

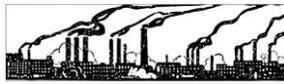


HOW DO WE CREATE INTELLECTUAL CAPITAL (TALENT AND EXPERTISE) ON A MASS SCALE? AND THEN, HOW DO WE MEASURE IT?

by Ruby K. Payne, Ph.D.



As we have entered the knowledge-based economy where intellectual capital (expertise and talent) creates wealth, the educational system has become central to that development. When we were agrarian, we represented wealth on paper using deeds. In the industrial era, we represented wealth on paper using stock certificates. In the knowledge-based economy, the struggle has been to find paper representation of intellectual capital. The closest we have to it right now are patents, copyrights, and college degrees.

Hunting/Gathering Economy 	Agrarian Economy 	Industrial Economy 	Knowledge-Based Economy 
No formal schooling	Basic numeracy and literacy	K–12 schooling	College or higher
Productivity based on keen sensory data; wealth measured by physical prowess and survival	Productivity based upon physical labor; wealth measured by land, cattle, and children; represented on paper as deeds	Productivity tied to standardization and compliance; wealth measured by employability and ownership; represented on paper as stock certificates	Productivity based on intellectual capital and capacity; wealth measured by individual capacity; represented on paper as patents, copyrights, degrees, and test scores

So the beginning of the discussion in education has centered on standards, which are an attempt to identify the intellectual capital offered in a course. Assessment is an attempt to identify how much an individual student has acquired.

A key issue facing America today is this: How do we create intellectual capital (talent and expertise) on a mass scale? And then, how does it get measured?

In an attempt to address that issue, state and federal policy and legislation have gone to models that simply will not work because the underlying assumptions are flawed, structural issues are ignored, and the models miss the mark.

So what should we be doing instead to get better results? And, simply from an objective and factual standpoint, what are my credentials that would give validity to my recommendations? I have a Ph.D. in Educational Policy Studies from Loyola University in Chicago. I have been in the education business for 40 years. I have spoken to approximately 1½ million educators, written multiple books (one has sold 1.6 million copies), and have been on thousands of school campuses in every state of the United States, plus a dozen other countries. I have been in rural, urban, and suburban areas, on Native American reservations—districts that have 30 students K–12 to districts that have 400,000-plus students. I have worked with every level of K–12 education (elementary and secondary, as well as central office), with state departments and intermediate service centers, with higher education departments of education, with U.S. national agencies, and with national agencies in several other countries. I also have worked with more than 100 school districts helping them address and raise student achievement scores in high-poverty areas. When I was principal of an elementary school, we went from fourth place in the district to first place in math scores in two years; the staff and I did it



with \$2,000. I list the above only to verify that indeed I have the experience and credentials to justify the following recommendations.

IT SHOULD BE NOTED THAT EDUCATIONAL SYSTEMS ARE POLITICAL SYSTEMS; they are funded and governed politically (in most cases, elected school boards and officials). They are structured to serve a geographical area. They were originally purposed for “the common good”; in other words, a democracy cannot survive without at least a somewhat educated populace that has enough literacy to be able to vote. With the increasing economic value of intellectual capital, there has been an attempt in recent years to repurpose the schools for academic achievement—but by using old structures and processes.

WHAT SHOULD WE BE DOING?

What follows are the kinds of changes that will move us to the development of intellectual capital (talent and expertise).

CONCEPTS, STRUCTURES, PROCESSES THAT NEED TO CHANGE

	MOVING FROM 	MOVING TO EXPERTISE AND TALENT
1	Funding tied to programs and student populations	Funding tied to interventions correlated to positive student outcomes (achievement, discipline, graduation, course completion, attendance, etc.)
2	Teacher evaluation	Teacher credentialing
3	Merit pay and tenure bidding rights	Pay differentials for difficult teaching assignments
4	Student testing based on standards	Calibrating student work/assignments against expertise development
5	Training for parents	Adult capacity development
6	Ignore neighborhood effects	Address neighborhood effects (early childhood, undeveloped talent ages 16–25)
7	Management/technical training of leaders	Leadership development
8	Policy based on theoretical frames; correlational research used as causation	Policy based on “operational validity” (e.g., using data generated in No. 1)
9	Forced choice/stand-alone delivery mechanisms	Mixed-use models: varied hours, intern-based, apprenticeships
10	Ineffective education of most males	Brain-based approaches evidencing greater success for males
11	Models based on compliance and standardization (industrial models—pass or fail—measure knowledge)	Models based on development of expertise and talent (human capacity models that measure growth and productiveness)

CONCEPTS, STRUCTURES, PROCESSES TO CHANGE

	MOVING FROM 	MOVING TO EXPERTISE AND TALENT
1	Funding tied to programs and student populations	Funding tied to <i>interventions</i> correlated to positive student outcomes (achievement, discipline, graduation, course completion, attendance, etc.)

CURRENT

Currently, school districts receive their funds categorically and tend to track the spending categorically because of the need to account for the monies. Funding, then, is largely separate from student outcomes. No business would consider not tracking funding to outcomes. This has been tried



in the past, but the model linked it directly to the achievement scores, and that doesn't work. It must be linked to the *interventions* that contribute to the outcomes. Because the ROI (return on investment) regarding interventions is not tied to outcomes, the political process plays a greater role in how monies are spent. Board members wrangle over allocations; administrators choose their favorite vendors, textbook and tech companies, etc., without knowing if that particular intervention made any difference in student outcomes.

