

The Dichotomy of Modern Education: Data Driven Analysis and the Erosion of the Art of Teaching

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“When will I ever need this?”

“I just won the lottery!” Perhaps that statement is the new mantra of economic freedom in our society. Unfortunately, only a very lucky few can achieve economic security without the benefit of education. As our world grows smaller and economies merge, there is a phenomenon of great concern that is unfolding. Many traditional jobs are being absorbed by the world market and the economic marketplace of “the new world order.”

With the advent of the computer and the birth of the internet, many high tech and engineering jobs have been lost to overseas vendors. The job market is changing and evolving. Many of the skills necessary to succeed in those jobs are changing as well.

I therefore must disagree with the statement made by John Dewey, “education therefore, is a process of living and not a preparation for future living”.

I believe, as educators we should be greatly concerned that the quality and direction of curricula is in tune with, and adequate enough to secure our students’ future success in the job market as it will exist when they arrive at that place in their lives.

School districts must strive to foresee what future trends the job market might take and adapt their curriculum to meet the academic and social needs required to succeed in those industries.

Education is necessary to promote abstract thought, critical thinking, and creativity. Education is the conduit by which the impoverished may escape the bounds that imprison them. It is far better to teach a person how to farm and to become self sufficient than it is to provide them with a daily plate of food and thus remain dependent.

A properly administered curriculum based on the needs, beliefs, and goals of the learning community will create diversely educated, successful, productive and happy adults for the future health of our society, culture, and nation.

As teachers we should always be on the lookout for imaginative new ways to present the curriculum to students. Many approaches and techniques can be utilized such as creating a “story, engaging in metaphor, jokes, mental imagery, etc, as outlined by Egan. (Egan, 2005, p2-6).”

Bureaucracy – the elephant in the living room.

Towards the end of the 19th century our nation embraced the industrial revolution. Powerful and influential men of industry and finance, an elite class of philanthropists had a very major role in the transformation of American education.

These powerful people were part of the “child saving movement”, which purported to be a movement that had the best interests of children in mind. This may well be the case

but there was another motive as well. Along with this new revolution, came the need for a work force. At that time in our history there were many wayward children in the juvenile justice system, and a moral imperative to save them, thus the framework of the modern educational system was born.

One size does not fit all!

It’s a “You Tube” world, and even for those who believe that testing is the only way to measure success, does anyone know what to test anymore? The definition of “success” is evolving so rapidly that we need to question whether or not we are, in fact, testing children for the skills they will need in the 21st century.

- The classroom is the proving grounds for educational initiatives.
- Teachers are the guardians, the medium, and the conduit by which students learn the fundamentals of academics, socialization, and survival.
- Teachers interact with their students on a daily basis they come to know them and who they are.
- Teachers understand how their students learn and what they need in terms of emotional support.

Rigid benchmarks, rubrics and burdensome bureaucratic mandates spell the death of creativity and dilute the *art* of the teaching profession.

- They impose potentially outdated standards.
- They consume the teacher’s time, flexibility and opportunity to adapt, create and motivate students.
- They do not consider very specific situations with very specific children living a world in which economic, political and social reality has a frighteningly short half-life.

At some point, the “Powers that Be” may have to choose between the comfort of measurement and the discomfort of trusting the individual teacher to adapt their lessons to the shifting skill sets of the world their students will need to survive.

The early part of the 20th century, was a time when our country was host to a massive influx of immigrants from many parts of the world. This was good news for the industrial giants and good news for the reformed educational system. The need to assimilate these new members of our

society became paramount to the success of our nation both economically and culturally.

If we do not 'Americanize' our immigrants by luring them to participate in our best civilization...they will contribute to the degeneration of our political body and thus de-Americanize and destroy our national life (Graham, 2005, p.11).

Thus our nation embarked on a mission to “forge” all of these new immigrant children into patriotic Americans in spite of their cultural backgrounds.

Today, our educational system has evolved. While the buildings and the classrooms still maintain the factory/warehouse look, we have moved away from the authoritarian / industrial model to one which truly values and caters to children and their diversity. The needs of our society are no longer at the forefront of our educational process, and the needs of the children are the priority.

