
Preparing Students for Their Future and Successful Schools: From Research to Action Plans

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Preparing Students for Their Future

Education is integral to maintaining the cultural and structural stability of society. Society, whether it is viewed on a local, national, or global scale, is in a perpetual state of flux. An effective education system is one that is adaptable to change.

History provides a chain of examples of nations that assumed an elite status as a world power only to be replaced by the next up-and-comer. In the 1600s, the Spanish extended their political influence around the world; the 1700s was the century of Dutch imperialism; the British were dominant in the 1800s. The United States became the preeminent world power in the 1900s – a title which it retains to this day, albeit tenuously.

Based on the cyclical nature of such transitions and the frenetic pace at which society is changing at the global level, it is imperative for the U.S. to consider what actions we must take to remain a viable world presence. More and more, the American public points to education as the answer . . . or part of the problem. The Trends in International Math and Science Study (TIMSS) has shown American students to be quite average among the participating nations. The gap between technology and education continues to widen in America (Moore's Law is a sobering reminder of just how great the disparity is) because, as a nation of educators, we are not adapting to changes in society. Perhaps the added scrutiny on education in the end will help create the spark that ignites a renaissance for America – just as it did over a century ago when the U.S. was beginning its march to world prominence.

Looking back to the late 19th century, America was emerging from an agrarian society. The rural landscape was home to a large portion of the population – a vast majority of whom were self-employed or worked in small companies or on farms. When the Industrial Revolution hit and factories became the economic focus of the country, workers flocked to urban centers to seek employment. It was apparent that more leaders were required to keep pace with the changing climate of business, urban infrastructure, and cultural diversity. In 1893 the Committee of Ten was appointed to conceptualize how American schools should be structured to meet the demands of the time.

Generally, members of the agrarian society had required only a rudimentary level of education. In fact, most children completed their formal schooling by age 14 in order to begin working full-time. The change to an economy based on manufacturing required more young people be educated to assume leadership positions not only in industry, but in government, business, and communities as well. It was determined by the Committee of Ten to raise education standards and extend the years of schooling for a select 15 to 20 percent of young people to get them through the equivalent of today's high school level education.

The Committee's "select and sort" methodology was effective. The United States was the world leader in manufacturing throughout most of the twentieth century. As the century was coming to a close, however, it was apparent that the U.S. was not the economic monolith that it was earlier in the century. At the same time, society was experiencing another significant upheaval in form of the Information Age. Technology abounded around us, most people were employed in large companies, and we began to see a growing economic threat from other parts of the world. The 1983 report on education, *A Nation at Risk*, was thus born. Since 1983, the American schools have experienced compounded pressure from political and business leaders throughout the country to raise our academic standards across the board for all students. More recently states have seriously undertaken the implementation of the new standards and state assessments to be in compliance with the *No Child Left Behind* (NCLB) legislation. NCLB has required every district, school, superintendent, principal, and teacher in this country to look at new and different ways of educating their students if they are to be successful in raising academic standards and student performance as defined by NCLB.

Whereas the Committee of Ten promoted a methodology of raising standards for a select few, the publication of *A Nation at Risk* accentuated the need to provide **all** students with an academically rigorous and relevant education. While this is the direction U.S. education needs to go, we are finding it easy to conceptualize change but difficult to implement it. Tinkering at the margins will not enable us to achieve our mission. Schools need to be restructured if they are serious about getting all students to the high standards necessary for them to compete and excel in the global society.

The Perfect Storm – Four Mega Trends

There are four major trends impacting the U.S., in general, and our students, in particular, which must be addressed to assure that our nation and our students are prepared to meet the challenges of the near and distant future. These four challenges are globalization, changing demographics, technology, and changing values and attitudes.

Globalization

September 11, 2001, is a date Americans will never forget. The vision and memory of planes crashing into the World Trade Center, the Pentagon, and the field near Shanksville, Pennsylvania, have changed the way we view ourselves and the world around us. November 9, 1989, though not immediately recognizable as the date of another significant global event, it was the date the Berlin Wall came down, which symbolized the fall of communism in Eastern Europe. Since then, the Eastern Bloc nations of the former Soviet Union have entered the free enterprise system. And although India gained its independence from Great Britain in 1947, it wasn't until the late 1990s that the socialist leaning government was replaced by one deeply committed to a free enterprise system. More recently, China, one of the few remaining communist nations in the world, has emerged as a powerful participant in the global economic arena.

From the Eastern European nations and Russia to India and China, we have witnessed the rapid spread of capitalism to over half of the world's population in just 16 years. These nations have long envied the potential of what the free enterprise system can provide. Their goal is to emulate America by establishing a prosperous middle class. A century ago, the United States understood challenge and the enormous effort required to become a prosperous nation during a significant time of transition. Similarly, the Indians, Chinese, and Eastern Europeans recognize the energy and sacrifices required of them as individuals and realize the benefits of restructuring their countries from industrial to an information based societies. Current trends suggest that they are very willing to put forth the effort needed to attain a middle class standard of living for their societies. Americans, in general, and our youth, in particular, seem to believe it is their birthright to enjoy a middle class lifestyle and are lulled into a false sense of security and comfort. As a result, however, we lack the drive needed to match the aggressiveness of other nations in the global economy.

Globalization and rapid technological advancements are having dramatic effects on our lives as we experience the transition from an information-based society to one based upon bio and nanotechnology. As the pure information technologies that made companies such as Microsoft, Apple, and Cisco the world's most successful, new companies based on bio and nanotechnology will emerge. A main element in the transformation to an information-based society is the ease in which work moves to worker via digital and satellite information technologies. Suddenly a very large segment of the world's available workforce is competing for American jobs. Most MRI and CAT scans performed in American hospitals are analyzed in India rather than here at home. Hundreds of thousands of U.S. income tax forms this year were processed in India. Reuters recently moved 1,500 jobs in their research division to India. The U.K.'s "A Level" exams for college prep students, which contain complex essay questions, are now being graded in India because of their well trained, but inexpensive work force. In effect, information technology has impacted the work place as much as e-mail and the World Wide Web have revolutionized the ways we conduct our personal business.