MOVING TO FUNDING TIED TO INTERVENTIONS CORRELATED TO POSITIVE STUDENT OUTCOMES

What needs to happen is for each student to be given a multi-digit code for the following:

- Age
- Gender
- Race
- Disability
- Limited English proficiency
- Free and reduced lunch (poverty)
- Textbooks assigned to student
- Amount of time student receives one-on-one instruction
- Degree level of teacher
- Experience level of teacher (years in teaching)
- Technology access
- Amount of extra time student receives from specialists
- Attendance
- Discipline referrals
- Mobility (frequency of family moves)
- Homelessness, etc.

These are subsequently correlated against the achievement level of the student. The analysis then identifies which interventions worked for which patterns of students, what was the cost of those interventions, and which interventions had a ROI. This is a much more sophisticated way to make decisions about expenditures, and it lessens significantly more expensive and ineffective choices. Most schools already have the numbers on nearly all of these items: They are simply not tied together to identify ROI.

Note: The Aldine, Texas, ISD (Independent School District) used this model 20 years ago.

CONCEPTS, STRUCTURES, PROCESSES TO CHANGE

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2	Teacher evaluation	Teacher credentialing

CURRENT

Just as “all politics is local,” teacher quality also is *local*. Most school boards and teacher unions are in an uneasy alliance. Picture a seesaw, and you have the concept. When one is more powerful than



the other, no balance can be achieved—and students suffer. (Just as there are abusive/incompetent teachers, there are abusive/incompetent administrators, board members, and parents.) Teacher unions use contracts and litigation as their primary weapons, and their primary role is to protect teachers. School boards' role is to ensure the education and well-being of children by setting and monitoring the policies and budget. **Only school boards can hire and fire teachers.** Often neither party clearly understands its respective roles; then the seesaw goes out of balance. Currently, in many states, school board members cannot be litigated nor can they be removed.

Because anger is a much more potent organizing force than reasonable action, unions often will create issues to keep the organization active (Alinsky, 1971). Administrators cannot take action to correct a teacher problem if there is little or no backing from the school board. Conversely, unions have promised to protect the teacher. If an administrator does not do his/her homework, or the board will not act on the recommendation, then the teacher stays. The administration and board blame the unions. The reality is much more complicated.

Particularly in rural and urban areas, nepotism in the schools is a huge issue because schools tend to be the best places to work, in large measure because they have benefits.

Example: A teacher is incompetent. Parents have complained to administrators, and the principal has documented the lack of performance. However, the teacher's brother is on the school board and hears about this. The board member goes to the superintendent privately and says, "Look, I know my sister isn't the sharpest saw in the toolbox, but she can't lose her job because she needs the medical benefits. No one in the family has the resources to help her. She has three years to retirement. Can you just find a way to keep her until then? I promise I'll vote for everything you want if you'll just do this." The superintendent keeps the recommendation from going to the board and tells the principal to drop it and move the teacher into another classroom. When the parents complain to the superintendent, he says, "I understand, but because of the teacher unions we can't do anything. We have moved her though."

Example: New York City schools have a "Rubber Room." This is where teachers who have been removed from the classroom are kept and paid, but they no longer have access to students. NYC has 1,700 teachers who fit this category, and it costs the district \$1,700,000 annually. The NYC school board has crunched the numbers and calculated that this "solution" is less expensive than litigation (Brill, 2009).

Many principals today spend an inordinate amount of time watching teachers and doing evaluations. It is analogous to watching and videoing a National Football League coach, giving the football players a paper and pencil test about football, but not watching them play. We evaluate coaches based on what their players can do. We should be evaluating teachers based on what their students produce (as opposed to know) rather than spending our time watching the teacher.

There is often little payoff for the amount of time administrators spend doing required teacher evaluations.

MOVING TO TEACHER CREDENTIALING

To truly change teacher quality, credentialing needs to change. Currently most teachers receive lifetime certification. Credentialing needs to be required every five years, in front of a state board of examiners composed of practitioners and researchers, who look at the teacher's portfolio of student growth and achievement over the last five years, as well as the training the teacher has taken to stay current with the research and profession. The teacher would be required to identify five different



students with whom he or she has worked. This is similar to the type of credentialing done with other professions (accountants, lawyers, medical profession, therapists, etc.).

Teachers can be removed for incompetence (unfortunately, the law does not define that specifically), illegality, immorality, insubordination/negligence of duty, or failure to teach the curriculum (two U.S. Supreme Court decisions confirm that). However, you cannot teach if you are not certified.

It then becomes a very simple issue: If you don't get your certification renewed, you simply cannot teach. It minimizes the impact of local politics.

The National Board Certification of Teachers already has the model developed. It is excellent.



CONCEPTS, STRUCTURES, PROCESSES TO CHANGE

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1	Funding tied to programs and student populations	Funding tied to <i>interventions</i> correlated to positive student outcomes (achievement, discipline, graduation, course completion, attendance, etc.)
2	Teacher evaluation	Teacher credentialing
3	Merit pay and tenure bidding rights	Pay differentials for difficult teaching assignments

CURRENT

There has been a huge push to offer merit pay to teachers. Vanderbilt University did a study and found out that it has been tried numerous times with no positive results (Moran, 2010). The whole approach to merit pay cannot work because (a) numerous subjects are not tested (e.g., music, art, physics), (b) students are often taught by multiple teachers (secondary), and (c) beginning teachers typically get the most difficult students.

One of the most persistent civil-rights violations is that low-income and minority students almost always get beginning teachers. The poorest and neediest children are often given beginning teachers or long-term substitutes. In low-income and minority high schools, 50% of high school students and 70% of middle school students have an Algebra teacher who is not credentialed in math (Peske & Haycock, 2006). Most union/board agreements state that you cannot transfer out of your current position until you have taught at least three years, so the new teachers get the most difficult students and, as soon as they can, most transfer out. And if teachers received a grant to be educated as a teacher, they often have the stipulation that they must teach in a high-poverty school for five years to have that grant forgiven. So, at the end of five years, most of them also transfer to a school where students are easier to teach and have more resources.

