seen before.

And if parents want to lead (or even to help, or merely get out of the way), that's even better.

46. At the heart of pedagogy

When we think about the role of school, we have to take a minute to understand that we *backed* into this corner; we didn't head here with intent.

A hundred and fifty years ago, 1 percent of the population went to the academy. They studied for studying's sake. They did philosophy and mathematics and basic science, all as a way to understand the universe.

The rest of the world didn't go to school. You learned something from your parents, perhaps, or if you were rich, from a tutor. But blacksmiths and stable boys and barbers didn't sit in elegant one-room schoolhouses paid for by taxpayers, because there weren't any.

After the invention of public school, of course, this all changed. The 1 percent still went to school to learn about the universe.

And 99 percent of the population went to school because they were ordered to go to school. And school was about basic writing (so you could do your job), reading (so you could do your job), and arithmetic (so you could do your job).

For a generation, that's what school did. It was a direct and focused finishing school for pre-industrial kids.

Then, as often happens to institutions, mission creep sunk in. As long as we're teaching something, the thinking went, let's teach something. And so schools added all manner of material from the academy. We taught higher math or physics or chemistry or Shakespeare or Latin—not because it would help you with your job, but because learning stuff was important.

Public school shifted gears—it took the academy to the masses.

I want to be very clear here: I wouldn't want to live in an uneducated world. I truly believe that education makes humans great, elevates our culture and our economy, and creates the foundation for the engine that drives science which leads to our well being. I'm not criticizing education.

No. But I am wondering when we decided that the purpose of school was to cram as much data/trivia/fact into every student as we possibly could.

Because that's what we're doing. We're not only avoiding issues of practicality and projects and hands-on use of information; we're also aggressively testing for trivia.

Which of society's goals are we satisfying when we spend 80 percent of the school day drilling and bullying to get kids to momentarily swallow and then regurgitate this month's agenda?

47. Academics are a means to an end, not an end

Go back to the original purpose of school: we needed to teach citizens to be obedient (to be good workers), to consume what marketers sold them (to keep industry going), and to be able to sit still (to be good workers).

Academics are one way to reinforce those ideas. Sure, there were a few things (like basic arithmetic and the ability to read) that all civilized people needed, but we kept adding to the list, creating a never-ending list of topics that students could be confronted with as a test of their obedience. By conflating learning (a good thing) with obedience (an important thing for the industrial age) and consumption (essential for mass marketers), we confused ourselves. We came to the conclusion that increasing all three of these in tandem was what society wanted, and we often used one to get more of the other.

Of course, those who were creating the curricula got focused on the academic part.

At first, we used primers and memorization as a direct method of teaching obedience. Then, though, as we got smarter about the structure of thought, we created syllabi that actually covered the knowledge that mattered.

But mattered to whom?

School is still about obedience and compliance and consumption, but now, layered on top of it, are hours every day of brute-force learning about how the world actually works. The problem is that we don't sell it well, it's not absorbed, it's expensive, and it doesn't stick.

Now that obedience is less important and learning matters more than ever, we have to be brave enough to separate them. We can rebuild the entire system around passion instead of fear.

48. The status quo pause

That feeling you're feeling (if you haven't given up because of the frightening implications of this manifesto) is the feeling just about every parent has. It's easier to play it safe. Why risk blowing up the educational system, why not just add a bit to it? Why risk the education of our kids merely because the economy has changed?

That whisper in your ear, that hesitation about taking dramatic action—that's precisely why we still have the system we do. That's how we get stuck with the status quo. When it's safer and easier and quieter to stick with what we've got, we end up sticking with what we've got.

If just one parent asks these questions, nothing is going to happen. Every parent has an excuse and a special situation and no one wants to go out on a limb… but if a dozen or a hundred parents step up and start asking, the agenda will begin to change.

The urgency of our problem is obvious, and it seems foolish to me to polish the obsolete when we ought to be investing our time and money into building something that actually meets our needs. *We can't switch the mission unless we also switch the method.*

49. Compliant, local, and cheap

Those were the three requirements for most jobs for most of the twentieth century. Only after you fit all three criteria was your competence tested. And competence was far more important than leadership, creativity, or brilliance.

If you were applying to be a forklift operator, a receptionist, an insurance salesperson, or a nurse, you showed up with a résumé (proof of a history of compliance), you showed up (proof that you lived somewhere nearby), and you knew about the salary on offer (of course).

School didn't have to do anything about the local part, but it sure worked hard to instill the notion that reliably handing in your work on time while making sure it precisely matched the standards of the teacher was the single best way to move forward.

And it certainly taught you to accept what those in authority gave you, so the wage was the wage, and you took it until someone offered you a better one.

Each student had already had a job—from the age of five, a steady job, with a string of managers giving instructions. Built right into the fabric of our lives were the ingredients for

compliant and cheap. Local was a bonus.

50. The problem with competence

Institutions and committees like to talk about core competencies, the basic things that a professional or a job seeker needs to know.

Core competence? I'd prefer core incompetence.

Competent people have a predictable, reliable process for solving a particular set of problems. They solve a problem the same way, every time. That's what makes them reliable. That's what makes them competent.

Competent people are quite proud of the status and success that they get out of being competent. They like being competent. They guard their competence, and they work hard to maintain it.

Over the past twenty to thirty years, we've witnessed an amazing shift in U.S.-based businesses. Not so long ago, companies were filled with incompetent workers. If you bought a Pacer from American Motors, it wasn't all that surprising to find a tool hidden in a door panel of your new car. Back then, it wasn't uncommon for shipped products to be dead on arrival.

Computers changed that. Now the receptionist can't lose your messages, because they go straight into voice mail. The assembly-line worker can't drop a tool, because it's attached to a numerically controlled machine. The telemarketer who interrupts your dinner is unlikely to over-promise, because the pitch is carefully outlined in script form on paper.

Oh, there's one other thing: As we've turned human beings into competent components of the giant network known as American business, we've also erected huge barriers to change.

Competence is the enemy of change!

Competent people resist change. Why? Because change threatens to make them less competent. And competent people like being competent. That's who they are, and sometimes that's all they've got. No wonder they're not in a hurry to rock the boat.

If I'm going to make the investment and hire someone for more than the market rate, I want to find an incompetent worker. One who will break the rules and find me something no one else can.

> Nothing in the world is more dangerous than sincere ignorance and conscientious stupidity.
>
> – Dr. Martin Luther King, Jr.

51. How they saved LEGO

Dr. Derek Cabrera noticed something really disturbing. The secret to LEGO's success was the switch from all-purpose LEGO sets, with blocks of different sizes and colors, to predefined kits, models that must be assembled precisely one way, or they're wrong.

Why would these sell so many more copies? Because they match what parents expect and what kids have been trained to do.

There's a right answer! The mom and the kid can both take pride in the kit, assembled. It's done. Instructions were followed and results were attained.

LEGO isn't the problem, but it is a symptom of something seriously amiss. We're entering a revolution of ideas while producing a generation that wants instructions instead.

This is the old approach to LEGO toys. It failed because it required too much risk on the part of parents and kids—the risk of making something that wasn't perfect or expected.

52. The race to the top (and the alternative)

The real debate if you're a worker is: do you want a job where they'll miss you if you're gone, a job where only you can do it, a job where you get paid to bring yourself (your true self) to work? Because *those* jobs are available. In fact, there's no unemployment in that area.

OR do you want a job where you're racing to the bottom—where your job is to do your job, do

as you're told, and wait for the boss to pick you?

School is clearly organized around the second race. And the problem with the race to the bottom is that you might win. Being the best of the compliant masses is a safe place (for now). But the rest? Not so much.

53. The forever recession

There are two recessions going on.

One is gradually ending. This is the cyclical recession. We have them all the time; they come and they go. Not fun, but not permanent.

The other one, I fear, is here forever. This is the recession of the industrial age, the receding wave of bounty that workers and businesses got as a result of rising productivity but imperfect market communication.

In short: if you're local, we need to buy from you. If you work in town, we need to hire you. If you can do a craft, we can't replace you with a machine.

No longer.

The lowest price for any good worth pricing is now available to anyone, anywhere. Which makes the market for boring stuff a lot more perfect than it used to be.

Since the "factory" work we did is now being mechanized, outsourced, or eliminated, it's hard to pay extra for it. And since buyers have so many choices (and much more perfect information about pricing and availability), it's hard to charge extra.

Thus, middle-class jobs that existed because companies had no choice are now gone.

Protectionism isn't going to fix this problem. Neither is the stimulus of old factories or yelling in frustration and anger. No, the only useful response is to view this as an opportunity. To poorly paraphrase Clay Shirky, every revolution destroys the last thing before it turns a profit on a new thing.

The networked revolution is creating huge profits, significant opportunities, and a lot of change. What it's not doing is providing millions of brain-dead, corner-office, follow-the-manual middle-class jobs. And it's not going to.

Fast, smart, and flexible are embraced by the network. Linchpin behavior. People and companies we can't live without (because if I can live without you, I'm sure going to try if the alternative is to save money).

The sad irony is that everything we do to prop up the last economy (more obedience, more compliance, cheaper yet average) gets in the way of profiting from this one.

54. Make something different

I don't know how to change school, can't give you a map or a checklist. What I do know is that we're asking the wrong questions and making the wrong assumptions.

The best tactic available to every taxpayer and parent and concerned teacher is to relentlessly ask questions, not settling for the status quo.

"Is this class/lecture/program/task/test/policy designed to help our students do the old thing a little more efficiently, or are we opening a new door to enable our students to do something that's new and different?"

School is doing the best job it knows how to create the output it is being asked to create.

We ought to be asking school to make something different. And the only way to do that is to go about it differently.

55. Make something differently

The simple way to make something different is to go about it in a whole new way. In other words, doing what we're doing now and hoping we'll get something else as an outcome is nuts.

Once we start to do schooling differently, we'll start to get something different.

56. 1000 hours

Over the last three years, Jeremy Gleick, a sophomore at UCLA, has devoted precisely an hour a day to learning something new and unassigned.

The rules are simple: it can't be related to schoolwork, and reading a novel doesn't count.

Since he's started on this journey, he has read Steven Pinker and Stephen Hawking books, watched documentaries about ants and astrophysics, and taken courses in blacksmithing (in person) and card tricks (online). He has done this with rigor and merely had to sacrifice a little TV time to become smarter than most of his peers.

There are two things I take away from this:

a. This is a rare choice, which is quite disturbing. Someone actually choosing to become a polymath, signing himself up to get a little smarter on a new topic every single day.

b. The resources available for this endeavor have increased by several orders of magnitude. Available resources and instruction have gone from scarce to abundant in less than a decade, and the only barrier to learning for most young adults in the developed world is now merely the decision to learn.

My argument is that the entire schooling establishment can be organized around this new widely available resource.

57. The economic, cultural, and moral reasons for an overhaul

There's an economic argument to make about schools and the world of dreams. Small dreams are hurting us like never before. Small dreams represent an attitude of fear; they sabotage our judgment and they keep us from acquiring new skills, skills that are there if we're willing to learn them.

There's a societal argument to make as well. All of us are losing out because we've done such a good job of persuading our future generations not to dream. Think of the art we haven't seen, the jobs that haven't been created, and the productivity that hasn't been imagined because generations have been persuaded not to dream big.

And there's a moral argument, too. How dare we do this, on a large scale? How dare we tell people that they aren't talented enough, musical enough, gifted enough, charismatic enough, or well-born enough to lead?

58. The virtuous cycle of good jobs

Industrial jobs no longer create new industrial jobs in our country. A surplus of obedient hourly workers leads to unemployment, not more factories.

On the other hand, creative jobs lead to more creative jobs. Self-starting, self-reliant, initiative-taking individuals often start new projects that need new workers. In my opinion, the now politicized role of "job creator" has nothing at all to do with tax cuts and everything to do with people who trained to have the guts to raise their hands and say, "I'm starting."

An economy that's stuck needs more inventors, scientists, explorers, and artists. Because those are the people who open doors for others.

59. The evolution of dreams

Fairy tales tell us a lot about what people want. Girls want to be princesses, boys want to be heroes. And both girls and boys want to be chosen. They want to have the glass slipper fit, or the mighty gods from another planet give them a lantern that energizes their power ring.

In a monarchy or similarly authoritarian system, there was no way in the world you were going to accomplish much of anything unless you were picked. Picked by the chief or the local ruler or the priest or the nobleman in search of a wife.

It was the best you could hope for.

We've heard of Mozart because he was picked, first by Prince-elector Maximilian III of Bavaria, and then by a string of other powerful royalty. Michelangelo was picked by the Pope. Catherine of Aragon was picked by one man after another (with plenty of dowry politics involved) until she ended up with Henry VIII.

When life is short and brutish, and when class trumps everything, fairy tale dreams are about all we can believe we are entitled to.

The industrial revolution created a different sort of outcome, a loosening of class-based restrictions and the creation of new careers and pathways.

Suddenly, folks like Andrew Carnegie and Henry Ford became the pickers. Now there were far more people who could pick you (and offer you a job), and thus the stakes were even higher because the odds were better. Not only were there more ways to be picked, but suddenly and amazingly, there was a chance that just about anyone could become powerful enough to move up the ladder.

Our fairy tales started to change.