When you consider the ability to move work to worker in an age when the majority of jobs exist in the information sector, the fact that India, China, and Eastern Europe are competitive in the global economy is not surprising. It is a situation, however, that few Americans have been able to come to grips with and adapt to. The rapidity at which technology is changing is another challenge for the U.S. economy. Digital information systems are giving way to bio- and nanotechnologies. Unfortunately, America is not doing very well in recruiting young people to compete for jobs in these technology sectors. Consider the following:

- Bachelor's degrees in science and engineering make up 60 percent of the total degrees earned in China.
- Five percent of the degrees earned in the United States last year were in science and engineering.
- This year, China alone will graduate 350,000 engineers.
- By 2010, it is predicted that 90 percent of all the world's scientists and engineers will be in Asia.
- U.S. enrollment in science and engineering has dropped by 12 percent in the last five years.
- Nearly one-half of all U.S. enrollments in science, technology, engineering and mathematics are students who are non-U.S. citizens.
- In 1975, the United States ranked third in the world in the percentage of its students who were received degrees in science and engineering. Today we are 17th in the world.

In a world in which science and engineering will become the cornerstone of what is needed to know and be able to do in the 21st century, the U.S. is being outpaced dramatically by India, China, and Eastern Europe. The decline of U.S. enrollment in science and engineering combined with the fact that scientists and engineers will be even more coveted in the work force in the coming years places the U.S. at a great disadvantage as a nation. Continuance of these trends will result in severe human and economic consequences to our country.

Demographics

America is aging. As mentioned earlier, Americans at the turn of the 20th century typically took their first job at the age of 14 (today's child labor laws were put in place during the Great Depression to prevent young people from taking jobs away from adults). Today the average age at which an individual takes his or her first full-time job is 18 years, 7 months. The later age of beginning work is attributable to

more time spent in the classroom. It is forecasted that the average start age of work will continue to be later and that by 2100 the average age of first time employment will be 21 years.

Now let us look at trends in the retirement age of Americans. In 1900, the typical employee worked until he or she died. The average life expectancy was 47 year. Life expectancies began to increase considerably, however, during the 20th century. When Social Security was implemented in the 1930s, a retirement age was set at 65. This age was still well beyond the average life expectancy, so most people still worked until death. What the retirement age did accomplish, however, was to keep the American workforce fluid by continually pumping new employees into the jobs vacated by retirees as well as those who died. Today the average retirement age is down to 62 years but the average life expectancy is up to 77. Prolonging life was and continues to be a result of advancements in healthcare and medicine. Experts in geriatrics and genetics expect the increase in longevity we experienced during the last century to continue throughout this one. Even greater advancements and breakthroughs in healthcare and pharmaceuticals are predicted to keep the average American alive to the unfathomable age of 107 by the year 2100.

What implications do these trends suggest? The only trend that remains somewhat static is the current average retirement age, which is actually trending down slightly. By the end of this century, if Americans do in fact live to be 107, begin work at 21, and retire at 62, the average citizen will have spent more time in retirement than they did working.

Compounding the impending strain on our nation's resources for senior citizens is a declining American birthrate. A zero-base population growth would equate to 2.1 births annually for every 100 women of childbearing age. In the time between the early 1900s until World War II, America averaged three births annually for every 100 women of childbearing age. Social Security was structured on a metric that assumed there would always be more young people than old. Immediately following World War II the baby boom happened. With 4.6 births for every 100 women of childbearing age, the birth rate greatly surpassed the death rate. Since 2000, however, the birthrate has dropped to an average of 1.4 births annually for every 100 women of childbearing age. With the baby boomers becoming eligible for Social Security in 2008, we will see a disproportionate 3:1 ratio of retirees to job market entries. Immigration growth will alleviate this considerably, but with that comes a new set of challenges such as an increasing number of limited English proficient students.

These demographic trends are the reason that Social Security and other retirement systems – including pension plans – are in jeopardy of collapse. It is a mathematical certainty that our nation cannot afford to allow these trends to continue without taking preventative action soon. In Illinois, for example, the state has promised 225,000 current and retired teachers \$51 billion in pensions. However, the state has only \$31 billion in its accounts to pay those pensions. Texas has recently informed its younger teachers that they will need to work longer before they can collect their pension, which will be based on averaging their last five years of teaching rather than their last three. These situations are increasingly common. Something must be done, as the nation simply cannot afford to wait and hope for the best any longer, especially with other major challenges on the horizon.

There is also an enormous challenge facing us in the area of Medicare. In 2004, 9 percent of the federal budget was spent on Medicare; in 2020 it will be 25 percent. In 2040, 50 percent of the federal budget will be spent on Medicare. Medicare and social security by 2040 will more than wipe out the entire federal budget with no resources available to provide to schools, national defense, etc.

These factors helped to convince Senator Edward Kennedy to sponsor *No Child Left Behind* and President Bush to embrace it. The looming civil rights and economic crises we face are far beyond anything the nation has experienced in the past. We need to understand and accept that *No Child Left Behind* is not just a senseless piece of legislation imposed upon educators, but legislation that is crucial to our nation's security and well-being.

Technology

Many of us can remember the first mainframe computers . . . how they filled an entire room, required four technicians to operate, and were fed data by inserting punch cards in them. The earliest mainframes had a grand total of eight megabytes of storage capacity. In 1976, the personal computer (PC) first hit the market. The natural progression of technology has armed us with the more portable laptop computers we enjoy today. Gradually now the laptop is being replaced by the personal digitized assistant (PDA) or what is commonly referred to as the hand held computer. The PDA now allows us to access e-mail and the Internet from anywhere we travel. These devices have so much more speed and capacity than the early mainframes or even the early PCs that we must pause and wonder how we survived such primitive technologies. In the very near future, Smart Personal Object Technology (SPOT) will become the newest fad. SPOT will be integrated in our watches, and essentially function as a PC. With this technology a user would project the image of both a screen and keyboard from the SPOT unit onto a tabletop or piece of paper and work as if using a regular PC and keyboard. As technology continues to get smaller, it becomes more and more an extension of our being.