Therefore, low-income and minority students, in effect, are constantly training new teachers and often have teachers who are not credentialed in the subject matter.

MOVING TO PAY DIFFERENTIALS

Several school districts have begun paying a differential of \$5,000 to \$10,000 a year to experienced teachers to go to high-poverty, high-minority schools, also with a differential of \$10,000 to \$20,000 a year to keep excellent principals in those schools.

One school district consistently rotated its excellent teachers for three years at a time through its neediest schools. The district asked the teachers to make that commitment for three years, and then the teacher would be moved to a school where students were easier to teach. There was an understanding with the board that the schools with the neediest students would get a greater level of support for resources and staffing as well.



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4	Student testing based on standards	Calibrating student work/assignments against expertise development

CURRENT

Many classrooms spend 25% to 33% of their school year testing. When nearly one-third of the school year is spent testing, it means that much less teaching is being done. And as the agrarian adage goes, “You don’t make a pig fat by weighing it.” If we’re spending huge amounts of our time measuring learning and less and less time teaching, not much is going to change. Tony Wagner, in his book, *The Global Achievement Gap*, states that test scores in America have not gone up since 1980 and in some areas, have declined. Yong Zhao, in his book *World Class Learners*, graphs the inverse relationship between countries that have high standardized test scores and their responding levels of creativity and innovation. While the USA has one of the lower sets of test scores in Western countries, it has one of the highest rates of innovation. Japan has very high standardized test scores but very low levels of innovation and creativity.

Furthermore, the standards (regardless of whether you use Common Core or another approach) are usually skill- or content-based and tend to be taught and tested in isolation. But learning is usually very contextual. (Case in point: See attached example, “Assessment of a Skilled Historian”—Appendix A.) As a result, we aren’t moving the students to expertise. We’re in the business of testing unrelated bits of information that have little significance to most students.

All of this is incredibly frustrating to excellent teachers because they know how to teach to expertise and how to put learning in context. To have inordinate amounts of time spent testing has triggered an exodus of strong teachers from U.S. classrooms. And for the excellent teachers who do stay, most of them use their tenure to teach the “excellent students,” meaning that the majority of students from poverty continue to get shortchanged.

MOVING TO STUDENT WORK SAMPLES CALIBRATED AGAINST EXPERTISE DEVELOPMENT

We need to move students to expertise and talent by showing them what it looks like. (See Appendix B—Reading Rubrics, Grades 1–5). The development of expertise is generally considered to be at least a 10-year process (Gladwell, 2005; Bloom, 1976) and operates off a continuum. It is not pass-fail. Expertise integrates skill, content, patterning, and production to find solutions to problems (Clark, 2008).

In a California Department of Education (2007) study of low-performing schools, researchers found that all the teachers were teaching the standards. When they looked at the student work, however, they found that 100% of student work/assignments were on grade level in kindergarten—but that by fifth grade in low-performing schools, only 2% of the student assignments were on grade level. Not



long ago I was visiting a sixth-grade classroom in a low-performing school. The teacher had on the board that students would be “able to identify character development in literature.” But the actual assignment the students were doing was coloring in a coloring book.

I would describe *student work* as identifying the tasks/assignments that a student at that grade level should be able to complete. That is a much more powerful approach than testing. If you show parents this is what your child should be able to *do* at the end of this grade level, that is very tangible. In my experience, the closest that testing comes to that is some of the tasks required in Smarter Balanced testing involving text. For example, rather than define the standards, we would say, “In the third grade, students will do the following experiments in science, be able to do the following tasks related to that experiment, and on a rubric identify the growth of this student against expertise as a scientist.” Proof of that students work would be kept in a portfolio. As it stands now, all the teacher has to do is lecture on the subject, drill and kill on the content, but the student seldom needs to *do* anything related to the learning—and the lab resources needed to do the assignment in question are infrequently provided.

Project based learning is another approach, particularly the one used by High Tech High schools in San Diego, CA. www.hightechhigh.org



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5	Training for parents	Adult capacity development

CURRENT

Most schools offer training for parents—primarily at the elementary level and generally about how to provide literacy and numeracy to their children. Training is typically limited to those parents whose children are currently enrolled. However, many parents do not come to the training for myriad reasons, which may include working two jobs, no transportation, mental or physical illness, incarceration, military service, travel, caretaking responsibilities for younger or older individuals, etc. And in under-resourced communities, the attendance is even less.

As a result, we often ask parents to give capacity to their children when they themselves do not have it. That is very difficult to do. An analogy would be: “I am going to teach you how to drive a car so you can teach it to someone else. However, you will never actually drive the car.”

MOVING TO ADULT CAPACITY DEVELOPMENT

If we are to interrupt the patterns of generational poverty, we will need to not only intervene with students but also with the adults in their lives because the adults can help negate neighborhood effects *and* will have the capacity to develop capacity in their children. Furthermore, because of the number of uneducated or under-educated adults, it is imperative to build capacity in the adults.

What does it mean to build capacity in adults? It means they have the capacity to create their own resources, develop their own future story, and negotiate with institutions for themselves and their children.

aha! Process, Inc. has a program called Getting Ahead in a Just-Gettin’- By World, www.ahaprocess.com in which adults in poverty take 10 classes together (with trained facilitators) in which they learn about *themselves* and their own capacity to impact the stability and direction of their life. To be sure, the Getting Ahead program is not a panacea, but it is a start.



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5	Training for parents	Adult capacity development
6	Ignore neighborhood effects	Address neighborhood effects (early childhood, undeveloped talent ages 16–25)

CURRENT

Our current model limits the access to cost-free development of intellectual capital to the ages of 5 to 18. If students do not or cannot meet the requirements in that age frame, they are “thrown away” and become dependent on other resources to survive. It is a throwback to the 9–5 job concept, which is no longer valid either.

