

ORANGE
JUICE



STATION
WAGONS

Why the SAT-ocracy is No Longer the “Golden Ticket”



HAMBURG AREA SCHOOL DISTRICT

PREPARED FOR THE BOARD OF SCHOOL DIRECTORS,
FACULTY AND STAFF, COMMUNITY, PARENTS AND STUDENTS
AT HAMBURG AREA SCHOOL DISTRICT

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EXECUTIVE SUMMARY

This is an essay about student engagement. More specifically, it is an essay about understanding the reality of work and life in the 21st century, and the need to build educational systems that engage learners meaningfully and prepare them to meet the challenges and opportunities of the future.

Historically, educational systems in America have done a good job at preparing learners for existing opportunities. In fact, we are getting exactly the results for which we were designed more than one hundred years ago. However, our collective response to the impact of globalization and technology opening competition to world markets, allowing employers to recruit the best talent from around the globe, has been to become more efficient with the current assembly line, academic bureaucracy that I have referred to as the SAT-ocracy. To say it another way, we have focused our efforts on squeezing more juice from the orange.

In a world where any job that can be automated, outsourced, offshored, or is not valued in the age of abundance has disappeared or will disappear, preparing learners for existing jobs is no longer

sufficient. Our educational systems must prepare learners to create new and different opportunities in the marketplace. In other words, we must prepare our kids to create new products and services, or to add value to existing products and services.

As this essay will demonstrate, our current system is not sufficient, even for the “playschool” kids; those that play school the best. What we need is not a way to squeeze more juice from the orange, but a system that grows new and better trees (educational systems) that produce a different kind of orange (learner), yielding a new type of juice; the juice that will fuel the creative and innovative souls we need to keep America a world leader.

I have written that we need to prepare learners for their future, not our past. This essay investigates our current reality and examines the skills necessary for success in the future. It is also a call to arms for courage and leadership in designing educational systems that will prepare our kids to contribute to a bright future with passion and purpose.

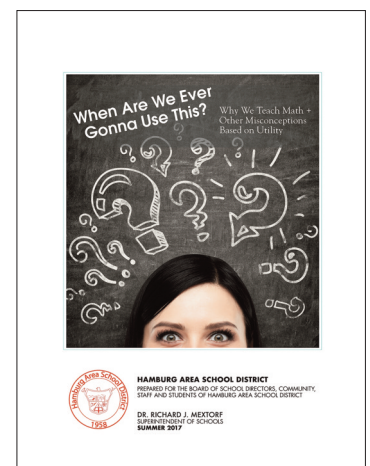
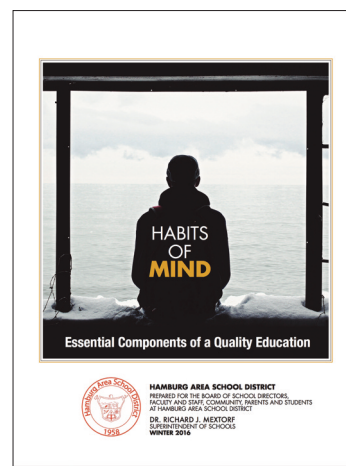
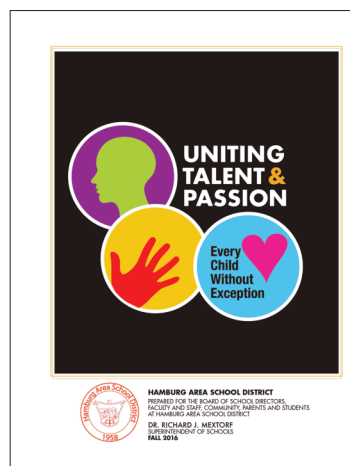
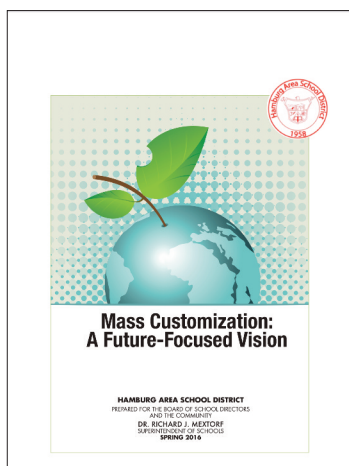
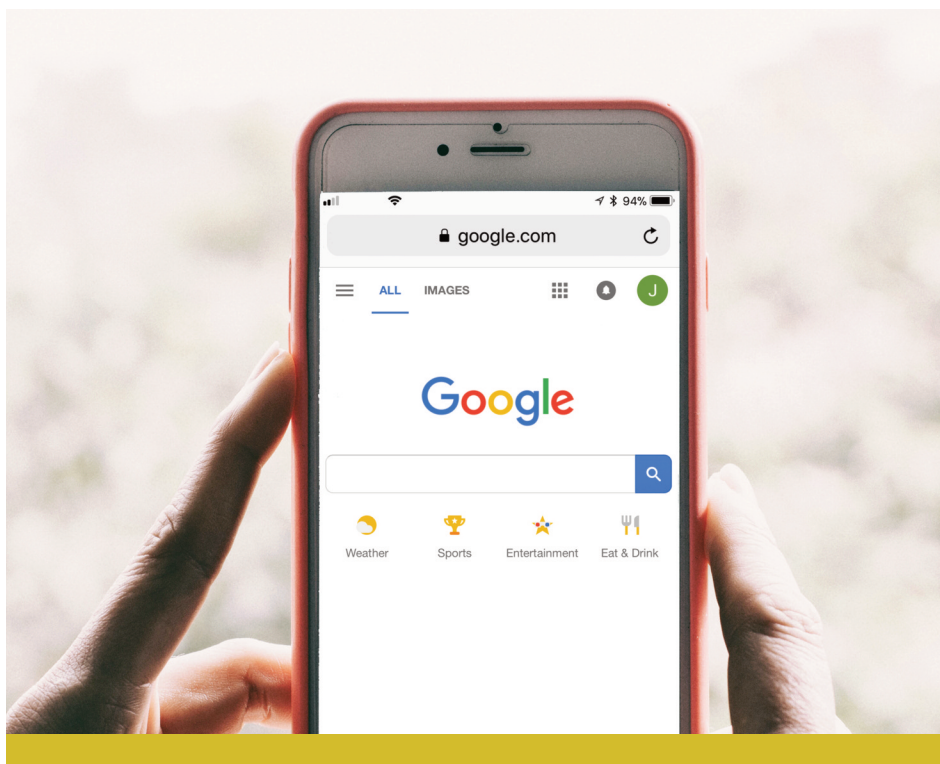




