

Windows on the Future

Thinking About Tomorrow Today

Developed for the Superintendent's Visioning Institute

By Ian Jukes & Ted McCain

Austin, June 2007

This handout is a brief summary of the major points of our facilitation in Austin on June 22nd and 23rd, 2007. A detailed 200-page version of the handout can be downloaded from: <http://web.mac.com/iajukes/iWeb/thecommittedsardine/Home.html>

Talking About Change

1. Change is sneaky and slippery. It's hard to grasp what's changing.
2. We must deal with dizzying, massive, overwhelming change in communities, in our institutions, and in our children lives.
3. Because we are living in an exponential world - we must differentiate between linear & exponential growth - the problem is that we tend linear thinkers in an exponential times.
4. Gladwell's *Tipping Point* represents a shift from linear and predictable change to massive, sudden & overwhelming change.
5. The fundamental issue we must deal with is not about technology but what it does to how we think about life - this is about headware not hardware.
6. There are several global exponential trends that hold profound implications for us all not just as educators but also as citizens.

Exponential Trend #1 - Moore's Law

1. The technological processing power and speed to cost ratio of microchips is exponentially growing by a factor of 4 every 12, soon to be every 6 months.
2. This exponential doubling will continue for at least another 15 years and according to the experts, likely another 100 years.
3. Extrapolating out, trying to anticipate the impact of Moore's Law on our society, our children and our institutions the future is a great challenge.
4. Ray Kurzweil's *The Singularity is Near* states that there are more than 75 global exponential trends coming together and this holds profound implications for our world.
5. In education, there is a tendency to think that change happens somewhere else - that we are essentially immune from the changes taking place

6. What are the implications for the future based on Moore's Law - and is it linear common sense or exponential common sense that we are using to anticipate the future?

Exponential Trend #2 - Photonics

1. Bandwidth speed and capacity available per dollar is tripling exponentially three to six times the rate of Moore's Law.
2. According to the experts exponential tripling will continue for at least another 20 to 50 years.
3. This is not just for wired bandwidth, but also for wireless. The standard is WiFi but soon it will be WiMax and WiBro - this will mean close to fiber speed wirelessly.
4. *The World is Flat* by Thomas Friedman talks about the death of distance. There has never been a time where distance has meant less than it does today. Our economy is no longer defined by state and national borders. It's an economy based on new not reconstituted knowledge and it requires a different set of skills and knowledge than the skill set students typically leave school with today.
5. In Daniel Pink's *A Whole New Mind* he tells us that we are living in a predominantly linear, logical left brained world. Left-brained thinking is the basis of the school system and No Child Left Behind. The role of the right side of the brain, which is the primary source of big picture thinking, problem solving and creativity has long been misunderstood. But almost anything that involves predominantly left brained thinking will be turned into hardware, software, or be outsourced. Many skills can be outsourced, but not creativity and imagination. If our students are to survive in the culture of the 21st Century, they will have to use a whole new mind.

Exponential Trend #3 - The Internet

1. The Internet has come out of nowhere in the past 10 years. It now boasts more than a 1.4 billion regular users in some 175 countries. There are more than 100 billion web pages. A Pew Internet study suggests that someone somewhere on the planet clicks on a Web page 200 billion times a day.
2. The amount of bandwidth being used to send and receive digital content is conservatively estimated to be tripling exponentially every year.
3. The indicators of growing bandwidth usage include the emergence MySpace, YouTube, Wikipedia, eBay, Skype, 2nd Life, podcasts, digital music, Apple iTunes University and the blogosphere.
4. Web 2.0 represents a move from the Internet as a passive viewing medium to learning tools of mass collaboration. According to the Pew Internet study, more than half of online users today are content creators not just content consumers.
5. The move to Web 2.0 has lead to a new mindset for communication and collaboration.

6. The future of the Web must be viewed in exponential terms. It's moving from being a pipe to being a working and learning environment where we will interact with information in virtual settings wearing virtual glasses.
7. In the past ten years the Web has become business, an education, an entertainment & a communications center that all fit one device. And instead of going to these services, increasingly we want them to come to us.
8. The revolution has just begun and it is already outstripping our capacity to cope, antiquating our laws, transforming our morals, reshuffling our economy, reordering our priorities, redefining our workplace, putting the constitution to the fire, shifting our concept of reality and making us sit for even longer
9. We are seeing the emergence of tools of unimaginable capabilities - and this has all happened in just the past five years.
10. If this is just now, what will the next five years bring?

Exponential Trend #4 - InfoWhelm

1. Because of exponentialism, we now live in the age of disposable information - a temporary and disposable commodity as perishable as fruit.
2. Because of InfoWhelm, we have the ability to access way more information than we ever needed whether we wanted to access it or not.
3. There are more than 200 Google tools used to make more than three billion Google searches each month.
4. Google is now financing Google Book Search - the digitization of 60 million books including every single book in 5 of the most prestigious research libraries in the world - Stanford, Harvard, University of Michigan, Oxford and the New York Public Library with any idea accessible in less than a second.
5. Powerful new tools and technologies are giving us with the same access to information that iPods have given to music.
6. InfoWhelm that has led to fundamental depreciation in the value of technical information.
7. A good rule of thumb is the faster the world changes, the shorter the half-life of knowledge is and the more there's a need to invest in lifelong learning. What begins to matter more is not just the ability to remember specific content but more importantly the ability to place the information in a context & use it effectively.
8. In the Age of InfoWhelm, Information Fluency (the unconscious ability to ask good questions, access data from a range of high tech and low tech sources, analyze and authenticate the data to distinguish the good from the bad, the ability to apply the data that has been turned into knowledge to solve real world problems, the ability to be able to assess both process and product) needs to be taught in the same structured manner than Science, Math and Languages currently are.

Four Global Exponential Trends

1. Moore's Law
2. Photonics
3. The Internet
4. InfoWhelm

Reflections

1. Alfred North Whitehead - it is the business of the future to be dangerous...
2. Erik Hoffer - in times of radical change, the learners inherit the earth...
3. David Thornburg - our job is to prepare children for their future...

Reflection Activities

1. The rubber band effect.
2. The compass activity. Alignment of intentions.
3. Thinking in future tense - living life like Tony Romo and Matt Schaub.
4. Describing the day in the life...
5. The Five Apes.
6. TTWWADI (That's the Way We've Always Done It) in life.
7. TTWWADI in education.
8. TTWWADI in the classroom.
9. Teaching For Tomorrow
10. Moving VIP (Vision into Practice)
11. 21st Century Learning
12. 21st Century Teaching
13. 21st Century Assessment
14. Action Plans

FOR MORE DETAILS CONTACT:

Ian Jukes: The InfoSavvy Group

Phone: 250-462-0767

Fax: 250-490-4969

E-mail: ijukes@mindspring.com

Web: www.thecommittedsardine.net
web.mac.com/iajukes/iWeb/thecommittedsardine/Home.html

Ted McCain: The Thornburg Center

Phone: 604-462-8586

Fax: 604-463-5197

E-mail: tmccain@shaw.ca

Web: www.tcpd.org

Lori Anderson: Office Manager

Office: 250-717-0998

Fax: 250-717-0999

E-mail: ijukes@shaw.ca (Lori Anderson)

Copyright Policy:

This handout, and materials published on The Committed Sardine web site may be duplicated in hard copy format for educational, non-profit school district use only and must include this copyright policy. All other uses, transmissions and duplications are prohibited unless permission has been expressly granted.