The research is clear, however, that prior to age 5 learning occurs much faster. Ages 16–25 are the years when employment becomes very important, and for those who didn’t take advantage of the education opportunities prior to that, there are virtually no options available to them that don’t require payment. Technical training and community college require personal funds. Current numbers indicate that 72% of white students have a high school diploma, but only 50% of Hispanic and 50% of African American students. (Wagner, 2008) Can America afford to “throw away” 50% of our Hispanic and African American students?

Students often don’t take advantage of educational opportunities because of neighborhood effects. The research on neighborhoods effects is compelling, yet largely ignored. Students spend on average 1,150 hours a year in school. They spend on average 4,500 waking hours outside of school, so the impact of the neighborhood tends to be much greater than the impact of the school.

If a student comes from an under-resourced neighborhood and household, then crime, violence, drugs, gangs, and early pregnancy are often part of the scenario. These neighborhood effects make it very difficult to be educated. In a 2011 study, Sharkey and Elwert found that the generational effects of poverty (two generations or more) lowered cognitive skills by ½ a standard deviation. In the book, *Scarcity*, Mullainathan and Shafir (2014) found that the stress “bandwidth” of poverty lowers daily functioning by 13 IQ points.

One argument is that if students didn’t take advantage of the opportunities between 5 and 18, they don’t deserve another chance. Society, however, pays for their lack of development at a much higher rate than it would cost to do the development.



MOVING TO ADDRESS NEIGHBORHOOD EFFECTS

Neighborhood effects can be addressed many places, but these three in particular are crucial: early-childhood interventions, cost-free opportunities for students between ages 16 and 25 to get technical and college interventions, and reentry strategies for prisoners.

Three initiatives worth noting:

- Tennessee now gives two free years of community college if you graduate from high school in that state (Haslam, 2014).
- Georgia has established 23 technical centers across the state that will give you a free year of technical school if you graduate from high school in Georgia (Technical College System of Georgia, 2014).
- Year Up (2014) is a program started by a foundation to jump-start individuals in the ages 16–25 bracket.



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7	Management/technical training of leaders		Leadership development

CURRENT

If I am on a campus that is low-performing, and the principal has been there at least three years, I can tell you there is a leadership problem. No ifs, ands, or buts. Much of the principal training right now is in technical kinds of things: data analysis, legal management, teacher evaluation instrument assessment, etc. But as any leader knows, many times you have to make decisions without good data or only partial data. And if a leader cannot effectively deal with conflict, he/she has a very hard time getting things done.

But in recent years most of the emphasis has gone to the teachers; everything is about the teachers. My question: Who hired the teachers? Who does the monitoring of what is important? In business, if a business is failing, the conversation is almost always about the leadership. Why would it be different in education?

MOVING TO LEADERSHIP DEVELOPMENT

Because so many variables are uncontrollable in public education (parents, students with handicaps, student mobility from school to school, mental illness, legislation, elections), school leaders often deal with crisis on a daily basis. Unlike law enforcement where the primary agenda is to keep people safe, schools not only must keep students safe, they also must ensure that learning takes place, regardless of the variables.

For school leadership, particularly in under-resourced environments, it becomes essential for a school leader to be able to do the following:

- Resolve conflicts.
- Establish structure and process for measuring learning (not just grades and credits).
- Establish norms and boundaries for both adults and students.
- Create a safe environment.
- Manage time and staff.
- Move the staff collaboratively toward goals.



All of this establishes the foundation for addressing learning. Because much administrative training focuses on instruction *right now*, the foundation crucial to getting results is rarely addressed. It's analogous to building a house without a foundation. Leadership coaching nowadays focuses almost exclusively on proficiencies in instruction and data management and almost totally ignores the human side of leadership.



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7	Management/technical training of leaders	Leadership development
8	Policy based on theoretical frames; correlational research used as causation	Policy based on “operational validity” (e.g., using data generated in No. 1)

CURRENT

One of the biggest mistakes made in educational research is to confuse correlation research with causation. Virtually all disciplines move through three stages: classification to correlation to causation. Educational research right now is at the correlation level.

Furthermore, to be in higher education and get tenure, you have to publish. To publish, you have to have a clean methodology. Researchers ask questions; practitioners want answers. Most researchers have an unlimited time frame to determine “their findings”; practitioners have a few minutes to solve an immediate problem/issue. Sometimes research is ahead of practitioners, and sometimes practitioners are dealing with issues that haven’t yet been researched. Researchers aren’t primarily concerned that their findings get used; they just want clean, replicable methodology. Most practitioners are concerned about one thing: Does it work? So the “marriage” between researchers and practitioners is often highly incompatible.

The Gates Foundation spent \$2 billion on small high schools. The initiative failed miserably. Why? Because someone decided that because there was a correlation between small high schools and higher achievement (*voilà!*) it was causal. Obviously, that was not the case.

Policy is being written based on correlational research, and most of those writing policy have little experience as practitioners. I did some work in Washington, D.C., in 2012 and asked legislative aides (many of whom had graduate degrees in policy) how they decided that a recommendation was good policy. They told me, “It is good policy because it is good policy.” I asked how you know that your policy works. They said to me, “It works because it’s good policy.” Scratching my head, I looked online and could not find one graduate school that requires a course in “operational validity”—i.e., does it *work*?

MOVING TO POLICY BASED ON ‘OPERATIONAL VALIDITY’

If schools used the model based on *interventions* and their ROI (as explained in No. 1), this would be the first step toward operational validity.