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INTRODUCTION

As I was channel surfing the other day, I came across an episode of *Diners, Drive-ins, and Dives*. This episode featured famous burger joints across the country, and included a place that served veggie burgers. At the risk of offending vegetarians, I began to wonder, who invented the veggie burger, and why would anyone want to eat one? Both veggies and burgers have been around for a long time; whose bright idea was it to put them together in this way?

I pulled out my mobile device and searched Google to find the answer. It turns out that Paul Wenner created the veggie patty in 1981. It must have been a slow evening, because I began to consider the process I used to acquire that information and the inventions/creations/innovations that spawned the technology and the devices I was using. The following is a list of what I discovered:

Television	1927	Philo T. Farnsworth
Veggie Patty	1981	Paul Wenner
Mobile Phone	1983	Richard Frenkiel and Joel Engel
Internet	1973	Vinton Cerf
Google	1998	Sergey Brin and Larry Page

Each of these people was an innovator; they saw things differently and put things together in ways that no one had thought of before.

The world has been blessed with many other innovators and innovations. Innovators such as Edwin Land (Polaroid instant camera), Bill Gates (Microsoft), Mark Zuckerberg (Facebook), Steve Jobs (Apple), Michael Dell (Dell), Larry Ellison (Oracle),

and Dean Kamen (Segway) all have something in common; they were accidental innovators. They did not become innovators by educational or parental design; they became who they are **in spite** of the system. Moving forward, the world needs many more people who will create new jobs, niches in the market, or who will **add value** in some way to existing markets.

Tom Friedman and Michael Mandelbaum, authors of *That Used To Be Us: How America Fell Behind in the World It Invented and How It Can Come Back*, instruct: “The days when you could graduate from college and do the same job, with the same skills, for four decades before sliding into a comfortable retirement are disappearing.”

Jeff Hunter, former vice president for human resource solutions at Dolby Labs instructs: “In the coming years, there won’t be a single job in the US that doesn’t require innovation.” Friedman and Mandelbaum elaborate:

The merger of globalization and the IT revolution that coincided with the transition from the twentieth to the twenty-first century is changing everything – every job, every industry, every service, every hierarchical institution. It is creating new markets and new economies and political realities practically overnight. This merger has raised the level of skill a person needs to obtain and retain any good job, while at the same time increasing competition for every one of those jobs. It has made politics more transparent, the world more connected, dictators more

vulnerable, and both individuals and small groups more empowered.

Consider the following statistics when evaluating emerging employment trends:

According to a Conference Board report, “U.S. employers rate creativity/innovation among the top five skills that will increase in importance over the next five years, and stimulating innovation/creativity and enabling entrepreneurship is among the top 10 challenges of U.S. CEOs.” (Ready to Innovate, New York: Conference Board, 2008).

In a McKinsey & Company global survey, 84 percent of executives say innovation is extremely or very important to their company’s growth strategy.

In a study by General Electric, which interviewed a thousand senior business executives in twelve countries, 69 percent of respondents agreed, “today innovation is more driven by people’s creativity than by high-level scientific research.” 77 percent agreed, “the greatest innovations of the 21st century will be those that have helped to address human needs more than those that had created the most profit.” (GE Global Innovation Barometer, 2011).

Friedman and Mandelbaum suggest that we can no longer create wealth by out-manufacturing or out-consuming the rest of the world. We must out-innovate our economic competitors. We have to become the country that produces more ideas to solve more and different kinds of problems. We have to become the country that leads the way

in developing the new technologies for a sustainable planet and affordable health care. We have to become the country that creates the new and better products, processes, and services that other countries want and need.

The new economic reality poses an educational challenge. We need to expand the analytical, innovative and human connection skills of Americans. Friedman and Mandelbaum suggest that this is no less profound a challenge as those created by the transition from plow horses to tractors or from sailing ships to steamships.