The transformation of technology from PCs to PDAs to cell phones to watches is possible thanks to the advancement of nanotechnology. Nanotechnology uses the atom as the fundamental building block for the development of technology. Nanotech companies are now manufacturing computer chips that are 1/1000 the width of a human hair. These computer chips have as much computing power as traditional silicon chips. Soon we will see a quantum leap in computing capacity as we move towards the total integration of information-, nano-, and biotechnology. Completed in 2003, the Human Genome Project (HGP) was a 13-year project that culminated in the successful mapping of human DNA. This monumental project triggered an explosion in research and of understanding how life works. By integrating the various areas of technology, researchers will have the ability to manipulate and develop life systems in manner very much like software systems were developed. Genes are pieces of information. Genes can, therefore, be engineered to become an information system . . . like a computer. The rate at which biotechnologies are developing is impressive. Moore's Law quantifies the processing power of a computer chip as doubling every 18 months. Bio/nanotechnology-based information systems will double in processing power every 27 months.

Here are a few examples of dynamic breakthroughs achieved recently in bio- and nano-science. Biotech scientists at Odontis Ltd., formed by King's College, London, have developed a technique in which stem cells are taken from a patient, treated and cultured in a laboratory, then re-implanted in the patient's jaw under the gum at the site of a missing or extracted tooth. The "seed" will then grow into a fully formed, live tooth. At the University of Louisville, a team of doctors believes that they are ready to perform the world's first facial transplantation procedure. This radical form of surgery may provide hope to severely disfigured burn victims and cancer patients.

One of the most exciting and revolutionary discoveries being developed is *in vivo* (Latin for 'within the living') technology. Studies are being performed on mice involving the placement of nanoparticle probes on semiconductor quantum dots into the circulatory system. The probes seek out cancerous cells in tumors, accumulate at the site of the tumor, and become luminescent under imaging. This delineates the boundaries of a tumor and also shows a doctor if it has spread. The nanoparticle probes are multifunctional and have the potential of killing cancerous cells. Of all the cancer treatments being developed, *in vivo* therapy may be the one that finally provides a cure for cancer.

Although *in vivo* technology may revolutionize cancer treatment, it is not really new. Insertion of a pacemaker into a human heart is technically an *in vivo* procedure, but not on a nano scale. More recently, the Vagus Nerve Stimulator (VNS) has been used to treat epilepsy sufferers. The VNS is a pacemaker sized device attached to a wire that connects to the vagus nerve. Stimulation of the vagus nerve can stop seizures in some patients or reduce the intensity and frequency of seizures in others.

In the sphere of bioinformatics, the VeriChip is one of the fastest growing technologies available. The chip is a secure radio frequency identification device (RFID) approximately the size of a grain of rice that can be embedded with a unique identification number and critical medical data about the wearer.

Requiring only local anesthesia and a tiny incision, it can be inserted in an outpatient setting. The data on the chip is retrieved through an external scanner. It works by allowing a small amount of radio frequency energy to pass through the skin and "energize" the dormant VeriChip.

The world today is an exciting one. Unfortunately, America at present is not positioned to maintain the level of leadership it enjoyed in the past. Other nations have made great strides in a short period of time of readying themselves for the future. America has been unable to keep pace with the changes going on in the world and is finding it more difficult to compete in the global economy.

China, unsurprisingly, is the world leader in clothes, shoes, and furniture manufacturing. They also lead the world in the production of consumer electronics and computers, meaning they have taken over a very significant sector of the technology industry. China is now positioned to become the world leader in bio- and nano-technology research and development. They understand the competition they face in America, Europe, India, and the other Pacific Rim nations, but the numbers are in their favor. As mentioned earlier, 60 percent of all bachelor's degrees in China are awarded in the areas of science and engineering and 90 percent of the world's scientists and engineers will work in Asia by 2010. The fact that it costs five times as much in America to employ a scientist or engineer than in China only exacerbates the problem that the U.S. faces. A highly skilled population willing to work for low wages is a concept that seems foreign to the U.S. value system.

Advancements in biotechnology now make possible a new method of selecting and sorting young people. Knowledge of one's genetic makeup can identify an individual's learning styles and aptitudes, and whether he or she is an inductive or deductive reasoner. Some Asian nations believe that they can use the genetic composition of students to place them in education programs that best suit their DNA. In America, however, this process would be considered a civil liberties violation if made mandatory.

One sector of the U.S. population that really understands the dynamics of competition at the national and global level and the challenges America faces is the business community. The economic trends became evident to them in the early 1980s with the dramatic decline in the number of unskilled jobs. Jobs that were once routine and sequential have been eliminated or replaced by technology that speeds production and reduces costs. Furthermore, the ease with which information can be shared allows businesses to outsource work overseas with a high-quality, low-cost return. Medium wage, high skill jobs are the standard for today's global economy. Unfortunately the high cost of American labor coupled with the vast amount of money required to support an aging population makes outsourcing very desirable to American companies.

Changing Values and Attitudes

Each generation acquires a different set of values and expectations than the ones before. Neil Howe and William Strauss, respected authors and experts in the field of generation studies, believe that every generation attempts to reverse what it perceives as the worst characteristics of its older generations, and to fill the role being vacated by the dying generation. Howe and Strauss contend that this cyclical process (four generations to complete a cycle) has been proven over the course of history. If this is true, today's students have very large shoes to fill because history has marked them as successors to the World War II-winning G.I.s, the ones labeled by Tom Brokaw as the "Greatest Generation."

The G.I. Generation was born in the first quarter of the 20th century. They experienced the Roaring Twenties and the Great Depression and fought in World War II. They were great risk takers and team players. They were responsible in large part for the restructuring of the American education, business, and government systems. This generation valued a high school diploma and considered it sufficient for success in life.

The G.I. Generation gave birth to the Silent Generation--labeled as such because they were expected to stay out of the way while their parents were busy fighting the Germans and Japanese. They grew up feeling they were born too late to do great deeds and felt it was their responsibility to protect the status quo. This generation placed value on graduating from high school.

Immediately following World War II and up to the mid-1960s the Baby Boomers were born. Generally, this generation was self-absorbed and rebelled against the cultural sterility they felt that they grew up with. They were deeply into their individual needs and, to an extent, self-absorbed. Many failed to see the importance of a high school diploma, but got one anyway. Some began to see the value of a college education as necessary to success. Baby Boomers were culture creators, and left an indelible mark on American society.