When the economy hit its stride after World War II, it led to an explosion in dreams. Kids dreamed of walking on the moon or inventing a new kind of medical device. They dreamed of industry and science and politics and invention, and often, those dreams came true. It wasn't surprising to get a chemistry set for your ninth birthday—and it was filled not with straightforward recipes, but with tons of cool powders and potions that burst into flame or stank up the entire house.

A generation dreamed of writing a bestseller or inventing a new kind of car design or perfecting a dance move.

We look back on that generation with a bit of awe. Those kids could dream.

60. Dreamers are a problem

And then schools refocused on mass and scale, and the dreams faded. While these new heroes created generations of kids who wanted to disrupt the world as they did, they also sowed the seeds for the end of those dreams.

It turns out that industry scales. Little businesses turn into big ones. One McDonald's turns into ten thousand. One scientist at Pfizer creates a pathway for one hundred or one thousand obedient assistants and sales reps.

Fifty years ago, businesses realized that they were facing two related problems:

They needed more workers, more well-trained, compliant, and yes, cheap workers willing to follow specific instructions…

and

They needed more customers. More well-trained, pliable, eager-to-consume customers watching TV regularly and waiting to buy what they had to sell.

Dreamers don't help with either of these problems. Dreamers aren't busy applying for jobs at minimum wage, they don't eagerly buy the latest fashions, and they're a pain in the ass to keep happy.

The solution sounds like it was invented at some secret meeting at the Skull and Bones, but I don't think it was. Instead, it was the outcome of a hundred little decisions, the uncoordinated work of thousands of corporations and political lobbyists:

School is a factory, and the output of that factory is compliant workers who buy a lot of stuff. *These students are trained to dream small dreams.*

What about the famous ones we hear about? Surely the successful people we read about have something special going on….

Majora Carter grew up in the 1960s in the South Bronx. She wasn't supposed to have dreams; neither were her classmates. The economic impediments were too big; there wasn't enough money to spend on schools, on support, on teachers who cared.

And yet Majora grew up to be, according to *Fast Company*, one of the hundred most creative people in business, a TED speaker, a community activist, and a successful consultant. Her fellow students are still waiting to get the call.

Dreamers don't have special genes. They find circumstances that amplify their dreams. If the mass-processing of students we call school were good at creating the dreamers we revere, there'd be far more of them. In fact, many of the famous ones, the successful ones, and the essential ones are part of our economy despite the processing they received, not because of it.

The economy demands that we pick ourselves. School teaches us otherwise.

I'm arguing for a new set of fairy tales, a new expectation of powerful dreaming.

61. Is it possible to teach willpower?

After all, willpower is the foundation of every realized dream.

Dreams fade away because we can't tolerate the short-term pain necessary to get to our long-term goal. We find something easier, juicier, sexier, and more now, so we take it, leaving our dreams abandoned on the side of the road.

But is willpower an innate, genetic trait, something we have no say over?

It turns out that (good news) willpower can be taught. It can be taught by parents and by schools. Stanford researcher Kelly McGonigal has written about this, as has noted researcher Roy Baumeister.

If willpower can be taught, why don't we teach it?

Simple: because industrialists don't need employees with willpower, and marketers loathe consumers who have it.

Instead of teaching willpower, we expect kids to develop it on their own. Colleges and others have to sniff around guessing about who has developed this skill—generally, it's the students who have managed to accomplish something in high school, not just go along to get along. In other words, the ones who haven't merely followed instructions.

62. Pull those nails: The early creation of worker compliance

Years ago, I sat in on a fifth-grade class ostensibly working on a math project.

Mary Everest Boole was a mathematician in the 1800s, the wife of the inventor of Boolean logic. One of her legacies was string art, a craft designed to teach math to students. The project took the nub of Mary's idea and industrialized it into a make-work craft project.

My job was to bring the hammers, twenty-four of them, which I had bought for cheap at the local hardware store. The students were using little brass nails to create patterns on inexpensive pine boards—and then they were going to use string to interlace modulo-nine patterns on the nails, creating (ostensibly) both learning and art.

At the start of the class, the teacher gave the students instructions, including the stern advice that they needed to be sure that the nails went in quite firmly.

For the next half hour, I sat and listened to twenty-four students loudly driving nails. I'm not sure if more nails led to more learning, but it was certainly noisy. (One thousand nails, thirty strikes per nail—you get the idea.)

Then the teacher interrupted the class and called a student (ten years old) to the front of the room. "I said," she intoned, raising her voice, "that all the nails had to be put in *firmly*." She made him wiggle a few nails. They were loose.

I will never forget what happened next. She didn't ask him to hammer the nails in a little tighter.

No.

She stood there, and with the entire class watching and with the little kid near tears, took each

and every loose nail out of the board. A half an hour of solid (and loud) hammering, for nothing. She intentionally humiliated him, for one clear reason. The message was obvious: I am in charge, and my instructions matter. You will conform and you will meet the quality standards or you will be punished.

If there's a better way to steal the desire to dream, I'm not sure what it is.

63. Is it too risky to do the right thing?

Do parents mean well?

It's about at this point in the discussion that parents get a bit squeamish. We all want the best for children—and many parents are willing to go to extraordinary lengths to get the best. We will hire tutors, track down better schools, fret over report cards, go to parent-teacher conferences, and drive ourselves crazy worrying about homework or the kind of felt used to complete a school project.

But the sanctity of performance/testing/compliance-based schooling is rarely discussed and virtually never challenged.

It's crazy to imagine a suburban school district having serious talks about abandoning state standards, rejecting the SAT, or challenging the admissions criteria at famous colleges (more about famous in a minute).

There's a myth at work here, one that cannot and will not be seriously questioned. The myth says:

Great performance in school leads to happiness and success.

And the corollary:

Great parents have kids who produce great performance in school.

It doesn't matter that neither of these is true. What matters is that finding a path that might be better is just too risky for someone who has only one chance to raise his kids properly.

64. Connecting the dots vs. collecting the dots

The industrial model of school is organized around exposing students to ever increasing amounts of stuff and then testing them on it.

Collecting dots.

Almost none of it is spent in teaching them the skills necessary to *connect* dots.

The magic of connecting dots is that once you learn the techniques, the dots can change but

you'll still be good at connecting them.

65. The smartest person in the room

David Weinberger writes,

> As knowledge becomes networked, the smartest person in the room isn't the person standing at the front lecturing us, and isn't the collective wisdom of those in the room. The smartest person in the room is the room itself: the network that joins the people and ideas in the room, and connects to those outside of it. It's not that the network is becoming a conscious super-brain. Rather, knowledge is becoming inextricable from—literally unthinkable without—the network that enables it. Our task is to learn how to build smart rooms—that is, how to build networks that make us smarter, especially since, when done badly, networks can make us distressingly stupider.

This is revolutionary, of course. The notion that each of us can assemble a network (of people, of data sources, of experiences) that will make us either smart or stupid—that's brand new and important.

What is the typical school doing to teach our students to become good at this?

66. Avoiding commitment

A byproduct of industrialization is depersonalization. Because no one is responsible for anything that we can see, because deniability is built into the process, it's easy and tempting to emotionally check out, to go along to get along.

When the factory owner treats you like you're easily replaceable, a natural response is to act the part.

It's no surprise to read quotes like this (from *Wired*):

> "This is something to commit to," he says. He takes a break and gives me the tour, pointing out different people in the community, tells me who they are and what they do for Occupy Boston. The community gives them something to care about, he explains. "That's what a lot of this is. We're rediscovering our self respect."

At school, we have created a vacuum of self-respect, a desert with nothing other than grades or a sports team to believe in or commit to. The only way for a student to get respect inside the system of school is to earn temporary approval from a teacher he won't likely see again any time soon. If that teacher is mercurial, petty, or inconsistent, the student is told to deal with it.

The notion that humans want to commit to something is ancient and profound. And yet we work overtime to keep students from doing just that.

67. The specter of the cult of ignorance

Here's a note I got after a recent blog post used the word *bespoke*, a much better fit than the word *custom* would have been:

> Bespoke? A word used only for sending people to the dictionary to discover how literate you are—a word they'll use only for the same purpose. Right?
>
> Andrew

Really?

My blog is hardly filled with words most educated citizens would have trouble understanding. And yet a cable TV–inoculated audience wants everything dumbed down to the Kardashian level. This relentless push for less (less intelligence, less culture, less effort) is one of the boogiemen facing anyone who would mess with the rote rigor of mass schooling.

"If we spend more time training inquisitive humans, we'll have to give up on the basics, and that will mean nothing but uneducated dolts who don't even know who Torquemada was."

Not to mention all those missing apostrophes.

I'm worried too. But one thing is clear: the uneducated *already* don't know who Torquemada was. The uneducated have already dumbed everything down to sound bites and YouTube clips. The industrial school had several generations and billions of dollars to drill and practice us into game show champions, and it has failed, miserably.

Cultural literacy is essential. A common store of knowledge is the only way to create community, to build and integrate a tribe of people interested in living together in harmony. But that store of knowledge will never be infinite, and what's more important, we cannot drill and practice it into a population that has so many fascinating or easy diversions available as alternatives.

I'm concerned about fact ignorance and history ignorance and vocabulary ignorance.

I'm petrified, though, about attitude ignorance.

If we teach our students to be passionate, ethical, and inquisitive, I'm confident that the facts will follow. Instead of complaining that I'm using a seven-letter word when a six-letter one might be sufficient, the inquisitive reader thanks me for adding a new, better word to his lexicon. No need to memorize that word—it's now, and forever, a mouse click away.

68. The Bing detour

Here's a simple example of the difference between pushing kids to memorize a technique and selling them on a process and an attitude:

The Bing search engine is owned by Microsoft—it's their alternative to Google. In order to increase usage, they've built it into the home page that shows up in Microsoft Explorer, the Web browser built into Windows, the operating system installed on most PCs.

It turns out that one of the most popular items searched for in Bing throughout 2011 was the word "Google."

Users type "Google" into Bing to get to Google so they can do a search (the very search they could have done in Bing, of course).

And then, when they get to Google, one of the most popular terms? Facebook.

They're typing "Facebook" into Google to get to the social networking site, because they don't know how to use the address bar at the top of the browser to type www.facebook.com, and they don't know how to bookmark their favorite sites.

Clueless user: Bing—> "Google"—>Google—>"Facebook"—>Facebook

Motivated user: Hit bookmark

Should you memorize this tip? Of course not. What's missing is that millions of Americans, people possessing computers that would have cost a million dollars just ten years ago, are operating out of habit and fear and treating the computer like a magic box. They're afraid to wonder if they can replace Bing with Google. Afraid to ask how to get rid of Internet Explorer and install Firefox. Too lazy to ask their colleagues if there's a better way. They don't look for tips or ways to break or open or fix or improve. They self-describe as Dummies and give up, not for lack of genetic smarts, but for lack of initiative and because of an abundance of fear.

They weren't sold on a forward-leaning posture when it comes to technology, so they make no effort, acting out of fear instead of passion. For the rest of their lives.

That forward-leaning posture is teachable.

69. But what about the dumb parade?

I know the feeling. You see the young mom feeding her infant a can of Sprite from a baby bottle. The blog reader who thinks "bespoke" is too difficult a word (and not worth looking up). The financially afraid who get tricked into losing their houses because they don't understand simple arithmetic.…

What about them?

How can we possibly argue about forcing students to memorize fewer facts when the world doesn't even know who's buried in Grant's tomb, doesn't know the difference between *write* and *right*, and can't balance a checkbook. What about them?

For a really long time, I thought more drilling, more schooling, and more homework was the only way. That schools lacked rigor and were failing students by not pumping them with enough data.

Then I realized that all of the people in this parade have already been through school. They've received the best their community could afford, but it didn't work because our effort was based on the wrong strategy.

The bad decisions we see every day aren't the result of lack of data, or lack of access to data.

No, they're the result of a schooling culture that is creating exactly what it set out to create.

Along the way, we teach students to be open to and trusting of marketing messages. Not only is the school day primarily about students accepting the messages marketed to them by the authority figures in the school, but the fashions, gadgets and trends of teen culture (all delivered by marketers) are the glue that holds the place together. We mix obedience with marketing culture, why are we surprised at what we get?

School is successful… at the wrong thing.

70. Grammr and the decline of our civilization

I need to come back to this again, because deep down, the educated people reading this aren't sure yet. The argument for rote, for primers, for drill and practice, and for grammar is made vivid within ten seconds of checking out YouTube. Here's a sample comment:

NOW UV STARTED READIN DIS DUNT STOP THIS IS SO SCARY. SEND THIS OVER TO 5 VIDEOS IN 143 MINUTES WHEN UR DONE PRESS F6 AND UR CRUSHES NAME WILL APPEAR ON THE SCREEN IN BIG LETTERS. THIS IS SO SCARY BECAUSE IT ACTUALLY WORKs

We're all going down the drain. Too much profanity, no verb conjugation, incomplete thoughts, and poor analysis, everywhere you look, even among people running for President.

I don't think the problem is lack of access to role models, or to Strunk and White, or to strict teachers.

I think the problem is that kids don't care. Because they don't have to. And if someone doesn't care, all the drilling isn't going to change a thing.

The way we save the written word, intellectual discourse, and reason is by training kids to care.

Only 3 percent of Americans can locate Greece on a map. (That's not true, but if it were, you wouldn't be surprised, because we're idiots about stuff like that.)