Tony Wagner, Harvard Professor and Author of *Creating Innovators: The Making of Young People Who Will Change the World*, suggests that merely giving students more of the same education will not create students who can innovate. For students to become innovators in the twenty-first century, they need a **different** education, not merely **more** education. Wagner instructs that, increasingly in the 21st century, what you know is far less important than what you can do with what you know. **The interest in and ability to create new knowledge to solve new problems is the single most important skill that all students must master today.** All successful innovators have mastered the ability to learn on their own “in the moment” and then apply that knowledge in new ways.

The authors seem to suggest that, if we are to continue to thrive as a nation, we must design our educational systems to produce innovators who will create new markets and services, rather than merely filling existing jobs that are being lost to globalization, outsourcing, off shoring, digitization, and automation.



*the greatest
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innovation

|,inə'vāSH(ə)n|

noun

the action or process of innovating.

- a new method, idea,

product, etc.:

technological

innovations designed to save energy.

DEFINITION

The London Business School defines innovation as using novel and creative ways to create value through new products and services, or new business models or new processes. A major innovation is one that is so successful; soon after its introduction few people can remember what life was like before the innovation was introduced.

The example I like to use is the iPhone. There was not one piece of new technology in the first iPhone; we had phones, mp3 players, the Internet, email, and text messaging before iPhone I, but Apple combined them to create a new product (while using an innovative design and development process) that most of us can't remember living without. The iPhone is what is known as a disruptive innovation. Unlike education, where disruptions are considered bad, disruptive technologies or innovations in the business sector are considered a good thing. A good way to tell if something is a disruptive innovation is if it becomes a verb. For example, looking up

something on the Internet is known as *Googling*.

Not all innovations are disruptive or transformational innovations – those that create a new or fundamentally different product or service that disrupts existing markets and displaces formerly dominant technologies. Incremental innovations significantly improve, or add value to existing products, processes, or services. Designer cases for all those mobile devices spawned by the iPhone are a good example of an incremental innovation. Being able to design your own designer case online and have it shipped to your door is an example of mass-customization.

CURRENT REALITY

We live in a time where the landscape of employment has changed on a global scale. Katz and Autor (2010) wrote a paper for the National Science Foundation entitled, *Grand Challenges in the Study of Employment and Technology Change*. The authors instruct that the current job market can be divided

disruptive

|dis'rəptiv|

adjective

adjective

- innovative or

groundbreaking:

breaking a disruptive

technology into the

market is never easy.



into three categories, which are steadily collapsing into two:

1. **Non-Routine, high skill jobs** – jobs whose function cannot be reduced to an algorithm that can be programed into a computer, a robot, or can't be easily digitized or outsourced abroad. Availability of these jobs is dependent on the overall global economy.
2. **Routine middle jobs** – involving a lot of standardized, repetitive tasks of either the white-collar or blue-collar variety. The merger of globalization and the IT revolution has devastated this routine work.
3. **Non-routine, low skill jobs** – done in person or manually. No robust computer can replace these jobs, and no one in India or China can take them away. How many exist and how much they pay depends on local supply and demand. *Table I* provides examples of work in each category.

Non-Routine/High Skill	Routine Middle	Non-Routine/Low Skill
Engineers	Factory/Assembly Line	Dental Assistant
Programmers	Number Crunching	Hairstylist
Designers	Filing	Waitress
Financiers	Routine Reporting	Truck Driver
Senior Executives	Transcribing	Cook
Stock and Bond Traders	Telemarketing	Construction Worker
Performers	Reading X-rays	Delivery Person
Athletes	Filing Tax Returns	Plumber
Scientists		Electrician
Doctors		Taxi Driver
Lawyers		Masseuse
Artists		Sales Clerk
Architects		
Contractors		
Chefs		
Specialized Journalists		
Editors		
Sophisticated Machine Tool Operators		
Innovators		

Table I

This phenomenon causes economic polarization. Non-routine, high skill jobs become more in demand and more lucrative, depending on the overall economy. Non-routine, low-skill jobs pay well depending on the local economy and on how well one performs. Routine white-collar and blue-collar jobs get squeezed out, negatively impacting the middle class.

Andy Kessler, author of *Eat People: And Other Unapologetic Rules for Game-Changing Entrepreneurs*, frames the current reality of the job market a bit differently. Kessler identified two types of workers – creators and servers. Creators drive

productivity with new products and services. Servers serve the creators by adding value to existing systems and processes. In a *Wall Street Journal* article (February 17, 2011), Kessler explains:

Forget blue-collar and white-collar. There are two types of workers in our economy: creators and servers. Creators are the ones driving productivity – writing code, designing chips, creating drugs, running search engines. Servers, on the other hand, service the creators (and other servers) by building homes, providing food, offering legal advice, and working at the Department of Motor Vehicles. Many servers will be replaced by machines, by computers, and by changes in how business operates.