Baby Boomers spawned Generation X, a reactive and nomadic lot. The self-absorption of their parents made them feel under-protected as children and felt they had to raise themselves. As a result, Gen Xers grew up quickly as a generation and were responsible for the dot.com boom of the 1990s. They were pragmatic about the value of a high school diploma and did not view it as sufficient for success.

Howe and Strauss have named the next generation “Millennials.” They are mostly the children of Generation X and are the ones filling K-12 classrooms today. The baby boomers were content to entrust their children’s education to the schools. Gen Xers do the opposite. They want to be involved in every aspect of their children’s education; much to the chagrin of many teachers and the students themselves. They are what Howe and Strauss call “helicopter parents.” Their willingness to challenge school policy and the techniques and decisions of teachers has placed additional pressure on the American education system. Interestingly enough, public opinion polls of parents of Millennials show that they generally support a push for new standards and are not nearly as opposed to tough testing requirements as are educators.

Millennials are not like their parents or grandparents, though. In their book, *Millennials Rising – the Next Great Generation*, Howe and Strauss make the point that “millennial attitudes and behaviors represent a sharp break from Generation X, and are running exactly counter to trends launched by the Boomers.” They are respectful, civic minded, collaborative, less likely to smoke or drink, and are good students. Both NAEP and TIMSS show a steady increase in student performance, especially among lower grades. Of all the trends discussed to this point, the increasing proficiency of students is by far the most positive.

Millennials are the largest group of young spenders in history, but not much of what they spend is their own money. This generation is growing up in an era of unparalleled affluence and many of their acquisitions (e.g. X-Boxes, DVDs and Game Boys) are gifts or co-purchases provided by parents or grandparents. Whereas China, India, and Eastern European countries are committed to establishing a middle class, Millennials have known no other scenario. They likely believe a middle class lifestyle is a birthright.

Conclusion

The four mega-trends (global, demographic, technological and cultural issues) facing America today cannot be ignored. The factors described give credence and forewarning of a quietly approaching perfect storm that threatens the middle class American lifestyle.

History is cyclical in the sense that there are good times as well as bad and each will pass. The United States has weathered numerous crises in its relatively brief history. When the perfect storm hits this country, we need to be up to the task once again. The students in schools today are a good source of hope and our nation’s most valuable resource. We must empower them to weather the storm.

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Successful Schools: From Research to Action Plans

The International Center for Leadership in Education was created in 1991 with the sole intent of assisting schools to move all students toward a more rigorous and relevant education. In recent years, that mission has been taken up by other organizations, including the U.S. Department of Education, the Council of Chief State School Officers (CCSSO), and the Bill & Melinda Gates Foundation.

Early on in our work at the International Center it became quite clear that educators, policy makers, and the public would support our mission and believe in the importance of it for students' post-school success. The International Center's team of consultants thus worked to help school districts communicate the need for rigor and relevance in education to the community. A second observation we made was that curriculums are overcrowded. A rigorous and relevant curriculum would require some slimming down in the sense that those items deemed non-essential for students' post-school success must be removed in favor of content that is relevant and necessary for life and work. Removal of content from curriculum cannot be done hastily, however. Significant changes as such require good data. The International Center specializes in providing schools and districts with the data and methods to make the necessary changes that will offer students the best and most relevant education possible.

One point that needs to be made clear is that change is not required because the education system has failed. It needs changing because it is still based on a century-old model that did not emphasize a rigorous and relevant curriculum for **all** students, but rather one that selected and sorted them. The world of today requires a different core of knowledge that all students need for success. The push of global competition, elimination of unskilled jobs, advancements in technology, and the demand for maintaining a middle class has led the public, media, and government to push for higher standards for all students. This is why change must happen in schools . . . and soon.

Research

With *No Child Left Behind* placing heavy emphasis on “scientific research,” it makes sense to begin any discussion with the research base, and considerable research has been done on school reform. Seven meta-analyses have been done in recent years in an attempt to consolidate the findings of hundreds of projects. The following is a summary of the International Center's findings on each of the meta-analyses:

1. Ronald R. Edmonds, “Search for Effective Schools” NIE, East Lansing, MI. The Institute for Research on Teaching, College of Education, Michigan State University, 1981

Dr. Edmonds was the leading researcher in school reform in the 1970s, and his work is still highly respected by education leaders. He created what is now known as the “effective schools model.” Dr. Edmonds' research noted the five following characteristics of successful schools:

- Strong administrative leadership
- Focus on basic skills
- High expectations for student success
- Frequent monitoring of student performance
- Safe and orderly schools

2. Jaap Scheerens and Roel Bosker, *The Foundations of Educational Effectiveness*, New York: Elsevier, 1997

Scheerens and Bosker's work was well recognized and embraced in the mid to late 1990s. They did research on a wide variety of school reform initiatives and came up with eight essential characteristics of successful schools. The characteristics they identified were:

- Monitoring of student progress
- Focus on achievement
- Parental involvement
- Creating a safe and orderly climate
- Focused curriculum
- Strong leadership
- Cooperative working environment
- Time on task

3. "Key High School Reform Strategies: An Overview of Research Findings." U.S. Department of Education, 1999.

For this report, a team of researchers studied the 300 most comprehensive school reform research studies done in the previous five years. The common characteristics they identified were as follows:

- Commitment to high academic expectations
- Small learning environments
- Structure learning around career/student interest
- Professional development focused on instruction
- Tie out-of-school learning to classroom learning
- Career and higher education counseling
- Flexible, relevant segments of instruction
- Assess on what students can do
- Partnerships with higher education
- Support alliances with parents and community

4. Robert J. Marzano, *What Works In Schools – Translating Research Into Actions*. ASCD, 2003.

Robert Marzano reviewed research on school reform in his new book. The five characteristics he identified for highly successful schools were as follows:

- Guaranteed and viable curriculum
- Challenging goals and effective feedback
- Parent and community involvement
- Safe and orderly environment
- Collegiality and professionalism

5. "High Poverty – High Success: Schools That Defy The Odds," Quick and Quick, Leadership Media, 2000.

