

HAMBURG AREA SCHOOL DISTRICT

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

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EXECUTIVE SUMMARY

For more than six decades, the national narrative of education has been like an escalator. Step on, passively ascend, and depart on the floor that hosted the career of your choosing. The longer you stayed on the escalator, or the more formal education you acquired, the better your career would be. Once on the desired floor (job), you had reached your destination: the American dream. Lifelong learning was a hobby, and you could aspire to average by following the rules.

The escalator has changed direction ... and so must the national narrative.

In our current reality, the American dream is a journey, not a destination. Lifelong learning is essential and we must aspire to differentiate. The

pace of economic evolution will favor those who can invent a job or career, and who have the courage to re-invent the rules along the way. If the escalator is moving downward, we need the agility to ascend faster than the downward motion; standing still and waiting our turn is no longer sufficient.

School is not job training. It is a process where students need to develop the tools to make a meaningful contribution to the world. If we merely focus on subjects as a means for job training (or more school), we miss the tangential benefits of providing our kids with coursework that will pay dividends for a lifetime. This essay is a framework for dialogue about the need to engage learners in a broad and deep liberal arts education.



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SAT-ocracy

is the notion that if you follow the path of the SAT-ocracy, you are guaranteed a job in your chosen field, complete with the salary, health care benefits, retirement package, the “white picket fence,” and gold watch after a career of working 35 years for the same company.

When Are We Ever Gonna Use This?

Why We Teach Math and Other Misconceptions Based on Utility

INTRODUCTION

“When am I ever gonna use this?” If you have attended school, you probably have asked this question, or have heard someone ask this question about one or more subjects taught in school. As educators, we should be able to articulate why specific subjects are taught in school. We also need to craft a contemporary narrative that addresses the misconception regarding relevance based on utility. To put it another way, we need to know why we teach what we teach, and we need to address the false notion that, if you can’t make a living doing it, it is not worthy of study.

THE “WHY” QUESTION

As a high school student, I remember asking the “when are we ever gonna use this” question about math. I “did” math, but I was not a confident learner in math, and I didn’t know why

I needed to study math. Consequently, I hated math. This is typical human behavior. If we are not good at something, we tend not to like doing it and avoid doing so whenever possible. After all, we like doing the things we do best. Seeking answers, I asked my parents, my teachers, and my school counselor. The answers included:

“You need a good grade for your GPA.”

“You need a decent grade to remain eligible in sports.”

“You need this class to get into college.”

“You need this class to prepare for the next class.”

“You need this class to prepare for the SAT.”

“You need this class to graduate.”

And the ever popular...

“Because I said so.”

The Right...	SAT-ocracy Narrative	New Narrative
Courses	Content Coverage & Weighted Courses	Deep Learning & Inspiring Curiosity
Grades	GPA & Class Rank	Broad and Diverse Experiences
SAT Score	Test Prep & College Acceptance	Movement Away from SAT ACT
College	Prioritize Four-Year College	Broaden the Definition of College
Job	Single Job for Life - Destination	Multiple Careers - Journey

The common theme among these responses is rooted in the SAT-ocracy. The SAT-ocracy is the notion that says, if you:

Take the “right” courses
Get the “right” grades
Get the “right” SAT score
Get into the “right” college
Get the “right” job
...You’ll have a good life

Let’s take a closer look at the SAT-ocracy.

THE SAT-OCRACY

The SAT-ocracy is the academic bureaucracy – It is the notion that if you follow the path of the SAT-ocracy, you are guaranteed a job in your chosen field, complete with the salary, health care benefits, retirement package, the “white picket fence,” and gold watch after a career of working 35 years for the same company. As *Sir Ken Robinson* (2009), *Tom Friedman* (2007), *Friedman and Mandelbaum* (2011), *Diane Ravitch* (2000, 2010), *Tony Wagner* (2008, 2010), *Richard Florida* (2005, 2008, 2010), *Don Tapscott* (2009), *Tapscott and Williams* (2006) *Jamie Vollmer* (2010), *Hagel, Brown and Davison* (2010), *Seth Godin* (2009), *Dan Pink* (2006, 2009) and others have proffered, while the SAT-ocracy is not a bad pathway to success, it is no longer the “golden ticket” i.e., *Charlie and the Chocolate Factory*, that it once was. As Robinson suggests, the value of the college degree has diminished, and is less like the “golden ticket,” and more akin to the wrapper

in which the chocolate resides. It is an essential part of the package, but it is not the game-changer it once was.