CREATIVE CREATORS	ROUTINE CREATORS	CREATIVE SERVERS	ROUTINE SERVERS
Non-Routine Work in Distinctive Ways	Non-Routine Work in Routine Ways	Non-Routine/Low Skill Work in Inspired Ways (passion and human touch)	Routine Work in Routine Ways

Table II

CREATIVE CREATORS	CREATIVE SERVERS
<div>Designing a building</div> <div>Writing an innovative legal brief</div> <div>Inventing a new business</div> <div>Composing an ad campaign</div> <div>Redoing a kitchen</div> <div>Writing an iPad application</div>	<div>Health care worker in a nursing home (patience)</div> <div>Sales people (expertise, relationships)</div> <div>Trainer (personal or class instructor)</div> <div>Composing an ad campaign</div>

Table II illustrates Freidmann and Manelbaum’s blend of Katz, Autor, and Kessler’s points of view regarding emerging job categorizations and examples of valued jobs of Creative Creators and Creative Servers.

Table III illustrates the relationship between skill and demand for each job category.

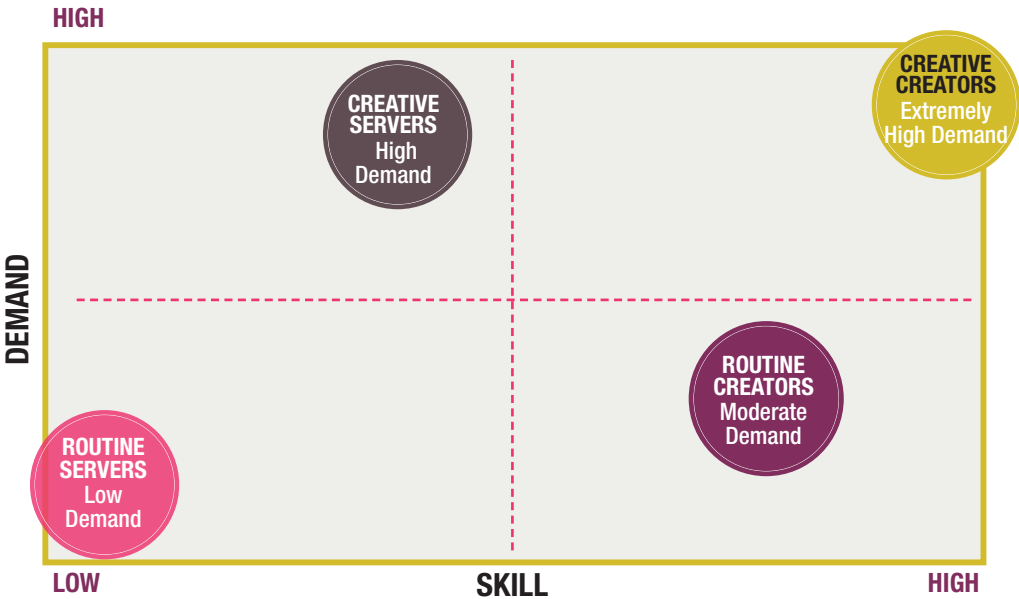


Table III

Technology entrepreneur John Jazwiec blogs on his website (JohnJazwiec.com) about being in the business of job killing, and the jobs he is unable to kill:

I can't kill creative people. There is no productivity solution or outsourcing [strategy] that I can sell to eliminate a creative person. I can't kill unique value creators... They might be someone with a relationship with a client. They might be someone who is a great salesman. They might be someone who has spent so much time mastering a market that they are subject matter experts.

Regardless of how jobs are categorized or valued, the most important question every worker must ask himself or herself is **Am I adding value by doing something unique and irreplaceable?** Friedman and Mandelbaum describe it as putting some extra chocolate sauce, whipped cream, and a cherry on top of whatever you do, or adding your own "secret sauce" to whatever you do.

CURRENT REALITY AND PUBLIC EDUCATION

I come from a family of five children. Every summer we went to church camp for a week. In the summer of 1974, my parents came to pick us up driving a brand new Ford LTD Country Squire station wagon. If you are "seasoned" enough to have mental picture of this car, you can see the faux wood paneling on the exterior, and visualize the third seat in the "way back," which faced the opposite direction. That was a fun ride home!

Over time, the car began to blow black smoke from the tailpipe. Of course, this meant that the engine was burning oil. For a while, our strategy was to keep a case of oil in the garage

“**There is no productivity solution or outsourcing solution that I can sell to eliminate a creative person.**”

j. jazwiec



and replace the oil often. While this made the car drivable, the solution was to replace the worn out engine. Our system of public education is akin to the engine of the old station wagon. We can pour in all the oil (money, standards, testing, punishments, reforms) we like, but it is no longer equipped to prepare our kids to meet the challenges and opportunities of our current economic and civic reality.

While technology, globalization, automation, outsourcing, off shoring, and digitization have changed the global economic landscape, public schools are still preparing learners for an economic reality that has long since vanished. While, intellectually, we understand how the world has changed, as parents we hope to "hang on" just a little longer to the old familiar system in hopes that it will work just long



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*... too many kids are
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 stewards of the Earth
 that we're going
 to need.*

”

s. engel

enough to make sure our kids are okay. The longer we hold on to this false hope, the farther behind we get in preparing our kids to meet the challenges and opportunities of our current reality and the future.