In June 2000, Drs. Doris Quick and Custer Quick, Senior Consultants at the International Center for Leadership in Education, did an analysis of five models of high achieving schools. They studied the 90-90-90 Schools, No Excuses Schools, Benchmark School Study, the Hope for Urban Education study, and the Beating the Odds study. They reviewed the characteristics that each of these major

initiatives had found to be central to student success and established the following five overriding characteristics:

- A commitment to a rigorous and relevant curriculum for all students
- Implementation of a testing program that evaluated both students' conceptual knowledge and their ability to apply knowledge
- A focused and sustained staff development program
- Commitment to addressing the issue of student behavior
- Willingness to make organizational changes for the benefit of students

6. The Bill & Melinda Gates Foundation Education Reform Strategies – Foundation Definitions of Effective High Schools, Targeted Literature Review of Major Constructs and Their Components: Evaluating the National School District and Network Grant Program, 5/30/02.

The Bill & Melinda Gates Foundation has made a major commitment to school reform, especially at the secondary school level, following an extensive review of the research on the components of successful schools. The characteristics they identified as most important were:

- Common focus on a few research-based goals
- High expectations
- Small, personalized learning environment
- Respect and responsibility for all
- Parent/community partnership
- Focus on performance
- Effective use of technology tools

7. Lawrence W. Lezotte, Robert D. Skaife, and Michael D. Holstead, *Effective Schools – Only You Can Make A Difference*, All Star Publishing, 2002

In recent years, Larry Lezotte has picked up leadership on the effective school research that Ron Edmonds started in the 1970s. In his recent book, Lezotte noted the following as the most important characteristics of effective schools:

- Creating the school culture
- The correlates of effective schools
- Site-based management
- Data collection, disaggregation and analysis
- School improvement plans process
- Organizing schools for students
- Building community support
- Evaluation of student progress

A comprehensive analysis of this research yields ten central findings that I believe schools should use as a platform for success in their reform initiatives:

1. **Create a culture** that embraces the belief that all students need a rigorous and relevant curriculum *and* all children can learn.
2. **Use data** to provide a clear unwavering focus to curriculum priorities that is both rigorous and relevant by identifying what is essential, nice to know, and not necessary.

3. Provide students real-world **applications** of the skills and knowledge taught in the academic curriculum.
4. Create a **framework to organize curriculum** that drives instruction toward both rigor and relevance *and* leads to a continuum of instruction between grades and between disciplines.
5. Create **multiple pathways** to rigor and relevance based upon a student's personal interest, learning style, aptitude, and needs.
6. **Set high expectations** that are monitored and hold both students and adults **accountable** for student's **continuous improvement** in the priorities identified in #2 above.
7. Sustained **professional development** that is focused on the improvement of instruction.
8. Obtain and leverage **parent and community** involvement successfully in schools.
9. Establish and maintain **safe and orderly schools**.
10. Offer effective **leadership development** for administrators, teachers, parents, and community.

Characteristics of Successful Schools

In 2004, through feedback from several schools we were working with, it became apparent that, though the meta-analysis research was valuable and appreciated, their most urgent need was a series of specific characteristics they could readily adopt that would help their schools in the short term. In turn, the International Center, in conjunction with the Council of Chief State School Officers and with financial support from the Bill & Melinda Gates Foundation, conducted a study on the most successful high schools in the country, paying close attention to their feeder elementary and middle schools, to try to understand the characteristics that made them effective schools. This investigation provided **nine central characteristics of high performance in high schools**:

1. Focus instruction around students' interests, learning styles, and aptitudes through a variety of small learning community approaches—most commonly academies.
2. Administrators and teachers share an unrelenting commitment to excellence for all students, especially in the area of literacy.
3. An extraordinary commitment of resources and attention to ninth grade students.
4. A rigorous and relevant twelfth grade year.
5. A laser-like focus on data at the classroom level to make daily instructional decisions for individual students.
6. High-quality curriculum and instruction that focuses on rigor and relevance.
7. Provide students with adults with whom they can develop personal relationships and be allowed the opportunity to use reflective thought.
8. Focus and maintain professional development around a limited number of high-impact initiatives.
9. Solid and dedicated leadership.

Action Plan

As the International Center continues its work with and listens to schools, it is abundantly clear that schools understand and embrace the research and are gaining a clearer understanding of characteristics that high-performing schools possess. Schools now seek direction and support in developing specific action plans to implement these characteristics.

To assist schools in this effort, the International Center for Leadership in Education has created the Successful Practices Network. The Network was launched two years ago, starting out with a group of schools with whom we had working relationships. It is apparent from our work with these founding members of the Successful Practices Network that considerable resources and technical assistance is needed by most schools to be able to move forward with an action plan. Schools are so overwhelmed by the mountains of regulations, requirements, tests, and reporting they have to do that there is little time or energy left to feasibly implement an action plan.

The International Center has again partnered with the Council of Chief State School Officers to begin a detailed dialogue about how to support a group of selective schools in moving forward with an action plan. After extensive discussion, a five-year plan was developed to assist these schools. The International Center reached out to the Bill & Melinda Gates Foundation for assistance in providing resources to help the initiative, and we are deeply grateful and honored that the Foundation agreed to help.

We have developed, in consultation with many national organizations including NEA, AFT, National School Boards Association, National Governor's Association, Achieve, Education Trust, ASCD, U.S. Department of Education, and others, the criteria of how to identify a highly successful school. The criteria include four characteristics:

1. High academic performance in core areas as measured on state and national tests.
2. Programs that stretch students well beyond the core academic skills measured by state and national tests.
3. Community involvement.
4. Social and personal development.

The International Center has developed a detailed rubric to measure success in each of these four areas. Working with CCSSO, we are now in the process of selecting 25 "proven" high schools, given their socio-economic characteristics, that appear to be the nation's most successful based on the above criteria. These schools will represent a cross section of the nation's community settings based on socio-economic characteristics. Subsequently, a group of 75 "promising" schools from ten targeted states will be added to the Network. Finally, we will add the existing schools in the Successful Practices Network together with a select group of additional schools that show an interest and capacity to make substantial improvements in their schools. Together, these schools will all become part of our Successful Practices Network.

These schools will then begin work on an action plan. The action plan will consist of up to eight initiative areas that any K-12 school system nationwide can use to be successful. The International Center and our Successful Practices Network will provide technical assistance and support to these schools in selecting the areas of improvement.

Following are the seven central actions that we believe schools must take, those which members of the Successful Practices Network will have the opportunity to participate in, if they are to improve the academic success of all students.