Don’t get me wrong. I am not arguing against a college education. However, as an educational leader, I feel a sense of responsibility and urgency to share the insights of thought leaders in our field and to study the implications for how we best prepare our young people to make their mark in the world. The clear emerging theme among thought leaders is that the SAT-ocracy, the traditional pathway that has defined our educational narrative since the G.I. Bill, is no longer a guaranteed passport to the American dream.

Let’s dissect the component parts of the SAT-ocracy narrative:

The “right” courses – focus on content coverage and weighted classes vs. deep learning and inspiring curiosity and passion for further study;

The “right” grades – focus on GPA and class rank vs. breadth and diversity of educational experiences that address multiple intelligences;

The “right” SAT score – focus on test prep in a college acceptance environment that is moving away from using SAT scores as a criterion for college admission.

As of October 2010, 850 colleges no longer use SAT or ACT scores as a criterion for admission (National Center for Fair and Open Testing).

Some examples include: Dickenson, Franklin & Marshall, Wheaton, Hobart, William Smith, Ursinus, Muhlenberg, Susquehanna, Providence (*U.S. News & World Report*).

Increasingly, colleges are using services such as Zinch, a digital portfolio clearinghouse, to connect students with colleges, and colleges with students.

The “right” college – a single, narrowly focused pathway based on traditional academics vs. broadening the definition of college to include community college, technical schools and apprenticeships. This reminds me of a story:

I know a young man named Derek, who had graduated from high school in 2010. Derek is a bright, gregarious, likeable young man who had spent his freshman year at a quality liberal arts college. Through our interactions, I learned from Derek that, while he had had a successful first year of school; he didn't quite “fit” where he was, and was planning to transfer to a state-funded four-year school. I didn't think too much about this, until Derek finally revealed to me several weeks later that he was not transferring to the state school; he was really transferring to a community college.

The community college has the exact program in health care that Derek wants to pursue. He will be highly employable upon graduation, based on a recent conversation with the CEO of the local health care system, and he will be doing something he loves. So, why did it take so long for Derek to “reveal” to me that he had chosen to leave a quality liberal arts school in favor of a community college education? My suspicion is that he felt slightly embarrassed, feeling as if I would think less of him because he chose a community college education.

How sad is this... a young man has found his passion, and, rather than feeling pride in his decision, he was almost apologetic when he told me of his plans. This makes me question the collective message we are sending our young people about the definition of higher education. The truth is, Derek is a brave young man. He made a bold decision, flying in the face of convention, and will emerge a passionate, self-directed, engaged, and highly employable candidate. Moreover, he will be doing something he loves and will make a difference in the lives of those he serves.

The “right” job – from learning that occurs in the early stages of our lives to prepare for a single job or career vs. learning as a lifelong journey to prepare for multiple career changes and respond to unforeseen challenges.

The implied message I (and countless others, I suspect) received, rooted in the SAT-ocracy narrative, was: “you need to do well on this path or you will not have a good life.” Even if that were true in the past, the effects of globalization, outsourcing, off-shoring, automation, and digitization have shown us that the traditional path to success via the SAT-ocracy is no guarantee to success in the modern world. As I have discussed in other articles (Mextorf, 2005, 2006, 2007, 2008, 2011, 2011) work has been going overseas for decades. Because the work was largely blue-collar, we saw this as progress because it led to being able to purchase goods cheaper (think Walmart). Now that the folks who followed the same rules as we did, the white-collar SAT-ocracy folks, are losing their jobs because of digitization, it has our attention because we fear the same thing could happen to



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us. That notwithstanding, I think our kids deserve a better answer to the “why” question, which is rooted in the question, “when are we ever gonna use this.”

WHY WE LEARN MATH

Authors Chip and Dan Heath (2007) provide what I consider to be the best example of an explanation about why students should learn math. High school math teacher Dean Sherman, in response to the question “When are we gonna use this?” responded:

Never. You will never use this.