Federal and state governments are focused on streamlining the existing educational model for efficiency and effectiveness. This is like trying to squeeze more juice from the existing orange. Focusing on replication, scaled efficiencies, predictability, and other tools of traditional business thinking will not help us to build the future-focused systems our kids need and deserve. Rather than squeezing more juice from the existing orange, we need to plant new trees that bear better yielding fruit, containing the nutrients necessary for healthy participation in the current economic reality.

Without question, public schools are doing some great work in spite of the existing system. However, the existing select-and-sort, assembly line system can serve to dampen the impact of even the most passionate teachers and the achievements of the most highly motivated students. Susan Engel, director of the teaching program at Williams College, and author of *Red Flags or Red Herrings? Predicting Who Your Child Will Become*, explains:

Even the nice schools aren't good enough. These schools have decent facilities, adequate class sizes, a good number of teachers who like their jobs and/or like the kids, and a majority of students who can read, who can pass standardized tests.

These okay schools may send kids like yours and mine on a good path – good colleges, good job options – but even in these schools,

too many kids are not living up to their intellectual or personal potential. They're not engaged, and not headed to become the inventors, entrepreneurs, and stewards of the Earth that we're going to need.

...we need to lift the bottom faster and the top higher.

Our young people seem to see the need for systemic change. Tony Wagner describes the predicament in which our young people find themselves:

Many of the Innovation Generation are worried about the future of the planet, seek healthier lifestyles, and want to make a difference more than they want to make money...

...But they are swimming against the tides of tradition. A lot of parents still harbor hopes that their children will pursue prestigious careers and be economically better off than they are. Too many teachers and employers still reward the “old school” behaviors of deference to authority and striving for “success” as conventionally defined – and count on carrots and sticks for motivation.

Wagner goes on to proffer: “Our education system does not encourage risk-taking and penalizes failure, and too many parents and teachers believe that a ‘safe’ and lucrative career in business or law or medicine is what young people should strive for – rather than something to do with changing the world.”

THE SAT-OCRACY

We all want what's best for our kids, which has fostered our collective embrace of the SAT-ocracy. Since World War II, the SAT-ocracy has been the accepted path to the American Dream.



It consists of taking the “right” classes, getting the “right” grades, getting the “right” SAT score, getting into the “right” college to assure a job with a salary, benefits, a retirement package, thirty-five years of employment with one company, and a gold watch upon retirement. For many years, the SAT-ocracy and the degree it produced was the surest pathway to the middle class. In our current reality, the degree is less like the “Golden Ticket” from *Charlie and the Chocolate Factory* and more like the wrapper in which the chocolate resides; it’s necessary, but every chocolate bar has one, so it’s not nearly as special.

Yet we cling to the SAT-ocracy, even as we witness the world changing around us. We see the deterioration of the middle class and the world of work evolving, yet we keep our heads down and hope for the best for our own students and children. Tony Wagner emphasizes this point:

Parents and teachers have come to believe that high school students must take as many advanced courses as possible, to be admitted to places like Harvard, despite the

fact that such courses do not teach the skills needed to be an innovator or even to succeed in a selective college.

I am not against advanced courses. I think our kids need to be challenged at the highest levels. However, we need to rethink what “advanced” means in terms of student engagement. Does “honors” simply mean going faster? Does “advanced” mean regurgitating more superficial facts? Rather than the traditional “mile-wide, inch-deep” curriculum, do Advanced Placement (AP) courses provide a “two-mile wide, one half-inch deep” curriculum?

Wagner quotes science teacher Amanda Alonzo regarding AP courses:

I (also) feel like AP courses drive the content down kids’ throats. They memorize a vast amount of content for the tests and never get to apply what they have learned. There is a lot of pressure on kids, as well. It takes the love out of science. And ultimately, the courses are not good preparation for college. I’ve seen kids who have gotten fives on their AP tests and

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curriculum?”

”
r. mextorf

“
College admissions are highly dependent on SAT/ACT scores, yet, scores tell us nothing about students' abilities to contribute meaningfully to social innovation and community service.
 ”
t. wagner

not have to take an introductory biology course in college, but then they struggle with the next-level course. Their brains were not developed enough to be able to apply what they've learned at the level required in the advanced classes.”

SACRED COWS AND HIGHER EDUCATION

It seems to me that no course should have “sacred cow” status. We should take a hard look at the role of each and every course in engaging kids. Yet, we hang on to old notions and “sacred cows” because we want our kids to get into the best colleges. While, as an educational leader, I want our students to be competitive for admission into the college of their choosing, the truth of the matter is – and I’m going to really upset some folks with this – it takes two things to get into college ... a pulse rate and a bank account. A recent CNN broadcast revealed that even colleges considered the most elite are now using the ability of applicants to pay cash tuition as a determiner for admission.

Colleges face a conundrum: trying to appear elite, yet remaining bastions of opportunity as the great equalizer; attracting the perceived “best and brightest,” yet adhering to a quota system for admission; providing opportunities for the underserved, yet having to pay the bills. If we think colleges have it all figured out ... they do not.