1. Creating a Culture that Supports Change

Most educators did not enter public education because of a burning desire to raise test scores. They did so because of a desire to prepare and assist children for success in life. To do this, we must realize that our children are growing up in a world altogether different than we knew as children. Young people are being pushed to respond to the economic pressures presented by a highly skilled global workforce and a growing number of retirees who will rely on them to support social security. Modern technology requires a different skill-set than the past. Our students are lagging behind their peers from many other nations in acquiring the relevant, modern-day skills necessary to compete.

School districts must find a way to communicate this message clearly and unmistakably to administration, boards, teachers, students, and parents. Until schools can spread public awareness and get acceptance of these issues by all of these groups, every effort for change will be resisted and eventually die on the vine. The highest performing schools in America understand this, have persevered, and overcame the challenges they faced.

The International Center for Leadership in Education has developed a wide variety of resources that can assist schools in this process.

2. A Focus on Instruction Rather than Structure

Increasingly throughout the country, schools have come to understand the need to move towards a more rigorous and relevant curriculum. This message has been made loud and clear by the U.S. Department of Education, many state education departments, the Bill & Melinda Gates Foundation, etc. From the International Center's 15 years of experience in promoting rigor and relevance we know that the concept is often discussed, but only the highest performing schools have understood how to implement it.

Too often schools get caught up in trying to make structural changes such as moving to a small learning community, to block schedules, to magnet or charter schools, to year round schools, etc. They do this intending to create a different structure that will develop a closer personal relationship with students and make their education more relevant. Unfortunately, these changes are extremely emotional and take on many sacred tenets of instruction. Our experience has taught us that, while all of the above structural changes can be beneficial, more often than not they lead to such emotional upheaval in the community that they drain the energy, support, and resources for any additional substantial change.

Another strategy that has had some success is to not attack the structure of schools but rather the instruction that occurs at the classroom level. This is far less emotional and teachers who are adaptable can alter their techniques in a short time. The problem here is that not everyone will get with the program. We have found that you can count on faculty splintering into three camps. One group will be enthusiastic about change, one group will accept it as policy but not immediately embrace it, and a third group will resist change at all cost. Over time, most faculty members will come around, but it is a struggle to get to that point.

If teachers are to change their instruction methodologies, they need materials and training that are concrete and specific, not a vague concept. They need resources that they can employ in their classrooms the very next day. The International Center developed the Rigor/Relevance Framework to do just that.

The Rigor/Relevance Framework requires all students to have academic rigor but, equally important, they must also understand and conceptualize relevant applications for each academic standard and benchmark being taught. Studies have shown that students understand and retain knowledge best when they have applied it in a practical, relevant setting. A teacher who relies solely on lecturing does not provide students with optimal learning opportunities.

When implementing the Rigor/Relevance Framework in a classroom, school, district, or state, it is of great importance to develop local and—as Florida is working to do—state assessments that measure D quadrant skills. This enables students to not only gain knowledge but to develop skills such as inquiry, investigation, experimentation, and how to use trial and error.

With the Rigor/Relevant Framework firmly in place, schools can then begin to look at the other meaningful structural changes, such as small learning communities, that will indeed play to a child’s interests, learning style, and aptitude. The Rigor/Relevant Framework will also bring to the classroom a structure that makes instruction easy and enjoyable for teachers.

3. Developing Relationships within the Building

Students who attend high-performing schools have personal relationships with adults and peers in their building. These relationships are not forced, but seemingly woven into the fabric of the schools.

For students to become all they are capable of being, they need ongoing direction and assistance. Schools that create an environment where one or more adults interact intimately with a child on a consistent basis will benefit the student greatly. A school committed to building personal relationships also understands the equally critical importance of adults communicating with each other. If we are to have an intimate understanding of our students and their lives, we need to interact with their parents as well.

In order to prepare students adequately for a “D-quadrant” world, they will need not only rigorous and relevant academic experiences, but also skills in working with others in a wide variety of settings. High-performing schools use a range of techniques and strategies to create personal relationships:

- Before the child is enrolled in class, teachers obtain from parents some basic information about their child’s interests, learning style, and aptitudes. This sort of background information is essential in order to understand the students and help them grow.
- Teachers make monthly phone calls to parents to brief them on their child’s progress and to obtain in return any new advice or significant goings on at home.
- In high schools, freshmen are assigned peer coaches who are juniors and seniors. Peer coaches need to be good role models for the younger student and also communicate well with the adult faculty member who looks after the student.
- The team of the peer coach, the teacher and/or adult faculty member assigned to the child, the parent, and the child periodically get together to share observations and discuss ways each of them can improve.

Almost certainly there will be some school faculty members who refuse to embrace the added responsibilities that go along with developing a close relationship with a student and his or her parents. The “It’s not my job!” argument comes into play. School administrators need to be direct and uncompromising in convincing them otherwise. Naturally, as an administrator, it helps to have teachers in your camp who are enthusiastic about change and can assist in changing the attitudes of their more reluctant colleagues. Efforts must be made to hire and retain staff who share the vision.

By the time students are 18 years of age, they will have only spent 13 percent of their waking hours in school. Parents can and should, therefore, have a very profound impact on their children’s education. It will never be easier than now to enlist their support. Parents today have different expectations and value their children’s education more than in the past. Oftentimes, their involvement may seem excessive and border on inappropriate. They may concern themselves more with what you have done to their children than what you are doing for their children. The label of “helicopter parents” is right on the money. They hover over their children incessantly and their protect-the-child-at-all-cost attitude has even driven some teachers out of the profession.

Educators should use this newly found interest in their school to their advantage. No longer will it be difficult to impossible to involve them in important discussions about their children, school, and other education issues. In fact, the change in the culture of parenting is often the opposite of what it used to be; almost to an extreme with some of the helicopter parents. Millennials and their parents rely on e-mail and cell phones for communicating. It is suggested that the adult faculty member working with the child and parent use these open lines of communication for relationship building.

We need to recognize parents for what they are, dedicated caregivers who can be a tremendous resource for educators who for decades, have wanted more parental involvement in children’s education. Every year more and more parents are pulling their kids out of public education and schooling them at home. In fact, home schooling is the fastest growing method of delivering K-12 education in America. These students have no regulations, no buildings, no certifications, and no state tests but are outperforming students in public education overall. If public education is to survive, we need to integrate some of the best aspects of home schooling, i.e., parents as stakeholders, into our classrooms.