The question is: Will spending more time drilling kids on the map of the world solve this problem? Is our apathy about world affairs a function of a lack of exposure to the map in school?

Of course not.

No, the problem isn't that we haven't spent enough hours memorizing the map. The problem is that we don't want to.

Teachers aren't given the time or the resources or, most important, the expectation that they should sell students on *why*.

A kid who is into dinosaurs has no trouble discussing the allosaurus/brontosaurus controversy. A student interested in fixing up his dad's old car will have no trouble understanding the mechanics of the carburetor. And the young Hilary Clintons among us, those who are fascinated by the world, understand quite clearly where Greece is.

If you're running an institution based on compliance and obedience, you don't reach for motivation as a tool. It feels soft, even liberal, to imagine that you have to sell people on making the effort to learn what's on the agenda.

I'm not sure it matters how it feels to the teacher. What matters is that motivation is the only way to generate real learning, actual creativity, and the bias for action that Open book, open note

Futurist Michio Kaku points out that soon, it will be easy for every student and worker to have contact lenses hooked up to the Internet.

One use will be that whatever you're reading can be instantly searched online, and any questions that can be answered this way, will be answered this way. Already, there are simple plug-ins that allow you to search any word or phrase in the document you're currently reading online.

Forget about futurists and contact lenses. This is something we can do right now, on any text on any screen on just about any computer.

What's the point of testing someone's ability to cram for a test if we're never going to have to cram for anything ever again? If I can find the answer in three seconds online, the skill of memorizing a fact for twelve hours (and then forgetting it) is not only useless, it's insane.

In an open-book/open-note environment, the ability to synthesize complex ideas and to invent new concepts is far more useful than drill and practice. It might be harder (at first) to write tests, and it might be harder to grade them, but the goal of school isn't to make the educational-

industrial complex easy to run; it's to create a better generation of workers and citizens.

71. Lectures at night, homework during the day

Sal Khan, founder of the Khan Academy, has a very different vision of how school can work. He's already raised millions of dollars from Bill Gates and others, and his site currently offers more than 2,600 video lectures that (for free) teach everything from Calculus to World History. To date, the lectures have been delivered almost a hundred million times.

None of the videos are as good as they will be in two years, just as Wikipedia, Google, and Amazon started as mere shadows of their current selves. But as each video is replaced by a better one, as others start competing to increase the quality, here's what will happen:

There will be a free, universal library of courses in the cloud online, accessible to anyone with an Internet connection. Every lecture, constantly improved, on every conceivable topic. This means that students will be able to find precisely the lecture they need, and to watch it at their own speed, reviewing it at will.

The next day at school, teachers can do what they want to do anyway—coach and help students in places they are stuck. In a school like this, the notion that every student will have to be in sync and watch the same (live!) lecture at the same time will become absurd. And for good reason.

The most visible symptom of the death of traditional schooling is going to be the rise of online video lectures. Not just online, but specific. Specific to a topic, to a problem, to a student's status. With the long tail of the Internet at our disposal, why settle for a generic lecture, the local lecture, the lecture that everyone else needs to see?

And most important, why settle for an amateur lecture, not very good, given by a teacher with a lot of other priorities? It's a bit like requiring teachers to write their own textbooks.

72. Beyond the Khan Academy

Check out Udacity.com, co-founded by Sebastian Thrun, who until recently, was a tenured professor at Stanford. His goal is to teach courses that have 200,000 simultaneous students. And why not?

He reports that in the last class taught at Stanford, every single person in the class who got a perfect grade wasn't in the classroom at all—all the A students were remote, some as remote as Afghanistan. Many of the students would watch a lecture twenty or more times because they were so focused on learning what he had to teach.

I've shared one example after another of what happens when we combine motivated students with specific and refined educational assets delivered digitally. It's easy to see how it works for computer programmers and math students, for those that want to learn a craft or understand a

novel (not for a grade, but because they actually care).

And yet, like all things associated with the ever-increasing yield of the networked economy, the examples are discounted. "Yes," people said after Amazon sold a few books, "it works for speciality books, but it will never work for novels." And then, after novels started selling a third or more of their copies online, the skeptics said it would never work for DVDs or MP3s or chocolate bars. But it did.

Just as online shopping scaled, an inexorable rise due to the efficiencies of the connections created by the net, so will the digital delivery of information permeate every nook and cranny of what we learn.

What we can't do, though, is digitize passion. We can't force the student to want to poke around and discover new insights online. We can't merely say, "here," and presume the students will do the hard (and scary) work of getting over the hump and conquering their fears.

Without school to establish the foundation and push and pull and our students, the biggest digital library in the world is useless.

73. Here comes Slader

Slader is a new website that further clarifies the future teaching process. Slader hired dozens of nerds and together they solved every homework problem in hundreds of editions of dozens of math textbooks.

Want to see the answer to any math homework problem? It's free.

Want to see it worked out? That'll cost a few pennies.

It's Cliffs Notes for math (and soon, they'll be doing English assignments as well).

This, it seems to me, is a ridiculous subterfuge when the efficient answer is obvious (though difficult to reach). Instead of playing cat and mouse with textbook publishers (who will quickly renumber the assignments and change numbers here and there in order to break Slader), why not interact directly with the teachers?

Find the best homework questions ever devised and create world-class tutorials in how to solve each one.

Go one step further and generate useful reports about which assignments were answered easily and which ones frustrated each student. Connect the data with people (human tutors and teachers and parents) who can actually pay attention when attention is needed.

When teachers nationwide coordinate their homework, we don't waste the time and energy of thousands of people. When students can get patient, hands-on, step-by-step help in the work they're doing, they learn more.

All of this was impossible five years ago. Now it's obvious.

74. The role of the teacher's union in the post-industrial school

It's not surprising that early on, many teachers found support in unions. The industrial nature of schooling set up an adversarial system. Management (the board, the administration, and yes, the parents) wanted more productivity, more measurability, and more compliance, not just from students, but from teachers as well. Spend less money, get more results—that's the mantra of all industries in search of productivity.

In the post-industrial model, though, the lectures are handled by best-in-class videos delivered online. Anything that can be digitized, will be digitized, and isolated on the long tail and delivered with focus. What's needed from the teacher is no longer high-throughput lectures or test scoring or classroom management. No, what's needed is individual craftsmanship, emotional labor, and the ability to motivate.

In that world, the defend-all-teachers mindset doesn't fly. When there is no demand for the mediocre lecture-reader, the erstwhile deliverer of the state's class notes, then school looks completely different, doesn't it?

Consider the suburban high school with two biology teachers. One teacher has an extraordinary reputation and there is always a waiting list for his class. The other teacher always has merely the leftovers, the ones who weren't lucky enough to find their way into the great class.

When we free access to information from the classroom setting, the leverage of the great teacher goes way up. Now we can put the mediocre teacher to work as a classroom monitor, shuffler of paper, and traffic cop and give the great teacher the tools he needs to teach more students (at least until we've persuaded the lesser teacher to retire).

The role of the teacher in this new setting is to inspire, to intervene, and to raise up the motivated but stuck student. Instead of punishing great teachers with precise instructions on how to spend their day, we give them the freedom to actually teach. No longer on the hook to give repeat performances of three or four lectures a day, this star teacher can do the handwork that we need all star teachers to do—the real work of teaching.

When the union becomes a standards-raising guild of the very best teachers, it reaches a new level of influence. It can lead the discussion instead of slowing it down.

75. Hoping for a quality revolution at the teacher's union

The Harlem Village Academy, like most charter schools, has no teacher's union. No tenure, no contract-based job security.

The thing is, the teachers here are more engaged and have more job satisfaction across the

board than just about any school I've ever visited. And the reason is obvious: they are respected professionals working with respected professionals. There's no one holding them back, and they work in a place where their bosses measure things that matter.

I've spent hours talking with school administrators, and when the union comes up, they invariably sadden and shake their heads. So many great teachers, they say, held back by a system that rewards the lousy ones. The union is held hostage by teachers in search of a sinecure instead of driven forward by the those that want to make more of an impact.

And the message of the Harlem Village Academy becomes crystal clear when held up against the traditional expectation that the union will protect the bureaucracy wherever it can. What happens when the great teachers start showing up at union meetings? What happens when the top 80% of the workforce (the ones who truly care and are able and willing and eager to get better at what they do) insist that the union cut loose the 20% that are slowing them down, bringing them down and averaging them down?

In a post-industrial school, there is no us and them. Just us.

76. Emotional labor in the work of teachers

Lewis Hyde's essential book *The Gift* makes a distinction between work and labor.

> Work is an intended activity that is accomplished through the will. A labor can be intended but only to the extent of doing the groundwork, or of not doing things that would clearly prevent the labor. Beyond that, labor has its own schedule. Things get done, but we often have the odd sense that we didn't do them.
>
> Paul Goodman wrote in a journal once, "I have recently written a few good poems. But I have no feeling that I wrote them." That is the declaration of a laborer…
>
> …One of the first problems the modern world faced with the rise of industrialism was the exclusion of labor by the expansion of work."

Labor, particularly emotional labor, is the difficult task of digging deep to engage at a personal level. Emotional labor looks like patience and kindness and respect. It's very different from mechanical work, from filling out a form or moving a bale of hay.

Every great teacher you have ever had the good luck of learning from is doing the irreplaceable labor of real teaching. They are communicating emotion, engaging, and learning from the student in return. Emotional labor is difficult and exhausting, and it cannot be tweaked or commanded by management.

As our society industrialized, it has relentlessly worked to drive labor away and replace it with work. Mere work. Busywork and repetitive work and the work of Taylor's scientific manage-

ment. Stand just here. Say just that. Check this box.

I'm arguing that the connection revolution sets the table for a return of emotional labor. For the first time in a century, we have the opportunity to let digital systems do work while our teachers do labor.

But that can only happen if we let teachers be teachers again.

77. Making the cut, the early creation of the bias for selection (early picks turn into market leaders)

The fun things that matter in school have no shortage of applicants. School government, the class play, and most of all, school sports are all about try-outs and elections.

Those who run these organizations are pretty sure they're sending the right message—life is a meritocracy, and when a lot of people try out for a few slots, we should pick the best ones. After all, that's how the world works.

So if you want to have a speaking part in the play, try out (even if you're eleven years old). If you want to get any time on the field, better play well (even though it's time on the field that may lead to your actually playing well). If you want to find out if you can contribute to budget discussions in the school government, better be preternaturally charismatic so that you can get elected (even though this creates a cycle of shallowness that we all suffer under).

The freshman soccer team at the local public school has a fairly typical coach. He believes that his job is to win soccer games.

Of course, this isn't his job, because there isn't a shortage of trophies, there isn't a shortage of winners. There's a shortage of good sportsmanship, teamwork, skill development, and persistence, right?

There are sixteen kids on the squad. Eleven get to play; the others watch. One popular strategy is to play your top eleven at all times, and perhaps, just maybe, if you're ahead by five or more goals, sub in a few of the second-string players. (Actually, this isn't just a popular strategy—it's essentially the way nearly every high school coach in the nation thinks.)

The lesson to the kids is obvious: early advantages now lead to bigger advantages later. Skill now is rewarded, dreams, not so much. If you're not already great, don't bother showing up.

If the goal of the team was to win, that would make sense. But perhaps the goal is to teach kids about effort and opportunity and teamwork. Isn't it interesting that the movies we love about sports always feature the dark horse who dreams, the underdog who comes off the bench and saves the day?

What would happen to school sports if the compensation of coaches was 100 percent based on

the development of all the players and none of it was related to winning the game at all costs?

Malcolm Gladwell has famously written about the distribution of birthdays in professional sports, particularly hockey. It turns out that a huge percentage of hockey players are born in just three months of the year. (About *twice* as many NHL players are born in March as in December.)

The reason is simple: these are the oldest kids in youth hockey in Canada, the ones who barely made the birthday cutoff. Every year, the Peewee leagues accept new applications, but those applicants have to have been born by a certain date.

As a result, the kids born just after the deadline play in a younger league. They're the biggest and the strongest when they're seven or eight or nine years old. What a terrific advantage—to be nine months older and five pounds heavier and two or three inches taller than the youngest kids. The older kids (remember, they are still eight years old) get picked for the all-star squad because they're *currently* the best.

Once picked, they get more ice time. They get more coaching. Most of all, they get a dream. After all, they're the ones getting applauded and practiced.

The rest of the kids, not so much. Dreams extinguished, they realize they have no right to play, so they settle for a job, not their passion.

The hockey parable extends to so many of the other things we expose kids to as they're seeking for something to dream about. Be good now, and you'll get even better later.

78. First impressions matter (too much)

"Maybe your son should do something else. He's not really getting this."

That's what Brendan Hansen's coach said to his mom. When he was four. In the pool for his third day of swim lessons.

You can already guess the punchline. Brendan has won four Olympic medals in swimming.

The industrialized system of schooling doesn't have a lot of time to jump-start those who start a bit behind, doesn't go out of its way to nurture the slow starter. It's easier to bring everyone up to a lowered average instead.

In Hansen's estimation, it's easy for natural gifts to escape the notice of people who aren't focused on finding them and amplifying them.

79. Why not hack?

Much of this manifesto echoes the attitude of the hacker. Not the criminals who crack open

computer systems, but hackers—passionate experimenters eager to discover something new and willing to roll up their sleeves to figure things out.