Colleges are struggling to find their identity in the new reality. Author Andrew Delbanco, in his book *College: What it Was, Is, and Should Be*, explains:

...the colleges find themselves squeezed, and not just financially. They are under constant scrutiny by trustees, alumni, and the general public, all of whom keep a keen eye

on the college rankings, of which those published in *U.S. News & World Report* are the most closely watched. Those who compile these rankings claim to base them on salient measures such as graduation and retention rates, “selectivity” (the percentage of applicants to whom offers of admission are made), faculty compensation, alumni giving, peer assessment, among others – but what they really express is the cumulative impression summed up by the word “prestige.”

...Moreover, colleges inflate their applicant numbers by direct marketing techniques to students whose names they obtain by buying lists from standardized-test providers – although they know many of the applicants they solicit are from unqualified candidates (*footnote provided by the author*).

So the quest for prestige is nothing new, but it has lately reached such frantic intensity that it is having serious negative effects on the educational mission of many institutions. For one thing, it means that at some colleges, the quality of the educational experience is confused with how many applicants it turns away. And since lower acceptance rate means higher prestige, the quest for more and more applicants becomes relentless...in order to ballyhoo how hard it is to get in.

In short, the admissions culture of selective colleges today is characterized by a rising degree of deception and – no doubt, unintended – cruelty.

Wagner, a Harvard professor, shares his thoughts on using SAT/ACT scores as a determiner for college admission:

21ST CENTURY SYSTEM STRUCTURE	SAT-OCRACY STRUCTURE
Collaboration	Individual Achievement
Multidisciplinary Learning	Specialization and Specific Content
Creating Meaning	Passively Consuming Knowledge
Intellectual Risk-Taking (trial and error)	Risk Avoidance
Intrinsic Motivation (curiosity, discovery)	Extrinsic Motivation (grades, GPA, etc.)

Table IV

“College admissions are highly dependent on SAT/ACT scores, yet, scores tell us nothing about students’ abilities to contribute meaningfully to social innovation and community service.” Author Andrew Delbanco instructs that, according to psychologist Robert J. Sternberg, written tests and grades signify little about “a student’s overall potential to make a positive difference in the world.” Scott Cowen, President at Tulane University, weighs-in on test scores: “I know that test scores do not have great meaning, but that’s one of the metrics *U.S. News & World Reports* uses, and so we can’t ignore it. I have this constant dilemma about the testing and how we use it here, and I haven’t found a solution yet.”

Colleges know that SAT scores are not a predictor of either readiness or success, yet they cling to them to feed the ranking machine of *U.S. News & World Report*. Schools and parents cling to the SAT-ocracy because they believe it will give their students/children an edge in college. Doing so misses an enormous opportunity to provide our kids the education they need to meet the challenges and opportunities of our current reality and the future.

Change is hard. Because we want what’s best for our kids, we want to cling to what has worked in the past. We can point to great national accom-

plishments as a result of our system. After all, we put a man on the moon, didn’t we? We sure did, but if we sent people to the moon today, it would not be in the space ships we used in the 1960s. Whether it’s replacing the engine or planting new trees, we need a new system!

A 21ST CENTURY EDUCATIONAL SYSTEM

What does the new system look like? What kinds of learning are taking place? What about the basics? As Friedman and Mandelbaum instruct: “...we need our education system not only to strengthen everyone’s basics – reading, writing and arithmetic – but to teach and inspire all Americans to start something new, to add something extra, or to adapt something old in whatever job they are doing.” The SAT-ocracy simply will not get us there.

How are learners engaged differently in a 21st century learning system than in the SAT-ocracy? Beginning at the macro level, let’s examine some contrasts in focus between the SAT-ocracy and a 21st century system in *Table IV* above.

The issue is not one of structure and no structure, but one of creating a new structure. The most important element in the 21st century system is the teacher. Great teachers expose learners

DESIGN THINKING	INNOVATIVE THINKING	CREATIVE THINKING	21 ST CENTURY SKILL
Interactive Thinking	Associating	Making Connections	Solver/Connector
Experimenting	Experimenting	Experimenting	Solver
Collaboration	Networking	Collaboration	Connector
	Observing	Observing	Solver/Connector
	Questioning	Questioning	Solver
Empathy		Empathy	Connector

Table V

to new ideas and teach them how to persist in discovery learning to build meaning in appropriate contexts.

In *Creating Innovators*, Wagner lists three sources regarding the types of thinking necessary for success in the 21st century. First, author Tim Brown, in a *Harvard Business Review* article, describes characteristics of design thinkers. Second, in a *Harvard Business Review* article and a book entitled, *The Innovator's DNA*, Dyer, Gregerson, and Christenson describe the characteristics of innovative thinking. Finally, Teresa Amabile, professor of business administration and director of research at Harvard Business School, describes what she calls creative thinking. Table V provides a crosswalk of the characteristics of each discipline, as well as the 21st century skills I have discussed in other essays.

Wagner discusses the importance of projects in educating young people to become innovators:

The value of hands-on projects where students have to solve real problems and demonstrate mastery; the importance of learning to draw on academic content from multiple disciplines to solve a problem; learning to work in teams. Hands-on, interdisciplinary experiences that require team-

work and encourage risk-taking are the most exciting and motivating^o part of students' education. These experiences enable passions and evolve into a deeper sense of purpose.

Wagner instructs that the most important aspect of being in an innovative environment is not being afraid to fail.