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9	Forced choice/stand-alone delivery mechanisms	Mixed-use models: varied hours, intern-based, apprenticeships

CURRENT

Delivery models in the agrarian age tended to be one-room schools and private tutors. In the industrial age, we moved to the German model of “graded schools,” which are still used today. Now we have the traditional “brick and mortar” school, magnet schools, charter schools, online learning, alternative schools, dual enrollment (high school and college credits at the same time), vocational/technical school, community college, home schooling, and universities. Many of these are the “9–5” model with a fixed number of days a year. The facilities go largely unused for parts of the year.

Individuals are often forced to choose one model for schooling per year.

MOVING TO MIXED-USE MODELS

To truly develop talent and expertise, we will need to go to mixed-use models. What exactly is that? Opportunity to be educated should be 24/7, as opposed to the 9–5 model we use now. And it should be available in multiple formats. For example, an individual plan would include an online course, a college course, perhaps a set of courses at a high school in the morning, a work experience, an internship, night classes, being involved with a cohort (much higher completion rates), etc.

There is a technical school in West Virginia that runs itself as if it were a business. Students are given 1 million dollars in play money to keep their business solvent. So the learning is actually in the form of work. Students clock in, etc. Coursework is embedded into the “work.”

The concept, with practical applications, that a student could get educated and credentialed from multiple sources is coming. And not a moment too soon. Such a system, however, would require some sort of centralized recordkeeping.



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10	Ineffective education of most males	Brain-based approaches evidencing greater success for males

CURRENT

Eighty-five percent of teachers are female; approximately 50% of the students are male. Yet the majority of special education students, discipline referrals, dropouts, and non-readers are males. The numbers do not work. According to Charles Murray (2012), only 2% of men in the top 20% of households in America do not work outside the home. But 30% of adult men in the bottom 20% of households in America do not work. William Julius Wilson (sociologist from Harvard) has stated, “If you want to break a culture, all you have to do is take work away from men because it changes identity.” You no longer have role identity—only gender identity. Right now just 2% of African American males over the age of 25 in America have a college degree (Noguera, 2003).

Furthermore, schools are not “boy friendly.” If you look at the brain processing in males versus females, there are some significant differences (Sax, 2007; Slocumb & Payne, 2010; Gurian & Stevens, 2005; Pollack, 1998). Yet in the school business, we seldom acknowledge that, and we don’t compensate for it.

We have many, many “off ramps” in school—many ways to fail school and get kicked out—but we have precious few “on ramps.” How do you get back in, recover, and continue?

MOVING TO BETTER BRAIN-BASED APPROACHES TO EDUCATING MALES

If we are going to more consistently and more broadly develop expertise and talent in males, then we will need to address the differences. Students, particularly males, benefit from more physical activities and from competitive activities that are relational and not autonomous. Males have less ready access to language; take more risks; have unpredictable adrenaline spikes (females have monthly cycles, males have daily cycles); have much more compartmentalized brains, which creates processing differences; take much more time to process emotions than females; and have retinas hardwired to see movement rather than color or detail. The list goes on. Learning, in short, is



increased with hands-on activities. Learning also is greatly enhanced by relationships. Dr. James Comer (1995) of Yale University says, “No significant learning occurs without a significant relationship.”

Few models exist to address this “boys in crisis” issue. Same-gender schools are an attempt to create a solution. Adding more male teachers at the elementary level is another. It also is worth noting that many males are kept in school through the competition and camaraderie of sports.



CONCEPTS, STRUCTURES, PROCESSES TO CHANGE

	MOVING FROM	MOVING TO EXPERTISE AND TALENT
1	Funding tied to programs and student populations	Funding tied to <i>interventions</i> correlated to positive student outcomes (achievement, discipline, graduation, course completion, attendance, etc.)
2	Teacher evaluation	Teacher credentialing
3	Merit pay and tenure bidding rights	Pay differentials for difficult teaching assignments
4	Student testing based on standards	Calibrating student work/assignments against expertise development
5	Training for parents	Adult capacity development
6	Ignore neighborhood effects	Address neighborhood effects (early childhood, undeveloped talent ages 16–25)
7	Management/technical training of leaders	Leadership development
8	Policy based on theoretical frames; correlational research used as causation	Policy based on “operational validity” (e.g., using data generated in No. 1)
9	Forced choice/stand-alone delivery mechanisms	Mixed-use models: varied hours, intern-based, apprenticeships
10	Ineffective education of most males	Brain-based approaches evidencing greater success for males
11	Models based on compliance and standardization (industrial models—pass or fail—measure knowledge)	Models based on development of expertise and talent (human capacity models that measure growth and productiveness)

CURRENT

Three major foundations—the Gates (Microsoft), the Walton (Walmart) and the Broad—have poured billions of dollars into influencing U.S. legislation, particularly Race to the Top. Their combined agenda is to change schools into a business model (remake education in their image) with the following characteristics:

choice, competition, deregulation, accountability, and data-based decision making. And they fund the same vehicles to achieve their goals: charter schools, high-stakes standardized testing for students, merit pay for teachers whose students improve their test scores, firing teachers and closing schools when scores don’t rise adequately, and longitudinal data collection on the performance of every student and teacher. (Barkan, 2011, n.p.)

Compliance and standardization are vital for industrial models, but they are not very good at developing human talent and expertise. The DOS software system was not created by Bill Gates (and others) in an environment of standardization and compliance but rather in a basement environment of experimentation, hands-on creativity, and context. And Gates did not use a model of pass-fail either. As Thomas Edison said after he had developed nearly 10,000 light bulbs that failed: “I know 10,000 things that do *not* work.”