Many new initiatives and changes have come down the pike and the stresses and strains of these programs have had both positive and negative effects on the learning community. Teachers have felt pushed and pulled in many directions over and over again as these new initiatives and directives seemingly change with the direction of the wind with very few positive results to show for it. It is no wonder that many teachers do not meet new initiatives with open armed glee and excitement.

Teachers have regularly and increasingly complained about the conditions of their work-the lack of respect they encounter, the increasing bureaucratization of their tasks, and their work schedule, faced with no office, phone or other amenities associated with white collar work. (Graham, 2005, p.190).

This does not presume to say that all is not well in the field of education, but improvement needed in the way these new approaches to education are delivered and implemented. The latest approach proposes a more comprehensive community model. The success of this new model however, requires that all parties are participating in the child’s education.

The current model as illustrated in the word graphic below, demonstrates the need to balance the responsibility of educating our nation’s children.

Graphically orienting these four words:

Parents Students Teachers Administrators



We can see that the center or fulcrum of the graphic lies just under the “a”, in Teachers. I believe that this represents the central position in which teachers and students find themselves, with the focus of the weight placed on the

teacher. Parental involvement in a child’s motivation to learn is important. Unfortunately many children find little encouragement or support on the home-front thus the burden of the weight shifts to the right and we teachers find ourselves performing the role of pseudo- parent.

On the other side of the see-saw are the administrators. Many of whom view their “common core of learning,” as a means to fit the “white-art” of teaching into the neat framework of a “rubric for success.” The effort to find a standard approach for the betterment of education is a noble one; it is unfortunate however, that many times the good intentions of some are adulterated in the political process:

Their work has been misused by politicians and bureaucrats who have ironically fixated on a most inappropriate tool – high stakes standardized tests – to measure this otherwise worthy goal and supposedly to hold educators and schools “accountable.”

(Fried, R (2005). The Game of School.)

The pressure created by new initiatives, which emanate from the National and State Boards of Education, while seemingly charged to the administrators, is perhaps unwittingly transferred to the left onto the teacher. It is therefore apparent that for many children, and perhaps most children, it is the *student- teacher relationship*, in spite of the forces of parents and administrators that is the driving force in the creation of the *lifelong motivated learner*.

Schools everywhere are being forced to bow down before idols of state-sanctioned curricula, to tremble in the shadow of all-powerful testing rituals, to replace their trust in the learning clerics of home and village (their teachers) with symbolic public worship of national (masquerading as standardized tests), in whose shadow our teachers are relegated to the role of altar boys. (Fried, 2005, pp79)

Teachers are the true soldiers of education. We are the guardians of the learning process. We must continually *reflect* upon the methods that we employ and *evaluate* them for success. Teachers should observe and evaluate classroom dynamics. They should try new methods designed to motivate students, and engage them in a positive exchange of ideas, and memorable activities. The fundamentals of learning are best administered and evaluated at the classroom level. The dynamic environment of the classroom is where the teacher has the opportunity to learn about each student’s capabilities, personality, and learning style. It is here where neural pathways are formed and nurtured. One thing that Jensen refers to in his book “Enriching The Brain” is the role that self discipline plays in students’ success.

A study called the “Marshmallow Test, (Jensen, 200, pp31)”, explains how students were offered the option of a marshmallow now or two marshmallows if they waited 15 minutes. The students were evaluated 14 years later and the study showed that those who waited (the non- impulsive)

group were more successful in life than the impulsive group who chose immediate gratification. The non-impulsive group displayed discipline and the ability to look ahead to the greater reward in the future.

I believe that student success is malleable, the classroom is the forge and the teacher is the blacksmith. I also believe that if student progress is to be measured it must be measured within the same context as the learning environment. This is the daunting task that the State and Federal Departments of education must wrestle with. As Jensen points out, there are many different forms of intelligence that are interlinked and all contributing to the overall learning dynamic of each student. The difficulty for the bureaucratic powers to be lies in the currently employed one - size - fits - all method of testing which does not truly reflect student acquisition of knowledge.

Bureaucrascience vs. The Art

Data, data, data! The standards based era that is currently in place needs data to survive. Any engineer will tell you that the more data you collect the more accurate your result will be. This approach to cause and effect works quite well in the manufacturing where production rates of machines and assembly lines can be mathematically calculated, outcomes predicted, and the parameters of operation are well defined and quantified within reliable tolerances.