Finally, it is very important that the schools establish a series of guiding principles for all relationships to be built around. The guiding principles that many schools use are those from the character-centered teaching initiative that exists in the U.S. They are:

- | | |
|-------------------|---------------------|
| 1. Respect | 7. Perseverance |
| 2. Responsibility | 8. Honesty |
| 3. Contemplation | 9. Optimism |
| 4. Compassion | 10. Trustworthiness |
| 5. Initiative | 11. Courage |
| 6. Adaptability | 12. Loyalty |

Schools today can create relationships with and around the child that exemplify these guiding principles. They will go a long way in preparing that child for success in all aspects of life.

4. Start with Special Education and English as a Second Language Students

Most schools in America attempt to mold a curriculum to the average to above-average student and then try to figure out how to shape it to fit the special education (SE), English as a second language (ESL) students, and talented or gifted students. High-performing schools do the opposite.

In developing curricula, high-performing schools will typically focus on nine central factors in planning student education and instruction. These factors are:

1. Using data, they carefully weigh content that is essential versus content that is nice to know but not critical for success after graduation.
2. They go to great ends to fully understand the interests, learning style, and aptitudes of each student.
3. They engage parents actively in a discussion of the child's needs and how to meet those needs most effectively.
4. They use proven methodologies to teach to the unique interests, learning style, and aptitudes of each student.
5. They monitor the success and failures of students on an ongoing basis and take appropriate corrective actions.
6. They stay current with the research and data on learning and integrate it into the classrooms.
7. They focus on the end result for students, which is to prepare them for work, college, family, and community participation rather than solely on standards and assessments.
8. They use technology to improve the learning opportunities for students.
9. They break learning down into its smallest incremental parts to guide instruction for students.

These nine characteristics are not uniquely suited to help SE and ESL students—they are good for all students. High performing schools begin by determining the needs of the hardest to serve students then by applying the same principles to the other students. The result is dramatic improvement for all students.

To do this, schools must create a culture that supports the belief that all children can learn, that a big majority of students can meet the standards, that more students than are presently meeting the standards can do so, and that we generally have too low of an expectation level for our students.

Another reason to focus on SE and ESL is that both of these groups will grow dramatically in number in the coming years. The demographics of America will continue to shift as immigration brings more students with limited English speaking ability and children in poverty into schools. Advancements in health care will make more young children with disabilities well enough to enter general education programs.

In schools throughout the country we have found that elementary, SE, and ESL educators have a tendency to focus more on students and less on content. In middle schools and high schools, the teachers have a tendency to focus more on content and not on individual students. It is this attention to students that will help improve the performance of all students because it replaces a focus on teaching with a focus on learning.

Because of their tendency to focus on the total needs of children, high-performing schools nationwide are increasingly placing SE, ESL, and elementary educators in leadership roles in both individual buildings and across the district at the principal level and at curriculum leadership levels.

5. Data-based Decision-making

Good data is a necessary ingredient in any curriculum restructuring initiative. American curriculum is so overcrowded with content that it is difficult for teachers to provide students with the process skills that enable them to know how to apply the content being taught. Teaching students how to apply knowledge takes considerable time, which teachers simply do not have. Therefore, schools need to make some difficult decisions regarding content that is essential versus that which is nice to know so that time can be made available for teaching process skills.

Prisoners of Time, a study by the National Education Commission on Time and Learning, reported that as of 1994, 11 states permit school terms of 175 days or less and only one state requires more than 180 days. If one accepts the *Prisoners of Time* estimate of 5.6 hours of classroom time per day in a school year of 180 days, there is a total of 13,104 hours of classroom time in 13 years of K-12 schooling. The highest estimate of the percentage of time that is typically allocated to instruction within the current system is 69 percent. This means that of the 13,104 available hours, teachers have 9,042 hours to teach, reinforce, and assess the knowledge identified in the average state curriculum.

The Mid-continent Regional Education Laboratory, under the leadership of Bob Marzano, worked with a large number of teachers to determine how much time was needed to teach all the standards and benchmarks in the four core academic areas. Simply stated, they concluded that 15,465 hours of time was necessary; nearly 6,500 more hours than is available.

High-performing schools have figured out how to eliminate many extraneous standards and benchmarks without sacrificing the quality and relevance of the students' education. Their decisions are based on what students need to know and be able to do once they graduate, being mindful to cover content that will be tested on the state exams. It is amazing how few teachers are aware of the data that is available to them to make these types of decisions themselves. The International Center for Leadership in Education created the *Curriculum Matrix* to help districts make good decisions about the curriculum and focus their instruction.

The Curriculum Matrix correlates a state's standards in math, science, and English language arts to that state's testing program and to the essential skills graduates will need in their post-school lives. The Curriculum Matrix is a user-friendly crosswalk of state standards to state assessments as well as the curriculum survey of essential skills, also developed by the International Center. High, medium and low instructional priorities are assigned to the standards based on the crosswalks. This is the type of data districts need to determine priorities that will help raise scores on the state-mandated tests and, equally as important, to focus instruction on skills/knowledge students need for success in their post-school responsibilities.

The Curriculum Matrix Summary Table for Florida's English language arts curriculum is provided below. It shows of the 521 benchmarks in Florida's curriculum in grades three through twelve, 126 (or 24 percent) of them are assessed by the Florida Comprehensive Assessment Test (FCAT). The number of benchmarks tested is arrived at by summing the high (H) and medium (M) priority columns under the FCAT for all grades. The Curriculum Matrix is completed on a benchmark by benchmark basis, meaning each benchmark is aligned directly to the FCAT and the curriculum survey rankings. The summary table shown is intended to give an idea of how the Curriculum Matrix can be used as a platform to curriculum restructuring.