What most states have done is to narrow the definition of talent through the course requirements to obtain a diploma. Most states have two or three diplomas. Yet in Texas, for example, there are 600-plus job descriptions/titles. For many minority and low-income students, getting a diploma is very difficult. If you fail one course your freshman year and one course your sophomore year, it’s almost



impossible to graduate. Most districts charge for summer school. As noted in No. 3 above, Algebra I is required, but at least 50% of low-income and minority students have an Algebra teacher who is not credentialed in math (Peske & Haycock, 2006). Compliance requires resources. You want to be a musician? Too bad for you. You want to be a chef? Too bad. You want to develop the next racecar engine? Too bad. You want to be in fashion design? Too bad. You will master three years of academic math, four years of academic English, three years of science, etc.

MOVING TO DEVELOPMENT OF HUMAN CAPACITY MODELS

Georgia has moved to 21 different high school diplomas. Smart. This connotes a much broader definition of talent and expertise.

Human capacity development models are in their infancy as they relate to institutions. Capacity giving has usually come initially from the family or religious settings. Institutions, including schools, must now play catch-up.

High Tech High schools is a model that actually develops human capacity as opposed to limit it.



CONCLUSION

So what would these changes bring to the development of talent and expertise?

CONCEPTS, STRUCTURES, PROCESSES TO CHANGE

	MOVING FROM 	MOVING TO EXPERTISE AND TALENT
1	Funding tied to programs and student populations	Funding tied to <i>interventions</i> correlated to positive student outcomes (achievement, discipline, graduation, course completion, attendance, etc.)
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7	Management/technical training of leaders	Leadership development
8	Policy based on theoretical frames; correlational research used as causation	Policy based on “operational validity” (e.g., using data generated in No. 1)
9	Forced choice/stand-alone delivery mechanisms	Mixed-use models: varied hours, intern-based, apprenticeships
10	Ineffective education of most males	Brain-based approaches evidencing greater success for males
11	Models based on compliance and standardization (industrial models—pass or fail—measure knowledge)	Models based on the development of expertise and talent (human capacity models that measure growth and productiveness)

Together they would lessen the political impact of the educational process, would move us toward talent and expertise development, and would address the much larger frame of learning—the neighborhood and broader community.

One thing that history is fairly clear about is the role of demographics in change and the concomitant impact on society. Demographics almost always win. When any country—for whatever reason—allows a critical mass of its individuals to be unemployed and uneducated (or even under-educated), that nation is eventually destined to fail.

We can turn it around. We are now “only” at 15% poverty in the United States. We are not yet at critical mass. But in another 40 years, if current trends continue, we *will* be if we don’t make the hard choices now to go in a different direction.



Appendix A Assessment of a Skilled Historian

	Beginning Historian	Developing Historian	Competent Historian	Expert Historian
Identifies repeat patterns in history (e.g., migration, war, etc.)	Has no idea there are repeat patterns	Recognizes that a couple of patterns happen frequently, such as war	Articulates multiple patterns in history and can explain some of reasons	Can predict current happenings based upon historical patterns and synthesis of those patterns
Understands historical interpretation and bias	Believes whatever book says	Knows there is more than one side to story Knows that some sources are more credible than others	Can distinguish between primary and secondary sources Explains role of victor in history	Can distinguish between primary and secondary sources, as well as victor role Can identify prevailing ideologies of time and influence on what is recorded and observed
Identifies and integrates canons of history (e.g., military, religious, governmental, arts, social, cultural, country, world, etc.)	Thinks history is only one canon and one country	Knows there is more than one canon but does not integrate them as part of cause and effect	Integrates canons and explains influence of one on other for particular country	Integrates canons and explains influence of one on other for world Can explain influence of a country on world events
Explains cause and effect, generational linkages, role of personality and timing, chronological sequence	Knows only chronological sequence	Identifies chronological sequence Can explain cause and effect of some events	Can explain cause and effect and role of intergenerational interactions Recognizes that personality and timing play role	Explains chronological sequence of interlocking personality, timing, precedents, and events Identifies places where another choice might have been made
Understands accuracy of interpretation, sources, conclusions	Thinks written document is accurate	Realizes that historical interpretation is based upon victor	Believes that accuracy is possible by careful documentation of sources	Articulates nebulous and even nefarious difficulties of accuracy Identifies methodologies most probable to approximating historical accuracy



Reading Rubric, Grade 1

Student Name: _____

School Year: _____

Campus: _____

Grade: _____

	Beginning	Developing	Capable	Expert
Fluent	Decodes words haltingly Misses key sounds Identifies most letter sounds Identifies short vowels Says/recognizes individual words	Decodes sentences haltingly Knows conditions for long vowels (vowel at end of syllable, e.g., <i>me, he</i>) Identifies blends and consonants Decodes digraphs and r-controlled vowels (<i>or, ar, er, etc.</i>) Reads at rate that does not interfere with meaning	Knows vowel teams (<i>ea, ee, oa, etc.</i>) Identifies common spelling patterns Uses word-attack skills to identify new words Reads sentences in meaningful sequence Reads with expression	Decodes polysyllabic words Decodes words in context of paragraph Decodes words accurately and automatically Reads paragraphs in meaningful sequence Reads with expression, fluency, appropriate tone, and pronunciation
Constructive	Predictions are incomplete, partial, and unrelated Predictions indicate no or inappropriate prior knowledge	Predicts what might happen next Makes minimal links to personal experience/prior knowledge	Predicts story based upon pictures and other clues Relates story to personal experience/prior knowledge	Can predict possible endings to story with some accuracy Can compare/contrast story with personal experience
Motivated	Does not read independently Concentrates on decoding	Reads when teacher or parent requests Is eager to utilize acquired skills (words and phrases)	Will read for specific purpose Uses new skills frequently in self-selected reading	Self-initiates reading Reads for pleasure

(continued on next page)



Reading Rubric, Grade 1 (continued)