I then go on to remind them that people don’t lift weights so that they will be prepared should, one day, (someone) knock them over on the street

and lay a barbell across their chests. You lift weights so that you can knock over a defensive lineman, or carry groceries or lift your grandchildren without being sore the next day. You do math exercises so that you can improve your ability to think logically, so that you can be a better lawyer, doctor, architect, prison warden or parent (p. 194).

Bottom line...math is mental weight training for life.

And there you have it. Even if you never again find the slope of a line or solve for X, the mental “weight lifting” that occurs in mathematics helps prepare learners to be better thinkers in whatever they choose to do in life. Now that’s an answer I (and kids) can relate to!

RELEVANCE BASED ON UTILITY

Ideally, all subjects must pass the bar of scrutiny regarding relevance i.e., why do we teach this? As educators, we should know and be able to articulate clearly why we teach every subject, and how each fits into a comprehensive educational program. However, a deeply embedded dichotomy exists in our educational systems. Subjects that fit neatly into the SAT-ocracy are assigned great significance, regardless of utility. Math, science, social studies and English (the big four) occupy that place in the hierarchy of subjects (Robinson, 2009), and we make tacit assumptions, steeped in the SAT-ocracy, about their relevance. Without question, math is important; but how many of us earn our livings as mathematicians? Yet, our success in the modern world depends greatly on the quality of our thinking skills and, more importantly, using abstract thinking skills (Mextorf, 2011) to identify complex patterns and relationships, connect the intellectual dots, and provide products and services the public didn't know it needed, yet, once introduced, can't seem to live without.

While the "big four" get a pass, the dichotomous bar of scrutiny based on utility is used to measure other subjects not considered to be "major" or "non-academic" in nature. In other words, subjects such as music, art, dance, drama, digital photography, graphic design, entrepreneurship, the social sciences, and digital media are nice to do, but because the likelihood of making a living doing them is remote, they are considered only as addendums to the "serious," "major," or "academic" subjects. In the modern world that celebrates and employs



unique talents, insights, perspectives – in a world that is increasingly niche market driven, this approach will no longer do (Anderson, 2008; Friedman, 2007, 2010; Shirky, 2008; Weinberger, 2007). We can no longer afford to devalue the education of the whole child by deemphasizing subjects that have traditionally been considered "fringe" subjects.

Don't get me wrong; I'm not suggesting we devalue the traditional subjects. I am saying subjects that have traditionally been considered "fringe" subjects will help our kids identify, nurture, and develop skills that will help them find their unique talents, passions, and combinations of intelligences – the things that will make them "untouchable" in a globalized economy. Just as, although we might never use algebra after graduation, it is still good to learn algebra, although we might never become

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sociologists, it is still good to have a deeper understanding of the human condition through the lenses of a rigorous course in sociology.

This is supported in learning theory by the concept of transfer. The existence of the legitimacy of transfer in learning theory can be traced at least to 1928, when Pedro Orata challenged Edward L. Thorndike's assertion that learning was discipline specific, and could not be transferred or extrapolated to other situations. Orata's studies demonstrated that considerable transfer did occur if students were taught to understand meanings, concepts, and principles. When students understood what they were learning, why they were learning it, and why it had implications outside the classroom, they were likely to transfer what they had learned to new situations. (Ravitch, 2000).