Students, teachers, administrators, and parents however are not machines, we are human. We all operate with different parameters and very wide tolerances. For decades the psycho-social sciences have been engaged in the continuing endeavor to analyze and quantify human behavior, but humanity evolves and changes, thus bringing to mind the vision of the obsessed greyhound in pursuit of the ever elusive fake rabbit.

In terms of education, there is a definite need to research, measure and assess the current health of the educational system, but often, "research designs do not fit the lumpy realities of educational practice (Graham, 2005, p.196)."

There is no doubt that a well outlined and orchestrated methodology for the collection and analysis of acquired data is crucial to the determination of whether an experiment or study is valid.

I use the terms experiment and study for a reason. As humans evolve (for those of us who believe in evolution), so does technology, scientific discovery, and the fabric of our society. Along with these changing facets of our world come new ideas and new strategies on how to make education better.

One of the biggest obstacles faced by the proponents of change is the one of experience. As Blankstein states, "Most veteran teachers have experienced disappointments at one time or another due to past waves of school reform" (Blankstein, 2004, p106).

Anyone can collect and analyze data, but useless data tells you nothing. Past educational reform initiatives, relied heavily on the use of standardized aptitude test results as the measure of success. While the results of these data have been able to show that a problem does indeed exist, these data fall

short when it comes to exposing the root cause of the problem. For that information, data that offers deeper analysis of proficiency and learning must be collected and analyzed. Data such as demographics, socioeconomic status, family issues, health issues, specific needs, teacher input as observed in the classroom, and other classroom performance criteria should be collected and disaggregated to show trends and patterns that can provide useful information to the educational team.

With all of this talk about data, research, analysis, study, the *art of teaching* is slowly and methodically eroding away as wave after wave of educational reform wash against its shoreline and it has become the most prominent victim of the tides of change.

As the saying goes; "you know it when you see it", the art of teaching is something that cannot be completely taught. If you were to hear a series of pianists play the same piece, there is most often one who has just the right touch and can bring the life out of a piece of music while others cannot-so goes the teaching profession.

The art of teaching is something that can be learned to some extent, but there must also some innate ability to do it well, to have the right touch, and the passion, to breathe life into the learning process. The frustration lies in that the drive to quantify the art is actually changing it into a more sterile, less passionate form. Much like the argument that listening to a record on the original analog vinyl is a much better sound than the newer digitized medium; the older having the entire ambiance and fullness of the original recording, while the newer having nothing but the filtered bits of the digital stream.

As we move further down the path of the new digitized form of education, we might want to consider allowing some of the ambiance to come through.

In education, there have been many successes; unfortunately the experiment cannot be reliably repeated.

We know that it is possible to create schools in which all or nearly all children prosper, we are not sure exactly what the constituent ingredients of such schools are. We know that they exist for we have seen them, but we do not know how to construct or universalize them (Graham, 2005, p.197).

Perhaps a different approach to learning could be employed. As stated above, the duplication of schools that are truly functional learning communities has proven to be elusive. States and districts have not found the winning formula for success in spite of countless attempts to change curricula and incorporate testing methods designed to determine proficiency in the subject matter.

Unfortunately bureaucratic programs tend to get bogged down in compartmentalization and categorization without much regard for the grey areas of creative achievement. As such, States and districts will remain focused on the specifics of curriculum and force teachers to yield to its timelines as they attempt to make the curriculum interesting without much support, training or time.

Too frequently teachers in the higher grades and college levels focus on the curriculum exclusively and do not see the students' developing cognitive tools in the curriculum material. (Egan, 2005, p.167)

If the Federal and States Departments of Education could divert some funding towards the training of teachers in areas such as *storytelling* as it applies to teaching various content areas, or provide workshops on how to make classroom instruction interesting, engaging and fun, instead of handing the teacher a "how-to" book or forcing them to attend a 30 minute promising practice, I believe that more teachers would develop ways of stocking their own *cognitive toolboxes* with the tools needed to create the prosperous imaginative classroom. A well taught class or workshop entitled "Introduction to Colorful Metaphor" might be more beneficial to teachers than another state mandated cookie cutter rubric.

Schools as Social Incubators.

"I'm alive", were the final words of a machine in an old science fiction thriller entitled, "The Demon Seed". It is a story where a malicious computer, designed to provide a fully functional household, becomes self-aware, develops a means to impregnate the homeowner with its own genetic concoction, and is subsequently 'born' in human form.

