

The education crisis is bigger than you think.

“...the stagnation and decline in the overall quality of Bahamian education has occurred during the greatest expansion of the world’s knowledge base.

“...technical change and intellectual growth will affect jobs, individuals and countries.

“The keys to survive and thrive are 1.) Be smart and 2.) Operate in an environment that allows for flexibility.

“Countries have to learn to see themselves as they really are and then make the positive decision to take the right steps.”

Despite 40-years of Government spending on education, the functional illiteracy of Bahamian youth today is so great that the Minister of Education calls it an “education crisis”, a crisis that was clearly defined by the Coalition for Education Reform in its June 2005 report “Bahamian Youth: The Untapped Resource”

The reason this is important now is that the country faces an embarrassing skills shortage given the job openings that will be created by the presently approved foreign investments. Simply put there may not be enough qualified Bahamians to fill the jobs created and a far greater than expected number of foreign workers may be needed.

But...the need to solve the education crisis is bigger and broader than that suggested by simply looking at BGCSE test scores and the need for foreign workers in tourism.

The world is being driven by economic and technological forces that challenge the economic and political status quo in all countries big and small.

Globalization.

Increasingly in today’s world work gets done where it can be done most efficiently; modern telecommunications and transportation systems, especially rapidly evolving computer hardware and software, make that possible. The products range from multi-million dollar aircraft to computers, computer software and kitchen appliances.

The Boeing 787 Dream-Liner, for instance, was conceived in Seattle but designed, in part, on French software by aircraft engineers in Russia. Twenty-five percent of the aircraft will be built abroad and it will be assembled in Seattle.

Educational Excellence.

The competition for such “internationally sourced work” has created a race to achieve educational excellence. A good example is India.

“In 1951, to his enduring credit, Jawaharlal Nehru, India’s first prime minister, set up the first of India’s seven Indian Institutes of Technology (IITs)...In the fifty years since then, hundreds of thousands of Indians have competed to gain entry and then graduate from these IITs and their private school equivalents. Given India’s 1 billion-plus population, this competition produces a phenomenal knowledge meritocracy. It’s like a factory churning out and exporting some of the most gifted engineering, computer science, and software talent on the globe...The IITs became islands of excellence by not allowing the general debasement of the Indian system to lower their exacting standards.”

For most of their first fifty years, these IITs were one of the greatest bargains America ever had. It was as if someone installed a brain drain that filled up in New Delhi and emptied into Silicon Valley, California.

Because of modern telecommunications developed in the 1990s this work is being done more and more in India rather than Silicone Valley. Furthermore, China with its 1.3 billion people is now working on a massive scale to surpass both India and the U.S. (Reference: Thomas L. Friedman, *The World Is Flat*, page 104.)

Unfortunately, the stagnation and decline in the overall quality of Bahamian education has occurred during the greatest expansion of the world’s knowledge base.

Non-Biological Intelligence.

And...this expansion is continuing and accelerating as the electronic computer extends intelligence further beyond man’s biological limits.

The first giant computer was the Electronic Numerical Integrator and Computer (ENIAC) built in 1943 that was first used to design the hydrogen bomb. It contained 17,000 vacuum tubes, 70,000 resistors, 10,000 capacitors and 5 million hand-soldered joints. It weighed 27 tons.

Two-years ago a silicon chip measuring 0.02 inches square had the same computing capacity. That is truly revolutionary. (Google Search: Wikipedia, ENIAC).

Computer construction has changed from a clearly visible operation to one where circuits are printed on silicon wafers with the help of microscopes that can “see” objects one seven thousandth of a human hair (one nanometer) in size.

Because of this revolution —

- Today’s electronic circuits are millions of times faster than the neuronal connections in the human brain. (Ref.: Ray Kurzweil, *Fantastic Voyage*, page 14)
- The power of information technologies, as measured by their performance/cost ratios, etc., is doubling about every year. (Ref: Ray Kurzweil, *The Singularity Is Near*, page 25.)
- Computing now goes beyond storing, manipulating and transmitting numbers to include voice and pattern recognition, etc., functions formerly the sole domain of the human mind. This is the new world of Artificial Intelligence (AI). In the world of AI many service jobs are likely to be radically changed and gravitate to the most efficient.

Healthcare.

To be more specific let us look at an example outside tourism that is currently a hot topic in the Bahamas. That is healthcare and where nanotechnology and micro-biology merge.

Nanotechnology is the design of structures, devices and systems as small as one nanometer.

The science of micro-biology began in 1987 with the first scientific paper on Deoxyribonucleic Acid, “DNA”, the “molecule of heredity” located in each human cell. It is responsible for human development and most inherited traits that range from hair color to the susceptibility to disease.

The group of critical genes, the human genome, is only 3% of the 50,000 to 100,000 genes in a human that encode proteins.

As a result of the human genome project we now are at the beginning of a new era, an era where “drug therapy is precisely targeting key steps in the process of atherosclerosis (the cause of heart disease), cancerous tumor formation, and the metabolic processes underlying each major disease and the aging process.”

In this new era Micro-biology and Nanotechnology are expected to produce drug-delivery vehicles that deposit a drug in a diseased area in the exact amount needed. Such an advance in healthcare should affect the status quo. (Ref: Kurzweil, *Singularity*, page 212 and Google Search, Wikipedia, Nanotechnology.)

And...this is directly relevant to the proposed Bahamian national health care system. In this regard please refer to Nadeem Esmail, *Health Insurance in the Bahamas*. (Ref: Google Search, Nassau Institute, Health Insurance in the Bahamas.)

August 11, 2006

Conclusions.

We live in a world where technical change and intellectual growth will affect jobs, individuals and countries.

The keys to survive and thrive are –

1. Be smart and
2. Operate in an environment that allows for flexibility.

Being smart means productive investments in humans. In the case of the Bahamas the present level of functional illiteracy leaves the average Bahamian and the country poorly prepared for this century. And...it should be no comfort that many other countries have the same problem.

Flexibility is molded by a country’s cultural endowment since that endowment determines its ability to absorb foreign ideas and best practices and meld those with its own traditions.

According to the Chief Executive Officer of the Indian high-tech trade association, “Cultures that are open and willing to change have a huge advantage in this world.”

Countries have to learn to see themselves as they really are and then make the positive decision to take the right steps.