	Beginning	Developing	Capable	Expert
Strategic	Does not self-correct Is uncertain as to how parts of story fit together	Recognizes mistakes but has difficulty in self-correcting Can identify characters and setting in story	Has strategies for self-correction (reread, read ahead, ask questions, etc.) Can identify characters, settings, and events of story	Analyzes self-correction strategies as to best strategy Can talk about story in terms of problem and/or goal
Process	Cannot tell what has been read	Does not sort important from unimportant	Can determine with assistance what is important and unimportant	Organizes reading by sorting important from unimportant



Reading Rubric, Grade 2

Student Name: _____

School Year: _____

Campus: _____

Grade: _____

	Beginning	Developing	Capable	Expert
Fluent	<p>Misses key phonemic elements</p> <p>Rate of reading interferes with meaning</p> <p>New vocabulary impairs understanding</p>	<p>Knows basic phonetic structure of vowels: short, long, <i>r</i>-controlled, vowel teams</p> <p>Occasionally rate of reading interferes with meaning</p> <p>Mispronounces unfamiliar words</p>	<p>Uses word-attack skills to identify new words in section</p> <p>Says sentences in meaningful sequence</p> <p>Uses contextual clues to determine pronunciation of new words</p>	<p>Decoding not an issue; it is taken for granted</p> <p>Analyzes selection and uses most effective reading rate</p> <p>Enjoys new words and practices using them in his/her vocabulary</p>
Constructive	<p>Makes some use of clues to determine what text will be about</p> <p>May mention character he/she read about previously</p> <p>Skips over new words</p>	<p>Can predict what character might do next</p> <p>Remembers general characters but not detail</p> <p>New vocabulary impairs understanding</p>	<p>Can predict possible outcomes from selection</p> <p>Can identify main character</p> <p>For new word, can give example but not definition</p>	<p>Connects personal experience to predict outcomes</p> <p>Can give detailed accounting of character and motive</p> <p>Can generate definition for new word or synonym</p>
Motivated	<p>Has limited interaction or response to reading</p> <p>Reads only when asked</p>	<p>May be involved in or identify with portion of story</p> <p>Self-initiates reading</p>	<p>Responds on personal basis to selection</p> <p>Has criteria for selecting reading materials</p>	<p>Tells others about what he/she has read</p> <p>Analyzes personal choices and determines new selections to explore</p>

(continued on next page)



Reading Rubric, Grade 2 (continued)

	Beginning	Developing	Capable	Expert
Strategic	Is uncertain as to how all parts fit together but can identify parts of selections	Has structure for story reading	Understands criteria of expository piece	Differentiates fiction from non-fiction by structure of piece
Process				
(Before)	Simply begins reading; does not know purpose	Has purpose for reading but relies heavily on pictures	Demonstrates some knowledge of clues to use before reading (looks at graphics, predicts, asks questions)	Applies strategies before reading that help better understand what text will be about
(During)	Keeps reading if he/she does not understand	Has only external strategies (will ask for help)	Uses some strategies during reading*	Applies appropriate strategies while reading; can self-correct**
(After)	Cannot verbalize about what he/she reads	Can identify which part he/she liked best	Can summarize with assistance/direction	Summarizes accurately

* Reading strategies: Summarizes and retells events, makes mental picture of what author says, predicts next event, alters predictions based on new information.

** Self-correction or "fix up" strategies: Looks back, looks ahead, rereads, slows down, asks for help.



Reading Rubric, Grade 3

Student Name: _____

School Year: _____

Campus: _____

Grade: _____

	Beginning	Developing	Capable	Expert
Fluent	Mispronounces common words Decodes sentences haltingly	Sees word root and endings separately Decodes words accurately and automatically	Understands that prefixes, roots, and suffixes are “changeable parts” Decodes words in context of paragraph	Analyzes pronunciation using analogy to known words and word parts Reads with expression, fluency, and appropriate tone and pronunciation
Constructive	New vocabulary impairs understanding Predicts story based on pictures and other clues	Can generate example or synonym for new word Identifies parts of story in relation to his/her own experience	Can generate synonyms, definition, or antonyms for new word Connects personal experience to clues and text	Uses new and unusual words in writing or Speaking Can compare and contrast previous personal experience to parts of story
Motivated	Reading is initiated by teacher Holds as much beginning information as possible and forgets rest Does not read for information	Self-initiates reading May describe what selection is about and provide some detail Reads for information if teacher-initiated	Reads for pleasure Identifies main idea Uses appropriate text for needed information	Reads for pleasure and information as needed Identifies main idea and supporting information Compares/contrasts one piece of reading with/to another

(continued on next page)



Reading Rubric, Grade 3 (continued)

	Beginning	Developing	Capable	Expert
Strategic	Has difficulty differentiating important from unimportant Does not self-correct	Knows important parts exist; cannot always identify Recognizes mistakes but has difficulty in self-correcting	Can identify important information Has strategies for self-correction**	Can identify and store important information and discard unimportant Analyzes self-correction strategies as to best strategy**
Process				
(Before)	Prereading strategies involve number of pages and size of print	Identifies purpose for reading	Identifies purpose and applies strategies before reading that help better understand what text will be about	Determines strategies needed to understand selection
(During)	Calls words and skips words if they cannot be understood or pronounced	Some aspects of text are connected to prior knowledge/experience	Uses some strategies during reading*	Applies appropriate strategies while reading; can self-correct**
(After)	Summaries are retelling of as much as is remembered	Needs help with summary; can identify which part he/she liked best	Has strategy for categorizing and summarizing information	Organizes reading by sorting important from unimportant, then relating it to purpose and structure

* Reading strategies: Summarizes and retells events, makes mental picture of what author says, predicts next event, alters predictions based on new information.