Check out this sixteen-year old student from Georgia: http://boingboing.net/2012/02/04/16-y-o-girl-accepted-to-mit.html

After getting admitted to MIT at the age of sixteen, she did what any hacker would do—she turned her admissions letter into a space probe, wired a video camera into it and sent it more than 91,000 feet in the air. And made a movie out of it.

Someone taught Erin King how to think this way. Who's next? Isn't that our most important job: to raise a generation of math hackers, literature hackers, music hackers and life hackers?

80. American anti-intellectualism

Getting called an egghead is no prize. My bully can beat up your nerd. Real men don't read literature.

We live in a culture where a politician who says "it's simple" will almost always defeat one who says "it's complicated," even if it is. It's a place where middle school football coaches have their players do push-ups until they faint, but math teachers are scolded for giving too much homework.

Ben Franklin and Thomas Jefferson were legendary intellectuals. Bill Gates and Michael Dell are nerds. But still, the prevailing winds of pop culture reward the follower, the jock, and the get-along guy almost every time.

Which is fine when your nation's economy depends on obeisance to the foreman, on heavy lifting, and on sucking it up for the long haul.

Now, though, our future lies with the artist and the dreamer and yes, the person who took the time and energy to be passionate about math.

81. Leadership and Followership

John Cook coined the phrase "leadership and followership" when he described a high school student practicing his music conducting skills by conducting the orchestra he heard on a CD. When you are practicing your leadership in this way, you're not leading at all. You're following the musicians on the CD—they don't even know you exist.

This faux leadership is what we see again and again in traditional schools. Instead of exposing students to the pain and learning that come from actually leading a few people (and living with the consequences), we create content-free simulations of leadership, ultimately reminding kids that their role should be to follow along, while merely pretending to lead.

Leadership isn't something that people hand to you. You don't do followership for years and then someone anoints you and says, "here." In fact, it's a gradual process, one where you take responsibility years before you are given authority.

And that's something we can teach.

82. "Someone before me wrecked them"

It doesn't take very much time in the teacher's lounge before you hear the whining of the teacher with the imperfect students. They came to him damaged, apparently, lacking in interest, excitement, or smarts.

Perhaps it was the uncaring parent who doesn't speak in full sentences or serve a good breakfast. The one with an accent. Or the teacher from the year before or the year before that who didn't adequately prepare the student with the basics that she needs now.

And the boss feels the same way about those employees who came in with inadequate training. We sell teaching and coaching short when we insist that the person in front of us doesn't have the talent or the background or the genes to excel.

In a crowded market, it's no surprise that people will choose someone who appears to offer more in return for our time and money. So admissions officers look for the talented, as do the people who do the hiring for corporations. Spotting the elite, the charismatic, and the obviously gifted might be a smart short-term strategy, but it punishes the rest of us, and society as a whole.

The opportunity for widespread education and skills improvement is far bigger than it has ever been before. When we can deliver lectures and lessons digitally, at scale, for virtually free, the only thing holding us back is the status quo (and our belief in the permanence of status).

School serves a real function when it activates a passion for lifelong learning, not when it establishes permanent boundaries for an elite class.

83. Some tips for the frustrated student:

1. Grades are an illusion

2. Your passion and insight are reality

3. Your work is worth more than mere congruence to an answer key

4. Persistence in the face of a skeptical authority figure is a powerful ability

5. Fitting in is a short-term strategy, standing out pays off in the long run

6. If you care enough about the work to be criticized, you've learned enough for today

84. The two pillars of a future-proof education:

Teach kids how to lead

Help them learn how to solve interesting problems

Leadership is the most important trait for players in the connected revolution. Leadership involves initiative, and in the connected world, nothing happens until you step up and begin, until you start driving without a clear map.

And as the world changes ever faster, we don't reward people who can slavishly follow yesterday's instructions. All of the value to the individual (and to the society she belongs to) goes to the individual who can draw a new map, who can solve a problem that didn't even exist yesterday.

Hence the question I ask to every teacher who reads from her notes, to every teacher who demands rote memorization, and to every teacher who comes at schooling from a posture of power: Are you delivering these two precious gifts to our children? Will the next generation know more facts than we do, or will it be equipped to connect with data, and turn that data into information and leadership and progress?

85. Which comes first, passion or competence?

One theory is that if you force someone to learn math or writing or soccer, there's a chance she will become passionate about it and then run with what she knows.

The other theory is that once someone becomes passionate about a goal, she will stop at nothing to learn what she needs to learn to accomplish it.

The question then is: should we be teaching and encouraging and demanding passion (and then letting competence follow)? In other words, if we dream big enough, won't the rest take care of itself?

I think that part of effective schooling is helping students calibrate their dreams. Big enough doesn't mean too big—so big that your dream is a place to hide.

The student who dreams of playing in the NBA, starring in a television show, or winning the lottery is doing precisely the wrong sort of dreaming. These are dreams that have no stepwise progress associated with them, no reasonable path to impact, no unfair advantage to the extraordinarily well prepared.

School is at its best when it gives students the expectation that they will not only dream big, but dream dreams that they can work on every day until they accomplish them—not because they were chosen by a black-box process, but because they worked hard enough to reach them.

86. "Lacks determination and interest"

Here's an interesting question: when a good student gets a comment like that on a report card from a teacher in just one of his classes, who is at fault?

Does it matter if the student is six or sixteen?

If the teacher of the future has a job to do, isn't addressing this problem part of it? Perhaps it's *all* of it…

87. Hiding?

It's human nature to avoid responsibility, to avoid putting ourselves in the path of blame so we can be singled out by the head of the village for punishment. And why not? That's risky behavior, and it's been bred out of us over millions of generations.

The challenge is that the connected economy demands people who won't hide, and it punishes everyone else. Standing out and standing for something are the attributes of a leader, and initiative is now the only posture that generates results.

We're clever, though, and our amygdala and primitive lizard brain see a way to use big dreams to *avoid* responsibility. If the dream is huge, we get applause from our peers and our teachers, but are able to hide out because, of course, the dream is never going to come true, the auditions won't pan out, the cameras won't roll, the ball won't be passed, and we'll never be put on the spot.

School needs to put us on the spot. Again and again and again it needs to reward students for being willing to be singled out. Learning to survive those moments, and then feel compelled to experience them again—this is the only way to challenge the lizard.

> The lights go out and it's just the three of us
> You me and all that stuff we're so scared of
>
> – Bruce Springsteen

88. Obedience + Competence ≠ Passion

The formula doesn't work. It never has. And yet we act as if it does.

We act as if there are only two steps to school:

Get kids to behave

Fill them with facts and technique

Apparently, if you take enough of each, enough behavior and enough technique, then suddenly, as if springing from verdant soil, passion arrives.

I'm not seeing it.

I think that passion often arrives from success. Do something well, get feedback on it, and perhaps you'd like to do it again. Solve an interesting problem and you might get hooked.

But if it takes ten years for you to do math well, that's too long to wait for passion.

89. A shortage of engineers

We can agree that our culture and our economy would benefit from more builders, more people passionate about science and technology. So, how do we make more of them?

We need more brave artists, too, and some poets. We need leaders and people passionate enough about their cause to speak up and go through discomfort to accomplish something. Can these skills be taught or amplified?

90. Reading and writing

In the connected age, reading and writing remain the two skills that are most likely to pay off with exponential results.

Reading leads to more reading. Writing leads to better writing. Better writing leads to a bigger audience and more value creation. And the process repeats.

Typical industrial schooling kills reading. Among Americans, the typical high school graduate reads no more than one book a year for fun, and a huge portion of the population reads zero. No books! For the rest of their lives, for 80 years, bookless.

When we associate reading with homework and tests, is it any wonder we avoid it?

But reading is the way we open doors. If our economy and our culture grows based on the exchange of ideas and on the interactions of the informed, it fails when we stop reading.

At the Harlem Village Academy, every student (we're talking fifth graders and up) reads *fifty books a year*. If you want to teach kids to love being smart, you must teach them to love to read.

If the non-advantaged kids in Harlem can read fifty books a year, why can't your kids? Why can't you?

If every school board meeting and every conversation with a principal started with that simple question, imagine the progress we'd make as a culture. What would our world be like if we read a book a week, every week?

Writing is the second half of the equation. Writing is organized, permanent talking, it is the brave way to express an idea. Talk comes with evasion and deniability and vagueness. Writing, though, leaves no room to wriggle. The effective writer in the connected revolution can see her ideas spread to a hundred or a million people. Writing (whether in public, now that everyone has a platform, or in private, within organizations) is the tool we use to spread ideas. Writing activates the most sophisticated part of our brains and forces us to organize our thoughts.

Teach a kid to write without fear and you have given her a powerful tool for the rest of her life. Teach a kid to write boring book reports and standard drivel and you've taken something precious away from a student who deserves better.

91. The desire to figure things out

Consider the case of Katherine Bomkamp, a twenty-year-old who will never struggle to find a job, never struggle to make an impact.

She's not a genius, nor is she gifted with celebrity looks or a prodigy's piano skills. What she has is the desire to make things, to figure things out and to make a difference.

In high school, she spent a fair amount of time with her dad at Walter Reed Army Hospital. Her father is disabled and he had to visit often for his treatment. While sitting in waiting rooms with wounded soldiers, Katherine learned a lot about phantom limb syndrome. Like many idealistic kids, she thought she'd try to help.

What makes this story noteworthy is that Katherine actually did something. She didn't give up and she didn't wait to get picked. Instead, she got to work. Entering her idea in a school science fair, Katherine spent months finding experts who could help make her idea a reality. This is a revolutionary notion—that there are experts just waiting to help. But, as she discovered, there *are* people waiting to help, waiting for someone interested in causing change to reach out to them. Some are there in person, while others are online. The facts are there, the vendors are there, the case studies are there, just waiting to be found.

It was the science fair and the support of those around her that gave her an opening to do something outside of the path that's so clearly marked. Katherine did what so many kids are capable of doing, but aren't expected to do.

A few years later, the Pain Free Socket is about to be patented and may very well become a life-changing device for thousands of amputees. Katherine's life is already changed, though. She called the bluff of the system and didn't wait. What she learned in high school is something that precious few of her peers learn: how to figure things out and make them happen.

92. Because or despite?

That's the key question in the story of Katherine Bomkamp and so many other kids who end up making a difference.

Did they reach their level of accomplishment and contribution *because* of what they are taught in school, or *despite* it?

That question ought to be asked daily, in every classroom and at every school board meeting. The answer is almost always "both," but I wonder what happens to us if we amplify that positive side of that equation.

93. Schools as engines of competence or maintainers of class?

Or possibly both.

Public schools were the great leveler, the tool that would enable class to be left behind as a meritocracy took hold.

At schools for "higher"-class kids, though, at fancy boarding schools or rich suburban schools or at Yale, there's less time spent on competence and more time spent dreaming. Kids come to school with both more competence (better reading and speech skills) and bigger dreams (because those dreams are inculcated at home). As a result, the segregation of school by class reinforces the cycle, dooming the lower classes to an endless game of competence catch-up, one that even if it's won won't lead to much because the economy spends little time seeking out the competent.

Give a kid a chance to dream, though, and the open access to resources will help her find exactly what she needs to know to go far beyond competence.

94. College as a ranking mechanism, a tool for slotting people into limited pigeonholes

The scarcity model of the industrial age teaches us that there are only a finite number of "good" jobs. Big companies have limited payrolls, of course, so there's only one plant manager. Big universities have just one head of the English department. Big law firms have just one managing partner, and even the Supreme Court has only nine seats.

As we've seen, the ranking starts early, and if you (the thinking goes) don't get into a good (oh, I mean famous) college, you're doomed.

This is one of the reasons that college has become an expensive extension of high school. The goal is to get in (and possibly get out), but what happens while you're there doesn't matter much if the goal is merely to claim your slot.

When higher education was reserved for elite academics, there was a lot of learning for learning's sake, deep dives into esoteric thought that occasionally led to breakthroughs. Once industrialized, though, college became yet another holding tank, though without the behavior

boundaries we work so hard to enforce in high school.

In the post-industrial age of connection, though, the slotting and the scarcity are far less important. We care a great deal about what you've done, less about the one-word alumnus label you bought. Because we can see whom you know and what they think of you, because we can see how you've used the leverage the Internet has given you, because we can see if you actually are able to lead and actually are able to solve interesting problems—because of all these things, college means something new now.

95. The coming meltdown in higher education (as seen by a marketer)

For four hundred years, higher education in the U.S. has been on a roll. From Harvard asking Galileo to be a guest professor in the 1600s to millions tuning in to watch a team of unpaid athletes play another team of unpaid athletes in some college sporting event, the amount of time and money and prestige in the college world has been climbing.