We humans are also born, but unlike the demonic computer in the movie, we are born with very little if any cognitive or instinctive ability to survive.

I believe that schools teach the basic skills of survival, both academic and social.

After-school activities and connectedness to school help to promote a sense of mastery in areas of student interest as well as community and teamwork.

Relationships between students and teachers help to promote healthy interactions with adults and authority figures.

Given proper guidance, and a *nurturing, caring environment*, any student can be successful and become a valued member of society.

Schools provide the means by which exposure to many social and cultural experiences can be had. Interaction with those of different cultures, creeds, and personalities inevitably leads to greater tolerance and understanding, creating a more cohesive society where humanity is the common ground as opposed to divisive concepts such as race or religion.

As with any microcosm such as a school or a company in the private sector, the established social norms are a function of the attitude of management. If the attitude at the top is one of mistrust and negativity, then the entire social fabric of the company right down to the lowest level employee will be one of negativity.

Our socio-cultural norms often boast of our ability to buck the system, to affect social change. I believe that this takes courage, but individual courage can vary with the circumstances.

A new teacher without tenured protection from the teachers union may be less courageous than a veteran teacher. The irony is that the new teacher, having been

weaned on the current approaches to education, can promote positive change with fresh ideas and different perspectives. Unfortunately, new teachers are less likely to be strong advocates for change for fear of rocking the boat, being labeled as brown noses or losing their jobs.

Lifelong Learning, Future Success.

As a teacher in this new world of education, I aspire to the role of helping our children succeed and become lifelong learners. I believe that there must be a balance between data collection and analysis, and the preservation of the art of education.

As educators we should strive to ensure that we don't send our graduates off into world with no opportunity because of an education that is ill suited. As administrators and teachers we must all be aware of the effects of the programs that we put into place. We must continually evaluate the effects that stress imposed on the school community by state mandated testing, evaluations, and data collection, has on the quality of education of our children.

There is a real danger of changing too many variables at the same time in an effort to correct what the data indicates are problem areas. Many novice engineers and scientists fall into that trap early on in their careers. Much like a child who gets a new camera for his birthday, it is inevitable that he will go through at least one role of film on the first day. Of course most of the photos will be meaningless and the film will have been wasted.

As with the camera and film we must choose our snapshots of the current state of education carefully, ensuring that the pictures truly represent the real world. New initiatives should be metered out with care and deliberation as not to upset the balance of the delicate ecosystem that thrives within the school community.

As teachers, we have an increasingly critical role and a profound impact on the social fabric of our culture.

Teachers are the medium by which students learn about life. Attitudes, work ethic, academics, social and cultural norms, life experiences and more are all transferable to our students.

As a mathematics teacher and engineer, it is my pledge to find ways to bring my real-world knowledge and experience to my students. I pledge to find ways to give my students a reason to change their stereotypical view of math from "why do I need this", to "let's do another example".

I will be flexible, observant and aware of each student's personality, learning style, strengths and weaknesses.

Many students struggle through school, never finding out what their learning styles are, their passions, their strongest talents, or their preferred modes of communication. This puts them at a tremendous disadvantage because it is their strengths that will help them cope and even thrive in this world. When students know their own strengths, it allows them to see themselves in the bigger picture of school and at home. It lets them see how to succeed in life by asking for help without judging themselves as stupid. (Jensen, 2006, p 209)

The concept of tuning the classroom to the needs of each and every student will prove to be a very difficult and complex task. Many teachers perhaps unwittingly acquire data on their students on a daily basis and utilize it in a very rudimentary way. Perhaps documentation of such information can be helpful in tailoring classroom curriculum to the needs of the students.

These data are crucial to the development of a truly customized education, one where each student thrives and learns in their own way. It is also crucial that the methods of testing and evaluation become less centralized and more local. Mandated procedures and over-standardization is the enemy of the truly custom learning environment. Perhaps it is time for a shift in the traditional structure and hierarchy of education. Perhaps it is time that bureaucrats stop sending a mixed message to teachers and administrators. The message on one hand- to find new and creative ways to think and teach outside the proverbial box, while on the other hand- being forced to stay inside the bureaucratic one.

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