**International Center's Florida
Curriculum Matrix Summary Table**

	Number of Standards	Number of Benchmarks	FCAT			Curriculum Survey of Essential Skills		
			H	M	L / No Q	H 1-35	M 36-70	L 71 +
English LA								
Grade 3	11	51	10	7	34	31	8	12
Grade 4	11	51	16	1	34	28	13	10
Grade 5	11	51	10	7	34	28	13	10
Grade 6	11	52	10	5	37	22	18	12
Grade 7	11	52	10	5	37	22	19	11
Grade 8	11	52	14	1	37	22	18	12
Grades 9-12 Test 9th Grade	11	52	14	1	37	25	11	16
Grades 9-12 Test 10th Grade	11	52	14	1	37	25	11	16

The International Center has found that the data compiled in the Curriculum Matrix can be applied to career and technical education (CTE) and arts programs as well. Career and technical education students, in some schools, are outperforming college-prep students on state math, science, and English language arts tests. What these schools have done can be replicated in most CTE programs and lead to similar success. The schools compared the academic standards/benchmarks in their state to what was actually on the state tests in English, math, and science. Often, only a relatively small portion of the standards/benchmarks made up a majority of the test questions. They embedded this content in their CTE curricula and trained their CTE teachers to cover them. Not surprisingly, when taught these high-priority standards in an applied setting, the CTE students mastered them and performed well on the state tests.

Once teachers are armed with data, they then need professional development to show them how to use the data to make daily decisions at the classroom level. The International Center's experience with the high-performing schools has been that, unless professional development accompanies this data, teachers are often overwhelmed by it and not sure how to use it. A district that has received the proper training is then able to put information systems in place that will track how well students are doing on a state-wide, district-wide, school-wide, and classroom-by-classroom basis.

At all levels of education, from the classroom to the state, it is critical that we assess what we value and not simply value what we assess. Tests need to be developed that are based in the D quadrant and then gear instruction towards getting students prepared to master the content covered in these assessments which will, in turn, provide them with valuable life skills.

Some well-intended districts have found that their assessment policies were driving students in a direction opposite of what would be best for them. For example, a number of schools we have worked with found that high-performing students have shied away from IB and AP courses because it was negatively impacting their GPA. Other schools informed us that they were not providing Quadrant D instruction because the state tests were based in Quadrant A.

Fortunately, many states have begun to take these issues seriously. For example, the state of Florida has completed a detailed analysis of the FCAT to determine where they place on the Rigor/Relevance Framework. Based on their evaluation, Florida is now looking at the necessary changes that will move the FCAT into Quadrant D.

6. Transition Years

As students progress in a high-performing district, the transition is smooth from pre-K to kindergarten, kindergarten to 1st grade, elementary to middle school, middle school to high school, and from high school to higher education or work.

Let's look at ninth grade as an example, although similar strategies and techniques are used at each of the other levels in which transition occurs between schools. When a student is in eighth grade, the transition to ninth grade/high school must begin early in the eighth grade. High performing schools and districts use strategies such as these:

- Eighth grade students are provided copies of the high school student newspaper.
- Teachers from ninth grade visit eighth grade classrooms on a regular basis.
- Parent's night for eighth graders is held at the high school.
- Eighth graders visit the high school on at least two occasions.
- The eighth grade teacher loops to the ninth grade with the students.
- Detailed information about each student is collected in eighth grade and shared with ninth grade faculty before the students arrives in the fall.

Once the student reaches ninth grade numerous initiatives are undertaken to ensure their success in the high school. Among these initiatives are:

1. Loop the eighth grade teachers to the ninth grade, which provides students with a contact person who they know and a person who knows them.
2. Assign the best teachers to ninth grade; those teachers who can best relate to students.
3. Implement a menu of intervention programs that will spring into action if a student runs into any difficulty.
4. Compilation of data is faithfully maintained in the ninth grade. Students are reviewed every six weeks and the evaluation is shared with parents and students and appropriate actions are taken.
5. Focus on literacy at all times.
6. Assign a high school junior and senior who is good role model to act as a peer coach to each ninth grade student.
7. Extend instruction and provide bussing for students who are struggling.

Transition years are crucial. Moving to a new school in the district should not be a fractured event but a seemingly natural continuation of a student's educational experience.

7. Systems

High performing schools cannot be maintained without extensive support from the district and state. State departments of education have felt financial constraints over the last several years and have had to reduce their technical assistance staff and become more of a regulatory agency. This, we have

found, has had a very negative impact in enabling schools to achieve high standards for all students. A similar circumstance exists in a large number of districts throughout the country.

High performing schools emerge when the district and the state allocate their limited resources to assist teachers rather than regulate them. Support is provided in the following ways:

- Extensive resources in the area of curriculum and curriculum support services for classroom teachers.
- Technology is made available for classroom teachers
- Peer coaches are assigned to students.
- Professional development is widely available, but does not occur on district-wide staff development days. Instead districts use their limited resources to invite teachers to high-quality, well-focused professional development activities. The top one-third of teachers will jump at this opportunity. This proves to be a more cost effective use of resource.

It is becoming increasingly clear that school districts across the country and state departments of education must find new and innovative ways to provide technical assistance to classroom teachers. Kentucky and Florida provide good models in this respect.

Summary

To assist individual schools and school districts across the U.S., the International Center, CCSSO, and the Bill & Melinda Gates Foundation have joined hands to provide a series of services that will help them implement the eight actions listed above. The services that will be available to members of the Successful Practices Network include the following:

- An ongoing series of products and services that will create a culture supportive of change. Among these will be high-quality DVDs and videos that can be used in public access stations and other appropriate distribution centers in the community. A monthly Web cast by Dr. Daggett will promote a continuing need to raise our standards for all students in our schools.
- Monthly e-mails that discuss the need for change that schools can share with teachers, administrators, boards, parents, community members, and students.
- Monthly dissemination of Quadrant D lessons that schools can use to teach standards and benchmarks that are high-priority items on state assessments.
- Actions to implement comprehensive school reform including:
 - Study tours to the 25 high performing, proven schools in Successful Practices Network.
 - A symposium that will study the specific strategies and techniques used by the highest performing schools in each of the eight action items. The symposium will be held on October 1-3 in Washington, D.C.
 - Reduced fees for the 2006 Model Schools Conference.
 - Onsite evaluators who will assess challenges and successes of a school in relation to the eight action areas.

- On-call technical assistance from the International Center for Leadership in Education in each of the eight action areas.
- Other items as identified by individual school districts.

These services will be available, in most cases, at no charge to SPN members. Certain instances may require a reduced fee for network members. Non-network members may obtain these services on a fee-for-service basis.

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