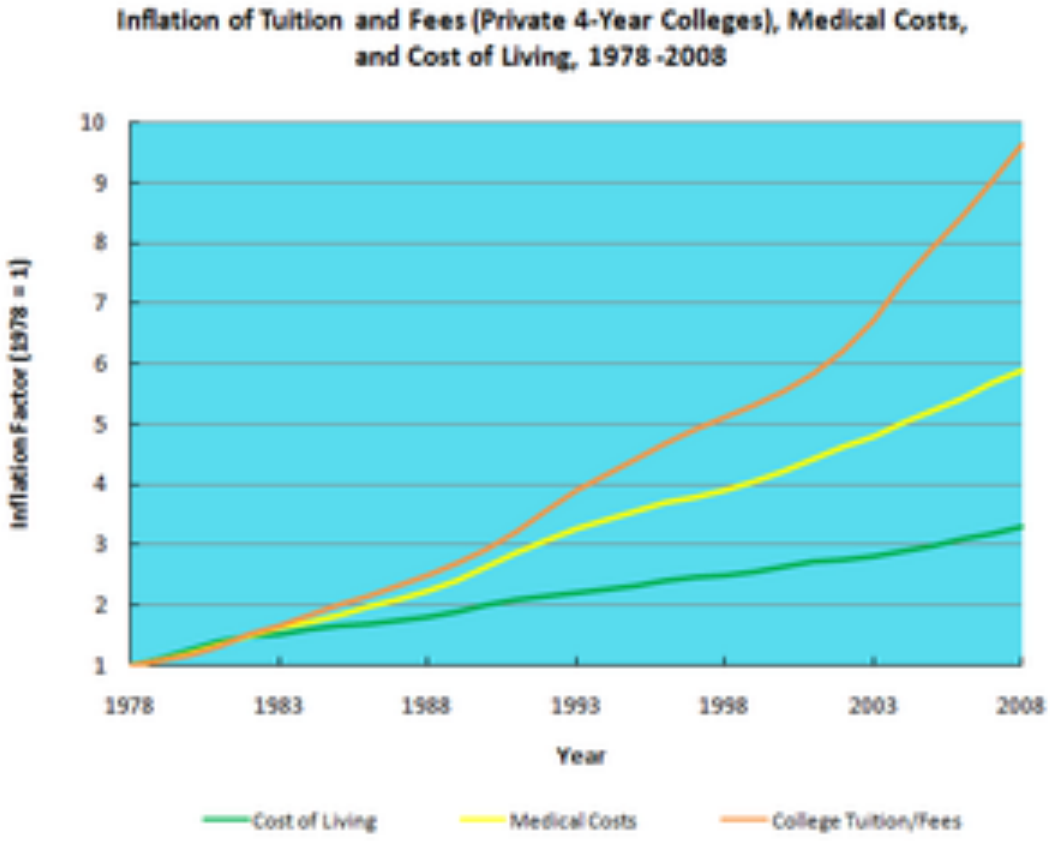
I'm afraid that's about to crash and burn. Here's how I'm looking at it.

1. Most colleges are organized to give an average education to average students.

Pick up any college brochure or catalog. Delete the brand names and the map. Can you tell which school it is? While there are outliers (like St. Johns, Deep Springs), most schools aren't really outliers. They are mass marketers.

Stop for a second and consider the impact of that choice. By emphasizing mass and sameness and rankings, colleges have changed their mission.

This works great in an industrial economy where we can't churn out standardized students fast enough and where the demand is huge because the premium earned by a college grad dwarfs the cost. But...



2. College has gotten expensive far faster than wages have gone up.

As a result, there are millions of people in very serious debt, debt so big it might take decades to repay. Word gets around. Won't get fooled again....

This leads to a crop of potential college students who can (and will) no longer just blindly go to the "best" school they get into.

3. The definition of "best" is under siege.

Why do colleges send millions (!) of undifferentiated pieces of junk mail to high school students now? We will waive the admission fee! We have a one-page application! Apply! This is some of the most amateur and bland direct mail I've ever seen. Why do it?

Biggest reason: So the schools can reject more applicants. The more applicants they reject, the higher they rank in *U.S. News* and other rankings. And thus the rush to game the rankings continues, which is a sign that the marketers in question (the colleges) are getting desperate for more than their fair share. Why bother making your education more useful if you can more easily make it **appear** to be more useful?

4. The correlation between a typical college degree and success is suspect.

College wasn't originally designed to be merely a continuation of high school (but with more binge drinking). In many places, though, that's what it has become. The data I'm seeing shows that a degree (from one of those famous schools, with or without a football team) doesn't translate into significantly better career opportunities, a better job, or more happiness than does a degree from a cheaper institution.

5. Accreditation isn't the solution, it's the problem.

A lot of these ills are the result of uniform accreditation programs that have pushed high-cost, low-reward policies on institutions and rewarded schools that churn out young wanna-be professors, instead of experiences that help shape leaders and problem-solvers.

Just as we're watching the disintegration of old-school marketers with mass-market products, I think we're about to see significant cracks in old-school schools with mass-market degrees.

Back before the digital revolution, access to information was an issue. The size of the library mattered. One reason to go to college was to get access. Today, that access is worth a lot less. The valuable things people take away from college are interactions with great minds (usually professors who actually teach and actually care) and non-class activities that shape them as people. The question I'd ask: Is the money that mass-marketing colleges are spending on marketing themselves and scaling themselves well spent? Are they organizing for changing lives or for ranking high? Does NYU have to get so much bigger? Why?

The solutions are obvious. There are tons of ways to get a cheap, liberal education, one that exposes you to the world, permits you to have significant interactions with people who matter and to learn to make a difference (start here). Most of these ways, though, aren't heavily marketed, nor do they involve going to a tradition-steeped two-hundred-year-old institution with a wrestling team. Things like gap years, research internships, and entrepreneurial or social ventures after high school are opening doors for students who are eager to discover the new.

The only people who haven't gotten the memo are anxious helicopter parents, mass-marketing colleges, and traditional employers. And all three are waking up and facing new circumstances.

96. Big companies no longer create jobs

Apple just built a massive data center in Malden, North Carolina. That sort of plant development would have brought a thousand or five thousand jobs to a town just thirty years ago. The total employment at the data center? Fifty.

Big companies are no longer the engines of job creation. Not the good jobs, anyway.

What the data center does, though, is create the opportunity for a thousand or ten thousand individuals to invent new jobs, new movements, and new technologies as a result of the tools and technology that can be built on top of it.

There is a race to build a plug-and-play infrastructure. Companies like Amazon and Apple and

others are laying the groundwork for a generation of job creation—but not exclusively by big companies. They create an environment where people like you can create jobs instead.

Pick yourself.

97. Understanding the gas station question

"How many gas stations are there in the United States?"

Yet another one of those trick questions that William Poundstone writes about. Companies like Google and Microsoft are renowned for using obtuse questions (what's the next number in this sequence: 10, 9, 60, 90, 70, 66…) often to make job seekers feel inadequate and pressured.

That wasn't my goal. Years ago, when doing some hiring, I often asked the gas station question because in a world where you can look up just about anything, I found it fascinating to see what people could do with a question they couldn't possibly look up the answer to (because, in this case anyway, they didn't have a computer to help them).

Those are the only sorts of questions that matter now.

If the training we give people in public school or college is designed to help them memorize something that someone else could look up, it's time wasted. Time that should have been spent teaching students how to be wrong.

How to be usefully wrong.

That's a skill we need along with the dreaming.

P.S. After asking this question to more than five hundred people in job interviews, I can report that two people mailed me copies of the appropriate page from the Statistical Abstract (what a waste), and two other people said, "I don't have a car" and walked out of the interview.

98. The cost of failure has changed

In an industrial setting, failure can be fatal—to the worker or to the bottom line.

If we're building a giant factory, the building can't fall down. If we're hauling 10,000 pounds of ore, we need to move it the right way the first time. If we're changing the legal conditions on a thousand life insurance policies, we can't afford the class action lawsuit if we do it wrong.

Noted.

But if we're trading hypotheses on a new scientific breakthrough, of course we have to be wrong before we can be right. If we're inventing a new business model or writing a new piece of music or experimenting with new ways to increase the yield of an email campaign, of course we have to be willing to be wrong.

If failure is not an option, then neither is success.

The only source of innovation is the artist willing to be usefully wrong. A great use of the connection economy is to put together circles of people who challenge each other to be wronger and wronger still—until we find right.

That's at the heart of the gas station question: discovering if the person you're interviewing is comfortable being wrong, comfortably verbalizing a theory and then testing it, right there and then. Instead of certainty and proof and a guarantee, our future is about doubt and fuzzy logic and testing.

We can (and must) teach these skills, starting with kids who are happy to build towers out of blocks (and watch them fall down) and continuing with the students who would never even consider buying a term paper to avoid an essay in college.

99. What does "smart" mean?

Our economy and our culture have redefined "smart," but parents and schools haven't gotten around to it.

Some measures are:

SAT scores

GPA average

Test results

Ability at Trivial Pursuit

These are easy, competitive ways to measure some level of intellectual capacity.

Are they an indicator of future success or happiness? Are the people who excel at these measures likely to become contributors to society in ways we value?

There's no doubt that Wall Street and the big law firms have a place for Type A drones, well educated, processing reams of data and churning out trades and deals and litigation.

The rest of the straight-A students in our society are finding a less receptive shortcut to prosperity and impact, because smart, this kind of smart, isn't something that we value so much anymore. I can outsource the ability to repetitively do a task with competence.

And what about the non-dreamers with C averages? Those guys are in *real* trouble.

100. Can anyone make music?

Ge Wang, a professor at Stanford and the creator of Smule, thinks so. The problem is that people have to get drunk in order to get over their fear enough to do karaoke.

Ge is dealing with this by making a series of apps for iPhones and other devices that make composing music not merely easy, but fearless.

He's seen what happens when you take the pressure off and give people a fun way to create music (not play sheet music, which is a technical skill, but *make* music). "It's like I tasted this great, wonderful food," he says now, "and for some reason I've got this burning desire to say to other people: 'If you tried this dish, I think you might really like it.'"

His take on music is dangerously close to the kind of dreaming I'm talking about. "It feels like we're at a juncture where the future is maybe kind of in the past," he says. "We can go back to a time where making music is really no big deal; it's something everyone can do, and it's fun."

Who taught us that music was a big deal? That it was for a few? That it wasn't fun?

It makes perfect sense that organized school would add rigor and structure and fear to the joy of making music. This is one more symptom of the very same problem: the thought that regimented music performers, in lockstep, ought to be the output of a school's musical education program.

It's essential that the school of the future teach music. The passion of seeing progress, the hard work of practice, the joy and fear of public performance—these are critical skills for our future. It's a mistake to be penny-wise and cut music programs, which are capable of delivering so much value. But it's also a mistake to industrialize them.

As we've learned from Ben Zander (author and conductor), real music education involves teaching students how to hear and how to perform from the heart… not to conform to to a rigorous process that ultimately leads to numbness, not love.

101. Two kinds of learning

Quick, what's 8 squared?

My guess is that you know, and the reason you know is that someone drilled you until you did.

The same is true for many of the small bits of knowledge and skill we possess. We didn't learn these things because we believed we needed them right then, and we didn't learn them because they would change our lives; we learned them because it was required.

Here's a second question:

It's third down and four. There are five defensive linemen running straight at you and you have

about one second to throw the ball. What now?

There's just no way you learned this in a classroom.

Of course, this sort of learning covers far more than football. You need to give a speech. What should it be about? You have to work your way through an ethical dilemma involving your boss. What should you do?

The instinct of the industrial system is to force the bottom rung to comply. It's the most direct and apparently efficient method to get the work done—exercise power. In fact, it's not efficient at all. Real learning happens when the student wants (insists!) on acquiring a skill in order to accomplish a goal.

We've inadvertently raised generations that know volumes of TV trivia and can play video games and do social networking at a world-class level. The challenge for educators is to capture that passion and direct it to other endeavors, many of which will certainly be more useful and productive.

102. History's greatest hits: Unnerving the traditionalists

In his book *Civilization*, Niall Ferguson complains,

> A survey of first-year history undergraduates at one leading British university revealed that only 34 per cent knew who was the English monarch at the time of the Armada, 31 per cent knew the location of the Boer War and 16 per cent knew who commanded the British forces at Waterloo. In a similar poll of English children aged between 11 and 18, 17 per cent thought Oliver Cromwell fought at the Battle of Hastings.

He bemoans the fact that kids only know the greatest hits of history, recognizing the names of Henry VIII, Hitler, and Martin Luther King, Jr., uncomfortably juxtaposed without the connecting facts well remembered.

My first answer is, "so what?" It's even easier for me to be dismissive since he's talking about British history and I know not a thing about the Battle of Hastings.

The real question, though, in an always-on world, a world where I can look up what I need to know about the Battle of Hastings faster than I can type this, is, "how many of these kids leave school *caring* to know?"

The top-down, command-and-control authoritarian pedagogical approach to cramming facts into our kids is an unqualified failure.

When forced to comply, the smart kid plays along, the stupid one is punished, and neither of them produces much of value as a result.

To be as clear as possible here: In which situation does knowledge of the Boer War help society? And does it help because it means the student was obedient and attentive enough to play along to get ahead (in other words, it's a marker, a symptom of something else)? Or do we actually need the trivia?

Trivia? Yes, I think knowing the year that the Battle of Hastings was fought is trivia. On the other hand, understanding the sweep of history, being able to visualize the repeating cycles of conquest and failure and having an innate understanding of the underlying economics of the world are essential insights for educated people to understand.

When access to information was limited, we needed to load students up with facts. Now, when we have no scarcity of facts or the access to them, we need to load them up with understanding.

If we're looking for markers, we need better ones.

103. This is difficult to let go of

Those of us who have successfully navigated the industrial education system like it when people are well informed, when sentences are grammatically correct, and when our peers understand things like what electrons do and how the scientific method works.

Does the new economy demand that we give this up?