THE SAT-OCRACY, LOAD-BEARING WALLS, AND THE IMPORTANCE OF THE ARTS AND HUMANITIES

Every structure contains load-bearing walls. In organizations, load-bearing walls are policies, processes and tacit assumptions that keep us doing things the way we have always done them. The load-bearing walls within the SAT-ocracy have served to select, sort, and stratify learners, batch them for administrative convenience, and marginalize the learning in the arts and humanities that is most needed for success in the 21st century. Listed below are some examples that illustrate this point.

The SAT-ocracy serves to stratify learning, giving greater emphasis to the traditional "college-bound" track than it does to other legitimate areas of study. As Friedman and Mandelbaum instruct:



“To innovate,
you have to
question the
status quo”

s. dukach

“Many people ...
especially economically
disadvantaged
populations ... have
labels given to them –
hyperactive, ADD,
ADHD, special needs,
and so on. This may
describe certain
symptoms, but all too
often these “diagnoses”
become a stigma, a
mark on children’s
souls that tells us
nothing about who
they are, what they are
capable of, and what
they need to succeed.”

”
t. wagner

We also need more routes to the top. Many of the good jobs opening up in this country do not require four years of college, but they do require high-quality vocational training. Learning to repair the engine of an electric car, or a robotic cutting tool, or a new gas-powered vehicle that has more computing power in it than the Apollo space capsule – these are not skills you can pick up in a semester of high school shop class. It is vital that high schools and community colleges offer vigorous vocational tracks and that we treat them with the same esteem as we do the liberal arts or college track.

...we need to understand that learning how to deconstruct a laptop computer in the local community college is as valuable as learning how to deconstruct

The Catcher in the Rye at the state university.

The SAT-ocracy also excludes many students who happen to learn differently. Wagner explains:

Many people ... especially economically disadvantaged populations ... have labels given to them – hyperactive, ADD, ADHD, special needs, and so on. This may describe certain symptoms, but all too often these “diagnoses” become a stigma, a mark on children’s souls that tells us nothing about who they are, what they are capable of, and what they need to succeed. What is common to many that I have taught, however, is that they are not “book learners.” They learn by doing. They are capable of making enormous contributions to society if given the right opportunities to learn and develop.

“

You must have the basics. But, if in our rush to get everyone a proper grounding in math and science, **we throw out or shrink art, music, journalism, choir band, film, physical education, dance (and calligraphy) ... we lose the very things that encourage collaboration and inspire creativity and mash-ups.**”

friedman & mandelbaum

The intense focus on standardized testing and external measures of accountability that has emerged in recent decades further marginalizes important learning for students. I am reminded of the now famous story about Steve Jobs and calligraphy, which he recalled at Stanford graduation in 2005.

Steve Jobs had dropped out of college as a full-time student and was living on the dorm room floor of friends. He spent his time taking single courses that sparked his curiosity, one of them being calligraphy. As Jobs told it, he took the course without knowing how it would ever help him in the future. About ten years later, when he was involved in designing the first Macintosh computer, it all clicked and Jobs used what he learned in calligraphy class to design the first multiple typefaces, or proportionally spaced fonts. Drawing on his experience with a seemingly useless course, Jobs provided the world amazing typography for personal computers.

Friedman and Mandelbaum support the notion of well roundedness in learning experiences and the importance of a liberal arts education:

You must have the basics. But, if in our rush to get everyone a proper grounding in math and science, we throw out or shrink art, music, journalism, choir band, film, physical

education, dance (and calligraphy)... we lose the very things that encourage collaboration and inspire creativity and mash-ups.

The SAT-ocracy has trained us into thinking that the “hard” subjects are more important than the “touchy feely” liberal arts. Vivek Wadhwa, technology entrepreneur turned academic researcher from Duke and Harvard, opines that liberal arts are just as important as engineering:

It takes artists, musicians, and psychologists working side by side with engineers to build products as elegant as the iPad. Anyone with education in any field can achieve success in Silicon Valley. My advice to my students – and to my own children – is to study what interests them; to excel in fields in which they have the most passion and ability; to change the world in their own way and on their own terms.

Another important component of the liberal arts approach are the humanities. Literature, philosophy, social sciences, anthropology, epistemology, poetry, etc., provide a framework for learners to challenge their thinking from a variety of disciplines. Accordingly, students learn to view issues through multiple lenses, making them deeper, more reflective thinkers. Semyon Dukach,



MIT trained high-tech entrepreneur, provides insight into the importance of the humanities:

Humanities seminars where people form ideas and argue about them foster creativity and innovation in engineering. To innovate, you have to question the status quo – rebel in a sense. Humanities, at their best, teach you to question everything, and they foster a belief in argument and logic. For example, when you come up with a new interpretation of a piece of literature, that experience empowers you to question and to use your mind creatively in other endeavors.

The key to a new system of education is balance. Friedman and Mandelbaum said it best when discussing the difference between smart and ingenious. The authors describe the distinction thusly:

The primary distinction, I think, is the ability to apply creativity and aesthetic sensibilities to a challenge. In the world of invention and innovation, that means

combining an appreciation for the humanities with an understanding of science – connecting artistry to technology, poetry to processors.