** Self-correction or "fix up" strategies: Looks back, looks ahead, rereads, slows down, asks for help.



Reading Rubric, Grade 4

Student Name: _____

School Year: _____

Campus: _____

Grade: _____

	Beginning	Developing	Capable	Expert
Fluent	Mispronounces common words Decodes sentences haltingly	Sees word root and endings separately Decodes words in context of paragraph	Understands that prefixes, roots, and suffixes are “changeable parts” Decoding is non-issue	Analyzes pronunciation using analogies to known words and word parts Reads with expression, fluency, and appropriate tone and pronunciation
Constructive	Can predict what character might do next New vocabulary impairs understanding	Can predict with some accuracy possible endings to story Can generate an example or synonym for new word	Can predict more than one ending/solution Can generate synonyms, definitions, or antonyms for new word	Can predict endings to story and explain advantages and disadvantages for author in using various endings Uses new vocabulary in writing or speaking
Motivated	Has little understanding of reason for reading Has limited interaction with or response to reading	Reads text because teacher said to May mention character he/she has read about previously	Establishes clear purpose for reading Compares/contrasts one piece of reading with/to another	Evaluates purpose for reading Analyzes personal choices and determines new selections to explore

(continued on next page)



Reading Rubric, Grade 4 (continued)

	Beginning	Developing	Capable	Expert
Strategic	Does not have enough information to ask questions Has difficulty differentiating important from unimportant Has some difficulty differentiating the structure of fiction from non-fiction	Has difficulty asking questions Can use structure to identify important information Differentiates fiction from non-fiction by structure of piece	Can ask questions about what was read Uses structure to assign, order, remember characters, and identify problem/goal Can differentiate among structures used in fiction*	Asks questions that tie together this text and other reading Uses structure to determine most important aspects of text to remember Can differentiate among non-fiction structures**
Process				
(Before)	Prereading strategies involve number of pages and size of print	Identifies purpose for reading	Applies strategies before reading that help better understand what text will be about	Determines strategies needed to better understand selection
(During)	Calls words and skips words if not understood	Some aspects of text are connected to prior knowledge/experience	Uses some strategies during reading***	Applies appropriate strategies while reading; can self-correct****
(After)	Summaries are retelling of as much as is remembered	Can identify part he/she likes best but needs help with summary	Has strategy for categorizing information	Organizes reading by sorting important from unimportant and relating it to purpose and structure

* Fiction structures (examples): Flashbacks, chronological, episodic, story within story.

** Non-fiction structures (examples): Topical, cause and effect, sequential, comparison/contrast, persuasive.

*** Reading strategies: Summarizes and retells events, makes mental picture of what author says, predicts next event, alters predictions based on new information.

**** Self-correction or "fix up" strategies: Looks back, looks ahead, rereads, slows down, asks for help.



Reading Rubric, Grade 5

Student Name: _____

School Year: _____

Campus: _____

Grade: _____

	Beginning	Developing	Capable	Expert
Fluent	Rate of reading interferes with meaning	Occasionally rate of reading interferes with meaning	Analyzes selection and uses most effective reading rate	Can articulate demands of reading task
Constructive	Has trouble understanding meaning of text Vocabulary slows reader	Can understand text but has difficulty formulating questions Can use text to make meaning of new vocabulary	Can explain why text is important and can summarize main points Can ask questions about text	Assigns meaning and relates information in larger context of knowledge Applies vocabulary outside of text and uses it to refine understanding
Motivated	Does not read for information: concentrates on decoding Can provide some details about selection Reading is initiated by teacher	Holds as much beginning information as possible and forgets rest May describe what selection is about and provide some detail Reading is initiated by student	Identifies main idea; determines fact and non-fact Compares/contrasts Information with/to other events or experiences Shares reading with others	Knows specific information he/she needs from text Develops questions unanswered by selection Actively seeks reading opportunities
Strategic	Differentiates fiction from non-fiction by structure of piece	Can differentiate among structures used in fiction*	Can differentiate among non-fiction structures**	Can articulate and analyze author's use of structure
Sorting	Can remember some of important pieces	Uses structure to assign order, remember characters, and identify problem/goal	Uses structures to determine most important aspects of text to remember	Discusses how structure assists reader in sorting important from unimportant

(continued on next page)



Reading Rubric, Grade 5 (continued)

	Beginning	Developing	Capable	Expert
Asks questions	Does not have enough information to ask questions	Has difficulty asking questions	Can ask questions about what was read	Asks questions that tie this text to others
Self-correction strategies	Does not self-correct	Recognizes mistakes but has difficulty in self-correcting	Has strategies for self-correction****	Analyzes self-correction strategies as to best strategy****
Identifies purpose	Has little understanding of reason for reading	Reads text because teacher said to	Establishes clear purpose for reading	Evaluates purpose for reading
Process (Before)	Does not predict	Has some difficulty making predictions	Applies strategies before reading that help better understand what text will be about	Predicts and identifies how author or genre tends to end selections
(During)	Keeps reading if he/she does not understand	Uses some strategies during reading***	Applies appropriate strategies While reading; can self-correct****	Analyzes own reading and thinking while reading
(After)	Summaries are retelling of as much as is remembered	Has strategy for categorizing information	After reading, revises schema/conceptual organization	Develops more clarity in thinking as result of reading

* Fiction structures (examples): Flashbacks, chronological, episodic, story within story.

** Non-fiction structures (examples): Topical, cause and effect, sequential, comparison/contrast, persuasive.

*** Reading strategies: Summarizes and retells events, makes mental picture of what author says, predicts next event, alters predictions based on new information.

**** Self-correction or "fix up" strategies: Looks back, looks ahead, rereads, slows down, asks for help.



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