No. But applying ever more effort and rigor to ensure that every kid knows every fact is insane.

We've failed at that. We've failed miserably. We set out to teach everyone everything, en masse, with embarrassingly bad results. All because we built the system on a foundation of compliance.

What if we gave up on our failed effort to teach facts? What if we put 80 percent of that effort into making huge progress in teaching every kid to care, to set goals, to engage, to speak intelligently, to plan, to make good decisions, and to lead?

If there's one classroom of beaten-down kids who scored well on their PSATs due to drill and practice, and another class of motivated dreamers, engaged in projects they care about and addicted to learning on a regular basis, which class are you going to bet on?

If we can give kids the foundation to dream, they'll figure out the grammar and the history the minute it helps them reach their goals and make a difference.

104. The situation

Real learning happens in bursts, and often those bursts occur in places or situations that are out of the ordinary. Textbooks rarely teach us lessons we long remember. We learn about self-reliance when we get lost in the mall, we learn about public speaking when we have to stand up

and give a speech.

In *Thinking, Fast and Slow* by Nobel prize–winner Daniel Kahneman, we discover that we have two brains—the primordial, hot-wired, instinctive brain and the more nuanced, mature, and rational brain. When we celebrate someone who is cerebral or thoughtful or just plain smart, what we're really doing is marveling over how much he's managed to use his rational brain. This is the person who doesn't take the bait and get into a bar fight, the one who chooses the long-term productive path instead of the shortcut.

It turns out, though, that none of this happens if we haven't also trained our instinctive brain to stand down. When we practice putting ourselves into situations, we give the rational brain a better chance to triumph. That's why you'd like the doctor who sees you in the emergency room to have years of experience. Why performance in debates improves over time. And why a mom with three kids is surprisingly more calm than one with merely one.

Practice works because practice gives us a chance to relax enough to make smart choices.

A primary output of school should be to produce citizens who often choose the rational path. And that's going to happen only if we've created enough situations for them to practice in.

105. If you could add just one course

Neil deGrasse Tyson, astronomer and head of the Museum of Natural History in New York, adds this one: "How to tell when someone else is full of it."

I'd augment that with: "And how to tell when you are."

106. The third reason they don't teach computer science in public school

The first reason is classic: it's a new topic, and changing the curriculum is political, expensive, and time-consuming. The bias is to leave it alone.

The second reason is related. Many teachers are more comfortable teaching areas in which they have significant experience and expertise, and computer programming doesn't really line up for them in those areas.

But the third reason is the most important one, and gets to the heart of the argument: Just about all the important things we need to teach in computer science can't be taught by rote memorization, lectures, and tests. And school is organized around all three.

Computer programming is directed problem solving. If you solve the problem for the student by saying, "here, we use this line of code, and here we use this one," you will have done nothing at all to develop the deep thinking and arrangement skills that programmers use every day.

Instead, the process involves selling the student on the mission, providing access to resources, and then holding her responsible for an outcome that works. And repeat. And repeat.

Other topics that are just like computer programming

Fine art

Selling

Presenting ideas

Creative writing

Product development

Law

Product management

Leadership

I don't think it's an accident that there are few traditional schools that teach these topics (in a moment, an aside about law schools).

These fields used to be left to the desire and persistence of the individual. If you wanted to excel in any of these areas, you were left to your own devices. You might, like Shepard Fairey, end up at Rhode Island School of Design, but more commonly, you either found a mentor or figured it out as you went.

107. An aside about law school

The apparent exception to the list above is law school. There are tons of law schools, probably too many, and they apparently churn out hundreds of thousands of lawyers on a regular basis.

What any lawyer will tell you, though, is that *law school doesn't teach you how to be a lawyer*.

Law school is a three-year hazing process, a holding tank based on competitiveness and the absorption of irrelevant trivia, combined with high-pressure exams and social pressure.

The pedagogy of law school has nothing to do with being a lawyer, but everything to do with being surrounded by competitive individuals who use words as weapons and data as ammunition. This indoctrination is precisely what many lawyers benefit from.

(The ironic aside here is that law school provides precisely the sort of situation I wrote about earlier—it puts students into a place where they can develop their rational minds at the same time they learn to calm down and do the work, whatever the work happens to be.)

The method is clever: use the trope of school, the lectures and the tests, to create an environment where a likely byproduct is that personalities are shaped and the culture of lawyering is fostered. In fact, they could replace half the classes with classes on totally different topics (Shakespeare, the history of magic) and produce precisely the same output.

Part of the make-believe academic sideshow is the role of the law reviews, publications that are produced by law schools and that feature academic treatises by law school professors. Rather than acknowledging that law school is a vocational institution, top schools race to hire professors doing esoteric research. The $3.6 billion spent each year on law school tuition goes, in large part, to these professors.

According to a study done in 2005, 40 percent (!) of the law review articles in LexisNexis had never been cited (never, not even once) in a legal case or in other law review articles.

The problem is that this process is an expensive waste. Top law firms have discovered that they have to take law school grads and train them for a year or more before they can do productive work—many clients refuse to pay for the efforts of first-year lawyers, and for good reason.

One more example of failing to ask, "what is school for?" and instead playing a competitive game with rules that make no sense.

108. School as the transference of emotion and culture

One thing a student can't possibly learn from a video lecture is that the teacher cares. Not just about the topic—that part is easy. No, the student can't learn that the teacher cares about *him*. And being cared about, connected with, and pushed is the platform we need to do the emotional heavy lifting of committing to learn.

Learning is frightening for many because at any step along the way, you might fail. You might fail to get the next concept, or you might fail the next test. Easier, then, to emotionally opt out, to phone it in, to show up because you have to, because then failure isn't up to you; it's the system's fault.

109. What great teachers have in common is the ability to transfer emotion

Every great teacher I have ever encountered is great because of her desire to communicate emotion, not (just) facts. A teacher wrote to me recently,

> I teach first grade and while I have my mandated curriculum, I also teach my students how to think and not what to think. I tell them to question everything they will read and be told throughout the coming years.
>
> I insist they are to find out their own answers. I insist they allow no one

> to homogenize who they are as individuals (the goal of compulsory education). I tell them their gifts and talents are given as a means to make a meaningful difference and create paradigm changing shifts in our world, which are so desperately needed. I dare them to be different and to lead, not follow. I teach them to speak out even when it's not popular.
>
> I teach them "college" words as they are far more capable than just learning, "sat, mat, hat, cat, and rat". Why can't they learn words such as cogent, cognizant, oblivious, or retrograde just because they are 5 or 6? They do indeed use them correctly which tells me they are immensely capable.

What's clear to me is that teaching first graders words like "cogent" and "retrograde" isn't the point. It's not important that a six-year-old know that. What is important, vitally important, is that her teacher believes she could know it, ought to know it, and is capable of knowing it.

We've been spending a fortune in time and money trying to stop teachers from doing the one and only thing they ought to be doing: coaching. When a teacher sells the journey and offers support, the student will figure it out. That's how we're wired.

110. Talent vs. education

Tricky words indeed.

Where does one end and the other begin? Are you a lousy public speaker/runner/brainstormer because you've never been trained, or because there's some mysterious thing missing from your DNA?

If you're in the talent camp, then most achievement is preordained, and the only job of school or parents is to shore up the untalented while opening doors for the lucky few.

This is a dark and lonely job, one that's appropriate for a pessimist masquerading as a realist.

Fortunately, most of us are of a different belief, willing to imagine that there are so many opportunities in our fast-moving culture that drive, when combined with background and belief, can overcome a lack of talent nine times out of ten.

If that's true, our responsibility is to amplify drive, not use lack of talent as a cheap excuse for our failure to nurture dreams.

111. Dumb as a choice

Let's define dumb as being different from stupid.

Dumb means you don't know what you're supposed to know. Stupid means you know it but make bad choices.

Access to information has radically changed in just ten years. Kahn Academy, Wikipedia, a hundred million blogs, and a billion websites mean that if you're interested enough, you can find the answer, wherever you are.

School, then, needs not to deliver information so much as to sell kids on wanting to find it.

Dumb used to be a byproduct of lack of access, bad teachers, or poor parenting. Today, dumb is a choice, one that's made by individuals who choose not to learn.

If you don't know what you need to know, that's fixable. But first you have to want to fix it.

112. The schism over blocks

Jean Schreiber wants kids in elementary school to spend more time playing with blocks and less time sitting at a desk and taking notes.

Is that okay with you?

Blocks for building.

Blocks for negotiating

Blocks for pretending.

Blocks for modeling the real world.

Time spent on blocks takes time away from painstakingly learning to draw a six, from memorizing the times tables, and from being able to remember the names of all fifty states.

Is that what school ought to be doing?

As a parent, you see what seven-year-olds in China are doing (trigonometry!) and you see the straight rows of silent students and rigor, and it's easy to decide that there's a race, and we're losing.

We are losing, but what we're losing is a race to produce the low-paid factory workers of tomorrow.

In New York, the Education Department just proposed a reading test for all third-graders—a test that would last more than four hours over two days. Clearly, playing with blocks is not part of this requirement.

But go back to the original premise of this manifesto—that what we need is not to create

obedient servants with a large bank of memorized data, but instead to build a generation of creative and motivated leaders—and suddenly, blocks make a lot of sense.

Give me a motivated block builder with a jumbled box of Legos over a memorizing drone any day. If we can't (or won't, or don't want to) win the race to the bottom, perhaps we could seriously invest in the race to the top.

113. Completing the square and a million teenagers

Every year, more than a million kids are at exactly the right age to radically advance their understanding of leadership and human nature. They're ready to dive deep into service projects, into understanding how others tick, and most of all, into taking responsibility.

And so, of course, the system teaches our best and brightest how to complete the square to solve a quadratic equation.

In case you missed it, it involves adding (b/a)[squared] to both sides of the equation and then solving from there.

It's almost entirely abstract, it is certainly of zero practical use, and it's insanely frustrating. The question worth asking is: why bother?

One reason is that quadratic equations are the gateway to calculus, which is the gateway to higher math.

Another reason is that many of the elements of Newtonian mechanics involve similar sorts of analysis.

Both reasons are based on the notion that a civilized society learns as much as it can, and advancing math and science (and thus engineering) requires a wide base of students who are educated in this subject so that a few can go on to get advanced degrees.

Less discussed is the cost of this dark alley of abstract math. In order to find the time for it, we neglect probability, spreadsheets, cash flow analysis, and just about anything that will increase a student's comfort and familiarity with the math that's actually done outside of academia.

Also ignored is the benefit of learning how to actually figure things out. Because we're in such a hurry to drill and practice the techniques on the SAT or Regents exam, we believe we don't have time to have students spend a week to independently *invent* the method of completing the square. They don't invent it, they memorize it.

Obedience again.

Precisely at the moment when we ought to be organizing school around serious invention (or re-invention and discovery), we wholeheartedly embrace memorization and obedience instead. Because it's easier to measure, easier to control, and easier to sell to parents.

The puzzles of math and physics are among the most perfect in the world. They are golden opportunities to start young adults down the path of lifelong learning. The act of actually figuring something out, of taking responsibility for finding an answer and then proving that you are *right*—this is at the heart of what it means to be educated in a technical society.

But we don't do that any longer. There's no time and there's no support. Parents don't ask their kids, "what did you figure out today?" They don't wonder about which frustrating problem is no longer frustrating. No, parents have been sold on the notion that a two-digit number on a progress report is the goal—if it begins with a "9."

Here's the nub of my argument: the only good reason to teach trig and calculus in high school is to encourage kids to become engineers and scientists. That's it.

The way we teach it actually *decreases* the number of kids who choose to become engineers and scientists. It's a screen, the hard course schools set up to weed out the less intent. In other words, we're using the very tool that creates engineers to dissuade them from learning the material that would help them become engineers.

Advanced high school math is not a sufficient end in and of itself. If that's the last class you take in math, you've learned mostly nothing useful. On the other hand, if your appetite is whetted and you have a door to advanced work opened, if you go on to design bridges and to create computer chips, then every minute you spent was totally worthwhile. And so the question:

Is the memorization and drill and practice of advanced math the best way to sell kids on becoming scientists and engineers?

If not, then let's fix it.

(Have you ever met a math whiz or an engineer who explained that the reason she went on to do this vital work was that the math textbook in eleventh grade ignited a spark?)

114. Let's do something interesting

Every once in a while, between third grade and the end of high school, a teacher offers the class a chance to do something interesting, new, off topic, exciting, risky, and even thrilling.

I'd venture it's about 2 percent of the hours the student is actually in school. The rest of the time is reserved for absorbing the curriculum, for learning what's on the test.

Just wondering: what would happen to our culture if students spent 40 percent of their time pursuing interesting discoveries and exciting growth opportunities, and only 60 percent of the day absorbing facts that used to be important to know?

115. Getting serious about leadership: Replacing Coach K

Let's assume for a moment that college sports serve an educational function, not just one of amusing alumni.

Who learns the most? I'm arguing that the quarterback and the coach take away the most lessons, because they're making significant decisions and have the biggest opportunities for intellectual (as opposed to physical) failure in each game.

A running-back might learn from a fumble (hold on tighter), but the person calling the plays and managing the team and organizing the defense probably gains a greater life lesson.

So let's de-professionalize. Have a student (or a rotating cast of students) be the coach. And let students be the high school recruiters. And let students be the managers of as many elements of the stadium, the press box, and the concessions as possible.