Our current system of education has done a good job of preparing kids to take existing jobs. However, in a world that is evolving at a rate like no other in history, as a country we must revisit what it means to be educated in the 21st century and how we can create the system we need to prepare our kids for work and life. Friedman and Mandelbaum assert that it is a matter of national importance: “It is imperative that we become much better in educating students not just to take good jobs but to create good jobs. The countries that educate and enable their workers to do that will surely thrive the most.”

Moving forward, every student and every working adult, will need to ask him or herself the following question: What is it about how I do my job that is going to differentiate me? Friedman and Mandelbaum suggest that now, more than ever, we are all waiters and

waitresses trying to do that something extra that a machine, a robot, or a foreign worker cannot do.

Friedman and Mandelbaum explain: “Extra” for many people will not be a software breakthrough or a rocket design or even a drive to exceed a sales target. It will be something simpler but all too rare these days: the ability to connect with other human beings in a way that no machine ever can – whether you are a doctor, nurse, salesclerk, or teacher. The more technology changes things, the more important the power of the “human stuff” becomes.

A new system of education goes beyond the benefits of preparing the workforce. Lest we forget, one of the original purposes of public education was for an educated citizenry. Susan Engle of Williams College provides good insight into this goal of education:

We don’t want our young people to be educated just so they can be better workers. We want all citizens to be better educated so they can be, well, better citizens. We want kids to think critically, to read, to create, but not simply because those things will get them jobs and money; but because a society made up of such people will be a better society. People will make more informed decisions, invent things that help the world rather than harm it, and at least some of the time, put the interests of others ahead of self-interest.

CONCLUSION

We are at a crossroads. We can come together and build 21st century educational systems, or we can put our collective heads in the sand and hope for things to go back to the way they were.

Like our old station wagon, the system that brought us 20th century

prosperity is burning oil. To say it another way, We can’t squeeze any more juice from the existing orange. Rather than training our kids to take their place in an existing world, we need to educate them to forge a new path toward excellence. Much like the Puritans, the revolutionaries, and those who settled the old west, we need pioneers to become leaders in our new reality by creating new products and services, or adding value to existing products and services. Moreover, we must raise the level of consciousness required for an educated citizenry by teaching our kids to be thoughtful, reflective, and selfless; able to consider issues through multiple lenses.

Our young people need a system of education that challenges their thinking through a variety of disciplines, a system based on curiosity, inquiry, passion, discovery, collaboration, hands-on engagement, and connecting on a human level. Doing so will not only secure our place as world leaders, it will raise the level of humanity and, in turn, the quality of life for all Americans.

We have a rich history in this country of coming together to do remarkable things. We secured our independence, industrialized the world, built great structures like the Hoover Dam, won world wars, and put a man on the moon. Restructuring public education will take no less effort than the other great feats we have achieved as a nation. The inertia of the status quo is enormous, but so is the power of the American will and the American spirit. It will take bold, visionary leadership and a massive collective effort, but the future of the country depends on it.

**I know we can do it;
our kids are depending on us.**

REFERENCES

Amabile, T. (1998). *How to Kill Creativity*. *Harvard Business Review*. September-October, 1998.

Arum, R. & Roksa, J. (2011). *Academically Adrift: Limited Learning on College Campuses*. Chicago, IL: University of Chicago Press

Brown, T. (2008). *Design Thinking*, *Harvard Business Review*, June 2008.

Delbanco, A. (2012). *College: What It Was, Is, and Should Be*. Princeton, NJ: Princeton University Press.

Dyer, J., Gregersen, H. & Christensen, C. (2009). *The Innovators DNA*. *Harvard Business Review*, December, 2009.

Engel, S. (2011). *Red Flags or Red Herrings? Predicting Who Your Child Will Become*. New York, NY: Atria.

Friedman, T. & Mandelbaum, M. (2011). *That Used To Be Us: How America Fell Behind in the World It Invented and How We Can Come Back*. New York, NY: Farrar, Straus and Giroux.

GE Global Innovations Barometer, (2011)

Jazwiec, J. – blog at JohnJazwiec.com

Isaacson, W. (2011). *The Genius of Steve Jobs*. *New York Times*, October 29, 2011, opinion column.
<http://www.nytimes.com/2011/10/30/opinion/sunday/steve-jobs-genius.htm>

Katz and Autor (2010). *Grand Challenges in the Study of Employment and Technology Change*. National Science Foundation.

Kessler (2011) *Wall Street Journal*. February 17, 2011

Kessler, A. (2011). *Eat People: And Other Unapologetic Rules for Game-Changing Entrepreneurs*. New York, NY: Penguin Group.

McKinsey & Company (2010). *Innovation and Commercialization*, 2010. http://www.mckinseyquarterly.com/Strategy/Innovation/Innovation-and-commercialization_2010_McKinsey_Global_Survey_results_2662.



This is the fifth in a series of essays designed to provide a framework for dialogue as, together, we craft the future of public education in Hamburg. Each essay is designed to highlight a particular aspect of education, and discuss how we can move forward to provide a future-focused, personalized learning plan for **every child, without exception**. We are fully committed to helping our kids become the best version of themselves, so that they may make their contributions to the world and live lives of significance and meaning.

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