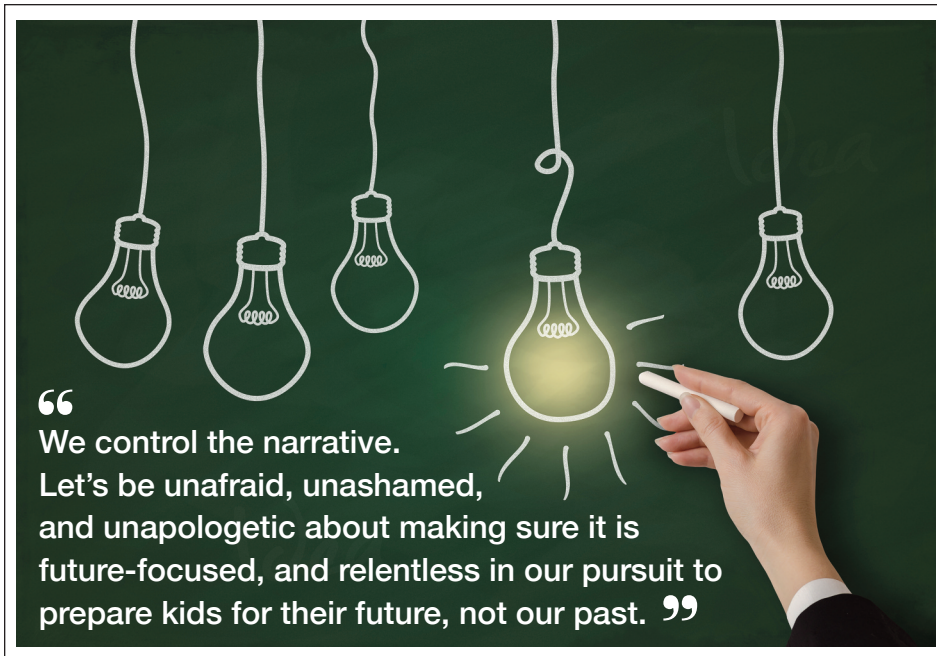
By the 1950s, it was generally accepted in learning theory that transfer can and does occur. Walter B. Kolsenik reinforced the importance of transfer in preparing learners by postulating: “The very notion of formal schooling assumes that what is taught in school will prepare students for new and unexpected situations.” (Kolsenik, 1958, pg. 5).

The notion of transfer in learning theory reminds me of a conversation I had recently:

A woman told me the story of her daughter, Maryann, who was educated in music. The daughter's general course of study was liberal arts in nature; her major was music education (at the urging of her parents, so she would have a “fallback”) with an emphasis in classical singing. Upon graduating, Maryann traveled the world for several years pursuing her career as a singer.

Tiring of “the road” and wanting to start a family, she settled into a career in real estate. Although she does not earn her living as a singer, Maryann's liberal arts background and education in music nurtured her development intellectually, allowing her to recognize and understand complex patterns and relationships. Now she uses those skills as a problem solver and solution provider in her chosen profession. Her arts background allows Maryann to connect with clients' emotional needs and aesthetic preferences on a human level, and transfer that connection into viable options and practical solutions. She even enjoys the concomitant effects of her background in the arts as an attractor for clients. To put it another way, Maryann's reputation as an artist and her global experience makes her services attractive to clients interested in higher-end property (we'll call this the “hoity-toity” effect). Her background also has taught her the value of perseverance through hard work.

Although Maryann is not making her living as a singer, her education in the arts has allowed her to provide a valuable service to clients, make a nice living for herself, and do something she both enjoys and is good at doing. By any measure, Maryann is



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a success professionally, and her education, along with the support of her family, was a pathway to her success.

CONCLUSION

In a world that is changing at breakneck speed, being able to adapt and respond to new and unexpected situations is more critical now than ever. While we in the United States are attempting to compete with China by increasing standardized testing and narrowing the breadth of educational programs, China is restructuring its educational system to unleash the creative potential of its students (Zhao, 2009). The way to engage our students fully is through a broad, deep, rigorous educational program; one that is not based on the unequally applied false notion of relevance based on utility.

Perhaps Michael J. Fox, appearing in a guest star role in the series *Boston Legal*, was on to something when he said:

(We need to) inspire our kids to be innovative thinkers; people who tap into

their own creativity and confidence to try new things, to challenge the status quo, to make new discoveries. Our kids will do all that and more...if we (just) let ‘em grow...

We must engage in a new narrative that includes developing the unique talents, passions, and intelligences of every child, without exception. The old SAT-ocracy will no longer suffice as the singular preferred pathway to success.

I believe in our kids. They deserve our very best, and they should expect more of us than to cling blindly to the past for the sake of familiarity and nostalgia. After all, nostalgia is merely optimism facing in the wrong direction.

We control the narrative. Let’s be unafraid, unashamed, and unapologetic about making sure it is future-focused, and relentless in our pursuit to prepare kids for their future, not our past.

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This is the fourth 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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