And let's have the director of the college musical be a student as well.

And the person in charge of logistics for homecoming.

Just about all of these jobs can be done by students. What would that lead to?

Well, first we'd have to get truly serious about giving these students the background and support to do these jobs well. Interesting to note that kids in college plays have taken ten years or more of drama classes, but the student director probably has no mentor, no rigor, and no background in doing his job. We've rarely taught students how to do anything that involves plotting a new course.

Would you be interested in hiring the kid who coached the team that won the Rose Bowl? How about working for someone who had handled logistics for five hundred employees at a 50,000-seat stadium? Or having your accounting done by someone who learned the craft tracking a million dollars' worth of ticket sales?

Is there a better way to learn than by doing?

116. Higher ed is going to change as much in the next decade as newspapers did in the last one

Ten years ago, I was speaking to newspaper executives about the digital future. They were blithely ignorant of how Craigslist would wipe out the vast majority of their profits. They were disdainful of digital delivery. They were in love with the magic of paper.

In just ten years, it all changed. No interested observer is sanguine about the future of the newspaper, and the way news is delivered has fundamentally changed—after a hundred years of stability, the core business model of the newspaper is gone.

College is in that very same spot today.

Schools are facing the giant crash of education loans and the inability of the typical student to justify a full-fare education. It will be just a few years after most courses are available digitally—maybe not from the school itself, but calculus is calculus. At that point, either schools will be labels, brand names that connote something to a hiring manager, or they will be tribal organizers, institutions that create teams, connections, and guilds. Just as being part of the *Harvard Crimson* or *Lampoon* is a connection you will carry around for life, some schools will deliver this on a larger scale.

I guess it's fair to say that the business of higher education is going to change as much in the next decade as newspapers did in the prior one.

117. This Is Your Brain on the Internet: The power of a great professor

Cathy Davidson teaches at Duke and her courses almost always have a waiting list. Interesting to note that in the first week, about 25 percent of the students in the class drop out. Why? Because the course doesn't match the industrial paradigm, can't guarantee them an easy path to law school, and represents a threat to established modes of thinking.

Bravo.

In her words, "Sometimes the line outside my office was as long as those at a crowded bakery on a Saturday morning, winding down the hall. Students wanted to squeeze every ounce of interaction from me because they believed—really believed—that what they were learning in my classes could make a difference in their life."

The astonishing thing about this quote is that only one professor in a hundred could truly claim this sort of impact.

Davidson doesn't use term papers in her class—instead, she has created a series of blog assignments as well as a rotating cast of student leaders who interact with each and every post. Her students write more, write more often, and write better than the ones down the hall in the traditional "churn it out" writing class.

She is teaching her students how to learn, not how to be perfect.

118. Polishing symbols

Just about everything that happens in school after second grade involves rearranging symbols. We push students to quickly take the real world, boil it down into symbols, and then, for months and years after that, analyze and manipulate those symbols. We parse sentences, turning words into parts of speech. We refine mathematical equations into symbols, and become familiar with the periodic table.

The goal is to live in the symbolic world, and to get better and better and polishing and manipulating those symbols. That's what academics do.

If $f(x) \geq g(x) \geq 0$ $f(x) \geq g(x) \geq 0$ on the interval $[a, \infty)$ $[a, \infty)$

then,

If $\int_a^\infty f(x)\,dx$ $\int_a^\infty f(x)\,dx$ converges, then so does $\int_a^\infty g(x)\,dx$ $\int_a^\infty g(x)\,dx$.

If $\int_a^\infty g(x)\,dx$ $\int_a^\infty g(x)\,dx$ diverges, then so does $\int_a^\infty f(x)\,dx$ $\int_a^\infty f(x)\,dx$.

I love stuff like this. The manipulation of ever increasing levels of abstraction is high-octane fuel for the brain; it pushes us to be smarter (in one sense).

But at another level, it's a sort of intellectual onanism. For a few math students, it's a stepping stone on the way to big new insights. For everyone else, it's a distraction from truly practical conversations about whether to buy or lease a car, or how to balance the Federal budget.

The reason we make fun of advanced research papers with titles like "Historic Injustice and the Non-Identity Problem: The Limitations of the Subsequent-Wrong Solution and Towards a New Solution" is that the academics are focusing all their attention on symbol manipulation—and since we, the readers, have no clue how the symbols relate to the real world, we're lost.

Symbol manipulation is a critical skill, no doubt. But without the ability (and interest) in turning the real world into symbols (and then back again), we fail. Pushing students into the manipula-

tion of symbols without teaching (and motivating) them to move into and out of this world is a waste.

It doesn't matter if you're able to do high-level math or analyze memes over time. If you're unable or unwilling to build bridges between the real world and those symbols, you can't make an impact on the world.

Back to the original list of what our society and our organizations need: we rarely stumble because we're unable to do a good job of solving the problem once we figure out what it is. We are struggling because there's a shortage of people willing to take on difficult problems and decode them with patience and verve.

119. My ignorance vs. your knowledge

> There is a cult of ignorance in the United States, and there has always been. The strain of anti-intellectualism has been a constant thread winding its way through our political and cultural life, nurtured by the false notion that democracy means that "my ignorance is just as good as your knowledge."
>
> –Isaac Asimov

School is not merely vocational. It used to be, a long time ago, but then, in addition to work training creeping up, the Academy crept down. It became important to our culture for even the street-sweeper to know what a star was, to have a basic understanding of the free market, and to recognize Beethoven when he heard it.

In the rush to get a return on our investment, sometimes we forget that having knowledge for the sake of knowledge is a cornerstone of what it means to be part of our culture.

The shift now is this: school used to be a one-shot deal, your own, best chance to be exposed to what happened when and why. School was the place where the books lived and where the experts were accessible.

A citizen who seeks the truth has far more opportunity to find it than ever before. But that takes skill and discernment and desire. Memorizing a catechism isn't the point, because there's too much to memorize and it changes anyway. No, the goal has to be creating a desire (even better, a need) to know what's true, and giving people the tools to help them discern that truth from the fiction that so many would market to us.

> I don't know what your destiny will be, but one thing I know: The only ones among you who will be really happy are those who sought and found out how to serve.
>
> – Albert Schweitzer

120. Seek professional help

There seems to be a cultural bias against getting better at things that matter. School has left such a bad taste that if what we need to do to improve feels like reading a book, attending a lecture, or taking a test, many of us tend to avoid it.

Consider how easy (and helpful) it would be to get better at:

Giving a presentation

Handling a negotiation

Writing marketing copy

Shaking hands

Dressing for a meeting

Making love

Analyzing statistics

Hiring people

Dealing with authority figures

Verbal self defense

Handling emotionally difficult situations

And yet… most of us wing it. We make the same mistakes that many who came before us do, and we shy away from the hard (but incredibly useful) work of getting better at the things that matter.

Not because we don't want to get better. Because we're afraid that it will be like school, which doesn't make us better but merely punishes us until we comply.

121. Home schooling isn't the answer for most

Thousands of caring and committed parents are taking their kids out of the industrial system of schooling and daring to educate them themselves. It takes guts and time and talent to take this on and to create an environment that's consistently challenging and focused enough to deliver on the potential our kids are bringing to the world.

There are several problems, though—reasons for us to be concerned about masses of parents doing this solo:

—The learning curve. Without experience, new teachers are inevitably going to make the same mistakes, mistakes that are easily avoided the tenth time around… which most home educators will never get to.

—The time commitment. The cost of one parent per student is huge—and halving it for two kids is not nearly enough. Most families can't afford this, and few people have the patience to pull it off.

—Providing a different refuge from fear. This is the biggest one, the largest concern of all. If the goal of the process is create a level of fearlessness, to create a free-range environment filled with exploration and all the failure that entails, most parents just don't have the guts to pull this off. It's one thing for a caring and trained professional to put your kids through a sometimes harrowing process; it's quite another to do it yourself.

122. Some courses I'd like to see taught in school

How old is the Earth?

What's the right price to pay for this car?

Improv

How to do something no one has ever done before

Design and build a small house

Advanced software interface design

123. The future of the library

This is an issue very much aligned with the one we're dealing with here. The very forces that are upending our need for school are at work at libraries as well. Here's my most retweeted blog post ever:

What is a public library for?

First, how we got here:

Before Gutenberg, a book cost about as much as a small house. As a result, only kings and bishops could afford to own a book of their own.

This situation naturally led to the creation of shared books, of libraries where scholars (everyone else was too busy not starving) could come to read books that they didn't have to own. *The library as warehouse for books worth sharing.*

Only after that did we invent the librarian.

The librarian isn't a clerk who happens to work at a library. A librarian is a data hound, a guide, a sherpa, and a teacher. The librarian is the interface between reams of data and the untrained but motivated user.

After Gutenberg, books got a lot cheaper. More individuals built their own collections. At the same time, though, the number of titles exploded, and the demand for libraries did as well. We definitely needed a warehouse to store all this bounty, and more than ever we needed a librarian to help us find what we needed. *The library is a house for the librarian.*

Industrialists (particularly Andrew Carnegie) funded the modern American library. The idea was that in a pre-electronic media age, the working man needed to be both entertained and slightly educated. Work all day and become a more civilized member of society by reading at night.

And your kids? Your kids need a place with shared encyclopedias and plenty of fun books, hopefully inculcating a lifelong love of reading, because reading makes all of us more thoughtful, better informed, and more productive members of a civil society.

Which was all great, until now.

Want to watch a movie? Netflix is a better librarian, with a better library, than any library in the country. The Netflix librarian knows about every movie, knows what you've seen and what you're likely to want to see. If the goal is to connect viewers with movies, Netflix wins.

This goes further than a mere sideline that most librarians resented anyway. Wikipedia and the huge databanks of information have basically eliminated the library as the best resource for anyone doing amateur research (grade school, middle school, even undergrad). Is there any doubt that online resources will get better and cheaper as the years go by? Kids don't schlep to the library to use an out-of-date encyclopedia to do a report on FDR. You might want them to, but they won't unless coerced.

They need a librarian more than ever (to figure out creative ways to find and use data). They need a library not at all.

When kids go to the mall instead of the library, it's not that the mall won; it's that the library lost.

And then we need to consider the rise of the Kindle. An e-book costs about $1.60 in 1962 dollars. A thousand e-books can fit on one device, easily. Easy to store, easy to sort, easy to hand to your neighbor. Five years from now, electronic readers will be as expensive as Gillette razors, and e-books will cost less than the blades.

Librarians who are arguing and lobbying for clever e-book lending solutions are completely missing the point. They are defending the library-as-warehouse concept, as opposed to fighting for the future, which is librarian as producer, concierge, connector, teacher, and impresario.

Post-Gutenberg, books are finally abundant, hardly scarce, hardly expensive, hardly worth

warehousing. Post-Gutenberg, the scarce resources are knowledge and insight, not access to data.

The library is no longer a warehouse for dead books. Just in time for the information economy, the library ought to be the local nerve center for information. (Please don't say I'm anti-book! I think through my actions and career choices; I've demonstrated my pro-book chops. I'm not saying I *want* paper to go away, I'm merely describing what's inevitably occurring.) We all love the vision of the underprivileged kid bootstrapping himself out of poverty with books, but now (most of the time), the insight and leverage are going to come from being fast and smart with online resources, not from hiding in the stacks.

The next library is a place, still. A place where people come together to do co-working and to coordinate and invent projects worth working on together. Aided by a librarian who understands the Mesh, a librarian who can bring to bear domain knowledge and people knowledge and access to information.

The next library is a house for the librarian with the guts to invite kids in to teach them how to get better grades while doing less grunt work. And to teach them how to use a soldering iron or take apart something with no user-serviceable parts inside. And even to challenge them to teach classes on their passions, merely because it's fun. This librarian takes responsibility or blame for any kid who manages to graduate from school without being a first-rate data shark.

The next library is filled with so many Web terminals that there's always at least one empty. And the people who run this library don't view the combination of access to data and connections to peers as a sidelight—it's the entire point.

Wouldn't you want to live and work and pay taxes in a town that had a library like that? The vibe of the best Brooklyn coffee shop combined with a passionate raconteur of information? There are one thousand things that could be done in a place like this, all built around one mission: *take the world of data*, *combine it with the people in this community*, *and create value*.

We need librarians more than we ever did. What we don't need are mere clerks who guard dead paper. Librarians are too important to be a dwindling voice in our culture. For the right librarian, this is the chance of a lifetime.

124. Thinking hard about college

If there's a part of the educational system that should be easier to fix, it's higher education. We've seen really significant changes in the physical plant, the marketing, and the structure of many universities, usually in response to student demand.

University presidents are responsive to application rates, donations, and football attendance—they understand that their seven-figure salaries are often a reflection of how the world of alumni, parents, and students feel about them. Unlike local high schools, colleges compete. They compete for students, for professors, and for funding.

Colleges have an opportunity to dramatically shift what it means to be educated, but they won't be able to do this while acting as a finishing school for those who have a high school diploma. College can't merely be high school, but louder.

So, that said, here are some thoughts from a former adjunct professor, an alum, and a parent of future college students (no football here, sorry).

125. The famous-college trap

Spend time around suburban teenagers and their parents, and pretty soon the discussion will head inexorably to the notion of going to a "good college."

Harvard, of course, is a good college. So is Yale. Add to the list schools like Notre Dame and Middlebury.

How do we know that these schools are good?

If you asked me if a Mercedes is a good car compared to, say, a Buick, by most measures we could agree that the answer is yes. Not because of fame or advertising, but because of the experience of actually driving the car, the durability, the safety—many of the things we buy a car for.

The people who are picking the college, though, the parents and the students about to invest four years and nearly a quarter of a million dollars—what are they basing this choice on? Do they have any data at all about the long-term happiness of graduates?

These schools aren't necessarily good. What they are is *famous*.

Loren Pope, former education editor at the *New York Times*, points out that colleges like Hiram and Hope and Eckerd are actually *better* schools, unless the goal is to find a brand name that will impress the folks at the country club. His breakthrough book, *Colleges that Change Lives*, combines rigorous research with a passion for unmasking the extraordinary overselling of famous colleges.

If college is supposed to be just like high school but with more parties, a famous college is precisely what parents should seek. If we view the purpose of college as a stepping stone, one that helps you jump the line while looking for a good job, then a famous college is the way to go. The line for those good jobs is long, and a significant benefit of a famous college is more than superstition—associating with that fame may get you a better first job.

A famous college might not deliver an education that's transformative to the student, but if that's not what you're looking for, you might as well purchase a valuable brand name that the alumnus can use for the rest of his life.

But is that all you're getting? If the sorting mechanism of college is all that's on offer, the four years spent there are radically overpriced.

It turns out that students who apply to Harvard and get in but don't go are just as successful and at least as happy throughout their lives as the ones who do attend. Try to imagine any other branded investment of that size that delivers as little.

Steve Jobs and Bill Gates both dropped out of college (one more famous than the other). It turned out that getting in was sufficient to give them a credibility boost.

Famous colleges are part of the labeling and ranking system, but have virtually nothing to do with the education imparted or the long-term impact of the education received. If you need the label to accomplish your goals, go get the label. Either way, we ought to hold colleges to a much higher standard when it comes to transformative education.

For starters, though, start using the word "famous" when your instinct is to say "good."

126. The SAT measures nothing important

Here's the essential truth: The only reported correlation between the SAT scores of a seventeen-year-old student and the success or happiness of that student when he's thirty is a double counting of how the brand name of a famous college helped him get a better job early on. Double count? Sure. Because normalizing for the fame of the college in the short run, lousy SAT scores lead to just as much (if not more) life happiness, income, leadership ability, etc.

The circular reasoning, of course, is that the fame of college determines the number of students who apply, which determines the "selectivity" (carefully put in quotes), which raises the typical SAT score of incoming students.

Kiplinger's, normally a reality-based magazine, ranked the fifty "best" private universities in the USA. The criteria were: admissions rate, freshman and graduating senior retention rate, and students per faculty member.

As we've seen, the admissions rate is nothing but a measure of how famous the college is, how good it is at getting applications. That's the key reason that so many middle-level (there's that ranking again) colleges spend a fortune on high school outreach. They do direct-mail campaigns to boost applications which boosts their statistics which boost their ratings which lead to more applications because they are now famous.

What about retention rate? Well, if a school tells its students the truth and gives them tools to proceed and succeed in the real world, you'd imagine that more of those students would leave to go join the real world, no? If retention rate is a key metric on the agenda of a university's leadership, I wouldn't be surprised to see grade inflation, amazing facilities, and most of all, an insulation from what will be useful in the real world. Why leave? Indeed, how can you leave?

To be clear, it's entirely likely that some students will find a dramatic benefit from four years of college. Or six. Or perhaps three. But measuring retention as a way of deciding if a college is doing a good job is silly—if students are leaving early, I'd like to know where they're going. If they are leaving to do productive work and are satisfied with what they've learned, I put that

down as a win, not a failure.

The most surprising irony of all is that the average debt load of a student leaving the top fifty schools on graduation is less than $30,000. Princeton, ranked first, has an average debt of less than $6,000. No, the famous schools aren't saddling their graduates with a lifetime of debt, one that's crippling. In fact, it's the second-, third-, and fourth-tier schools that lack the resources to offer aid that do this.

The lesser-ranked schools are less famous, net out to be more expensive (less aid), and, because many of them struggle to be on the list of the top fifty, offer none of the character-stretching that Loren Pope so relished.

A trap, caused by the power of marketing and the depth of insecurity among well-meaning parents raised in an industrial world.

127. "I'm not paying for an education, I'm paying for a degree"

In the words of a Columbia University student, that's the truth. If you choose to get an education at the same time, well, that's a fine bonus, but with free information available to all, why pay $200,000 for it?

Of course, once a college student realizes this truth, the entire enterprise loses its moorings. The notion of motivated students teamed up with motivated professors falls apart, and we're back to the contract of adhesion, to compliance-based education, to a scarce resource (the degree) being dispensed to those who meet the measurable requirements.

Hofstra University spent more than $3.5 million sponsoring a presidential debate in 2008. In exchange, they got 300 tickets for students (that works out to about $10,000 a ticket) and, as they're happy to brag, a huge boost of publicity, apparently worthwhile because it makes their degree more valuable (famous = good). That famous degree then leads to more applicants, which allows the University to be more particular about their SAT scores and admission rate, which leads to better rankings in *U.S. News*, which leads to more applications and ultimately, more donations and a raise for the university's president.

But did anyone actually learn anything?

128. Getting what they pay for

Over the last twenty years, large universities discovered a simple equation: Winning football and basketball teams would get them on television, which would make them more famous, which would attract students looking for a good school. Once again, it's the marketing problem of equating familiar with good.

Since 1985, the salary of college football coaches (at public universities) has increased by 650

percent. Professors? By 32 percent.

There is no question that over this time, the quality of football being played has skyrocketed. Attendance at games is up. Student involvement in sports spectating has gone up as well. And the fame of the schools that have invested in big-time sports has risen as well.

What hasn't improved, not a bit, is the education and quality of life of the student body.

In fact, according to research by Glen Waddell at the University of Oregon, for every three games won by the Fighting Ducks (winners of the Rose Bowl), the GPA of male students dropped. Not the male students on the team—the male students who pay a fortune to attend the University of Oregon.

Further research by Charles Clotfelter, a professor at Duke, found that during March Madness, schools that had teams in the playoffs had 6 percent fewer downloads of academic articles at their libraries. And if the team won a close game or an upset, the number dropped 19 percent the next day. And it never rose enough later to make up for the dip.

We get what we pay for.

Colleges aren't stupid, and as long as the game works, they'll keep playing it. After the University of Nebraska entered the Big 10, applications at their law school went up 20 percent—in a year when applications nationwide were down 10 percent. As long as students and their parents pay money for famous, and as long as famous is related to TV and to sports, expect to see more of it.

129. Access to information is not the same as education

Universities no longer spend as much time bragging about the size of their libraries. The reason is obvious: the size of the library is now of interest to just a tiny handful of researchers. Most anything that we want access to is available somewhere online or in paid digital libraries.

Stanford University has put up many of their courses online for free, and some have more than 30,000 active students at a time.

MIT just launched MITx, which will create ubiquitous access to information. The finest technical university in the world is going to share every course with any student who is willing to expend the effort to learn.

Measured by courses, MIT is going ahead and creating the largest university in the world. If you could audit any class in the world, would you want to?

A university delivers four things:

Access to information (not perspective or understanding, but access)

Accreditation/A scarce degree

Membership in a tribe

A situation for growth (which is where you'd file perspective and understanding)

Once courses are digitized, they ought to be shared, particularly by non-profit institutions working in the public good. Given that all the major universities ought to/should/will create a university of the people—giving access to information and great teachers to all (and if they don't, someone should and will, soon)—which of the other three really matter?

Accreditation: A degree from an Ivy League school is a little like real estate in a good neighborhood. It makes a lousy house better and a great house priceless. We make all sorts of assumptions about fifty-year-old men (even fictional ones—Frasier Crane went to Harvard) because someone selected them when they were eighteen years old.

With so much information available about everyone, it gets ever harder to lump people into categories. Graduating from (or even getting into) a prestigious institution will become ever more valuable. We need labels desperately, because we don't have enough time to judge all the people we need to judge. It's worth asking if the current process of admitting and processing students (and giving a "gentlemen's C" to anyone who asks) is the best way to do this labeling.

But there's really no reason at all to lump the expense and time and process of traditional schooling with the labeling that the university does. In other words, if we think of these schools as validators and guarantors, they could end up doing their job with far less waste than they do now. They could be selectors of individuals based on the work they do elsewhere, as opposed to being the one and only place the work has to occur.

Membership in a tribe: This is perhaps the best reason to actually move to a college campus in order to get a degree. While access to information is becoming ever easier (you'll soon be able to take every single MIT course from home), the cultural connection that college produces can be produced only in a dorm room, at a football stadium, or walking across the quad, hand in hand. Catherine Oliver, an Oberlin graduate, remembers living in one of the co-ops, planning a menu, cooking, baking, washing dishes, mopping floors, and sitting through long consensus-building meetings.

All of it builds tribes.

For centuries, a significant portion of the ruling class has had a history with certain colleges, been a member of the famous-college tribe, sharing cultural touchstones and even a way of speaking. The label on a résumé is more than a description of what you did thirty years ago—it's proof, the leaders say, that you're one of us.

Until that changes, this tribe is going to continue to exert power and influence. The real question is how we decide who gets to be in it.

A situation for growth: And here's the best reason, the reason that's almost impossible to mimic in an online situation, the one that's truly worth paying for and the one that almost never shows up in the typical large-school laissez-faire experience. The right college is the last, best chance for masses of teenagers to find themselves in a situation where they have no choice but to grow. And fast.

The editor at the *Harvard Lampoon* experiences this. I felt it when I co-ran a large student-run business. The advanced physics major discovers this on her first day at the high-energy lab, working on a problem no one has ever solved before.

That's the reason to spend the time and spend the money and hang out on campus: so you can find yourself in a dark alley with nowhere to go but forward.

130. Whose dream?

There's a generational problem here, a paralyzing one.

Parents were raised to have a dream for their kids—we want our kids to be happy, adjusted, successful. We want them to live meaningful lives, to contribute and to find stability as they avoid pain.

Our dream for our kids, the dream of 1960 and 1970 and even 1980, is for the successful student, the famous college, and the good job. Our dream for our kids is the nice house and the happy family and the steady career. And the ticket for all that is good grades, excellent comportment, and a famous college.

And now that dream is gone. Our dream. But it's not clear that our dream really matters. There's a different dream available, one that's actually closer to who we are as humans, that's more exciting and significantly more likely to affect the world in a positive way.

When we let our kids dream, encourage them to contribute, and push them to do work that matters, we open doors for them that will lead to places that are difficult for us to imagine. When we turn school into more than just a finishing school for a factory job, we enable a new generation to achieve things that we were ill-prepared for.

Our job is obvious: we need to get out of the way, shine a light, and empower a new generation to teach itself and to go further and faster than any generation ever has. Either our economy gets cleaner, faster, and more fair, or it dies.

If school is worth the effort (and I think it is), then we must put the effort into developing attributes that matter and stop burning our resources in a futile attempt to create or reinforce mass compliance.

131. How to fix school in twenty-four hours

Don't wait for it. Pick yourself. Teach yourself. Motivate your kids. Push them to dream, against all odds.

Access to information is not the issue. And you don't need permission from bureaucrats. The common school is going to take a generation to fix, and we mustn't let up the pressure until it is fixed.

But in the meantime, *go*. Learn and lead and teach. If enough of us do this, school will have no choice but to listen, emulate, and rush to catch up.

132. What we teach

When we teach a child to make good decisions, we benefit from a lifetime of good decisions.

When we teach a child to love to learn, the amount of learning will become limitless.

When we teach a child to deal with a changing world, she will never become obsolete.

When we are brave enough to teach a child to question authority, even ours, we insulate ourselves from those who would use their authority to work against each of us.

And when we give students the desire to make things, even choices, we create a world filled with makers.

“The best way to complain is to make things”

James Murphy

133. Bibliography and further reading

(the links below can be found clickable in the on-screen version at stopstealingdreams.com)

Thinking, Fast and Slow by Daniel Kahneman

Dumbing Us Down and *Weapons of Mass Instruction* by John Taylor Gatto

Free Range Learning by Laura Weldon

Turning Learning Right Side Up by Russell Ackoff and Daniel Greenberg

Unschooling Rules by Clark Aldrich

Colleges that Change Lives by Loren Pope

FIRST and Dean Kamen http://www.usfirst.org/

Majora Carter

Horace Mann's Troubled Legacy, by Bob Pepperman Taylor (a bit academic)

Kelly McGonigal on Willpower and Roy Baumeister on Willpower

"The Smule"

Ken Robinson, including his great TED talk and his books

DIY U by Anya Kamenetz

William Poundstone on interview questions

Civilization, by Niall Ferguson

Too Big to Know, by David Weinberger

MITx

Laura Pappano on big-time college sports in the *New York Times*

Cathy Davidson in *Academe* on term papers and more

Deborah Kenny, short article and her new book, *Born to Rise*

My blog and my books

Thank you to Lisa DiMona, Catherine E. Oliver, Laurie Fabiano, the students at the Medicine Ball, the Sambas, the Nanos, the Fembas, and the loyal readers of my blog. And to my kids, who dream this every single day.